Appendix A

Key Documents Related to the Recirculation of Portions of the Draft Environmental Impact Report

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1. Horizon West Transmission, LLC's Original Comments on the Draft Environmental Impact Report
2. California Public Utilities Commission's Data Request No. 6 – Information Requests Related to the Project Revision Included in Horizon West Transmission's Comments on the Draft Environmental Impact Report
3. Horizon West Transmission, LLC's Response to California Public Utilities Commission Data Request No. 6
4. Adams Broadwell Joseph & Cardozo's Comments on Draft Environmental Impact Report
5. Environmental Permitting Specialists' Analysis of Public Health Risks Associated with the Estrella Substation and Paso Robles Area Reinforcement Project
6. Pacific Gas & Electric Company's Comments on the Draft Environmental Impact Report

ADA Accessibility: This appendix includes reference document from other sources that are not accessible using an assistive device such as a screen reader. For additional assistance please contact CPUC.

Horizon West Transmission, LLC's Original Comments on the Draft Environmental Impact Report

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February 22, 2021

By Electronic Mail

Robert Peterson, c/o Tom Engels
Horizon Water and Environment
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Re: Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project, December 2020 (California State Clearinghouse No. 2018072071)

Dear Mr. Peterson and Mr. Engels:

This letter and the enclosed documents provide the comments of Horizon West Transmission, LLC ("Horizon West") on the Draft Environmental Impact Report ("DEIR") for the Estrella Substation and Paso Robles Area Reinforcement Project ("Estrella Project" or "Proposed Project") proposed by Horizon West and Pacific Gas and Electric Company ("PG&E"). Horizon West appreciates the time and effort of staff of the California Public Utilities Commission ("Commission" or "CPUC") and its consultants in preparing the DEIR. Horizon West's comments are intended to ensure that the final environmental impact report for the Estrella Project ("FEIR") will be accurate, complete, and consistent with the California Environmental Quality Act ("CEQA").

Section I below provides an overview of the Proposed Project and describes a minor project refinement ("MPR") involving Horizon West's acquisition of an additional five acres for the site of the substation portion of the Proposed Project (the "Estrella Substation Site"). The MPR also involves the slight reorientation of facilities and equipment at the Estrella Substation Site for access purposes. The MPR is described in greater detail in the memorandum provided as **Attachment 1** hereto and the updated Project Description provided as **Attachment 2** hereto. Horizon West requests that the Commission incorporate into the FEIR (i) the addition of five acres to the Estrella Substation Site and the other design refinements described in the MPR in **Attachment 1** hereto, (ii) the additional changes specified in the updated Project Description in **Attachment 2** hereto, and (iii) the comments and corrections specified in the detailed comment table in **Attachment 3** hereto.

Section II below describes the most significant of Horizon West's comments on the DEIR, which are a subset of the comments and corrections specified in the detailed comment table in **Attachment 3** hereto. Specifically, Horizon West requests that the following modifications be incorporated into the FEIR:

- In Agriculture and Forestry Resources, revise Mitigation Measure AG-1 to (i) allow Horizon West and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation, and (ii) recognize that PG&E and Horizon West will have different contribution amounts that are based on their respective impacts to important farmland;

- Also in Agriculture and Forestry Resources, revise the FEIR to recognize that placing the Estrella Substation Site within the existing parcel that is under a Williamson Act contract would not conflict with that contract, including its underlying intent;

- In Noise, revise Mitigation Measure NOI-1 so that it will not apply to ground-level construction noise activities determined to have less than significant impacts;

- In the Alternatives Analysis, correct the DEIR's understatement of the visual impacts of Alternative SS-1 (the Bonel Ranch Substation Site), and apply consistent findings regarding Williamson Act contracts to the Estrella Substation Site and the Bonel Ranch Substation Site;

- In the Alternatives Analysis, revise the FEIR to recognize that Alternatives BS-2 and BS-3 are purely speculative and have not been shown to be potentially feasible; and

- Also in the Alternatives Analysis, revise the FEIR to find that Alternative BS-2 and Alternative BS-3 also do not meet the key project objective of increasing reliability and should be eliminated.

I. OVERVIEW OF THE PROPOSED PROJECT AND MPR

On January 25, 2017, Horizon West and PG&E filed a joint application (pending in CPUC Docket Application ("A.") 17-01-023) in which each applicant requests a separate Permit to Construct ("PTC") for its portion of the Proposed Project ("Joint Application").[1] The Proposed Project is a reliability-driven transmission solution that was identified by the California Independent System Operator Corporation ("CAISO") and approved in its 2013-2014 Transmission Plan. The Proposed Project is comprised of the Estrella Substation, which is a new 230 kilovolt ("kV")/70 kV substation, plus a new approximately seven-mile overhead 70 kV double-circuit power line, and replacement and reconductoring of approximately three miles of an

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[1] Horizon West is the entity formerly known as NextEra Energy Transmission West, LLC. On May 10, 2019, Horizon West submitted a Notice of Name Change to the Commission. On May 22, 2019, Horizon West filed a *Motion to Change Caption Due to Change in Name* in Docket A.17-01-023. The motion included copies of the California Secretary of State's Amended Certificate of Registration confirming the name change and the Delaware Secretary of State's certification of the name change.

existing 70 kV power line. Together, these components comprise the reliability-driven upgrade that the CAISO identified and approved.

The CAISO identified certain components of the Proposed Project as being eligible for competition pursuant to its Tariff and Federal Energy Regulatory Commission ("FERC") Order 1000,[2] including the new 230 kV substation, buswork, and termination equipment and a new 230/70 kV transformer bank. The CAISO conducted a competitive solicitation process and ultimately awarded those components to Horizon West as the approved project sponsor. The other components of the Proposed Project were not eligible for competitive solicitation and were awarded to PG&E as the incumbent utility. Because the Horizon West components and the PG&E components together form a single, integrated transmission project, the parties filed the Joint Application together to request a separate PTC for each applicant's components.[3] As proposed in the Joint Application, Horizon West would construct, own, and operate the new 230 kV buswork and termination equipment and a new 230/70 kV transformer bank at the Estrella Substation, while PG&E would construct the new 70 kV buswork and termination equipment at the Estrella Substation, new 230 kV interconnection facilities needed to interconnect the Estrella Substation to PG&E's existing 230 kV facilities, the new approximately seven-mile 70 kV power line, and the approximately three miles of 70 kV reconductoring.[4]

Since filing the Joint Application and the Proponents' Environmental Assessment ("PEA") in 2017, Horizon West and its engineers have refined the detailed design and engineering plans for the Estrella Substation. This work resulted in an MPR involving the Estrella Substation Site. The elements of the MPR are the following:

- Horizon West will acquire an additional five acres as part of the Estrella Substation Site. The Estrella Substation thus will be located on a twenty-acre parcel instead of a fifteen-acre parcel. The inclusion of the five acres is reflected in the comments and corrections in **Attachment 1**, **Attachment 2**, and **Attachment 3** hereto.

- Adding five acres necessitated a design change to the Estrella Substation to reorient it to allow access to the five-acre addition. Specifically, the 230 kV and 70 kV yards and associated equipment will be slightly reoriented closer to Union Road.

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2 *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, FERC Stats. & Regs. ¶ 31,323 (2011), *order on reh'g*, Order No. 1000-A, 139 FERC ¶ 61,132 (2012), *order on reh'g and clarification*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012).

3 *See* Joint Application at 3 ("[Horizon] West could not successfully interconnect and energize its 230 kV project components without the project components that only PG&E can build and own. Conversely, PG&E would have no reason to seek a PTC for its 70 kV project components or its 230 kV interconnection facilities unless the [Horizon] West 230 kV project components also were being constructed.").

4 Joint Application at 10-12.

At its closest point, the fence line will be located approximately 64 feet northwest of Union Road, as shown in Figure 2 in **Attachment 1** hereto. Without this change, the design would preclude access to the five-acre addition to the site. This slight reorientation will require approximately 72,000 cubic yards of cut and fill, which will be balanced on site to the extent feasible. The MPR will only result in a slight reconfiguration of the yard equipment and will not affect the type of electrical equipment to be housed within the site's fence line as originally proposed.

As demonstrated in the analysis presented in the memorandum in **Attachment 1** hereto, construction and operation activities associated with the MPR would not result in a new, significant impact or a substantial increase in the severity of a previously identified significant impact based on the criteria applied in the DEIR. Table 1 in **Attachment 1** hereto provides a summary of the potential impacts for resource area analyzed in the DEIR. The elements of the MPR reflect the updated design plan for the Estrella Substation and should be reflected in the FEIR as insignificant changes to the Estrella Substation design.

II. KEY SUBSTANTIVE COMMENTS ON THE DEIR

A. In Agriculture and Forestry Resources, Mitigation Measure AG-1 should be revised to allow use of comparable mitigation measures and recognize that Horizon West and PG&E will have different contribution amounts.

The DEIR finds that the Proposed Project would convert 2.66 acres of Farmland of Statewide Importance and 11.76 acres of Unique Farmland to non-agricultural uses, and concludes that the conversion of this small amount of acreage would constitute a significant impact.[5] This suggests that the permanent conversion of any amount of designated farmland acreage, however small, is a significant impact.

Use of this stringent threshold would create a precedent for any project with any conversion of designated farmland, however small, to result in a significant agricultural impact. This negates the use of the California Agricultural Land Evaluation and Site Assessment Model ("LESA") which is endorsed by the Department of Conservation ("DOC") as an alternative and arguably more rigorous approach to assessing impacts to designated farmland.[6] The DOC's website states: "The California LESA Model was developed to provide lead agencies with an optional methodology to ensure that potentially significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095), including in California Environmental Quality Act

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[5] DEIR at 4.2-12 through 4.2-13. The acreage numbers in Tables 4.2-1 and 4.2-2 in the DEIR are updated in the comments in **Attachment 3** hereto to reflect the addition of five acres to the Estrella Substation Site.

[6] The LESA model is described on the DOC website at: https://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx.

(CEQA) reviews."[7] The DEIR's approach negates any quantitative assessment of potentially significant effects on the environment of agricultural land conversions by rendering any conversion of any acreage, regardless of overall quality or viability for agricultural purposes, a significant impact. Rote application of the DEIR's stringent threshold, without more analysis of factors specific to the Proposed Project and its location, would be contrary to CEQA because "thresholds cannot be used to determine automatically whether a given effect will or will not be significant."[8] Indeed, Section 15064(b)(2) of the CEQA Guidelines was revised in 2018 to reflect this.

Use of the DEIR's stringent threshold also is a departure from the thresholds applied for the conversion of agricultural lands by other CPUC-approved projects. The PEA evaluated the impacts of the Proposed Project's conversion of agricultural land based on the CPUC's analysis of PG&E's Shepherd Substation project in A.10-12-003, approved May 2013. For that project, the CPUC recognized a standard of significance based on Government Code Section 51222, which identifies 10 acres as the size of a parcel large enough to sustain agricultural use in the case of Prime Farmland, and 40 acres in the case of Farmland of Statewide Importance, Unique Farmland, and non-Prime Williamson Act lands.[9] The Commission also applied a minimum size threshold of significance in the 2015 Mitigated Negative Declaration and Supporting Initial Study ("MND/IS") for the Southern California Edison Company ("SCE") Banducci Substation Project in A.12-11-011. In that case, the CPUC found no significant impacts for SCE's substation project, even though 6.3 acres of Prime Farmland would be converted to non-agricultural use.[10] Specifically, the CPUC found a less than significant impact based on the conclusion that the 6.3 acres of converted Prime Farmland represents 0.001 percent of the 608,789 acres of Prime Farmland in Kern County.[11] Under these thresholds, the Proposed Project's impacts are less than significant because the Proposed Project would convert a *de minimis* amount of Prime Farmland, less than 40 acres of the other categories addressed in Government Code Section 51222, only 0.001 percent of the approximately 22,697 acres of Farmland of Statewide Importance in San Luis Obispo County, and only 0.0004 percent of the 45,175 acres of Unique Farmland in San Luis Obispo County.[12] The Commission should consider whether the threshold applied in the DEIR should be adjusted in the FEIR for consistency with these statutory standards and prior Commission precedent.

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[7] *Id.*

[8] *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1108-1109.

[9] PEA at 3.2-21, citing the PG&E Shepherd Substation Project IS/MND (May 2012) at 3.2-8 through 3.2-9.

[10] *See* SCE Banducci Substation Project MND/IS at 5-59.

[11] *Id.*

[12] These percentage are calculated using the adjusted acreage numbers in the detailed comments in **<u>Attachment 3</u>** hereto, which include the addition of five acres to the Estrella Substation Site.

Additionally, although the Commission has applied the DEIR's stringent standard in a recent case,[13] this "binary" standard of deeming significant <u>any</u> loss of farmland fails to consider additional factors such as the overall acreage subject to conversion (which in this case is a small number), or the value of the farmland to be converted, using for example, the LESA model as supported by the DOC, or the relative percentage of Prime and other farmland to be converted compared to the overall acreage in the county. Under the DEIR's approach, any conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland is automatically a significant and unavoidable impact. This approach overstates the Proposed Project's impacts.

To the extent mitigation is required, Mitigation Measure AG-1 should be revised to allow Horizon West and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation requirement.[14] Mitigation Measure AG-1 requires contributions to the California Farmland Conservancy Program, which promotes the long-term preservation of agricultural lands in California though agricultural conservation easements. Based on preliminary outreach, the California Farmland Conservancy Program is not aware of the Proposed Project and does not have a clear plan for implementing this mitigation measure. To provide flexibility and ensure that Horizon West and PG&E can comply, Mitigation Measure AG-1 should be revised to allow comparable mitigation as shown below and in the detailed comment table in **<u>Attachment 3</u>** hereto. The changes below also are necessary to clarify the scope and required timing of the mitigation, as well as the specific criteria that will be applied to confirm that the mitigation measure has been satisfied.

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[13] *See* SCE Circle City Substation and Mira Loma-Jefferson 66 kV Line Project (A.15-12-007).

[14] In addition to applying the stringent threshold, the DEIR finds that Mitigation Measure AG-1 (as discussed in the DEIR on page 4.2-13) "would not fully offset the significant impact because it would not create any new Important Farmland . . . ." This finding may be intended to follow the decision in *King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814 addressing a situation involving a vastly larger permanent loss of designated farmland acreage. It should be recognized, however, that CPUC precedent has allowed the use of conservation easements to mitigate such impacts to less than significant levels, and that the 2018 revisions to the Section 15370(e) of the CEQA Guidelines make clear that "mitigation" includes "[c]ompensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements." Cal. Code Regs., tit. 14, § 15370(e). The holding in *King and Gardiner Farms* therefore is not appropriate here.

> Mitigation Measure AG-1: Provide Compensation for Loss of Agricultural Land.
>
> HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.

B. Also in Agriculture and Forestry Resources, the DEIR's conclusion of significant and unavoidable agricultural impacts due to conflict with an existing Williamson Act contract misapplies the law and should be corrected.

The DEIR also contradicts applicable law in its conclusion that the Proposed Project's agricultural impacts are significant and unavoidable due to conflict with an existing Williamson Act contract.[15] The DEIR concludes that removing 15 acres[16] for the Estrella Substation Site from the current 98-acre Williamson Act parcel would conflict with the existing Williamson Act

[15] DEIR at 4.2-14.

[16] As explained above, five acres will be added to the Estrella Substation Site.

contract's "intent" to "preserve agricultural land in agricultural use."[17] This is not correct, however, because Government Code Section 51238 expressly provides that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Further, as noted in the DEIR, removing the acreage for the proposed substation parcel from the 98-acre Williamson Act parcel would not disqualify the remainder (*i.e.*, 78 acres) from being an agricultural preserve under the County of San Luis Obispo's Rules of Procedure to Implement the California Land Conservation Act of 1965. Indeed, the remaining 78 acres under the modified Williamson Act contract satisfy the acreage under the County's rules, (*i.e.*, 40-acre minimum parcel size) and will continue to be cultivated and with land uses limited to compatible uses. In short, the Proposed Project does not present a conflict with the existing Williamson Act contract, and the DEIR's conclusion of a significant and unavoidable impact is contrary to law and lacks a factual basis.

To be consistent with Government Code Section 51238, the language in the DEIR on page 4.2-15 should be modified in the FEIR as follows:

> ~~However, p~~ Placing the substation within the existing parcel under Williamson Act contract would not conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use, because Government Code Section 51238 specifies that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract.

C. The DEIR incorrectly applies Mitigation Measure NOI-1 to all construction activities, even though ground-level construction noise impacts are determined to be less than significant.

CEQA is clear that mitigation measures are not required for effects which are not found to be significant.[18] The DEIR on page 4.13-18 states that "ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or

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17 DEIR at 4.2-15.

18 Pub. Res. Code § 21002; CEQA Guidelines, Cal. Code Regs., tit. 14, §§ 15126.4, subd. (a)(3) and 15091.

segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously)." Notwithstanding the DEIR's finding that ground-level construction noise impacts will be less than significant, the DEIR states that Mitigation Measure NOI-1 is applicable to all construction activities. The DEIR provides no basis for this requirement, and it appears wholly unnecessary and onerous given that Applicant Proposed Measure (APM) NOI-2 is expressly discussed in the DEIR as a way to further reduce the already less than significant ground-level construction noise impacts.[19] Given this, Horizon West requests that the FEIR not require NOI-1 for ground-level construction activities.

D. The DEIR correctly selects the Estrella Substation Site as the environmentally superior alternative, but understates or ignores significant impacts that would result from Alternative SS-1 (the Bonel Ranch Substation Site).

The DEIR concludes that Alternative Combination #2 "offers the most advantages and least drawbacks among the Proposed Project and other alternative combinations."[20] Alternative Combination #2 consists of the Estrella Substation (*i.e.*, the Proposed Project), Alternative PLR-1A, Alternative BS-2, and Alternative BS-3.[21] Horizon West agrees with the DEIR's assessment that the Estrella Substation as proposed by Horizon West is the environmentally superior alternative as compared with the other alternatives for the substation site.

Although the DEIR correctly selects the Estrella Substation as environmentally superior, the DEIR ignores or understates some of the impacts associated with the alternative substation site labeled as Alternative SS-1 (also referred to as the Bonel Ranch Substation Site). As Horizon West detailed in its comments on the Alternatives Screening Report,[22] which is included in the DEIR as Appendix B, the Bonel Ranch Substation Site would result in significant impacts. The DEIR ignores or understates those impacts, as explained below.

First, the DEIR fails to recognize the significant visual effects of locating the substation at the Bonel Ranch Substation Site. As discussed in the DEIR on page 4.1-45, the Bonel Ranch Substation Site would be located adjacent to the Estrella River in an agricultural area, with the closest residence located approximately 0.5 mile west on Estrella Road. While the DEIR states that "[d]evelopment of the substation at the Bonel Ranch site would substantially alter the visual character of this immediate area and its agricultural setting," the DEIR concludes incorrectly that the alternative would have a "less severe effect on the area's visual character and visual quality"

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[19] DEIR at 4.13-18.

[20] DEIR at 5-13.

[21] DEIR at 5-1.

[22] *See* Comments of Horizon West Transmission, LLC (formerly known as NextEra Energy Transmission West, LLC) (U 222 E) on Draft Alternatives Screening Report for the Estrella Substation and Paso Robles Area Reinforcement Project (A.17-01-023), dated May 10, 2019.

compared to the Proposed Project due to lower "viewer concern" and "exposure."[23] The DEIR reaches this conclusion by asserting that the Estrella Substation Site would be visible from numerous wineries and from motorists along Union Road, whereas the Bonel Ranch Substation Site would reduce aesthetic impacts because it would not be visible from any vineyards or wineries and would affect a fewer number of motorists because the average daily traffic along Estrella Road is substantially less than along Union Road. This analysis fails, however, to consider potential changes to the visual character and quality of the Bonel Ranch Substation Site that would result if the substation were located there, including potential visual incompatibility with the surrounding landscape as seen from Estrella Road. In fact, comparison of the visual simulations in the DEIR for key observation points ("KOPs") 1 and 2 (near the proposed Estrella Substation Site) compared to those for KOPS 11, 12 and 13 (near the Bonel Ranch Substation Site) contradict the DEIR's conclusion.[24] As can be seen in the visual simulations for KOPs 1 and 2 (near the proposed Estrella Substation Site), the existing transmission line structures already present a degraded visual landscape in KOPs 1 and 2. In contrast, KOPs 11, 12 and 13 (near the Bonel Ranch Substation Site) all have agrarian landscapes untarnished by industrial structures. Additionally, construction of the Alternative PLR-1C route (or minor route variation) could result in additional visual impacts to these KOPs, but the DEIR does not discuss these potentially significant impacts. The DEIR thus lacks substantial evidence supporting the conclusion that visual impacts from Alternative SS-1 would be less significant than those for the Estrella Substation Site.

Second, the DEIR fails to identify potentially significant agricultural impacts from the Bonel Ranch Substation Site due to cancellation of a Williamson Act contract, despite finding a significant impact for the Estrella Substation Site due to such cancellation. As stated above, the DEIR's finding of a significant impact for the Estrella Substation Site for Williamson Act reasons is contrary to the Government Code. But if the Commission retains that conclusion in the FEIR for the Estrella Substation Site, then the FEIR must reach the same conclusion regarding the Bonel Ranch Substation Site. According to the San Luis Obispo County Land Use View GIS mapper, the Bonel Ranch Substation Site parcel is under an existing Williamson Act contract. The DEIR erroneously reaches the opposite conclusion. This should be corrected in the FEIR, and the FEIR's findings regarding Williamson Act contract implications should be consistent for the Estrella Substation Site and the Bonel Substation Site. Recognizing impacts accurately and consistently will provide additional support for selection of the Estrella Substation Site as the environmentally superior substation alternative.

E. Alternatives BS-2 and BS-3 are purely speculative, have not been shown to be potentially feasible, and should be eliminated.

As noted above, the DEIR selects Alternative Combination #2 as the environmentally superior alternative based on the conclusion that it "offers the most advantages and least drawbacks

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23 DEIR at 4.1-46.

24 *Cf.*, DEIR, Figures 4.1-2 through 4.1-3 with Figures 4.1-11 through 4.1-12.

among the Proposed Project and other alternative combinations."[25] Alternative Combination #2 includes as distribution components Alternative BS-2 and Alternative B-3. Alternative BS-2 would involve installation of front-of-the-meter ("FTM") battery energy storage systems ("BESSs") connected to the distribution system to defer the need for additional distribution capacity in the Paso Robles Distribution Planning Area ("DPA").[26] The DEIR used "illustrative" and "potentially feasible" sites for Alternative BS-2, and acknowledges that: "Because site-specific analyses are speculative at this time, this DEIR uses the illustrative sites to demonstrate the feasibility of this alternative, and the relatively small footprint these facilities would occupy throughout the project area."[27] Alternative BS-3 would involve behind-the-meter ("BTM") solar and battery storage to reduce loading on circuits within the Paso Robles DBA.[28] The DEIR does not identify site locations for Alternative BS-3 based on statements that: "Because it is unknown which specific customers will opt into the BTM resources program and install BTM resources on their property, the specific locations of activities under Alternative BS-3 are unknown;" and "In general, BESS would be anticipated to be installed within existing commercial and industrial buildings, and within existing residential homes or apartment complexes."[29]

These statements in the DEIR confirm that Alternative BS-2 and Alternative BS-3 are purely speculative and are not potentially feasible alternatives to the Proposed Project. An EIR is required to describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.[30] An EIR is not required to consider alternatives that are infeasible, and an EIR need examine in detail only those alternatives that "could feasibly attain most of the basic objectives of the project."[31]

For Alternative BS-2 and Alternative BS-3, there is no evidence in the record demonstrating that the theoretical FTM or BTM BESS systems are potentially feasible.[32] The

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[25] DEIR at 5-13.

[26] DEIR at 3-112.

[27] DEIR at 3-122.

[28] DEIR at 3-132.

[29] DEIR at 3-134.

[30] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(a).

[31] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(f).

[32] CEQA defines "Feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." Pub. Resources Code § 21061.1; CEQA Guidelines, Cal. Code Regs., tit. 14, § 15364. The CEQA Guidelines enumerate which factors should be assessed: "Among the factors that may be taken into account when addressing feasibility of alternatives are site

Commission should find that Alternative BS-2 and Alternative BS-3 are remote and speculative because they are unlikely as a practical matter to be carried out within the reasonable future, and because they are contingent on the occurrence of uncertain future events such as future procurement activities that may or may not result in a sufficient addition of BESS to meet the distribution objective.[33] The DEIR acknowledges that "[i]t is not possible to identify with certainty FTM BESS sites that could be selected by PG&E in the future" and concedes that "site-specific analyses are speculative at this time."[34] Alternative BS-3 is even more speculative and is based upon the assumption that 17,000 customers could and would implement solar and battery storage, which would result in 88 megawatts ("MW") of solar and 125 MW/240 MWh of storage.[35] But there is no evidence presented in the DEIR that any of these potential customers would adopt these technologies, or where any such future facilities would be located: "Because it is unknown which specific customers will opt into the BTM resources program and install BTM resources on their property, the specific locations of activities under Alternative BS-3 are unknown."[36]

As a result, each of Alternative BS-2 and Alternative BS-3 fails the most basic CEQA standards. Both, as expressly admitted in the DEIR, are inherently speculative. There is no evidence the FTM or BTM batteries could or would be deployed, and even if there were, there is nothing more than pure speculation regarding where such batteries and related facilities might be deployed. The DEIR also acknowledges that deployment of the hypothetical is likely to occur over many years, demonstrating substantial delay in completion. A substantial delay could, by itself, render an alternative incapable of being "accomplished in a successful manner within a reasonable period of time," and hence infeasible.[37] As noted above, in the context of alternative locations for a project, the CEQA Guidelines recognize that another factor in the determination of feasibility is whether the proponent can reasonably acquire, control, or otherwise have access to

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suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects within a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(f)(1), citing *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 and *Save Our Residential Environment v. City of West Hollywood* (1992) 9 Cal.App.4th 1745, 1753, fn. 1.

33 *See Al Larson Boat Shop Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 745; *Bowman v. City of Petaluma* (1986) 185 Cal.App.3d 1065, 1084.

34 DEIR at 3-112.

35 DEIR at 3-132.

36 DEIR at 3-134.

37 CEQA Guidelines, Cal. Code Regs., tit. 14, § 15364; *Bowman v. City of Petaluma*, *supra*, 185 Cal.App.3d at 1084 (condition of project approval requiring development of ring road that would result in long delay was infeasible).

the alternative site.[38] The DEIR lacks sufficient information and analysis regarding the potential environment impacts of Alternative BS-2 and Alternative BS-3. Selection of these two BESS alternatives as the environmentally superior distribution alternative therefore is not supported by substantial evidence.

F. Alternatives BS-2 and BS-3 also should be eliminated because they do not meet the Proposed Project's objective to ensure transmission and distribution reliability.

The CAISO designated the Proposed Project as a "reliability" project that is needed to mitigate thermal overloads and low voltage conditions in the Los Padres 70 kV system. The Proposed Project was identified in the CAISO's 2013-2014 Transmission Plan as a project needed to mitigate thermal overloads and voltage concerns in the Los Padres 70 kV system (specifically in the San Miguel, Paso Robles, Templeton, Atascadero, Cayucos, and San Luis Obispo areas). CAISO modeling determined that thermal overloads and very low voltage conditions, including voltage collapse in the area, could occur in this system following either one of two Category B1 contingencies: (1) loss of the Templeton 230 kV/70 kV #1 Transformer Bank; or (2) loss of the Paso Robles-Templeton 70 kV Transmission Line. If either the #1 Transformer Bank at the Templeton Substation or the 70 kV transmission line connecting the Paso Robles and Templeton Substations were to fail for any reason, that failure would result in dangerous overloading and low voltage conditions in the regional system.

This occurs due to both high load (*i.e.*, electrical service demand) in the Paso Robles area relative to substation capacity, and a lack of transmission redundancy in the system. Currently, the only sources of power to the Paso Robles Substation are the San Miguel-Paso Robles 70 kV Transmission Line from the north and the Paso Robles-Templeton 70 kV Transmission Line from the south, with the latter providing the bulk of the power and the nearest connection to a 230 kV power source. The San Miguel-Paso Robles 70 kV Transmission Line does not have the capacity to accommodate the load served through the Paso Robles Substation should the power source from Templeton Substation fail; therefore, thermal overloads, low voltages, and/or voltage collapse in the area could occur during one of the Category B contingencies identified by the CAISO. Because PG&E has an interim operational plan (an under-voltage load shedding scheme) that serves to protect the transmission system infrastructure in the event of such overload scenarios, load would be systematically dropped to bring voltages to acceptable levels. This operational plan could result in 60 to 70 MW of load in Paso Robles being dropped during one of the Category B contingencies described above.

The Proposed Project is designed to meet this CAISO-identified reliability need. The CAISO specified that: "As described in the ISO Functional Specification for the Estrella Substation project, the substation will address reliability issues in the Paso Robles area by providing Paso Robles Substation with more reinforced 70 kV sources from Templeton and

[38] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(f)(1).

Estrella Substations."[39] The CAISO's functional specifications explain that the Proposed Project would meet the reliability need as follows:

> The project will mitigate the thermal overloads and voltage concerns identified in the Los Padres 70 kV system, specifically in the San Miguel, Paso Robles, Templeton, Atascadero, Cayucos and San Luis Obispo areas following a Category B contingency due to loss of either the Templeton 230/70 kV #1 Bank or the Paso Robles-Templeton 70 kV Line. These two Category B contingencies put approximately 60-70 MW of load at Paso Robles at risk by activating the existing Paso Robles UVLS during summer peak conditions to alleviate the thermal and low voltage concerns. Also, a Category C3 contingency condition involving loss of Morro Bay-Templeton and Templeton-Gates 230 kV lines results in thermal overloads and low voltages in the underlying 70 kV system. With the additional source from the Gates 230 kV system, the Estrella Substation Project will provide robust system reinforcement to the Paso Robles and Templeton 70 kV system operations.[40]

Consistent with this fundamental reliability purpose, the Joint Application and PEA specified the following project objectives:

(1) **Reinforce Electrical Reliability by Implementing the CAISO-Approved Electrical Plan of Service.** Increase reliability and mitigate thermal overloads and voltage concerns in the area by having an additional 230 kV source of power that will increase service reliability in San Luis Obispo County, and maintain compliance with North American Electric Reliability Corporation reliability standards, as described in the *Estrella Substation Project Functional Specifications* issued by the CAISO in June 2014. The Proposed Project also is intended to allow Horizon West and PG&E to meet their obligation to add the CAISO-approved project to the CAISO-controlled grid, as defined in the *Functional Specifications* and the Approved Project Sponsor Agreement.[41]

(2) **Meet Expected Future Electric Distribution Demand.** Provide a location for future 21 kV distribution facilities with a 230/70 kV source near the anticipated

[39] Joint Application, Exhibit H—CAISO Estrella Substation Project—Project Sponsor Selection Report at 2.

[40] Joint Application, Exhibit K—CAISO Estrella Substation Project Description and Functional Specifications for Competitive Solicitation at 2-3.

[41] Joint Application at 7-8; PEA at 2-1; DEIR at 2-14.

growth areas in northern Paso Robles to efficiently add distribution capacity and improve service reliability when required in the Paso Robles DPA.[42]

(3) **Balance Safety, Cost, and Environmental Impacts.** Locate, design, and build the project in a safe, cost-effective manner that will also minimize environmental impacts.[43]

The CAISO's updated studies confirm that the Proposed Project is still needed as soon as possible for reliability at the transmission and distribution level. The CAISO performed revised transmission planning studies for the 2017-2018 transmission planning process. The CAISO restudied the need for the Proposed Project in the near-term planning horizon using the 2019 and 2022 summer peak base cases used in the 2017-2018 transmission planning process with the Proposed Project removed from the model. The CAISO explained that the results "would be very similar in 2027" and explained:

> For the P1 (N-1) contingency, the reliability constraint is overloading of the Coalinga-San Miguel 60 kV and San Miguel Paso-Robles 60 kV lines as well as voltage collapse in the area.
>
> . . .
>
> The reliability studies are consistent with the current loading and reliability constraints in the area. . . . an outage of the Templeton-Paso Robles 60 kV will result in an overloading of the San Miguel-Paso Robles 60 kV lines in addition to voltage stability in the area. The loading on the Coalinga-San Miguel 60 kV line is the same as the San Miguel-Paso Robles 60 kV line and would also be overloaded. The interim operational action plan to address the reliability constraints in the area, until the Estrella Substation project is in-service, is to rely on an under voltage load shedding (UVLS) scheme that will trip load in the area that addresses the overload and voltage stability conditions under the P1 contingency condition.
>
> The Estrella Substation project was originally approved in the 2012-2013 transmission planning process to address the transmission reliability constraints identified above in addition to the need PG&E has identified for a new load interconnection point for the distribution system in the area. The ISO has reviewed an alternative that would add an additional 230/70 kV transformer at the Templeton substation, reconstruction of the Templeton substation by PG&E, upgrades to the Paso Robles substation, and a new Templeton-Paso Robles 70 kV line. The alternative would

[42] PEA at 2-2; DEIR at 2-14.

[43] Joint Application at 7-8; PEA at 2-2; DEIR at 2-14.

> address the transmission reliability constraints but at a higher estimated cost than the Estrella Substation Project and does not address the need identified by PG&E for a new load interconnection point for the distribution system in the area.[44]

In the DEIR, Commission staff developed its own project objectives and used those objectives "to inform the CEQA process/evaluation, including the development and screening of project alternatives."[45] The DEIR articulates those objectives as consisting of the following separate "Transmission Objective" and "Distribution Objective":

- **Transmission Objective:** Mitigate thermal overload and low voltage concerns in the Los Padres 70 kV system during Category B contingency scenarios, as identified by the CAISO in its 2013-2014 Transmission Plan.

- **Distribution Objective:** Accommodate expected future increased electric distribution demand in the Paso Robles DPA, particularly in the anticipated growth areas in northeast Paso Robles.[46]

In its Transmission Objective, the DEIR partly recognizes the reliability need, but fails to fully capture the nature of the reliability need, the objective for avoiding loss of load, and the fundamental dual transmission/distribution reliability objective served by adding a 230/70 kV substation to support the 70 kV system while also adding a new load interconnection point for the distribution system in the area. The DEIR also fails to recognize the need to increase service reliability at the distribution level as part of the "Distribution" objective. To the contrary, the DEIR specifies that: "The issue of long feeders and poor service reliability was not identified as a fundamental project objective by the CPUC; however, it is considered a beneficial effect of the Proposed Project."[47]

Omission of this reliability objective resulted in the DEIR's incorrect selection of two BESS alternatives—Alternative BS-2 and Alternative BS-3—as the distribution component of the environmentally superior alternative. A BESS alternative would not meet the reliability objective of the Proposed Project to "improve service reliability when required in the Paso Robles DPA."[48] The addition of BESS in lieu of upgrading the distribution system could, if they materialize, help address load growth. But BESS alone would not increase reliability of the distribution system.

---

[44] CAISO Letter from J.E. (Jeff) Billinton, Manager, Regional Transmission—North to Mr. Rob Peterson, Energy Division, Infrastructure Permitting and CEQA, California Public Utilities Commission (February 23, 2018) at 4-5.

[45] DEIR at 2-14.

[46] DEIR at 2-14 through 2-15.

[47] DEIR at 2-15.

[48] PEA at 2-2; DEIR at 2-14.

The BESSs cannot solve the issue of long feeders and poor service reliability that are one of the Proposed Project's objectives. A BESS alternative therefore would not meet the reliability objective of the Proposed Project to "improve service reliability when required in the Paso Robles DPA."[49] PG&E's comments on the DEIR provide a more detailed explanation of the problems associated with the BESS alternatives. In sum, Alternative BS-2 and Alternative BS-3 do not meet the key project objective of increasing reliability at the distribution level and should be eliminated in the FEIR.

III. CONCLUSION

Horizon West appreciates the opportunity to submit these comments and requests that the modifications described above and in **Attachment 1**, **Attachment 2**, and **Attachment 3** hereto be incorporated into the FEIR.

Very truly yours,

/s/ Lisa Cottle

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Enclosed: Additional Documents Provided With This Letter:

Attachment 1	**Memorandum Regarding Minor Project Refinement**
Attachment 2	**Updated Project Description**
Attachment 3	**Detailed Comment Table**

[49] *Id.*

Attachment 1

Memorandum Regarding Minor Project Refinement

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February 22, 2022

Robert Peterson
Project Manager, Energy Division, CEQA Unit
California Public Utilities Commission
estrellaproject@horizonh2o.com

Re: Minor Project Refinement for the Estrella Substation and Paso Robles Area Reinforcement Project (Project)

INTRODUCTION

Horizon West Transmission, LLC (Horizon West) provides this memorandum for the California Public Utilities Commission (Commission) in order to document a minor project refinement (MPR) to support its analysis of the Project under the California Environmental Quality Act (CEQA). The MPR includes a design change to the proposed Estrella Substation and the acquisition of an additional five acres of land immediately adjacent to the originally proposed 15-acre parcel. As depicted in Figure 1, the additional five acres of land is located in the northeast portion of the 20-acre parcel. A design change to the Estrella Substation was necessitated after it was determined that the substation, as originally proposed, would preclude access to the additional five acres of land.

The MPR would slightly reorient the 230 kilovolt (kV) and 70 kV yards and associated equipment closer to Union Road to allow access to the additional five acres of land in the northeast portion of the parcel. At its closest point, the fence line for the 230 kV and 70 kV yards would be located approximately 64 feet northwest of Union Road. The configuration of the electrical equipment for the 230 kV and 70 kV substations is provided in Figure 2. The slight reorientation of the substation facilities would require approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible. The MPR would extend construction activities at the substation site by one week. The MPR would only result in a sight reconfiguration of the yard equipment and would not affect the type of electrical equipment to be housed within the substation fence line, as originally proposed.

SUMMARY OF IMPACTS

The minor substation design changes were evaluated to verify that construction and operation activities would not result in a new, significant impact or a substantial increase in the severity of a previously identified significant impact based on the criteria used in the Draft Environmental Impact Report (DEIR) for the Project. The following table provides a brief summary of the potential impacts for each resource area analyzed in the DEIR.

Table 1. Summary of Potential Impacts by Resource Section

Resource Section	Summary of Potential Impacts
Aesthetics	*No Change.* The MPR would slightly reorient Estrella Substation closer to Union Road. The slight reorientation of the MPR closer to Union Road would render the facility slightly more pronounced to viewers along Union Road. However, this change in visual prominence would be minor, particularly when considered in the context of the significant and unavoidable impact to visual resources already identified in the DEIR. As such, the MPR would not result in a new impact or constitute a substantial change in the severity of the previously identified significant and unavoidable impact to visual resources.
Agriculture and Forest Resources	*No Change.* The MPR would involve the acquisition of an additional five acres of land to the originally proposed 15-acre site within the existing, approximately 98-acre parcel. The 20-acre substation parcel associated with the MPR would not disqualify the remaining Williamson Act contracted area from an agricultural preserve under the County of San Luis Obispo's Rules of Procedure to Implement the California Land Conservation Act of 1965. Further, the additional five acres is classified as Unique Farmland and is currently used for viticulture. The acquisition of this additional agricultural land for industrial activities would be considered a permanent impact to Unique Farmland. However, when considered in the context of the significant and unavoidable impact to Important Farmland already identified in the DEIR, the MPR would not result in a new impact or constitute a substantial change in the severity of the previously identified significant and unavoidable impact to agriculture and forest resources.
Air Quality	*Decrease.* The MPR would contain a similar sized footprint (15 acres) to that analyzed in the DEIR. However, earthwork activities are anticipated to result in approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible. Given the increase in grading volume and additional week of construction activities, construction emissions associated with construction of the substation would slightly increase. Air quality emissions were remodeled to account for the additional week of construction activities at the substation site and to reflect the 21-month Project construction schedule.[1] As provided in Attachment A, cumulative Project emissions would not exceed the daily and quarterly maximum daily emission limits for any criteria pollutants.[2] Therefore, the MPR, when considered in the context of the Project, would reduce the severity of previously identified significant impacts resulting from daily emission exceedances of ROG + NOx and quarterly exceedances of ROG + NOx and fugitive dust to less than significant levels.
Biological Resources	*No Change.* The originally proposed 15-acre parcel and the additional five acres to be acquired as part of the MPR are under viticulture production. The additional five acres was surveyed in the field as part of the Proponent's Environmental Assessment (PEA) and was determined to have similar habitat characteristics and species issues as the originally proposed 15-acre parcel. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to biological resources, which was determined to be less than significant with mitigation in the DEIR.
Cultural Resources	*No Change.* The originally proposed 15-acre parcel and the additional five acres to be acquired as part of the MPR are currently under viticulture production and have the same low potential for cultural resources. The additional five acres was surveyed in the field as part of the PEA, and no archeological resources were identified onsite. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to cultural resources, which was determined to be less than significant with mitigation in the DEIR.
Energy	*No Change.* The MPR would increase construction activities by one week, which would result in a corresponding increase in the total usage hours of construction equipment and number of off-road truck trips. However, the number of weekly truck trips and equipment usage hours would not change. The MPR would slightly increase the projected fuel consumption or energy use. However, this increase would not be considered substantial. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to energy, which was determined to be less than significant in the DEIR.

[1] The California Emission Estimator Model (CalEEMod) conducted for the Project and described in the Proponent's Environmental Assessment (PEA) and DEIR assumed a seven-month construction schedule, not the 21-month Project construction schedule that would apply to the Project. As a result, air quality emissions were remodeled assuming the 21-month Project construction schedule and additional week of construction activity at the substation site.

[2] Construction activities were redistributed over the 21-month construction schedule and, therefore, result in fewer instances of overlapping activity compared to the CalEEMod assumptions described in the Draft EIR and PEA. As a result, daily emissions of ROG + NO_x and quarterly construction emissions of ROG + NO_x and fugitive dust decreased below their respective maximum daily limits.

Resource Section	Summary of Potential Impacts
Geology and Soils	*No Change*. The originally proposed 15-acre parcel and the additional five acres to be acquired as part of the MPR are underlaid by geologic formations of the same paleontological sensitivity. The additional five acres was surveyed in the field as part of the PEA and no paleontological resources or any paleontologically sensitive geologic formations on the ground surface were discovered. The additional five acres contain similar soils characteristics and seismic risks as the 15-acre parcel already assessed in the DEIR. Earthwork activities are anticipated to result in approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible. Earthwork activities would occur within the same parcel already assessed in the DEIR and, therefore, would not change the susceptibility of the soils underlying the MPR to soil erosion. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to geology, soils, and paleontological resources, which were determined to be less than significant with mitigation in the DEIR.
Greenhouse Gas Emissions	*No Change.* The Greenhouse Gas Emissions section of the DEIR calculates the maximum annual construction- and operation-related greenhouse gas (GHG) emissions to be approximately 187 metric tons of carbon dioxide equivalent ($MTCO_2E$) per year, which is well under the San Luis Obispo County Air Pollution Control District threshold of 10,000 $MTCO_2E$ per year. As provided in Attachment A, while construction activities would increase by one week at the substation site, the MPR, when considered together with the power line components of the Project, would also result in approximately 187 $MTCO_2E$ per year. Therefore, GHG emissions would not increase beyond what was analyzed in the DEIR and the MPR would not trigger an exceedance of this threshold. The MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact, which was determined to be less than significant in the DEIR.
Hazards and Hazardous Materials	*No Change.* The MPR would not alter the construction materials, construction methods, or operational aspects of the originally proposed substation design, as described in the DEIR. No known hazardous materials sites are located within the additional five acres. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to hazards and hazardous materials, which was determined to be less than significant with mitigation with mitigation in the DEIR.
Hydrology and Water Quality	*No Change*. The MPR would not result in a greater disturbance footprint than the originally proposed substation design. Earthwork activities are anticipated to result in approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible. However, this increase in earthwork activity would not substantially increase erosion and sedimentation impacts, degrade water quality, or require additional water use compared to the proposed substation design with implementation of identified APMs. Additionally, the MPR would not impact any jurisdictional water features. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to water resources, which was determined to be less than significant in the DEIR.
Land Use and Planning	*No Change*. As discussed in the DEIR, land use impacts would be significant under the CEQA if the Project results in a conflict with an applicable land use plan, policy, or regulations and/or results in a division of an established community or disrupts a recently approved land use. As part of the MPR, Horizon West would acquire 20 acres within an existing 98-acre parcel designated as agriculture and currently used for viticulture. The MPR would be consistent with the analysis in the DEIR because its use would not conflict with any land use plans, policies, or regulations. The MPR would be reoriented within the same 15-acre area already assessed in the DEIR. As a result, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to land use, which was determined to be less than significant in the DEIR.
Mineral Resources	*No Change*. The additional five acres to be acquired as part of the MPR is located entirely within an area classified as MRZ-1, or an area with little likelihood for the presence of significant mineral resources. No known mineral resources or extraction activities are associated with the additional five acres. Thus, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to mineral resources, which was determined to be no impact for the Estrella Substation site in the DEIR.
Noise	*No Change.* The MPR would slightly reorient the substation closer to Union Road. However, the distance of the substation to the nearest residence would not materially change. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to noise, which was determined to be less than significant with mitigation for Estrella Substation in the DEIR.

Resource Section	Summary of Potential Impacts
Population and Housing	*No Change.* The MPR would slightly reorient the substation closer to Union Road, but would have no effect on the quantity of personnel required during the construction or operation phases. The project would remain consistent with the intent of the City of Paso Robles General Plan Housing Element. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to population and housing, which was determined to be less than significant in the DEIR.
Public Services	*No Change.* Overall impacts of the MPR on public services would not change following implementation of the MPR. The MPR would not increase safety concerns or otherwise result in the increased demand on public services. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to public services, which was determined to be less than significant with mitigation in the DEIR.
Recreation	*No Change*. The additional acreage that would be acquired as part of the MPR is not located near any recreational facilities and would have no effect on the quantity of personnel required during construction or operation phases. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to recreational resources, which was determined to be less than significant in the DEIR.
Transportation	*No Change*. The MPR would increase construction activities by one week, which would result in a corresponding increase in the total number of construction vehicles and delivery trucks. However, the number of weekly truck trips would not change. While the total number of truck trips would slightly increase, this increase would not be considered substantial. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to transportation, which was determined to be less than significant with mitigation in the DEIR.
Tribal Cultural Resources	*No Change.* The originally proposed 15-acre parcel and the additional five acres to be acquired as part of the MPR is entirely within an agricultural area under viticulture production. The MPR would not increase the amount of permanent or temporary disturbance area, involve a change in the amount of ground-disturbing activity, or disturb an area of known tribal cultural sensitivity. Additionally, a search of the Sacred Lands Files from the Native American Heritage Commission was conducted of the additional 5 acres as part of the PEA. The results of the Sacred Lands Files search indicate that no Native American cultural resources are known in the immediate vicinity. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to cultural resources, which was determined to be less than significant with mitigation in the DEIR.
Utilities and Service Systems	*No Change.* Overall impacts of the MPR on utilities and service systems would not change as a result in the MPR. Earthwork activities are anticipated to result in approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible. As a result of the additional soil movement, an incremental increase in water use would be necessary to support construction activities, but would not exceed the estimates described in the DEIR. The MPR would not change the volume of wastewater or solid waste analyzed in the EIR generated by the project. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to utilities, which was determined to be less than significant in the DEIR.
Wildfire	*No Change.* The MPR would slightly reorient the substation closer to Union Road within the same 15-acre parcel already assessed in the DEIR. The originally proposed 15-acre parcel and the additional five acres to be acquired as part of the MPR are under viticulture production. The additional five acres contains similar topography and the same fire hazard classification as the originally proposed 15-acre parcel. Therefore, the MPR would not result in a new, significant impact or constitute a substantial increase in the severity of a previously identified impact to wildfire risks, which was determined to be less than significant with mitigation in the DEIR.

FIGURES

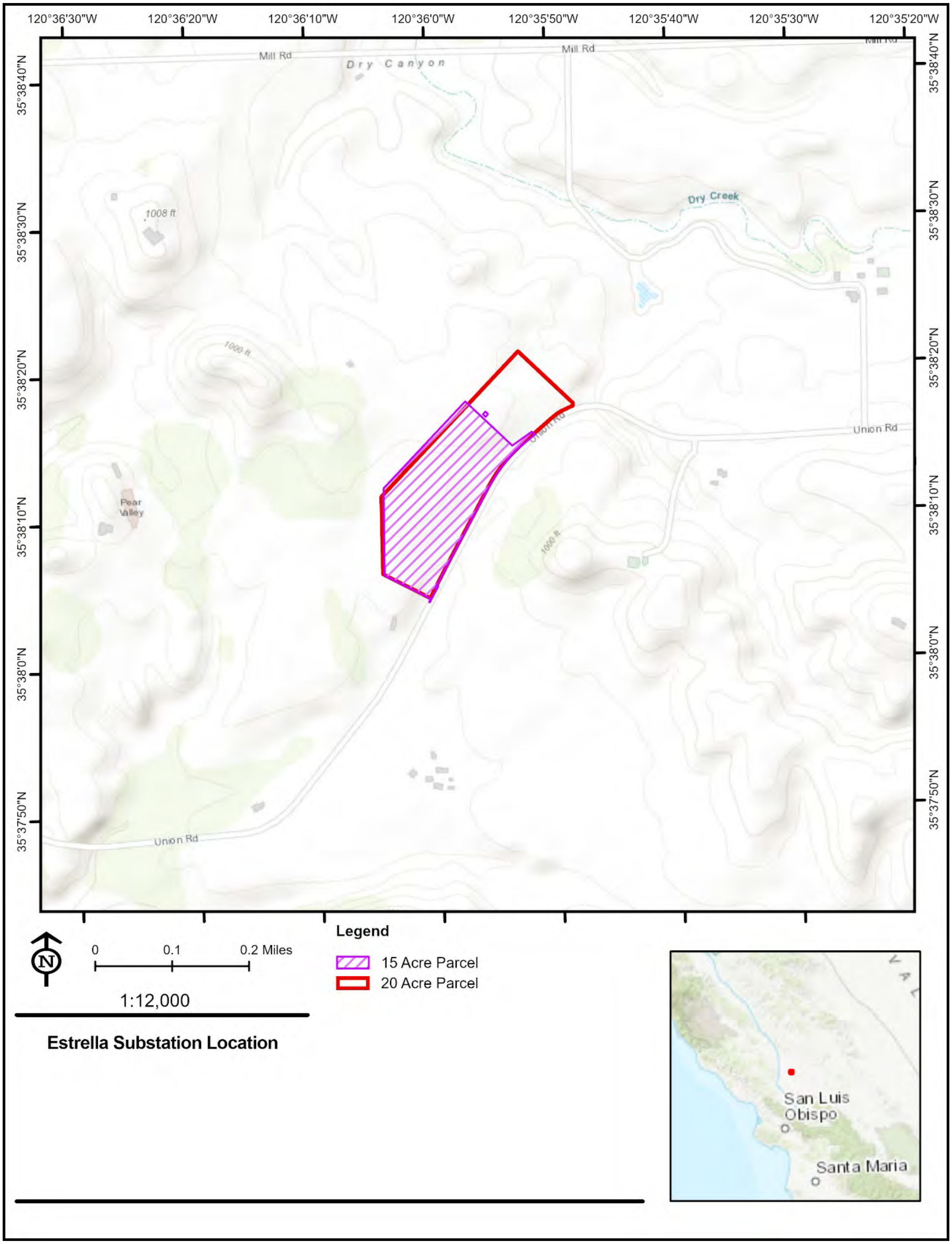


Figure 1. Estrella Substation Parcel.

Figure 2. Preliminary Plan

LEGEND

	EXISTING GRADE MAJOR CONTOUR
	EXISTING GRADE MINOR CONTOUR
	PROPOSED GRADE MAJOR CONTOUR
	PROPOSED GRADE MINOR CONTOUR
	PROPOSED SUBSTATION BASELINE
	CHAINLINK FENCE
	SILT FENCE
	PROPERTY BOUNDARY
	ROCK CHECK DAM
RTW:	RETAINING WALL
FG:	FINISH GRADE (TOP OF SURFACE ROCK)
SG:	SUBGRADE (TOP OF FLEXIBLE BASE)
RG:	ROUGH GRADE (TOP OF DIRT)
EG:	EXISTING GRADE

NOTES

1. Cut and fill volumes are raw volumes with no allowances for shrinkage where applicable.
2. Contractor shall strip approximately 10 inches of soils from the working area; stripped top soil shall be used for embankments and slopes outside of the immediate area of the pad.
3. Suitable excess fill including waste top soils may be used for embankments and slopes outside of the immediate area of the pad.
4. Site and roadway to be covered by a 8 inch road base gravel as a working surface.
5. Slope access roads for drainage.
6. New yard contours indicate subgrade and do not include crushed rock surfacing; new approach contours indicate finish grade; yard subgrade to match approach finish grade; yard finish rock will feather out onto approach.
7. All areas not receiving crushed rock surfacing or road mix (Flexible Base) shall be filled with topsoil and re-seeded.
8. Crushed rock surfacing shall not be placed until all subgrade conduit, grounding and utilities are complete.
9. Subgrade includes Flexible Base material.
10. The earthwork contractor shall furnish and install compacted non-expansive backfill.

PRELIMINARY

APPROXIMATE EARTHWORK QUANTITIES

TOTAL DISTURBED AREA		11.8	ACRES		
TOPSOIL					
	REMOVAL	AREA (SF)	DEPTH (IN)	VOL (CY)	
	70KV SUBSTATION	205454	10	6341	
	230KV SUBSTATION	187917	10	5800	
	APPROACH	120009	10	3704	
	TOTALS	11.8	ACRES	15845	CY
	RE-USED ON SITE	162994	6	3018	
	EXPORT / STOCKPILED / WASTED			12827	CY
CUT/FILL QUANTITIES*		CUT	FILL	NET	
	70KV SUBSTATION	39187	10650	28537	CUT
	230KV SUBSTATION	4183	51212	47029	FILL
	APPROACH	24485	2287	22198	CUT
	NET CUT/FILL TO R.G.	67855	64149	3706	CUT
	ONSITE MATERIAL IS SUITABLE AS FILL				
	CUT AVAILABLE FOR FILL			67855	CY
SELECT IMPORT**		AREA (SF)	DEPTH (IN)	VOL (CY)	
	YARD-FLEXIBLE BASE	300164	8	7411	
	YARD-SURFACING	272328	6	5043	
	YARD-ASPHALT	27836	3	258	
	APPROACH-FLEXIBLE BASE	44832	8	1107	
	APPROACH-SURFACING	19577	6	363	
	APPROACH-ASPHALT	25255	3	234	
	RIP RAP	2500	12	93	
			TOTAL	14508	
SUMMARY					
	TOTAL CUT (TOPSOIL + NET CUT)			83700	CY
	TOTAL FILL (SELECT IMPORT + NET FILL)			78657	CY
	TOTAL EXPORT / STOCKPILED / WASTED			16533	CY
	TOTAL IMPORT (SELECT IMPORT)			14508	CY

*TOPSOIL STRIPPED SURFACE COMPARED TO ROUGH GRADE
**ABOVE ROUGH GRADE

FILE LOCATION: L:\NEXTERA\NEXT-061 ESTRELLA\CADD\WORKING\CIVIL\ESTRELLA C3D2019 2021-02-15.DWG LAST SAVED BY: SKCamposan 2/18/2021 2:33 PM PLOTTED BY: Steven K. Camposan 2/18/2021 2:46 PM Tab:Site Grading Plan (4)

"Engineering with Distinction"
ECI ELECTRICAL CONSULTANTS, INC.
BILLINGS, MONTANA

NO	REVISION	DATE	BY	APR
0H	PRELIMINARY	02/18/21	SKC	CAJ
0G	PRELIMINARY	02/15/21	SKC	CAJ
0F	PRELIMINARY	02/02/21	SKC	CAJ
0E	PRELIMINARY	01/19/21	SKC	CAJ
0D	PRELIMINARY	01/08/21	SKC	CAJ

HORIZONWEST TRANSMISSION

ENGINEERING RECORD		DATE
DRAWN	D. JOHNSON	11/16/20
DESIGNED	D. JOHNSON	11/16/20
CHECKED	C. JOBES	12/18/20
APPROVED		
DWG SCALE: 1"=50'	PLT SCALE:	

ESTRELLA
230–70 kV SUBSTATION
SITE GRADING PLAN–OVERALL

DWG. NAME: EST-D-P002-2
REVISION NO : 0H

ATTACHMENT A

Table 4.3-5 Proposed Project Construction Emissions (to replace corresponding table in DEIR)

	CO	ROG	NO_X	ROG + NO_X	SO_X	Fugitive Dust PM_{10}	PM_{10}	$PM_{2.5}$	DPM
Maximum Daily Emissions (lbs/day)									
CalEEMod Sources (unmitigated)	77.59	11.89	110.48	122.37	0.28	8.47	12.38	7.38	3.91
Helicopter (unmitigated)	11.86	1.60	30.17	30.56	3.58	46.30	48.36	48.36	0.00
Total Maximum Daily (unmitigated)	79.88	11.89	110.48	122.37	3.83	47.78	52.66	51.37	3.91
CalEEMod Sources (mitigated)	77.59	11.89	110.48	122.37	0.28	4.05	7.96	5.28	3.91
Helicopter (mitigated)	11.86	1.60	30.17	30.56	3.58	46.30	48.36	48.36	0.00
Total Maximum Daily (mitigated)	79.88	11.89	110.48	122.37	3.83	47.78	52.66	51.37	3.91
Significance Thresholds	-	-	-	137	-	-	-	-	7
Significant?	-	-	-	No	-	-	-	-	No
Maximum Quarterly Emissions (tons/quarter)									
CalEEMod Sources (unmitigated)	-	-	-	1.18	-	0.04	-	-	0.04
Helicopter (unmitigated)	-			0.09	-	0.12	-	-	-
Total Maximum Quarterly (unmitigated)	-	-	-	1.28	-	0.16	-	-	0.04
CalEEMod Sources (mitigated)	-	-	-	1.18	-	0.03	-	-	0.04
Helicopter (mitigated)	-			0.09	-	0.12	-	-	-
Total Maximum Quarterly (mitigated)	-	-	-	1.28	-	0.14	-	-	0.04
Significance Thresholds	-	-	-	Tier 1 2.5 Tier 2 26.3	-	2.5	-	-	0.13
Significant?	-	-	-	No	-	No	-	-	No

	CO	ROG	NO_X	ROG + NO_X	SO_X	Fugitive Dust PM_{10}	PM_{10}	$PM_{2.5}$	DPM
Total Project Emissions (tons)									
CalEEMod Sources (unmitigated)	6.82	0.97	8.63	9.60	0.02	0.29	0.60	0.38	0.31
Helicopter (unmitigated)	0.04	0.01	0.15	0.16	0.02	0.21	0.22	0.22	-
Total Construction Project (unmitigated)	6.86	0.98	8.78	9.76	0.04	0.50	0.82	0.60	0.31
CalEEMod Sources (mitigated)	6.82	0.97	8.63	9.60	0.02	0.22	0.53	0.35	0.31
Helicopter (mitigated)	0.04	0.01	0.15	0.16	0.02	0.21	0.22	0.22	-
Total Construction Project (mitigated)	6.86	0.98	8.78	9.76	0.04	0.43	0.75	0.57	0.31

Note: Some totals may be off due to rounding

Table 4.8-1 Proposed Project GHG Emissions (to replace corresponding table in DEIR)

Phase	GHG Emissions (Metric Tons CO_2e)
Ground-Based Construction Emissions (unmitigated)	2,206
Helicopter Emissions (unmitigated)	43.70
Total Construction Emissions (unmitigated)	2,250
Amortized Construction Emissions (unmitigated)	75.0
Ground-Based Construction Emissions (mitigated)	2,206
Helicopter Emissions (mitigated)	43.70
Total Construction Emissions (mitigated)	2,250
Amortized Construction Emissions (mitigated)	75.0
SF_6 Gas Insulated Switches and Equipment	96
Total Annualized Emissions	187

Attachment 2

Updated Project Description

Chapter 2
Project Description

The California Public Utilities Commission (CPUC) is responsible for environmental review and permitting of Horizon West Transmission, LLC's (HWT) (formerly NextEra Energy Transmission West, LLC [NEET West]) and Pacific Gas and Electric Company's (PG&E) (collectively referred to as the "Applicants") proposed Estrella Substation and Paso Robles Area Reinforcement Project (Proposed Project). The Proposed Project would involve construction and operation of a new 230 kilovolt (kV)/70 kV substation and a new approximately 7-mile-long 70 kV power line, and replacement/reconductoring of approximately 3 miles of an existing 70 kV power line. The Proposed Project also anticipates providing for the future establishment of three new distribution feeders from the proposed Estrella Substation, including construction of roughly 1.7 miles of new distribution line and additional reconductoring activities. The distribution components are not planned to be constructed presently, but are being evaluated in the EIR because they are reasonably foreseeable (PG&E 2020). These facilities would be located in unincorporated San Luis Obispo County and within the City of Paso Robles. The Proposed Project is intended to address identified deficiencies in the electrical grid system in the Paso Robles area and to accommodate projected new growth.

This chapter describes the Proposed Project's purpose and objectives, location and setting, components, construction actions and methods, operation and maintenance, and anticipated permits and approvals. Information presented in this chapter is based primarily on the Proponent's Environmental Assessment (PEA) prepared by SWCA Environmental Consultants, Inc. for HWT and PG&E (NEET West and PG&E 2017) and follow-up requests by the CPUC for additional information.

2.1 Proposed Project Purpose, Need, and Objectives

2.1.1 Purpose and Need

The Proposed Project is needed to provide transmission system redundancy and power support in the event of outages (i.e., contingencies), as well as increased distribution capacity to accommodate forecasted electrical load growth in the Paso Robles area. The Proposed Project would also improve electrical service reliability by reducing the length of distribution feeders in the area. The following subsections provide further detail regarding the fundamental purpose and need of the Proposed Project.

Transmission System

The Proposed Project was identified in the California Independent System Operator's (CAISO) 2013-2014 Transmission Plan as a project needed to mitigate thermal overloads and voltage concerns in the Los Padres 70 kV system (specifically in the San Miguel, Paso Robles, Templeton, Atascadero, Cayucos, and San Luis Obispo areas) (CAISO 2014). CAISO modeling determined that thermal overloads and very low voltage conditions could occur in this system following either one of two Category B (i.e., P1 or N-1)[1] contingencies: loss of the Templeton 230 kV/70 kV #1 Transformer Bank or loss of the Paso Robles-Templeton 70 kV power line.

Essentially, if either the #1 Transformer Bank at the Templeton Substation or the 70 kV power line connecting the Paso Robles and Templeton Substations were to fail for any reason (e.g., vehicular impact to existing infrastructure, vegetation and/or storm damage, wildlife damage to existing electrical connections, and/or mechanical failure), this could result in dangerous overloading and low voltage conditions in the regional system. This is both due to high load (i.e., electrical service demand) in the Paso Robles area relative to substation capacity, as well as lack of redundancy in the system. As shown in Figure 2-1, currently, the only sources of power to the Paso Robles Substation are the San Miguel-Paso Robles 70 kV power line from the north and the Paso Robles-Templeton 70 kV power line from the south, with the latter providing the bulk of the power and the nearest connection to a 230 kV power source. The San Miguel-Paso Robles 70 kV power line does not have the capacity to accommodate the load served through the Paso Robles Substation should the power source from Templeton Substation fail; therefore, thermal overloads and low voltage could occur on this line during one of the Category B/P1 contingencies identified by CAISO (NEET West and PG&E 2017).

Because PG&E has an Under-Voltage Load Shedding (UVLS) scheme that serves to protect the transmission system infrastructure in the event of such overload scenarios, rather than allow the power line to deteriorate or completely fail, load would be systematically shed to bring voltages to acceptable levels. Practically, without the Proposed Project, this could result in 60 to 70 megawatts (MW) of load in the Paso Robles area being dropped during one of the Category B/P1 contingencies described above (CAISO 2014).

[1] The CAISO uses the National Electric Reliability Commission (NERC) reliability standards to analyze the need for transmission system upgrades. The NERC standards provide criteria for system performance requirements that must be met under a varied but specific set of operating conditions, and prior to 2012, included the following categories:

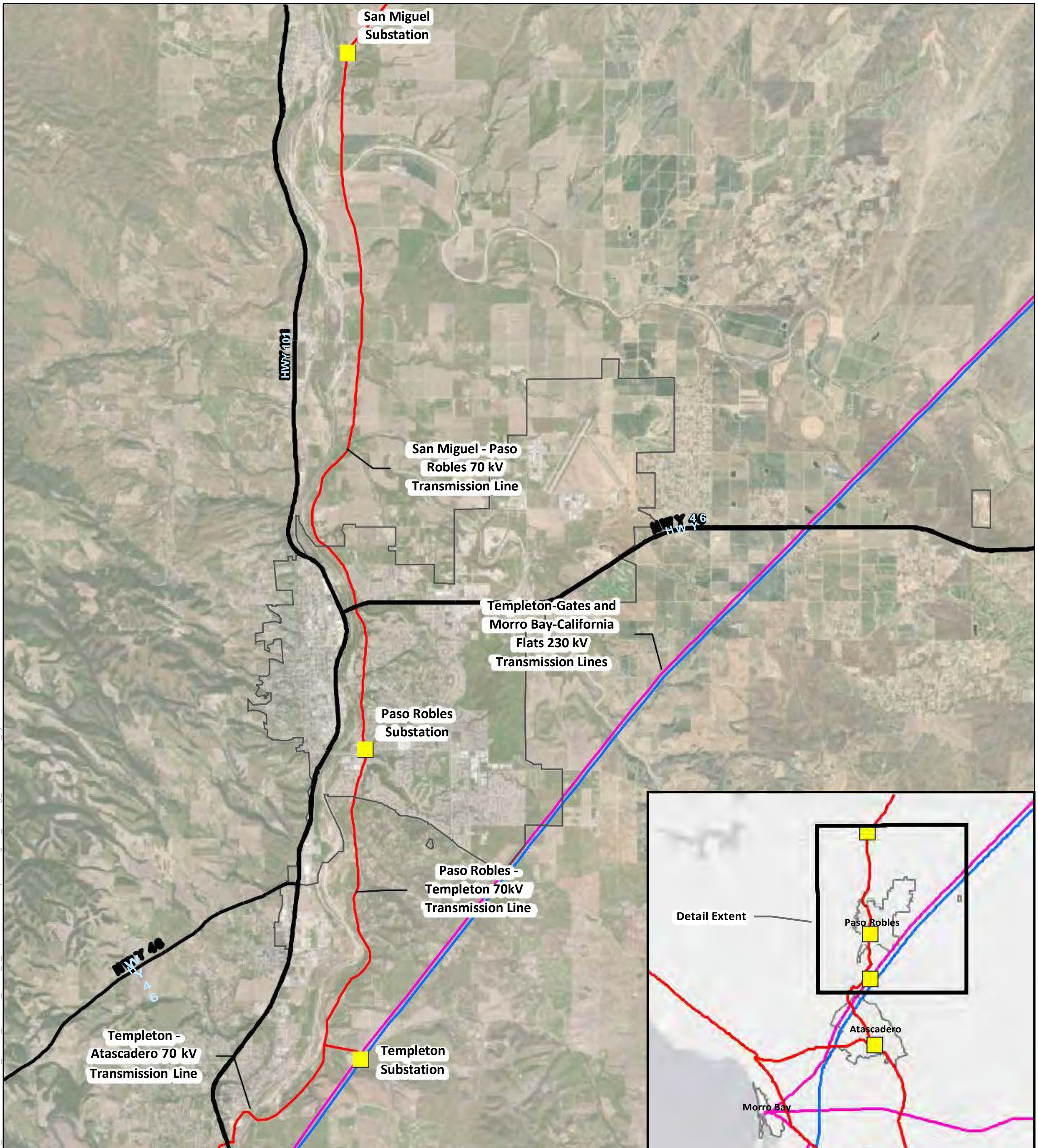
- Category A – System Performance Under Normal Conditions
- Category B – System Performance Following Loss of a Single Bulk Electric System (BES) Element
- Category C – System Performance Following Loss of Two or More BES Elements
- Category D – System Performance Following Extreme BES Events

The latest adopted NERC TPL-001-4 transmission reliability standard applies new terminology; P0 through P7 define different scenarios based on the initial system condition and nature of the event (e.g., loss of generator, transmission circuit, bus section fault, etc.). The Category B contingencies identified for the Proposed Project would equate to a P1 (single contingency), while the Category C3 contingency would equate to a P6 (multiple contingency; two overlapping singles) (NERC No Date). The NERC standards allow for load to be dropped for a P6 contingency, but not for a P1 contingency.

NERC also refers to single contingencies (i.e., loss of a single BES element) as N-1 events. A multiple contingency where both BES elements fail at the same time (e.g., two circuits on the same pole line fail when a pole is hit by a vehicle) is known as a N-2 event. A multiple contingency involving the consecutive loss of two single BES elements that are not physically or electrically connected is known as a N-1-1 event. The Category B/P1 contingencies identified for the Proposed Project would be N-1 events, whereas the Category C3/P6 contingency would be a N-1-1 event.

In addition to the above issues, CAISO also identified a Category C3 (i.e., P6 or N-1-1) contingency condition involving loss of the Morro Bay-Templeton and Templeton-Gates 230 kV lines that would result in thermal overloads and low voltages in the underlying 70 kV system. The 2013-2014 Transmission Plan states that with the additional source from the Gates 230 kV system, the Proposed Project would provide robust system reinforcement to the Paso Robles and Templeton 70 kV system operations (CAISO 2014).

Figure 2-1 shows a map depicting the transmission system in the area of Paso Robles. Figure 2-2 and Figure 2-3 show conceptual diagrams of the existing transmission system and the proposed transmission system with the addition of Estrella Substation.



Basemap Sources: Source: Esri, Maxar, GeoEye, Earthstar Geographics,

Existing Substation

Existing Transmission Lines
- 70 kV
- 230 kV
- 500 kV

Paso Robles City Limits

Highways

N

0 1
Miles

Horizon WATER and ENVIRONMENT

Source: Source: NEET West and PG&E 2017

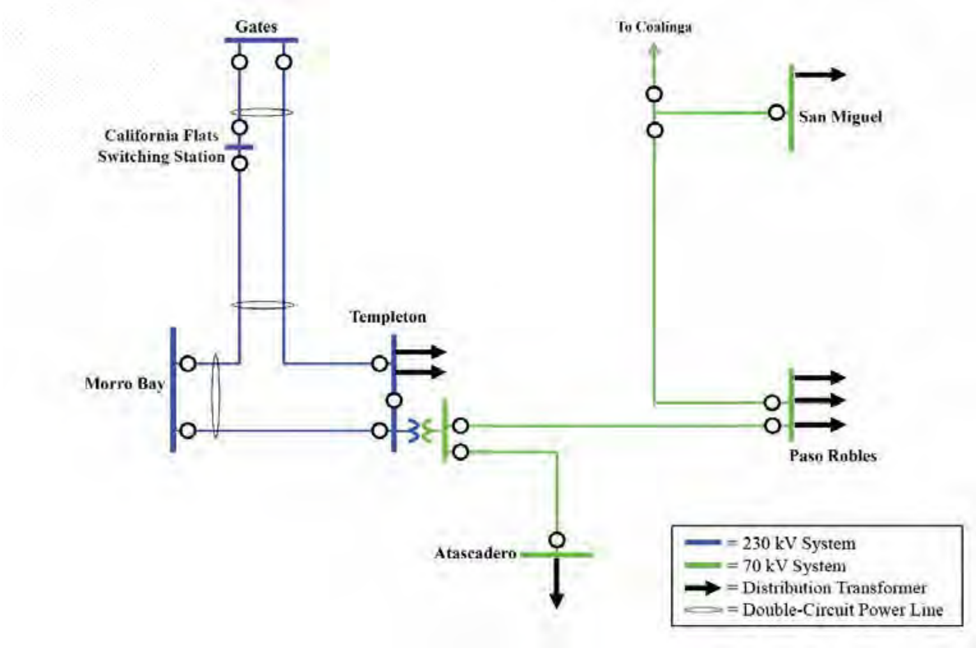
Note: The route variations shown are offset in order to display the alignments of the alternative routes that may overlap in places.

Figure 2-1
Existing Transmission System

Estrella Substation and Paso Robles Area Reinforcement Project

T:_PROJECTS\17010_CPUC_Estrella_Tas k_3_EIR\mxd\EIR\Chapter 2\Fig2-1_existing_transmis sion_system.mxd 7/17/2020 PG

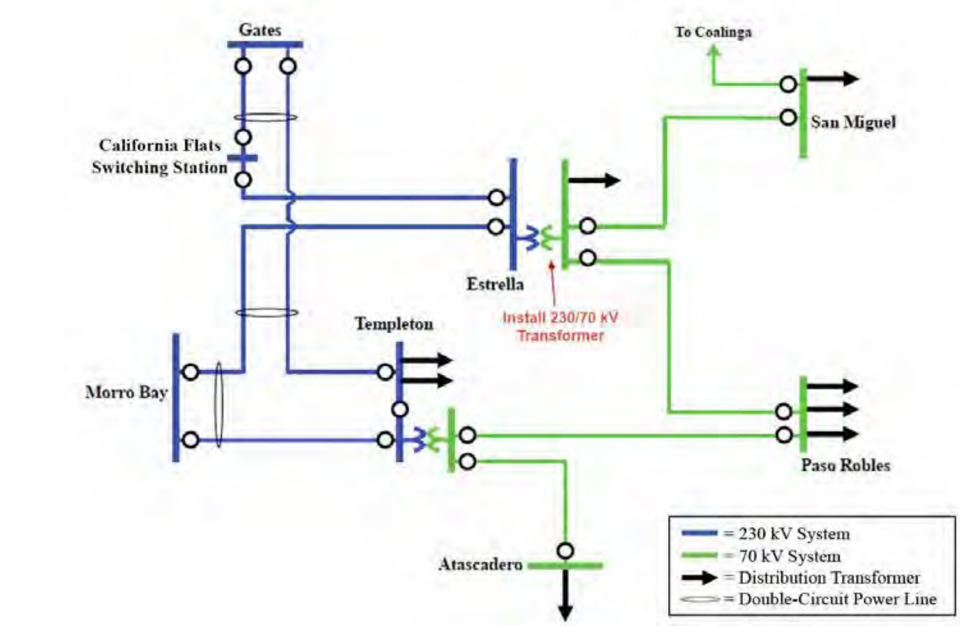
Figure 2-2. Existing Transmission System – Line Diagram



Note: kV = kilovolt

Source: NEET West and PG&E 2017

Figure 2-3. Proposed Transmission System – Line Diagram



Note: kV = kilovolt

Source: NEET West and PG&E 2017

Distribution System

The Proposed Project also would address existing undesirable conditions and projected load growth in the distribution system in the Paso Robles area. As described in detail in Appendix G of the Applicants' PEA, the Paso Robles system is characterized by very long distribution feeders[2], particularly those extending from Templeton Substation (see Figure 2-4). This is undesirable because long feeders are more susceptible to potential outages caused by vehicle pole strikes, downed vegetation from storms, or other incidents (NEET West and PG&E 2020a). Additionally, outages that occur on long feeders may affect larger numbers of people than similar events that occur on feeders of moderate length. In general, PG&E states that "Reliable distribution systems consist of substations located at regular intervals and sized correctly in terms of capacity and number of feeders to cover the area between substations without overextending some substations and underutilizing others. The Paso Robles Distribution Planning Area (DPA) is not currently in line with these system goals" (NEET West and PG&E 2020a).

Locating the new substation at its proposed location would allow for the long feeders to be split in half and for some of the load currently being served by the Templeton Substation to be served by the new Estrella Substation. Reducing the length of these feeders would reduce potential outages for customers in this area and improve the reliability of the distribution system in this area. Table 2-1 shows historical outages on the Templeton feeders, while Table 2-2 provides more detailed information (including root cause) for the sustained outages on the Templeton feeders. Finally, Table 2-3 provides a comparison of indices for reliability for the Templeton feeders, as compared to the Paso Robles DPA as a whole and to PG&E's entire system. Of note, the information in Table 2-1, Table 2-2, and Table 2-3 shows that (1) numerous sustained and momentary outages have occurred in recent years on the Templeton 21 kV feeders, affecting a substantial number of customers; (2) sustained outages on the Templeton feeders have been caused by a variety of factors and have often lasted quite long (up to 16 hours and 43 minutes); and (3) compared to the Paso Robles DPA and the PG&E system as a whole, the Templeton feeders have a higher average frequency of sustained outages (AIFI) and average frequency of momentary interruptions (MAIFI).

[2] Distribution *circuits* (i.e., electrical lines or conductors) are commonly referred to as *feeders*. They operate at voltages under 50 kV.

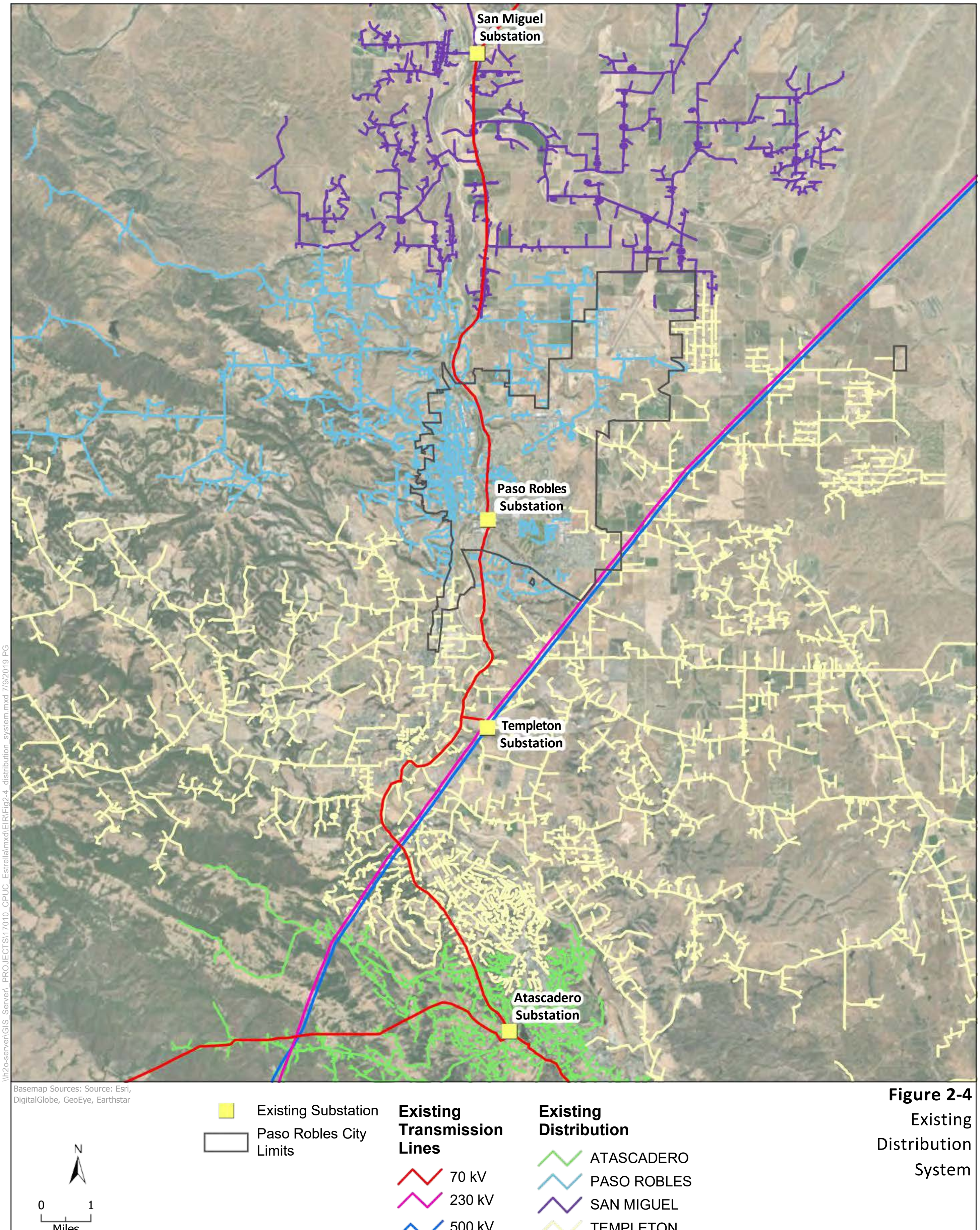


Figure 2-4
Existing Distribution System

Horizon WATER and ENVIRONMENT

Source: NEET West and PG& E 2017

Estrella Substation and Paso Robles Area Reinforcement Project

Table 2-1. Five-Year Outage History of Templeton 21 Kilovolt Feeders (February 2012 to February 2017)

Feeder Name	Area Served Where Outages Occurred	No. of Sustained Outages	No. of Momentary Outages	Average No. of Customer Connections Affected Per Event	Highest No. of Customer Connections Affected by an Event
Templeton 2108	Northern Atascadero	7	10	2,955	3,189
Templeton 2109	Northeast Paso Robles	5	9	2,957	4,325
Templeton 2110	Rural West Paso Robles	4	20	1,802	2,926
Templeton 2111	Western Atascadero	6	10	1,847	2,433
Templeton 2112	Southern Paso Robles	3	10	475	1,068
Templeton 2113	Santa Margarita	7	25	1,911	5,446

Source: NEET West and PG&E 2020a

Table 2-2. Sustained Outage History of Templeton 21 kV Feeders (February 2012 to February 2017)

Feeder Name	Root Cause Explanation of the Sustained Outage	Duration of Sustained Outage	Start Time for Sustained Outage (date and time)	Number of Customers Affected
Templeton 2108	Unknown Cause, Patrol – Not Conducted	39 Minutes	12/11/2014, 17:28	3,115
	Equipment Failure/Involved, Overhead	16 hours and 43 minutes	5/18/2015, 16:22	3,124
	Company Initiated, Personnel, Company	21 minutes	10/5/2012, 15:57	3,146
	Equipment Failure/Involved, Other	21 minutes	3/14/2014, 11:49	3,041
	Unknown Cause, Patrol – Found Nothing	20 minutes	8/29/2014, 13:21	2,307
	Unknown Cause, Patrol – Found Nothing	15 minutes	10/8/2014, 14:06	2,313
	Equipment Failure/Involved, Other	51 minutes	9/27/2013, 7:23	3,011
Templeton 2109	3rd Party, Vehicle	2 hours and 3 minutes	5/5/2012, 3:02	4,305
	3rd Party, Vehicle	20 minutes	3/31/2013, 16:58	2,021
	Company Initiated, Coordination Failure	3 hours and 53 minutes	6/28/2013, 16:14	2,023
	Vegetation, Tree – Fell into Line	3 hours and 25 minutes	2/17/2017, 10:10	332
	Equipment Failure/Involved, Other	56 minutes	7/21/2016, 18:19	2,364
Templeton 2110	Equipment Failure/Involved, Substation	3 hours and 45 minutes	6/21/2016, 16:52	2,924
	Equipment Failure/Involved, Other	24 minutes	6/25/2015, 07:45	1,247
	Vegetation Tree – Branch Fell on Line	7 minutes	6/21/2016, 20:49	491
	Equipment Failure/Involved, Underground	24 minutes	6/1/2016, 23:57	1,247
Templeton 2111	Environmental/External, Lightning	10 hours and 15 minutes	7/19/2015, 2:35	1,406
	Equipment Failure/Involved, Overhead	8 hours and 23 minutes	11/9/2015, 01:37	960
	Vegetation, Tree – Fell into Line	10 hours and 40 minutes	3/5/2016, 23:10	959
	Unknown Cause, Patrol – Found Nothing	1 hour and 15 minutes	4/17/2016, 12:53	960
	3rd Party	52 minutes	4/14/2016, 11:34	2,376

Feeder Name	Root Cause Explanation of the Sustained Outage	Duration of Sustained Outage	Start Time for Sustained Outage (date and time)	Number of Customers Affected
Templeton 2112	Vegetation, Tree – Fell into Line	51 minutes	7/10/2012, 13:30	2,376
	3rd Party, Vehicle	12 hours and 16 minutes	12/17/2016, 00:40	937
	Vegetation, Tree – Branch Fell on Line	5 hours and 29 minutes	7/14/2012, 18:51	428
	Company Initiated, Failed Equipment	1 hour and 37 minutes	11/5/2012, 10:27	428

Source: NEET West and PG&E 2019

Table 2-3. Templeton 21 Kilovolt Feeder Outage Indices, as Compared to Indices for the Paso Robles DPA and PG&E System-wide

Sample	Year	AIDI	AIFI	MAIFI	CAIDI	SO	MO
Templeton Feeders							
Selected Templeton Feeder Outages	2012	28.8	0.590	1.687	48.8	6	13
	2013	52.5	0.570	0.907	92.1	6	9
	2014	14.8	0.598	1.234	24.7	5	12
	2015	64.0	0.490	2.337	130.8	5	25
	2016	112.2	1.463	2.532	76.7	12	21
	2017	24.5	0.290	1.011	84.5	2	7
	Average	49.48	0.67	1.62	76.27	-	-
Paso Robles DPA Feeders							
Other Feeder Outages in the Paso Robles DPA	2012	34.1	0.329	0.835	103.4	12	33
	2013	49.6	0.504	1.611	98.5	16	40
	2014	110.9	0.659	1.144	168.3	25	23
	2015	136.5	0.617	1.021	221.1	22	61
	2016	38.2	0.454	1.440	84.2	22	47

Sample	Year	AIDI	AIFI	MAIFI	CAIDI	SO	MO
	2017	109.0	0.430	1.017	253.7	19	17
	Average	79.70	0.50	1.18	154.87	-	-
System-wide Feeders							
System-wide Feeder Outages	2012	70.8	0.609	1.467	116.1	3,191	7,706
	2013	61.3	0.584	1.350	105.0	2,933	7,521
	2014	73.8	0.643	1.265	114.8	3,419	6,870
	2015	59.5	0.546	1.538	108.8	3,281	8,816
	2016	56.2	0.620	1.311	90.5	3,486	8,154
	2017	82.9	0.312	0.667	266.0	1,893	4,247
	Average	67.41	0.55	1.27	133.53	-	-

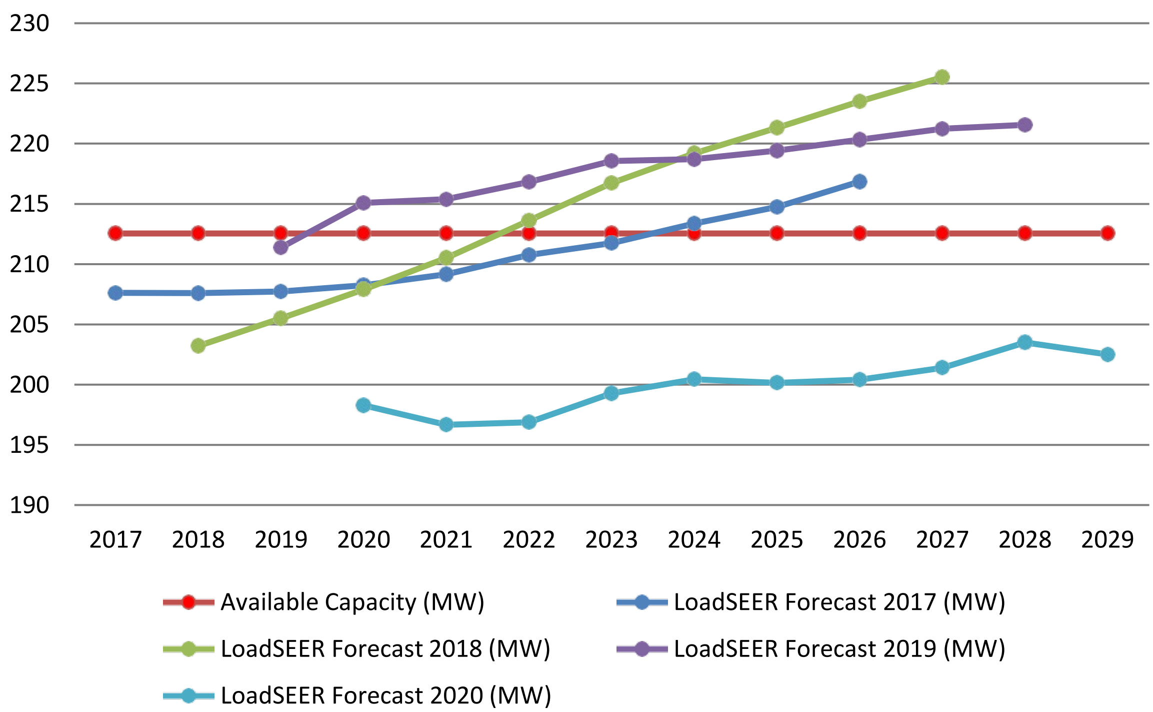
Notes: AIDI = average outage duration; AIFI = average frequency of sustained outages; CAIDI = average service restoration times; MAIFI = average frequency of momentary interruptions; MO = momentary outages; SO = sustained outages

Source: NEET West and PG&E 2019

In addition to the issue of long feeders, the projected growth within the Paso Robles DPA is anticipated to exceed the capacity of the system in the future. The City of Paso Robles (City) expects strong industrial growth to occur north of State Route (SR-) 46 in the Paso Robles city limits (in particular within the Golden Hill Industrial Park and directly south of Paso Robles Airport along Dry Creek Road) within the next 10 years, and a resurgence of residential growth south of SR-46 (NEET West and PG&E 2020a). Overall, City planners are estimating a 50 percent increase in the population of Paso Robles by 2045.

Increases in electrical demand (i.e., load) will place increased demands on the distribution and transmission systems. After using its LoadSEER[3] forecasting tool over the last several years, PG&E predicts that anticipated normal growth in the area, coupled with the addition of large “block loads” (e.g., large new businesses or developments that require large amounts of electricity), will exceed the available capacity of the Paso Robles system within 5 to 15 years (see Figure 2-5).

Figure 2-5. LoadSEER Forecasts (2017-2020), Paso Robles DPA



Source: NEET West and PG&E 2018, 2019, 2020a, 2020b

[3] LoadSEER is a spatial load forecasting tool which is used by electric distribution system planners to predict load and power changes, where on the grid the loads will occur, how distributed generation changes the load shape, and when it must be supplied (Integral Analytics No Date). PG&E utilizes the LoadSEER forecasting tool to predict growth in area electrical demand within a DPA for a 10-year period into the future, incorporating the most recent 13 years of substation historical peak-load data.

As shown in Figure 2-5, the available capacity in the Paso Robles DPA is currently static at just over 212 MW. This capacity is equal to the cumulative capacities of the four substations (Atascadero, Paso Robles, Templeton, and San Miguel) in the DPA, whereas the LoadSEER forecast prepared for the Paso Robles DPA represents the cumulative load that must be served by the distribution system for this area. The forecasted load has varied considerably over the last 4 years of LoadSEER forecasting by PG&E. The current (2020) forecast does not show that load will exceed available capacity in the next ten years, but additional capacity may be needed in the future. In a practical sense, without addition of a new or expanded substation or other facilities to serve increased load when it materializes, this situation could result in thermal overloads, low voltage, and electrical service outages, as the infrastructure is unable to meet demands. While the LoadSEER forecast takes a conservative approach to predict the peak load in any given year (assuming a 1-in-10 year in terms of heat and electricity usage), the actual recorded peak loads in the Paso Robles DPA have been lower than forecasted in recent years, as shown in Table 2-4.

Table 2-4. Recorded Peak Load in the Paso Robles DPA

Year	Historical Available DPA Capacity	Historical DPA Peak Load
2007	182.46	179.44
2008	197.51	169.40
2009	197.51	164.40
2010[1]	212.55	158.73
2011	212.55	150.69
2012	212.55	173.98
2013	212.55	180.63
2014	212.55	164.74
2015	212.55	169.33
2016	212.55	185.50[3]
2017	212.55	195.06
2018	212.55	190.30
2019[2]	212.55	168.10

Notes: DPA = Distribution Planning Area; MW = megawatt

1. Paso Robles Bank 1 was replaced in 2010 with a 30 megavolt ampere transformer unit, bringing available DPA capacity to 212.55 megawatt (MW).
2. Paso Robles Bank 1 capability updated in May 2019 to reflect customer reserve capacity.
3. The original 190.14 MW from 2016 has been corrected to reflect the true value of 185.50.

Source: NEET West and PG&E 2020c

The intent of the Proposed Project is to provide enhanced operational flexibility, improved area system reliability, and add capacity to the system with the addition of the new Estrella Substation. The new Estrella Substation would be able to absorb load currently served by other substations within the DPA and alleviate existing undesirable conditions. Additionally, since the new industrial growth is anticipated to occur in the Golden Hill Industrial Park area, the new substation and the reasonably foreseeable new distribution circuits would be well positioned to serve this new load. Please refer to Appendix G of the Applicants' PEA for detailed discussion of the Proposed Project purpose and need, and the modeling conducted for the existing distribution system.

2.1.2 Project Objectives

Applicants' Project Objectives

In their PEA, the Applicants identified the following objectives for the Proposed Project:

- **Reinforce Electrical Reliability by Implementing the CAISO-Approved Electrical Plan of Service.** Increase reliability and mitigate thermal overloads and voltage concerns in the area by having an additional 230 kV source of power that will increase service reliability in northern San Luis Obispo County, and maintain compliance with NERC reliability standards, as described in the *Estrella Substation Project Functional Specifications* issued by CAISO in June 2014. The Estrella Project is also intended to allow NEET West [HWT] and PG&E to meet their obligation to add the CAISO-approved project to the CAISO-controlled grid, as defined in the *Functional Specifications* and the Approved Project Sponsor Agreement.

- **Meet Expected Future Electric Distribution Demand.** Provide a location for future 21 kV distribution facilities with a 230/70 kV source near the anticipated growth areas in northern Paso Robles to efficiently add distribution capacity and improve service reliability when required in the Paso Robles DPA.

- **Balance Safety, Cost, and Environmental Impacts.** Locate, design, and build the project in a safe, cost-effective manner that will also minimize environmental impacts.

CPUC's Project Objectives

As part of its authority as the lead agency under the California Environmental Quality Act (CEQA) for preparation of the environmental impact report (EIR) for the Proposed Project, the CPUC is responsible for identifying appropriate project objectives to inform the CEQA process/evaluation, including the development and screening of project alternatives. These objectives may differ from the Applicants' stated objectives. Based on its understanding of the fundamental underlying purpose of the Proposed Project, the CPUC has identified the following CEQA objectives for the Proposed Project:

- **<u>Transmission Objective:</u>** Mitigate thermal overload and low voltage concerns in the Los Padres 70 kV system during Category B contingency scenarios, as identified by the CAISO in its 2013-2014 Transmission Plan.

- **Distribution Objective:** Accommodate expected future increased electricdistribution demand in the Paso Robles DPA, particularly in the anticipated growth areas in northeast Paso Robles.

The issue of long feeders and poor service reliability was not identified as a fundamental project objective by the CPUC; however, it is considered a beneficial effect of the Proposed Project.

2.2 Proposed Project Location and Setting

The Proposed Project would be located within the northern portion of San Luis Obispo County, California, including portions of the City of Paso Robles. The nearest communities are San Miguel, which is approximately 9 miles to the northwest, and Templeton, which is approximately 8.5 miles to the southwest. Land uses surrounding the Proposed Project area south of SR-46 are a mixture of intensive agriculture, vineyards, and rural residential development. North of SR-46 and within the City of Paso Robles limits, land uses consist of light industrial development, urban and residential development, and wineries/vineyards. Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 970 feet above mean sea level. Figure 2-6 shows an overview of the Proposed Project components, location, and setting.

2.2.1 Estrella Substation

Estrella Substation would be located on an approximately 15 acres of a 20-acre site. The site was created from a 98.6-acre parcel of land. This entire 20-acre site and the parcel of land are currently planted with grape vines of 10-foot-wide span lengths.
Several existing dirt maintenance roads traverse the parcel. Scattered oak trees are located close to Union Road along with one residential dwelling near the southwest corner of the parcel. Dry Creek, an ephemeral tributary to Huer Huero Creek, passes approximately 1,500 feet to the north of the proposed Estrella Substation site. In addition to the one residence at the southwest corner of the parcel, there is a residence located 1,000 feet to the east of the substation site, and a winery located 1,000 feet to the south. The topography of the site is moderately sloped with rolling hills in the vicinity.

The site is bordered by Union Road to the southeast, PG&E's existing easement for a 230 kV double-circuit transmission line and a 500-kV transmission line to the northwest, and vineyards under cultivation to the south and northeast. The existing transmission lines traverse along the northwest portion of the Estrella Substation site on two sets of lattice steel towers (LSTs).

2.2.2 Power Line

The new 70 kV power line would travel southwesterly from Estrella Substation, spanning over vineyards, and crossing under and paralleling existing 230 kV and 500 kV transmission lines for approximately 0.5 mile. North of Union Road, the new line turns westerly and joins an existing 12 kV overhead distribution line, which becomes an underbuild[4] on the new structures. The new line follows existing distribution lines for about 2.5 miles, extending through vineyards and large

[4] Distribution underbuild is a lower voltage distribution line placed underneath a higher voltage power line on the same structure or set of structures.

residential properties on the north side of Union Road, and then turning northwesterly and crossing Huer Huero Creek and continuing along the north side of Union Road.

Note that a possible Minor Route Variation (MRV) is under consideration at roughly the location where the new 70 kV power line would cross Huer Huero Creek along Union Road. This MRV would only be implemented if a possible golden eagle nest along Huer Huero Creek in this location is confirmed to have eagles present prior to Project construction.

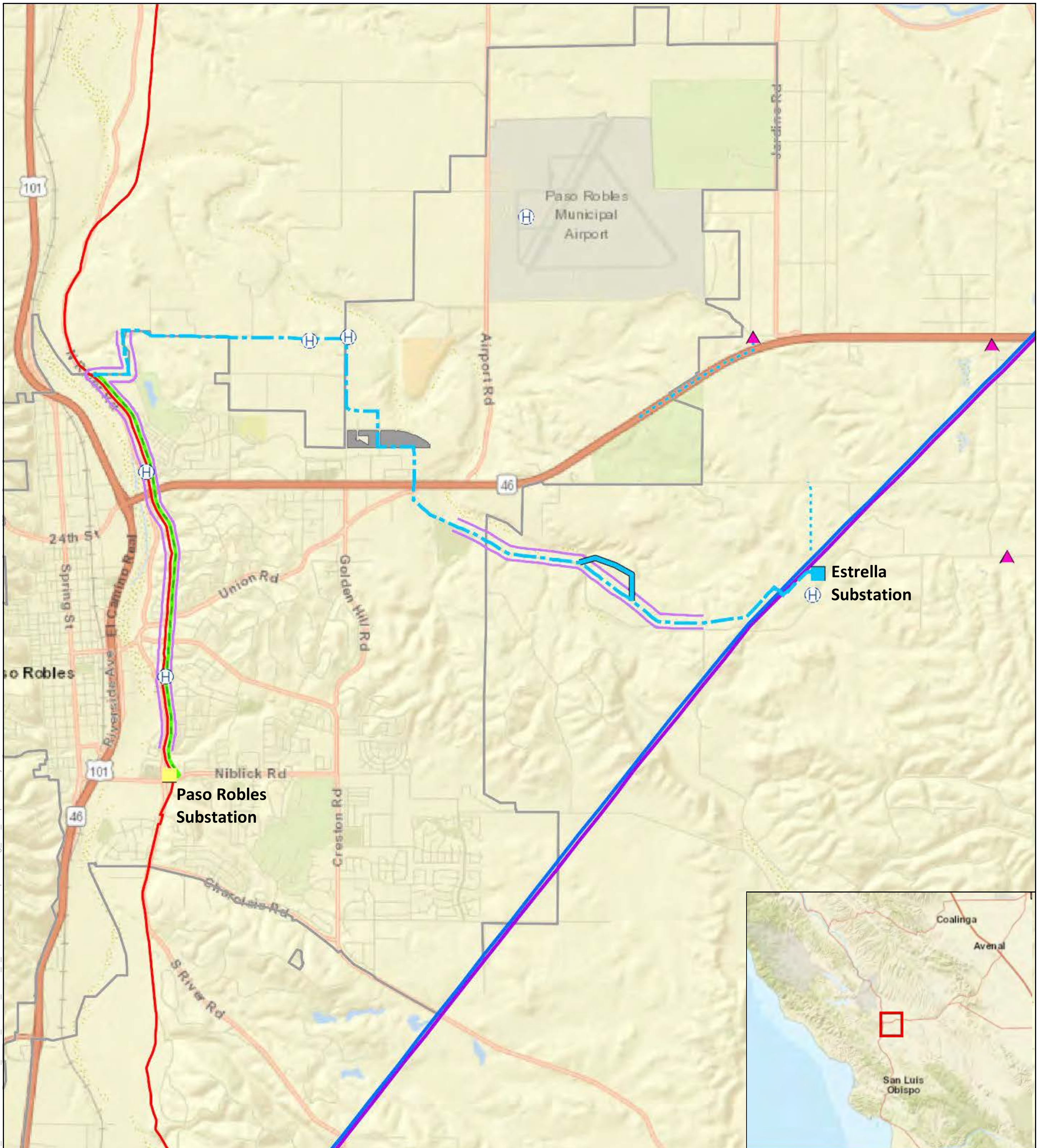
Near the Paso Robles Sports Club, the new 70 kV power line segment leaves the existing distribution alignment and crosses to the southwesterly side of Union Road. The new line continues in a northwesterly direction, crossing SR-46, and then generally traveling westerly for approximately 0.5 mile to Golden Hill Road. At Golden Hill Road, the route heads northerly along the Golden Hill Road alignment for approximately 1 mile and adjacent to the existing light industrial uses to the east and existing residences to the west. The new line then continues generally westerly for approximately 1.5 miles and then southwesterly for 0.5 mile to River Road, adjacent to existing residences, vineyards, and other agricultural uses. At River Road, the new 70 kV power line segment would interconnect with the existing San Miguel-Paso Robles 70 kV power line.

The existing San Miguel-Paso Robles 70 kV power line would then be reconductored south to Paso Robles Substation. This 3-mile-long reconductoring segment runs behind and through predominantly residential areas, extending south along the existing pole line alignment on the easterly side of River Road for about 1 mile, crossing SR-46. The segment then continues southerly for about 2 miles, crossing Union and Creston Roads, then into Paso Robles Substation.

2.2.3 Reasonably Foreseeable Distribution Components

The timing of construction of the distribution components is not known but is expected within 15 years. Based on the most recent load growth forecast (see Figure 2-5), the distribution components of the Proposed Project are not presently needed and are not planned to be constructed at the same time as the rest of the Proposed Project. However, if subsequent load growth forecasts show the need arising sooner or if applications are made for new large block loads, the timing of construction of the distribution components could accelerate.

The reasonably foreseeable new distribution line segments would be installed along an existing unpaved road through agricultural fields and along existing roadways. From Estrella Substation, a new distribution line segment would extend north approximately 0.6-mile along an unpaved road to Mill Road, where it would connect with an existing 21 kV circuit. The second new distribution line segment would follow SR-46 for approximately 1.1 mile and would fill in a gap in the existing distribution network. This portion of SR-46 is largely rural in nature, with the Hunter Ranch Golf Course and agricultural parcels bordering the highway on the south. Reconductoring of existing distribution lines would occur in rural areas of San Luis Obispo County and within portions of the City of Paso Robles.



Source: ESRI 2020, NEET West and PG& E 2017

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Miles

Horizon WATER and ENVIRONMENT

Proposed Project

- Estrella Substation
- 70kV Route
- New Distribution Line Segments
- 70 kV Minor Route Variation 1
- Reconductoring Segment
- Distribution Underbuild
- Power Line Staging Areas
- Helicopter Landing Zones

- Additional 21/12 kV Pad-Mounted Transformer
- Paso Robles city limits

Existing Infastructure

- Existing 500 kV Transmission Line
- Existing 230 kV Transmission Line
- Existing 70 kV Power Line
- Existing Substations

Note: Eight miles of distribution line segments would be reconduc tored in various locations to integrate the proposed substation. PG&E did no spec ify each location.

Figure 2-6

Proposed Project Location and Overview

Estrella Substation and Paso Robles Area Reinforcement Project

2.3 Proposed Project Components

The Proposed Project is comprised of two main components: Estrella Substation and the 70 kV power line. Each of these main components has several subcomponents, which are described below. The reasonably foreseeable distribution components and ultimate substation buildout are also described below.

- Estrella Substation Components
  - HWT to construct, own and operate a new 230 kV substation with one 230/70 kV three-phase power transformer.
  - PG&E to construct, own, and operate a new 70 kV substation including room for reasonably foreseeable 70/21 kV distribution facilities.
  - PG&E to construct, own and operate a new 230 kV transmission line interconnection that will loop the existing Gates-Morro Bay 230kV into Estrella.
- 70 kV Power Line Components
  - PG&E to construct, own and operate a new 70 kV double-circuit power line between the new 70 kV substation and the existing San Miguel-Paso Robles 70 kV power line.
  - PG&E will reconductor and replace poles on a portion of the existing 70 kV power line between the interconnection point of the new 70 kV power line segment and Paso Robles Substation.
- Reasonably Foreseeable Distribution Components
  - Establish three new 21 kV distribution feeders connecting from Estrella Substation to the existing distribution system, including:
    - Installing a new 30 megavolt amperes (MVA), 70/21 kV three-phase power transformer in the 70 kV substation.
    - Constructing 1.7 mile of new distribution line to fill in gaps in future Estrella Feeder #2.
    - Installing three new 21/12 kV pad-mounted transformers.
    - Reconductoring approximately 8 miles of existing distribution circuits to facilitate integration of the new Estrella feeders.

- Ultimate Substation Buildout
  - Establish additional 70 kV lines and 21 kV distribution feeders[5], as needed to meet future distribution demand and transmission needs, including the following activities within or adjacent to the Estrella Substation:
    - Constructing an additional 230 kV interconnection between the 230 kV substation and the adjacent 230 kV transmission line.
    - Installing an additional 230/70 kV transformer with associated breakers and switches.
    - Installing up to three additional 70/21 kV transformers with associated 70 kV breakers, 21 kV breakers, and switches.

A common neutral[6] would be collocated along the entire length of the 70 kV power line from Estrella Substation to Paso Robles Substation. A fiber optic line for communication services would be installed on the 70 kV power line to provide a fiber optic link between Estrella Substation and Paso Robles Substation.

The Proposed Project components, including estimated permanent ground disturbance acreages, are summarized in Table 2-5.

Table 2-5. Proposed Project Components Summary

Component	Approximate Quantity	Approximate Height Range and Average Height (Feet Above Ground)	Total Approximate Permanent Ground Disturbance (Acres)
Estrella Substation[1]			
Substations			
230 kilovolt (kV) Substation	1	65 (approx. tallest 230 kV dead-end structure)	4.0 (fenced portion)
70 kV Substation	1	37 (approx. tallest 70 kV dead-end structure)	3.5 (fenced portion)

[5] The routes of any future 70 kV power lines and 21 kV distribution lines that could be installed as part of the ultimate Estrella Substation buildout are unknown at this time. As a result, the potential environmental effects associated with the power and distribution lines are not evaluated in this DEIR. The additional equipment within Estrella Substation at ultimate buildout is included in the DEIR's evaluation.

[6] A common neutral conductor runs the entire length of the line from substation to substation where it attaches to the substation ground grids.

Component	Approximate Quantity	Approximate Height Range and Average Height (Feet Above Ground)	Total Approximate Permanent Ground Disturbance (Acres)
230 kV Transmission Line Interconnect			
Lattice Steel Towers	6	39–113 68	0.2
70 kV Power Line[2]			
New 70 kV Power Line Segment			
Light-Duty Steel Poles	63	70–110 91	0.3
Tubular Steel Poles	38	68–133 99	0.2
Wood Distribution Poles	1	46	<0.1
Reconductoring Segment			
Light-Duty Steel Poles	40	76–101 85	0.2
Tubular Steel Poles	9	71–108 88	<0.1
Wood Distribution Poles	6	48–62 56	<0.1
Reasonably Foreseeable Distribution Components[3, 4]			
Wood Distribution Poles	31	40–50 45	<0.1
21/12 kV Pad-Mounted Transformers	3	10	<0.1

Notes: kV = kilovolt;

1. Permanent ground disturbance for Estrella Substation is approximately 20 acres, including the area that would be permanently disturbed outside of the 230 kV and 70 kV substation fence lines.
2. Permanent ground disturbance for the 70 kV power line route assumes a 10-foot radius around each pole location supporting distribution equipment in grassland areas.
3. Installation of the 70/21 kV transformer and associated equipment within the Estrella Substation to support the reasonably foreseeable distribution components would not result in any new permanent ground disturbance, as it would be installed within the fence line of the substation. Reconductoring of existing distribution lines also would not result in new permanent ground-disturbance.
4. With respect to ultimate substation buildout, installation of additional transmission and distribution transformers and associated equipment within the 70 kV and 230 kV substations is assumed to not result in any additional permanent ground disturbance nor increase the height of

the substation. The additional 230 kV interconnection associated with ultimate substation buildout could result in similar ground disturbance to that described for the Proposed Project (see “230 kV Interconnect” within the table).

Source: NEET West and PG&E 2017

Figure 2-7 shows a detailed view of the Proposed Project substation and 70 kV power line components, including construction temporary impact areas (see Section 2.5.2 for discussion of temporary impact areas). As noted in Section 2.2.2, an MRV for the new 70 kV power line is under consideration to avoid a possible golden eagle nest along Huer Huero Creek near Union Road. Figure 2-8 shows this MRV in detail. Additionally, Figure 2-9 shows the reasonably foreseeable new Estrella distribution circuits (or “feeders”) that are anticipated as part of the Proposed Project. Figure 2-10 shows a detailed view of the reasonably foreseeable distribution line segments and pad-mounted transformers that would need to be constructed to establish the Estrella feeders.

2.3.1 Estrella Substation

Estrella Substation would be comprised of two separate and distinct substations on approximately 15acres within a 20-acre site. One 230 kV substation would be constructed and operated by HWT and one 70 kV substation would be constructed and operated by PG&E. The preliminary substation layout is provided in Figure 2-11.

Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV substation (approximately 700 feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points. The entrance gates would be a minimum 16 feet in width and would be locked and monitored remotely to limit access to qualified personnel. Warning signs would be posted on the perimeter chain-link fencing and gates, in accordance with the National Electric Safety Code (NESC) and the respective HWT and PG&E guidelines.

Lighting would be installed at Estrella Substation and would conform to NESC requirements. NESC recommends, as good practice, illuminating the substation facilities to a minimum of 22 lux or 2 foot-candles. Lighting would consist of sodium vapor or light-emitting diode (LED) fixtures and would be installed inside the facility and at the entry/exit gates to allow for safe access to the facility and its equipment. The fixtures would be mounted on legs of dead-end or switch support structures, the control enclosure, and on approximately 12-foot-tall galvanized steel lighting poles. Lights would be controlled by a photocell that automatically turns the lights on and off. All on-site lighting would be oriented downward to minimize glare onto surrounding property. Additional manually controlled lighting would also be provided to create safe working conditions at the substation when required. The exact number of fixtures and their output and location would be determined during final facility design.

The 230 kV and 70 kV substations would have their own sources of station power. Power would be supplied by tapping into the existing PG&E Gates- Morro Bay 230kV power line adjacent to the HWT substation site. Electric service would be requested from the local utility and applied for so that power can be served from the existing power lines adjacent to the station.

The existing telecommunications network would connect to Estrella Substation by splicing optical ground wire (OPGW) on the nearby existing 230 kV towers and installing a fiber optic line for communication services on the power line between Estrella and Paso Robles Substations. The communication cables would transition from the last 230 kV tower or 70 kV pole outside of the substation and enter a pull/splice box positioned near the base of each structure. From each pull/splice box, the fiber optic cable would transition underground in 4-inch conduits to the substation. All pull/splice boxes used for telecommunication cable would be 3-foot by 5-foot pre-cast polymer concrete.

230 kV Substation

The 230 kV substation would be owned and operated by HWT. The preliminary configuration for the 230 kV substation (general arrangement and profile view) is provided in Figure 2-12 and Figure 2-13. The tallest structures within the 230 kV substation would be the dead-end structures, which are approximately 65 feet high and 50 feet wide.

The following electrical equipment would be located within the fenced area of the 230 kV substation in the proposed configuration:

- Two 230kV Breaker and a Half bays and two operating buses
- One three-phase 230/70 kV 200 MVA transformer
- Twelve 230 and three 70 kV capacitive voltage transformers
- Thirteen 230 kV and one 70 kV group operated air break switches
- Five 230 kV and one 70 kV sulfur hexafluoride (SF_6) insulated circuit breakers
- Eight 230 kV and one 70 kV dead-end steel structures
- Nine 230 kV and three 70 kV lightning surge arresters
- A protection and control enclosure measuring about 50 feet long, 15 feet wide, and 15 feet high would be installed on 10 concrete piers measuring about 11 feet deep. The control enclosure would have redundant air conditioning units installed to protect electronic components.

In addition to the electrical equipment, the 230 kV substation would include the following infrastructure:

- Dark Sky Lighting[7] and signage
- Telecommunications and distribution feeder line for electrical service

[7] Dark sky lighting refers to lights that comply with the International Dark Sky Association Fixture Seal of Approval Program. Lights compliant with this program are typically shielded on the top and sides so light does not go up to the sky and are only used when needed (use motion detectors and only the wattage necessary). Lights are typically “warm” in color, which is generally considered more yellow or orange/amber than white.

Basebap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Horizon WATER and ENVIRONMENT

Alignment Components

70kV Route

New Distribution Line Segments

New 70 kV Poles

Substation Components

Substation Interconnection

Temporary Shoofly Poles

Substation Permanent Disturbance Area

Construction Temporary Disturbance Areas

Helicopter Landing Zones

Access Routes

Substation Temporary Disturbance Area

Temporary Pull Sites

Pole Temporary Work Area

Existing Infrastructure

70kV Route

Existing Substations

Existing 230 kV Transmission Line

Existing 70 kV Power Line

National Wetland Inventory

Freshwater Emergent Wetland

Freshwater Pond

Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View

Sheet 1 of 8

Estrella Substation and Paso Robles Area

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Basebap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Alignment Components

70kV Route

70 kV Minor Route Variation 1

New 70 kV Poles

Existing Distribution Pole to be Replaced

Substation Components

Substation Interconnection

Temporary Shoofly Poles

Substation Permanent Disturbance Area

Construction Temporary Disturbance Areas

Temporary Crossing Structure Work Area

Access Routes

Temporary Pull Sites

Pole Temporary Work Area

Existing Infrastructure

70kV Route

Existing Substations

Existing 230 kV Transmission Line

Existing 70 kV Power

National Wetland Inventory

Freshwater Emergent Wetland

Freshwater Pond

Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View

Sheet 2 of 8

Estrella Substation and

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Horizon
WATER and ENVIRONMENT

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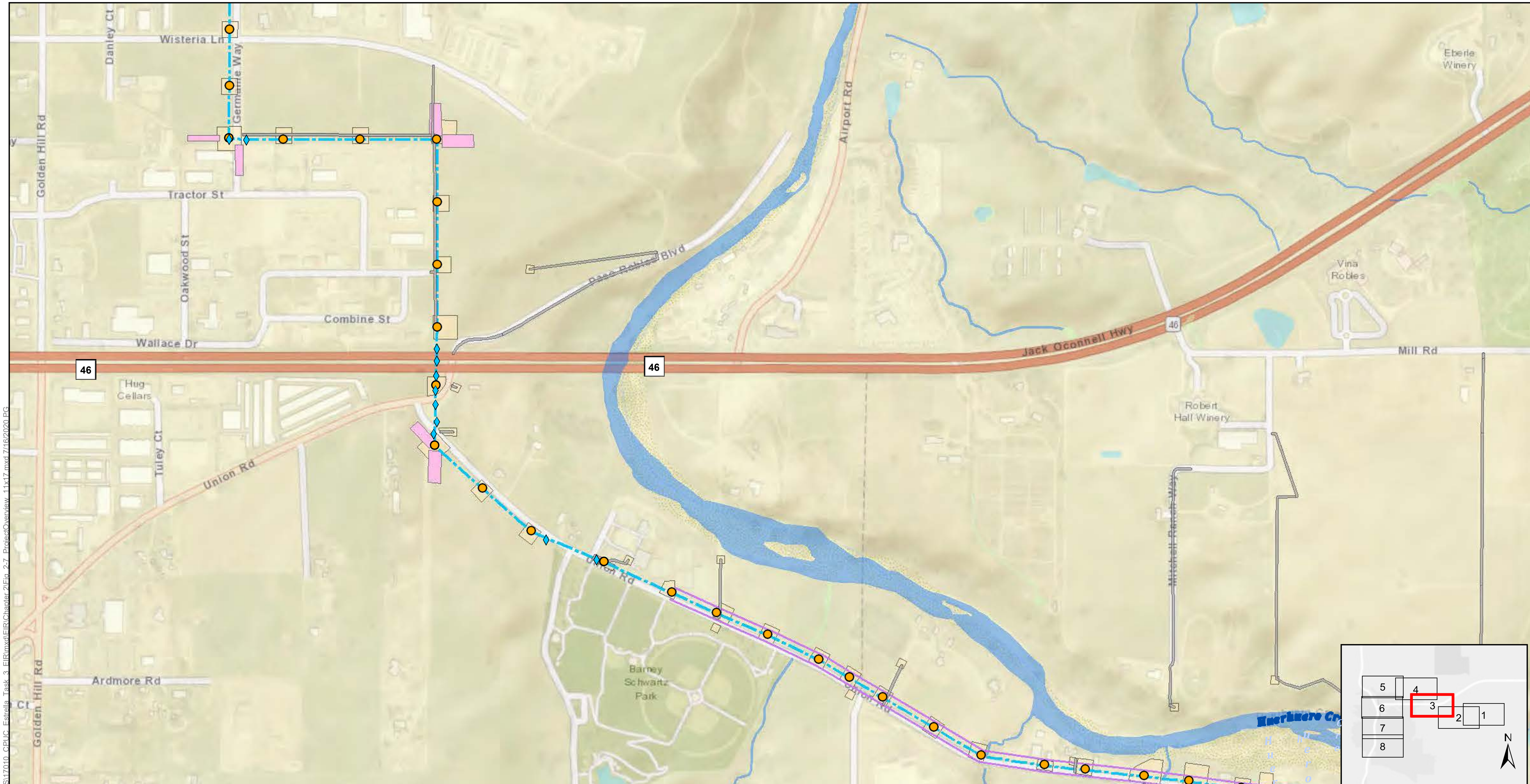

Basemap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Horizon WATER and ENVIRONMENT

Alignment Components

70kV Route

70 kV Minor Route Variation 1

New 70 kV Poles

Distribution Underbuild

Substation Components

Substation Interconnection

Temporary Shoofly Poles

Substation Permanent Disturbance Area

Construction Temporary Disturbance Areas

Temporary Crossing Structure Work Area

Access Routes

Temporary Pull Sites

Pole Temporary Work Area

Existing Infrastructure

70kV Route

Existing Substations

Existing 230 kV Transmission Line

Existing 70 kV Power Line

National Wetland Inventory

Freshwater Emergent Wetland

Freshwater Pond

Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View

Sheet 3 of 8

Estrella Substation and Paso Robles Area Reinforcement Project

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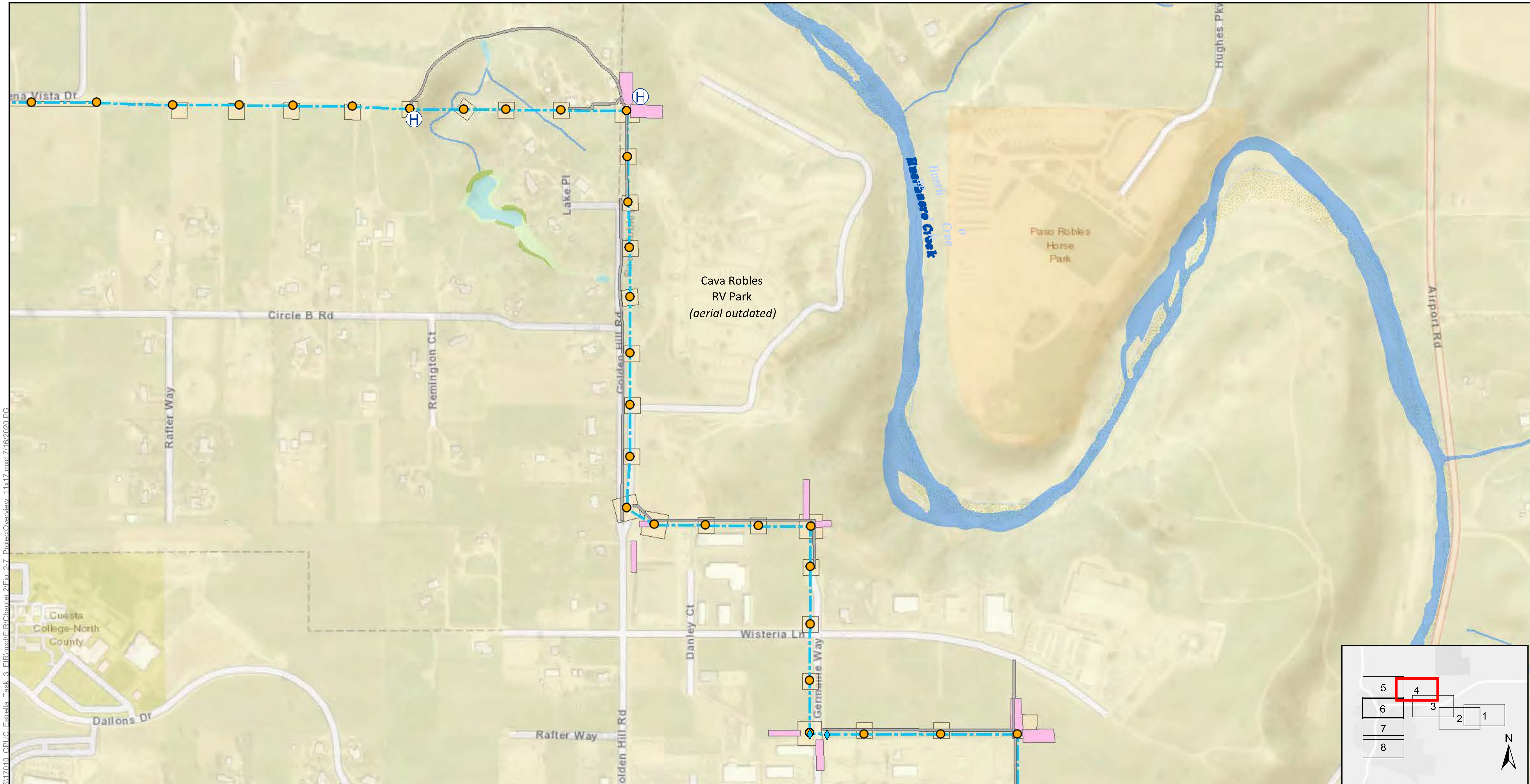

Basemap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Horizon WATER and ENVIRONMENT

Alignment Components

70kV Route

New 70 kV Poles

Substation Components

Substation Interconnection

Temporary Shoofly Poles

Substation Permanent Disturbance Area

Construction Temporary Disturbance Areas

Temporary Crossing Structure Work Area

Helicopter Landing Zones

Access Routes

Temporary Pull Sites

Pole Temporary Work Area

Existing Infrastructure

70kV Route

Existing Substations

Existing 230 kV Transmission Line

Existing 70 kV Power Line

National Wetland Inventory

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View
Sheet 4 of 8

Estrella Substation and Paso Robles Area Reinforcement Project

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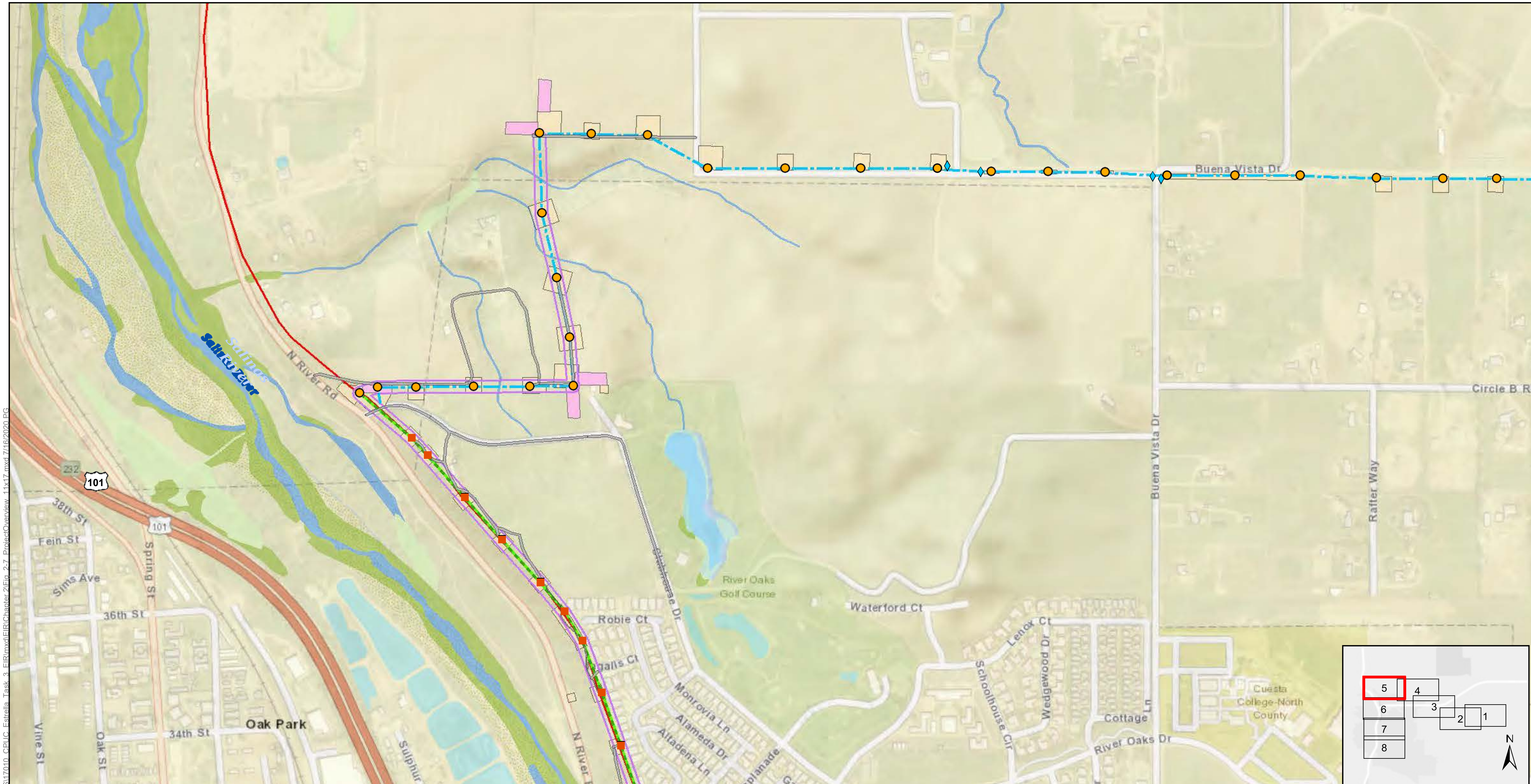

Basemap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Horizon WATER and ENVIRONMENT

Alignment Components

70kV Route
New 70 kV Poles
Existing 70 kV Pole to be Replaced
Reconductoring Segment
Distribution Underbuild

Substation Components

Substation Interconnection
Temporary Shoofly Poles
Substation Permanent Disturbance Area

Construction Temporary Disturbance Areas

Temporary Crossing Structure Work Area
Access Routes
Temporary Pull Sites
Pole Temporary Work Area

Existing Infrastructure

70kV Route
Existing Substations
Existing 230 kV Transmission Line
Existing 70 kV Power Line

National Wetland Inventory

Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View
Sheet 5 of 8

Estrella Substation and Paso Robles Area

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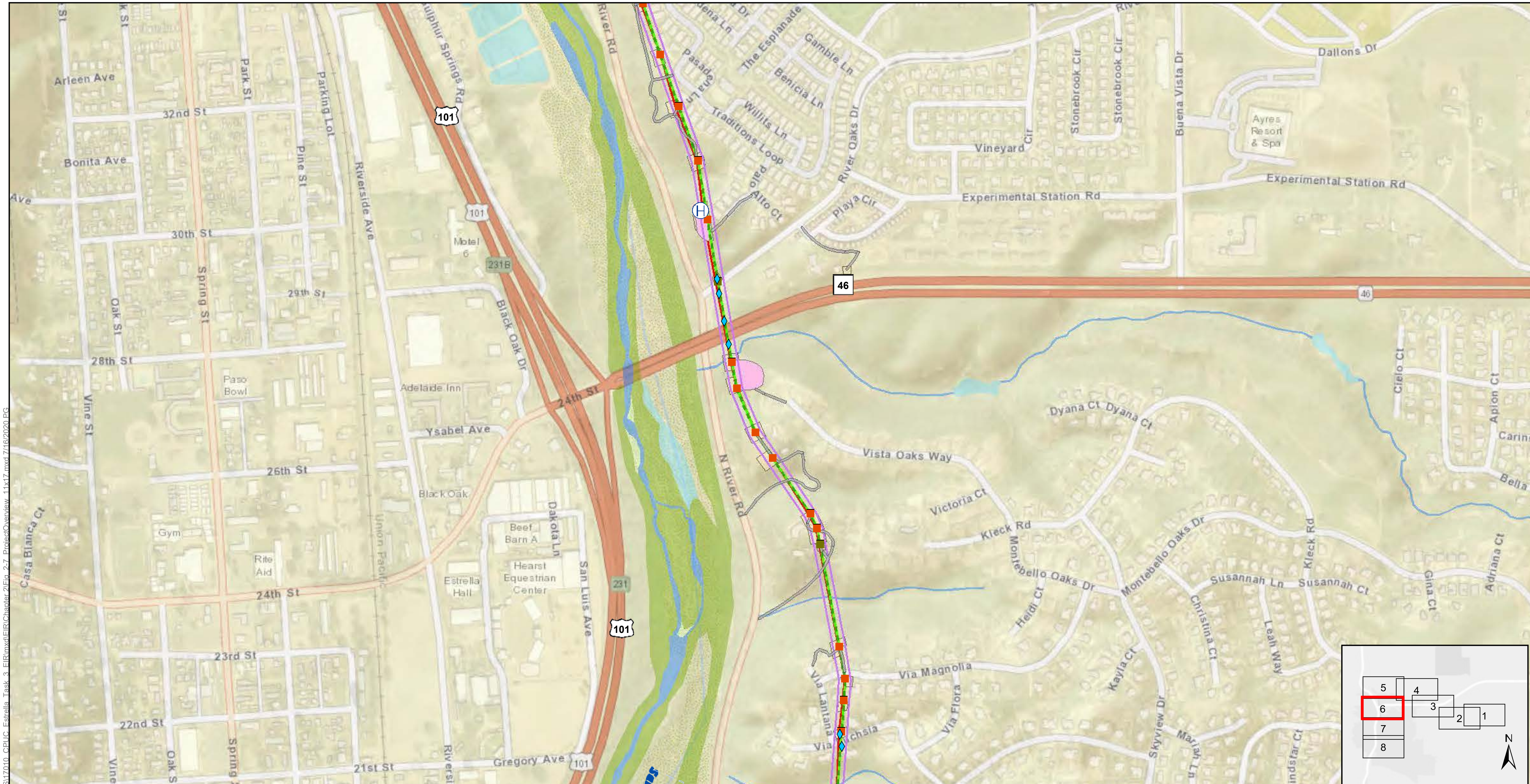

Basebap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Horizon WATER and ENVIRONMENT

Alignment Components

- Existing 70 kV Pole to be Replaced
- Reconductoring Segment
- Existing Distribution Pole to be Replaced
- Distribution Underbuild

Substation Components

- Substation Interconnection
- Temporary Shoofly Poles
- Substation Permanent
- Disturbance Area

Construction Temporary Disturbance Areas

- Temporary Crossing Structure Work Area
- Helicopter Landing Zones
- Access Routes
- Temporary Pull Sites
- Pole Temporary Work Area

Existing Infrastructure

- Existing Substations
- Existing 230 kV Transmission Line
- Existing 70 kV Power Line

National Wetland Inventory

- Freshwater Emergent Wetland
- Freshwater
- Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View

Sheet 6 of 8

Estrella Substation and Paso Robles Area Reinforcement Project

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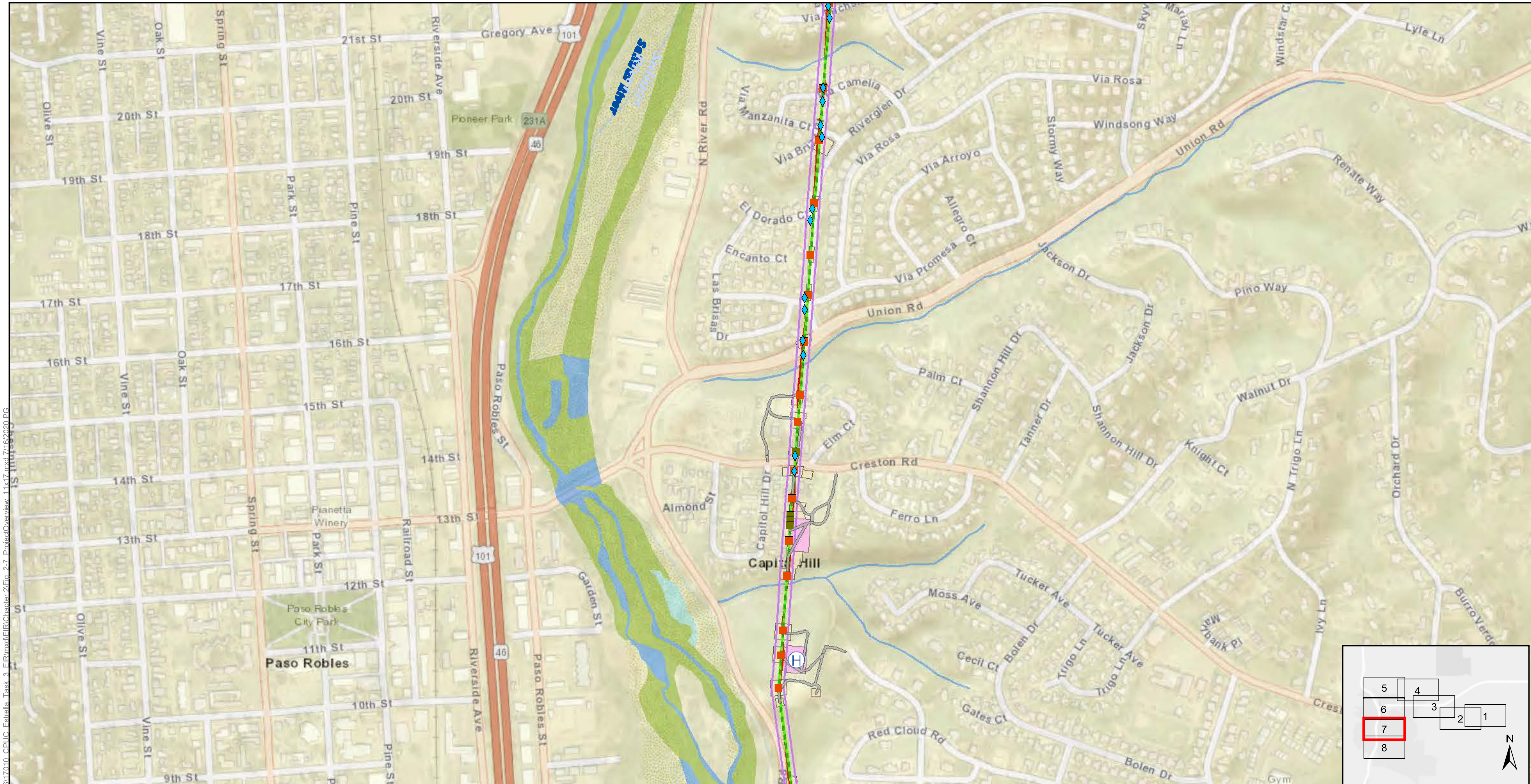

Basemap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Horizon WATER and ENVIRONMENT

Alignment Components

- Existing 70 kV Pole to be Replaced
- Reconductoring Segment
- Existing Distribution Pole to be Replaced
- Distribution Underbuild

Substation Components

- Substation Interconnection
- Temporary Shoofly Poles
- Substation Permanent
- Disturbance Area

Construction Temporary Disturbance Areas

- Temporary Crossing Structure Work Area
- Helicopter Landing Zones
- Access Routes
- Temporary Pull Sites
- Pole Temporary Work Area

Existing Infrastructure

- Existing Substations
- Existing 230 kV Transmission Line
- Existing 70 kV Power Line

National Wetland Inventory

- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View Sheet 7 of 8

Estrella Substation and Paso Robles Area Reinforcement Project

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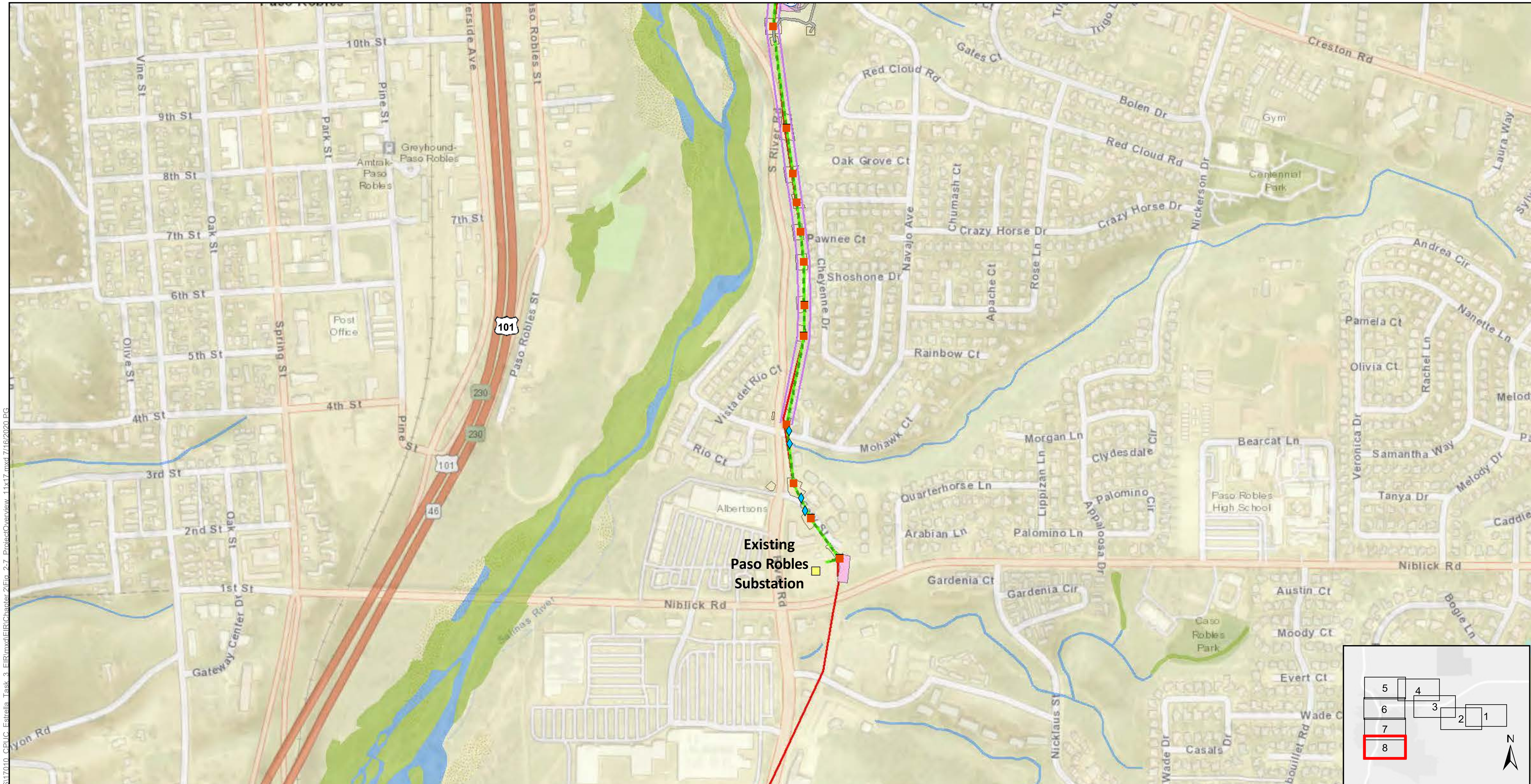

Basebap Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

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Feet

Horizon WATER and ENVIRONMENT

Alignment Components

Existing 70 kV Pole to be Replaced

Reconductoring Segment

Distribution Underbuild

Substation Components

Substation Interconnection

Temporary Shoofly Poles

Substation Permanent

Disturbance Area

Construction Temporary Disturbance Areas

Temporary Crossing Structure Work Area

Helicopter Landing Zones

Access Routes

Temporary Pull Sites

Pole Temporary Work Area

Existing Infrastructure

Existing Substations

Existing 230 kV Transmission Line

Existing 70 kV Power Line

National Wetland Inventory

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Riverine

Figure 2-7

Estrella Substation and 70 kV Power Line Components - Detailed View

Sheet 8 of 8

Estrella Substation and Paso Robles Area Reinforcement Project

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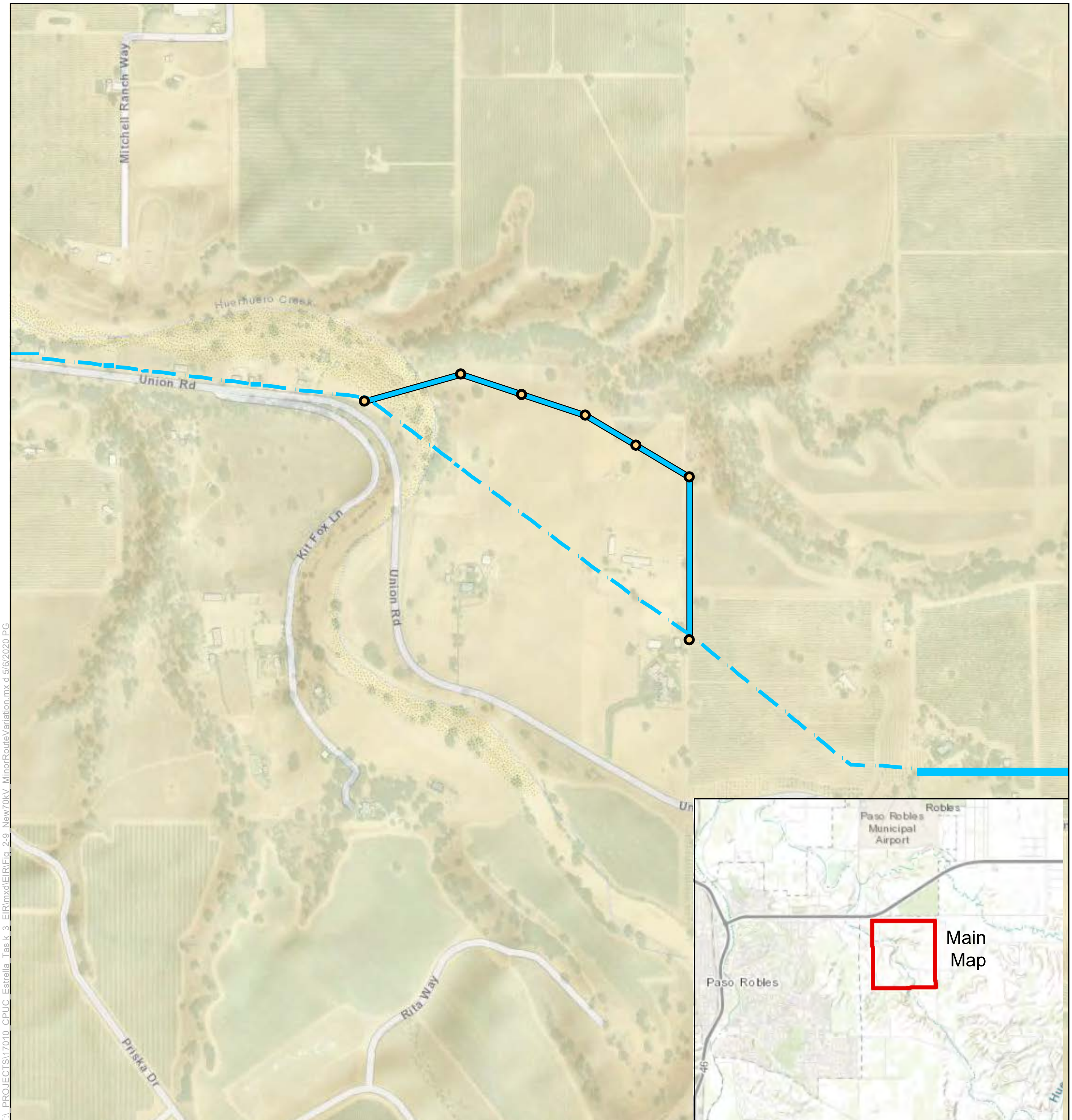

Source: Paso Robles General Plan 2018, PG&E 2019, SWCA 2017

Proposed Project Components

70kV Route

70 kV Minor Route Variation 1

Minor Route Variation Poles

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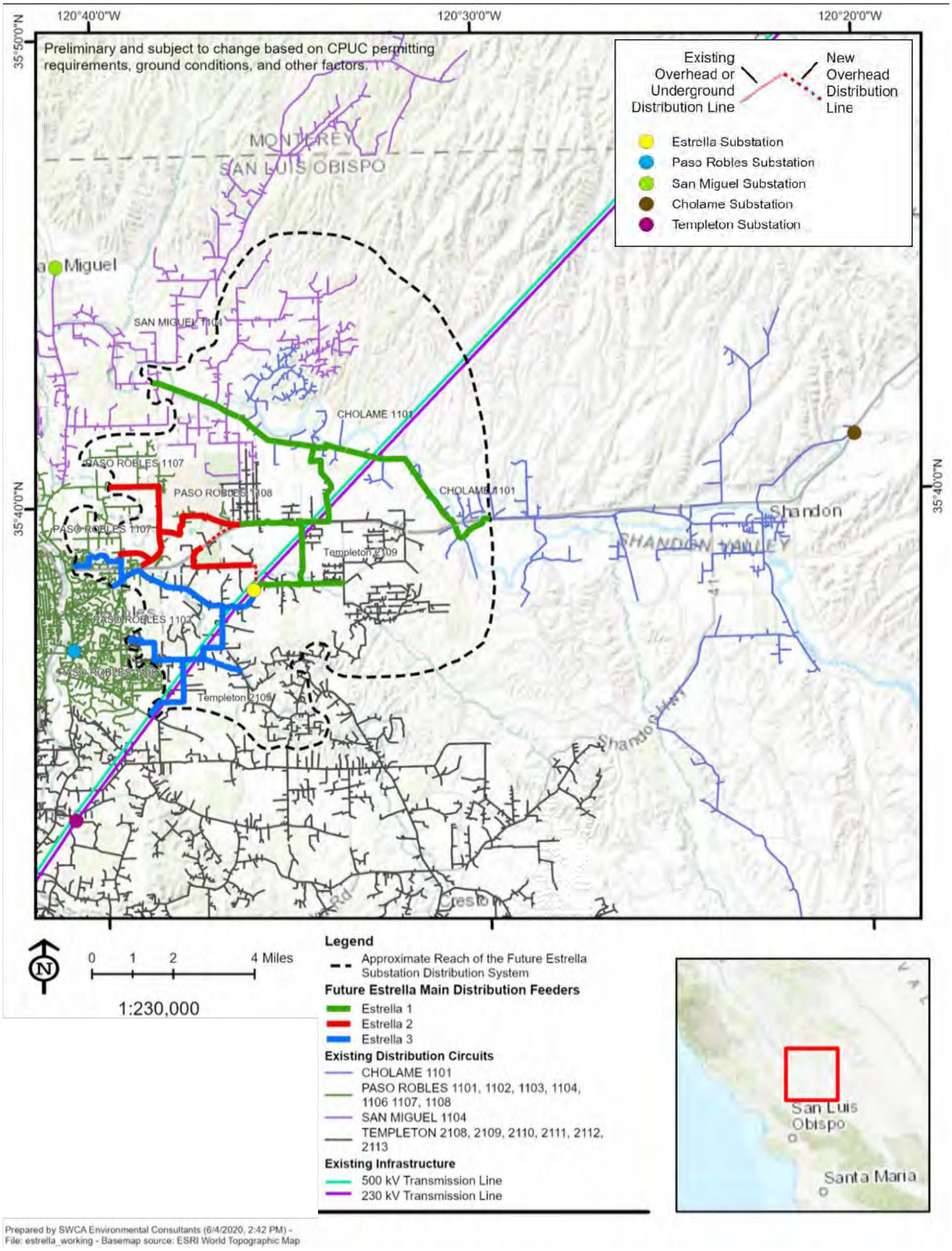
Feet

Horizon WATER and ENVIRONMENT

Figure 2-8

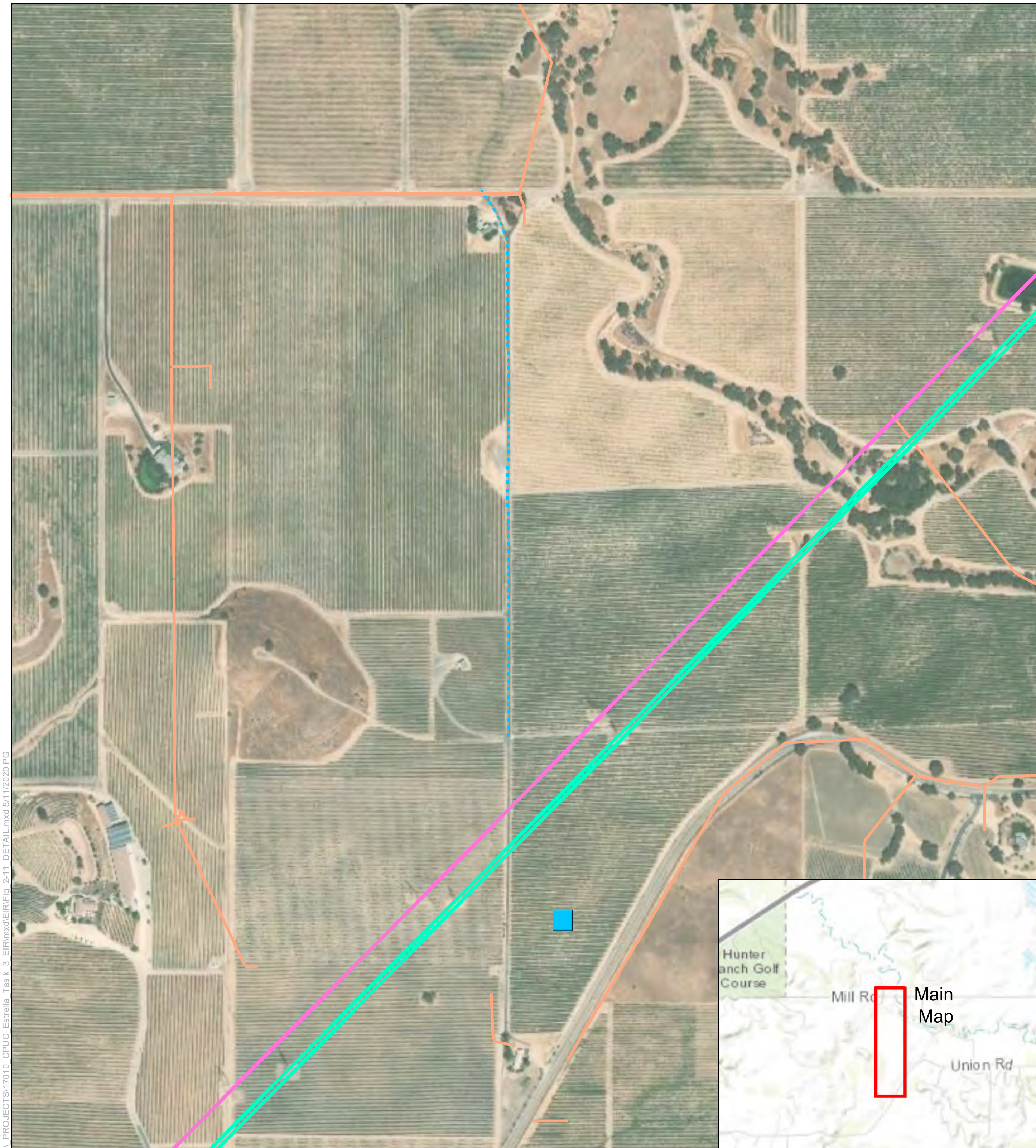
New 70 kV Power Line Minor Route Variation

Estrella Substation and Paso Robles Area Reinforcement Project



Source: NEET West and PG&E 2020

Figure 2-9.
Reasonably Foreseeable New Estrella Distribution Circuits



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Source: ESRI 2020, PG&E 2019, SWCA 2017

Figure 2-10
New Distribution Line Segments
and 21/12 kV Pad-Mounted
Transformers - Detail

Page 1 of 5

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0 300 600
Feet

Horizon WATER and ENVIRONMENT

Proposed Project

New Distribution Line Segments

Estrella Substation

Existing Infrastructure

Existing Overhead or

Underground Distribution Line

230 kV Transmission Line

500 kV Transmission Line

Source: ESRI 2020, PG&E 2019, SWCA 2017

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0 300 600
Feet

Horizon WATER and ENVIRONMENT

Proposed Project

Additional 21/12 kV Pad-Mounted Transformer

New Distribution Line Segments

Existing Infrastructure

Existing Overhead or Underground Distribution Line

Figure 2-10
New Distribution Line Segments and 21/12 kV Pad-Mounted Transformers - Detail

Page 2 of 5

Source: ESRI 2020, PG&E 2019, SWCA 2017

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Feet

Horizon WATER and ENVIRONMENT

Proposed Project

Additional 21/12 kV Pad-Mounted Transformer

New Distribution Line Segments

Existing Infrastructure

Existing Overhead or Underground Distribution Line

Figure 2-10
New Distribution Line Segments and 21/12 kV Pad-Mounted Transformers - Detail

Page 3 of 5

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Source: ESRI 2020, PG&E 2019, SWCA 2017

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Feet

Proposed Project

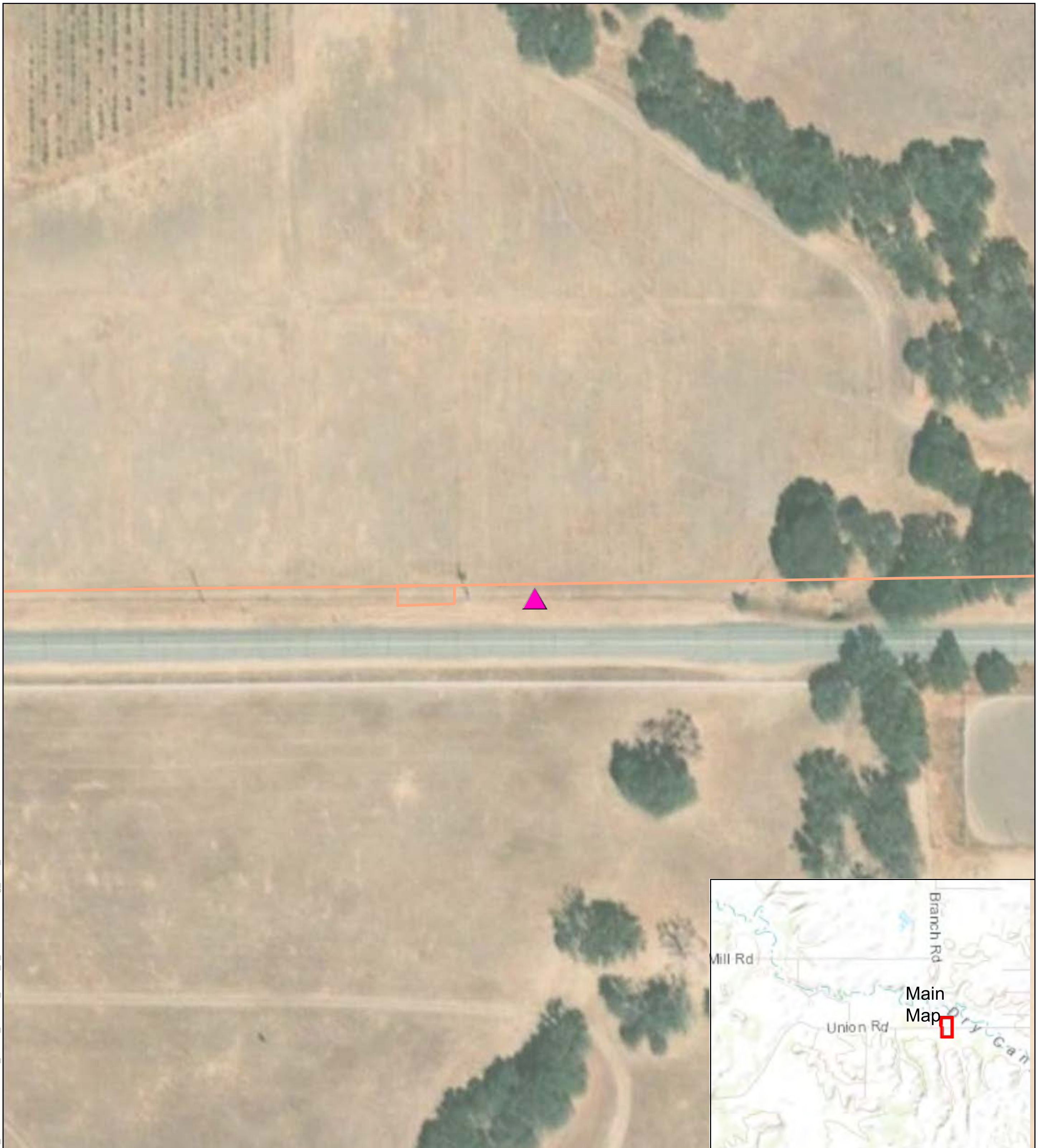
Additional 21/12 kV Pad-Mounted Transformer

Existing Infrastructure

Existing Overhead or Underground Distribution Line

Figure 2-10
New Distribution Line Segments and 21/12 kV Pad-Mounted Transformers - Detail

Horizon WATER and ENVIRONMENT



Source: ESRI 2020, PG&E 2019, SWCA 2017

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WATER and ENVIRONMENT

Proposed Project

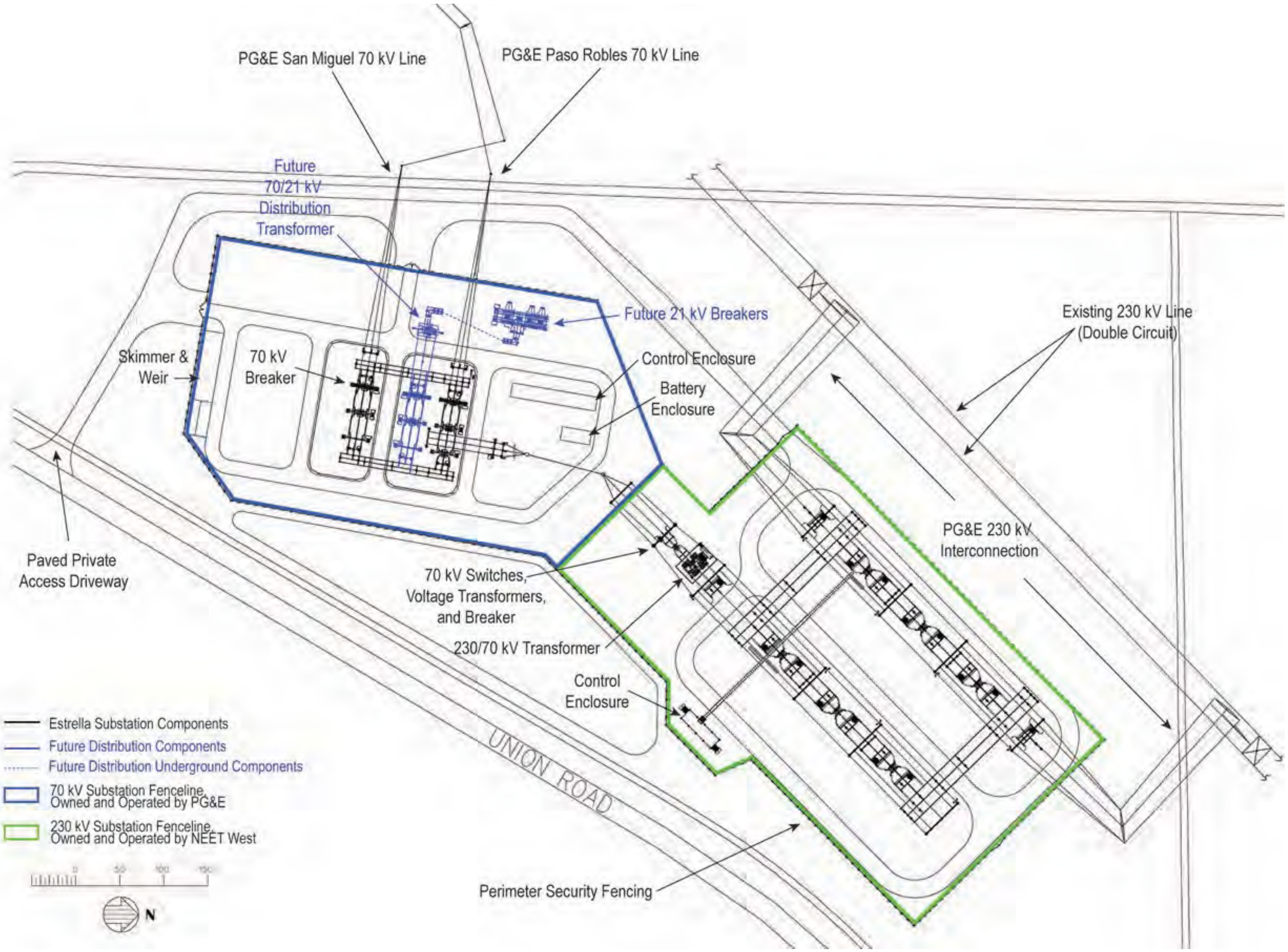
Additional 21/12 kV Pad-Mounted Transformer

Existing Infrastructure

Existing Overhead or Underground Distribution Line

Figure 2-10
New Distribution Line Segments and 21/12 kV Pad-Mounted Transformers - Detail

Estrella Substation and Paso Robles Area Reinforcement Project



Source: NEET West and PG&E 2017

Figure 2-11.
Preliminary Substation Layout

Estrella Substation and Paso Robles Area Reinforcement Project

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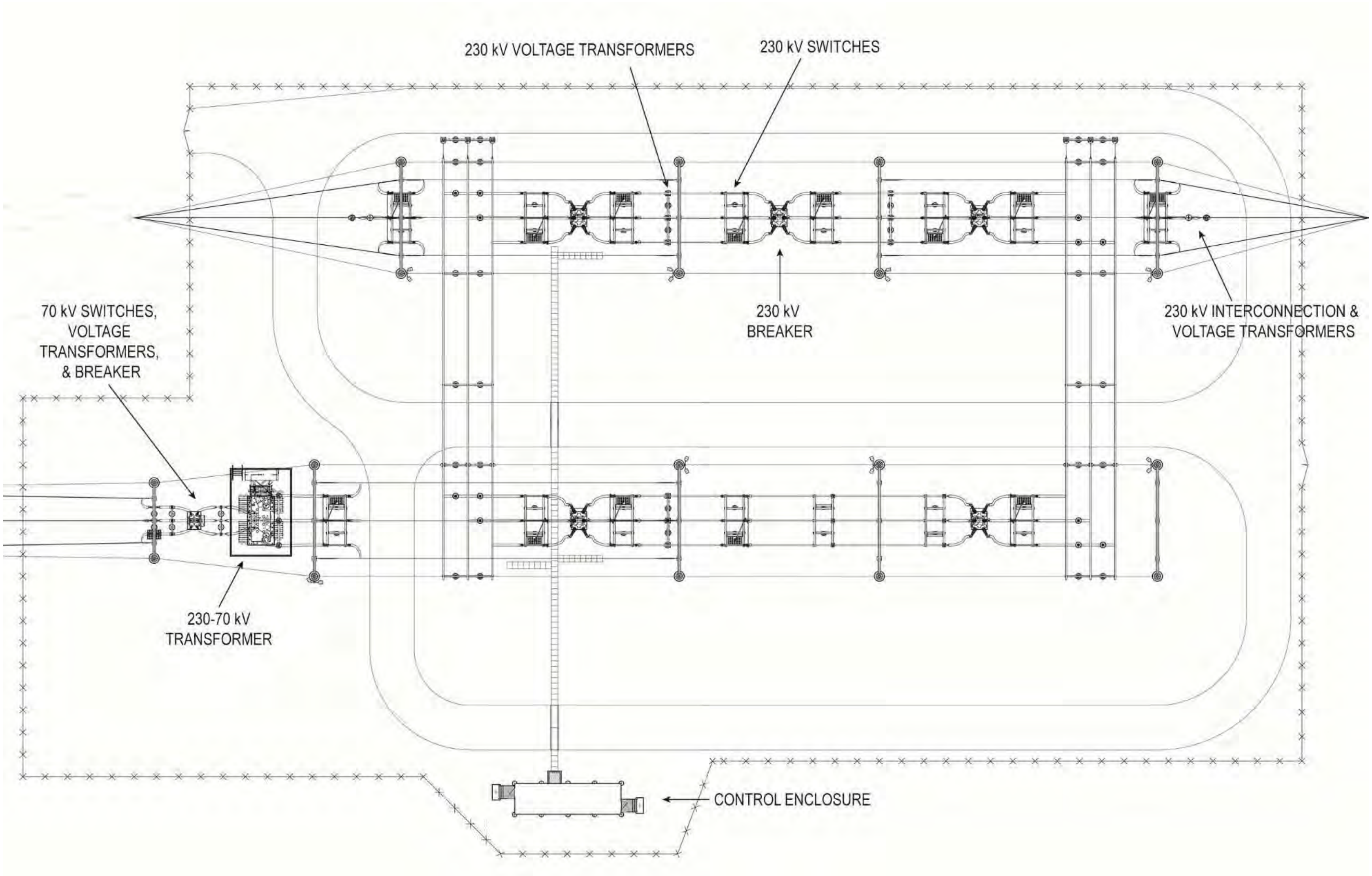
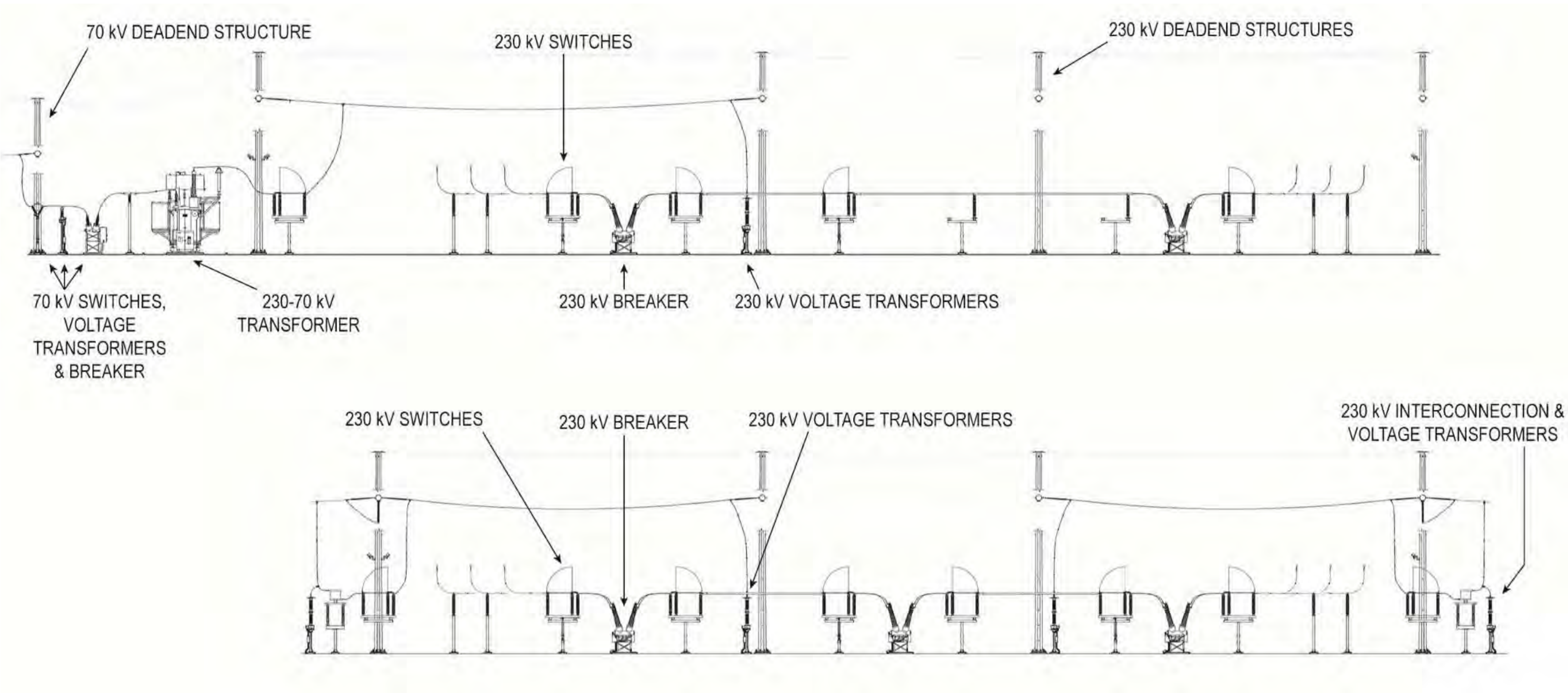


Source: NEET West and PG&E 2017

Figure 2-12.
Proposed 230 Kilovolt Substation General Arrangement

Estrella Substation and Paso Robles Area Reinforcement Project



Source: NEET West and PG&E 2017

Figure 2-13.
Proposed 230 Kilovolt Substation Profile View

Estrella Substation and Paso Robles Area
Reinforcement Project

- Secondary containment for transformer oil spill control on applicable equipment
- One spare SF_6 filler tank
- Graveled internal access road
- Perimeter security fencing

The fenced portion of the 230 kV substation would be approximately 4 acres in size. A chain-link fence, a minimum of 7-feet-tall, with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.

The maximum amount of mineral oil required for the three-phase 230/70 kV transformer would be approximately 16,000 to 18,000 gallons. The mineral oil would be utility grade. The 230 kV substation would be constructed with a concrete secondary containment basin (measuring approximately 45 by 34 by 2.5 feet) to provide mineral oil containment for the transformer and would be designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event. Following a storm event, rainwater collected in the containment area would be visually inspected for any contamination before allowing to drain off site through existing drainage swales along Union Road.

The 230 kV substation would connect to existing power and telecommunications located on an existing distribution pole at the northeast corner of the substation site along the edge of Union Road. Electricity would be used for construction (i.e., power construction trailers, lighting, and small hand-held machinery or tools) and operation back-up station service power. The electric power and telecommunication circuits (telephone and T1, either copper or fiber) would be brought to the 230 kV substation on either overhead distribution poles or underground conduits. If overhead, up to six approximately 40-foot-tall wood distribution poles may be constructed between the existing distribution pole and the 230 kV substation. The poles would be direct embedded up to approximately 6 feet. If undergrounded, the back-up power and communications would be brought into the 230 kV substation using up to three underground conduits.

230 kV Transmission Interconnection

The 230 kV transmission line interconnection would be owned and operated by PG&E. It would connect the existing 230 kV transmission line to Estrella Substation in two separate locations: a northern and a southern interconnection (refer to Figure 2-11). The 230 kV interconnection structures include LSTs (lattice steel tower) similar to the existing 230 kV transmission line towers. Figure 2-14 shows a representation of the LSTs to be used for the 230 kV interconnection.

The northern interconnection into Estrella Substation would begin with the replacement of an existing 230 kV LST approximately 200 feet to the northeast along the existing 230 kV transmission line alignment. From there, the northern interconnection would continue southwesterly within the existing 230 kV alignment for approximately 60 feet until reaching a new LST. From this point, the northeasterly interconnection would head southeasterly for approximately 180 feet to a new LST. From this tower, the northern interconnection would head southwesterly, terminating at the northerly 230 kV pulloff structure within Estrella Substation.

The southern interconnection would leave the southerly 230 kV pulloff structure within Estrella Substation, heading southwesterly for approximately 60 feet to a new LST. From this tower, the southern interconnection would head northwesterly for approximately 180 feet to a new LST located in line with the existing 230 kV alignment. From this point, the southern interconnection would follow the existing 230 kV alignment approximately 60 feet southwesterly to a new LST. This final tower would interset in the existing 230 kV conductor and complete the 230 kV interconnection.

The six 230 kV interconnection towers would each be mounted on four individual concrete pier foundations, and their base footprint would vary from 25 by 25 feet to 27 by 20 feet. These towers would be configured with six non-reflective, gray porcelain or clear glass insulator strings to support three individual conductors. Three conductors would be installed on each side of the towers and would be arranged in a vertical configuration. New and replacement LSTs within the existing easement would be configured to carry the existing six individual conductors. The overhead conductor would be attached to the new LSTs using non-reflective, gray porcelain or clear glass insulator strings. Structures and conductors would be installed with separation distance and ground clearance in accordance with CPUC General Order (G.O.) 95.

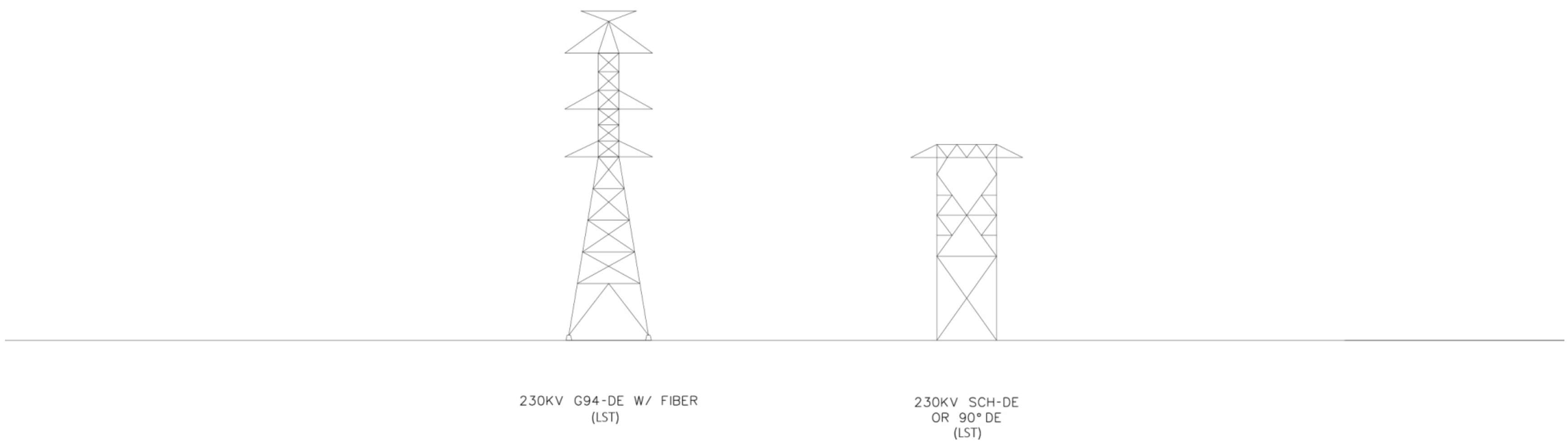
70 kV Substation

The 70 kV substation would be owned and operated by PG&E. The proposed configuration of the 70 kV substation (general arrangement and profile view) is shown in Figure 2-15 and Figure 2-16. The tallest structures within the 70 kV substation, other than the poles supporting the 70 kV power lines, would be the dead-end structures, which are approximately 37 feet high and 28 feet wide.

The following major electrical equipment would be located within the fenced area of the 70 kV substation in the proposed configuration:

- Two 70 kV aluminum buses
- Two 70 kV bus voltage transformers
- Seven line voltage transformers
- Station service voltage transformer
- Eleven 70 kV group operated air break switches
- Five 70 kV SF_6 insulated circuit breakers
- Nine 70 kV dead-end steel structures
- Three 70 kV lightning surge arresters
- A protection and control enclosure measuring approximately 16 feet wide, 96 feet long, and 11 feet tall would be installed on a concrete pad measuring about 3 feet deep. The exterior of the control enclosure would have an air conditioning unit installed to protect electronic components.

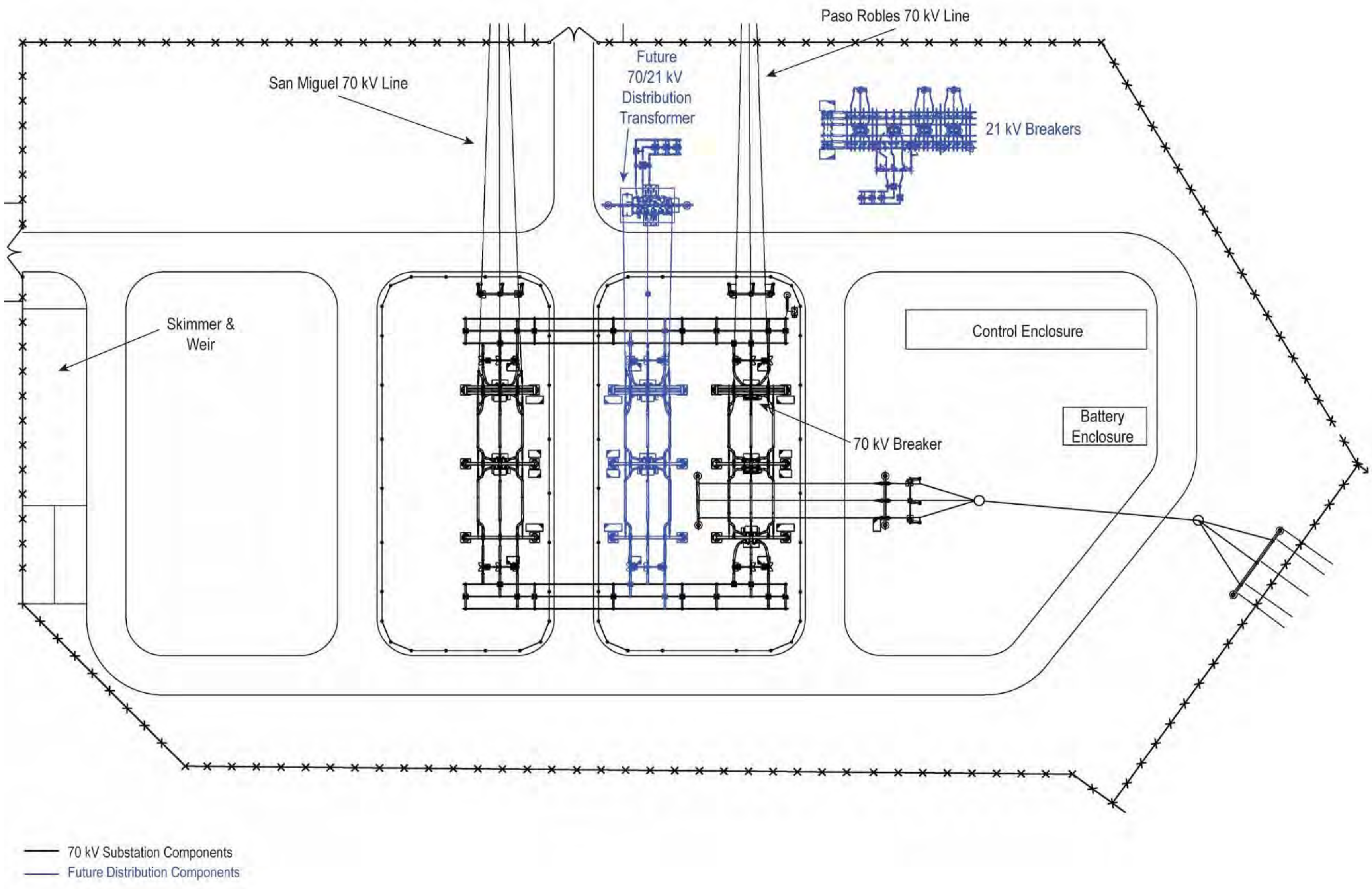
Note: Not to scale. LSTs measure approximately 25 by 25 feet at base.



Source: NEET West and PG&E 2017

Figure 2-14.
Typical Structure Diagram - 230 Kilovolt Interconnection

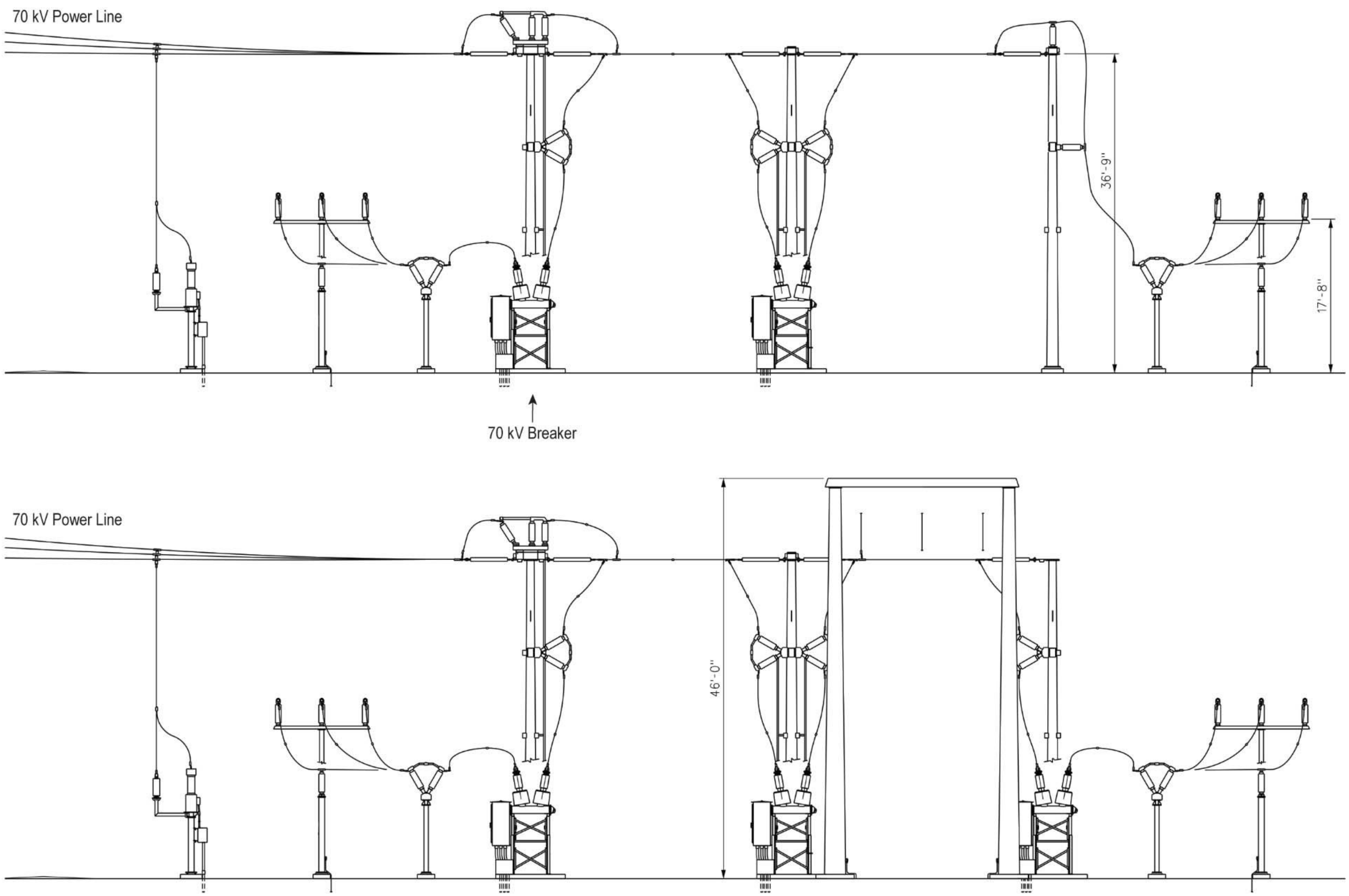
Estrella Substation and Paso Robles Area
Reinforcement Project



Source: NEET West and PG&E 2017

Figure 2-15.
Proposed 70 Kilovolt Substation General Arrangement

Estrella Substation and Paso Robles Area
Reinforcement Project



Source: NEET West and PG&E 2017

Figure 2-16.
Proposed 70 Kilovolt Substation Profile View

Estrella Substation and Paso Robles Area Reinforcement Project

In addition to the electrical equipment, the 70 kV substation would include the following infrastructure:

- Dark sky lighting[8] and signage
- Battery enclosure
- Paved internal access road
- Concrete skimmer/weir
- Perimeter security fencing

The fenced portion of the 70 kV substation would measure approximately 3.5 acres within the parcel acquired from HWT. An approximately 8-foot-tall chain-link fence with additional 1-1/2 foot of barbed and concertina wire would be installed around the remaining perimeter of the 70 kV substation.

The 70 kV substation would not store mineral oil. A concrete skimmer and weir device (flow measurement device) would be constructed at the southeast corner of the substation. This concrete device settles and collects sediment that is washed down by stormwater before it is discharged from the substation.

2.3.2 70 kV Power Line

The new 70 kV power line and reconductoring segments would use a combination of tubular steel poles (TSPs) and light-duty steel poles (LDSPs) for support. LDSPs would have a surface treatment designed to render the appearance of a natural weathering of a wood pole. Figure 2-17 shows typical drawings of each structure type.

Power line structures would vary in height depending on their location and purpose, but typically would range between 80 to 90 feet. Table 2-5 contains approximate height range and average height of power line alignment poles by structure type. The approximate distance from the ground to the lowest conductor is 29 feet. In areas where existing metal fences are in close proximity to the power line easement and cannot be replaced with non-conductive fences, wood or composite (fiberglass) poles would be used. These alternative poles may also be used in areas where existing underground utility metal lines are encountered in close proximity to structure locations, such as gas lines.

Both the new 70 kV power line segment and the reconductoring segment would use overhead aluminum electrical conductors, which, when installed, typically have a shiny surface appearance. This “reflective” or “specular” surface can make a power line more noticeable in appearance against the background landscape, and therefore more visible to small aircraft pilots that fly over the area. Observations by PG&E and other utilities indicate that specular conductor transitions to non-specular (i.e., becomes less shiny) in the course of a few seasons after installation. The new conductors would be installed to meet or exceed the minimum separation

[8] Refer to footnote 7 above for discussion of dark sky lighting.

distances and ground clearances in accordance with CPUC G.O. 95 and would meet raptor safety requirements.

A more detailed description of the required structures and the associated conductors for the new 70 kV power line and reconductoring segment is provided below.

New 70 kV Power Line Segment

The new 70 kV power line segment would consist of approximately 7 miles of double-circuit 70 kV power line on a combination of two types of structures: TSPs and LDSPs. TSPs would be utilized for the portion of the line that would be installed within the existing PG&E transmission corridor. In general, the TSPs would be installed adjacent to existing 500 kV transmission line towers, utilizing an average span length of approximately 650 feet. Each TSP would be installed on one individual concrete pier foundation.

The remainder of the new 70 kV power line segment would utilize both TSPs and LDSPs. These structures would typically be used in locations where the new 70 kV power line segment is not parallel to the existing 500 kV transmission line. TSP structures would be installed generally in locations where the alignment changes direction. The route would utilize an average span length of approximately 300 to 500 feet.

Structures along the new 70 kV power line segment would be configured with six individual aluminum conductors, measuring up to 1.25-inch diameter, and an underhung fiber optic cable, measuring up to 0.75 inch in diameter. Three conductors would be installed on each side of the structures and would be arranged in a vertical configuration. The overhead conductor would be attached to the structures using six post insulators or insulator strings (three per circuit) for tangent configurations, and up to 12 insulator strings (six per circuit) for dead-end configurations.

Reconductoring Segment

Reconductoring and pole replacement would occur on approximately 3 miles of single-circuit 70 kV power line using a combination of TSPs and LDSPs. LDSPs would typically be used in locations where the alignment is generally straight, and either guyed[9] LDSPs or TSPs would be used in locations where the alignment changes direction or where distribution tap spans are supported on line structures.

Anchors and guy wires would be attached to LDSPs and/or wood poles in locations where additional stability is required to support the conductor tension. The new replacement poles would typically be installed within 10 feet of the existing poles, which would result in a typical pole span length of approximately 300 feet.

[9] A guy is a tensioned cable designed to add stability to a free-standing structure. One end of the guy is attached to the structure, and the other is anchored to the ground at some distance from the pole or tower base. The tension in the diagonal guy-wire, combined with the compression and buckling strength of the structure, allows the structure to withstand lateral loads such as wind or the weight of cantilevered structures.

Replacement poles along the reconductoring segment would be configured to continue to carry three existing aluminum conductors, measuring about 1.25 inch in diameter, and an underhung fiber optic cable, measuring up to 0.75 inch in diameter. The conductor would be attached to the poles using three insulators for tangent configurations and six insulators for dead-end configurations.

Distribution Lines and Common Neutral

In locations where existing distribution lines are located in close proximity to the 70 kV power line alignment, the distribution conductors may be collocated on the power line structures. The existing conductors would typically be transferred to the new pole line as a distribution underbuild; however, in locations where the existing conductors are not able to be transferred, they would be replaced with an equivalent conductor. In addition, to meet PG&E power line design standards, a common neutral would be collocated along the entire length from Estrella Substation to Paso Robles Substation.

2.3.3 Reasonably Foreseeable Distribution Components

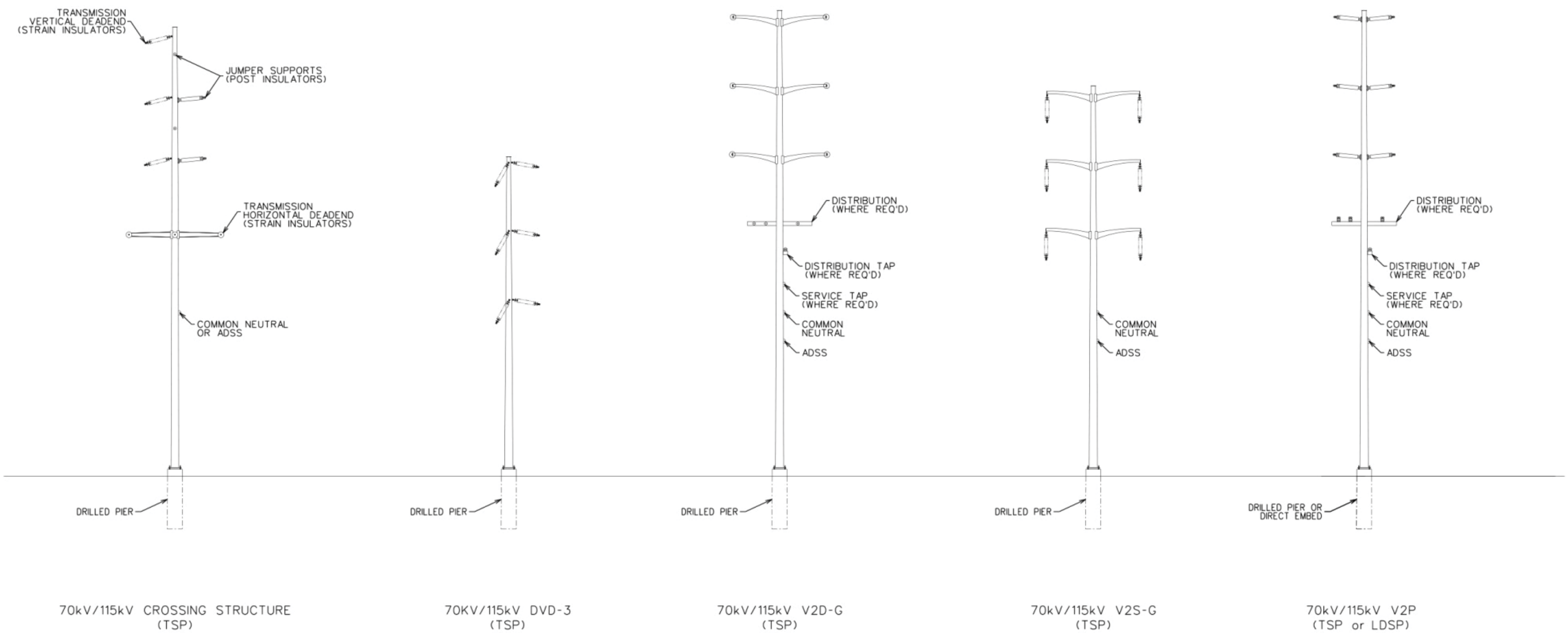
Given that new overhead distribution lines are typically supported by 18 poles per mile, the 1.7 miles of reasonably foreseeable new distribution line would require about 31 new wood poles. It is possible that some existing poles also would need to be replaced to support the reconductored circuits. New wood poles would likely be direct-bury poles (not requiring a foundation) and would require approximately 3 square feet of permanent ground disturbance per pole. The 70/21 kV transformer that would be installed within the 70 kV portion of the Estrella Substation as part of the reasonably foreseeable distribution components would include mineral oil and a concrete secondary containment basin.

2.3.4 Ultimate Substation Buildout

The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.

While ultimate buildout of the Estrella Substation could add six additional distribution feeders (for a total of nine from the substation), as well as additional 70 kV power lines, the routes, lengths, and associated characteristics of these components are unknown at this time.

Note: Not to scale. LDSPs have a 3-foot diameter at base and a 1-foot diameter at tip. TSPs have a 4-foot diameter at base and a 1.5-foot diameter at tip.



Source: NEET West and PG&E 2017

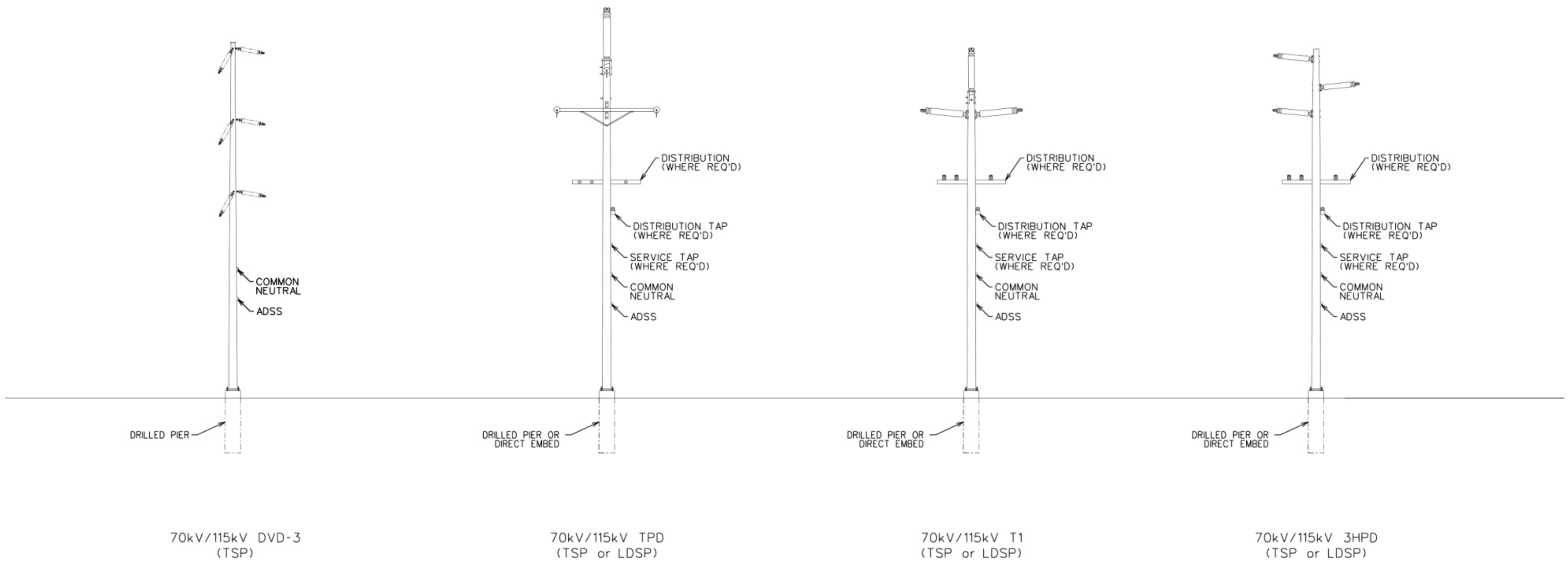
Figure 2-17.

Typical Structure Diagrams - New 70 Kilovolt Power Line

(sheet 1 of 2)

Estrella Substation and Paso Robles Area Reinforcement Project

Note: Not to scale. LDSPs have a 3-foot diameter at base and a 1-foot diameter at tip. TSPs have a 4-foot diameter at base and a 1.5-foot diameter at tip.



Source: NEET West and PG&E 2017

Figure 2-17.
Typical Structure Diagrams - Reconductoring Segment
(sheet 2 of 2)

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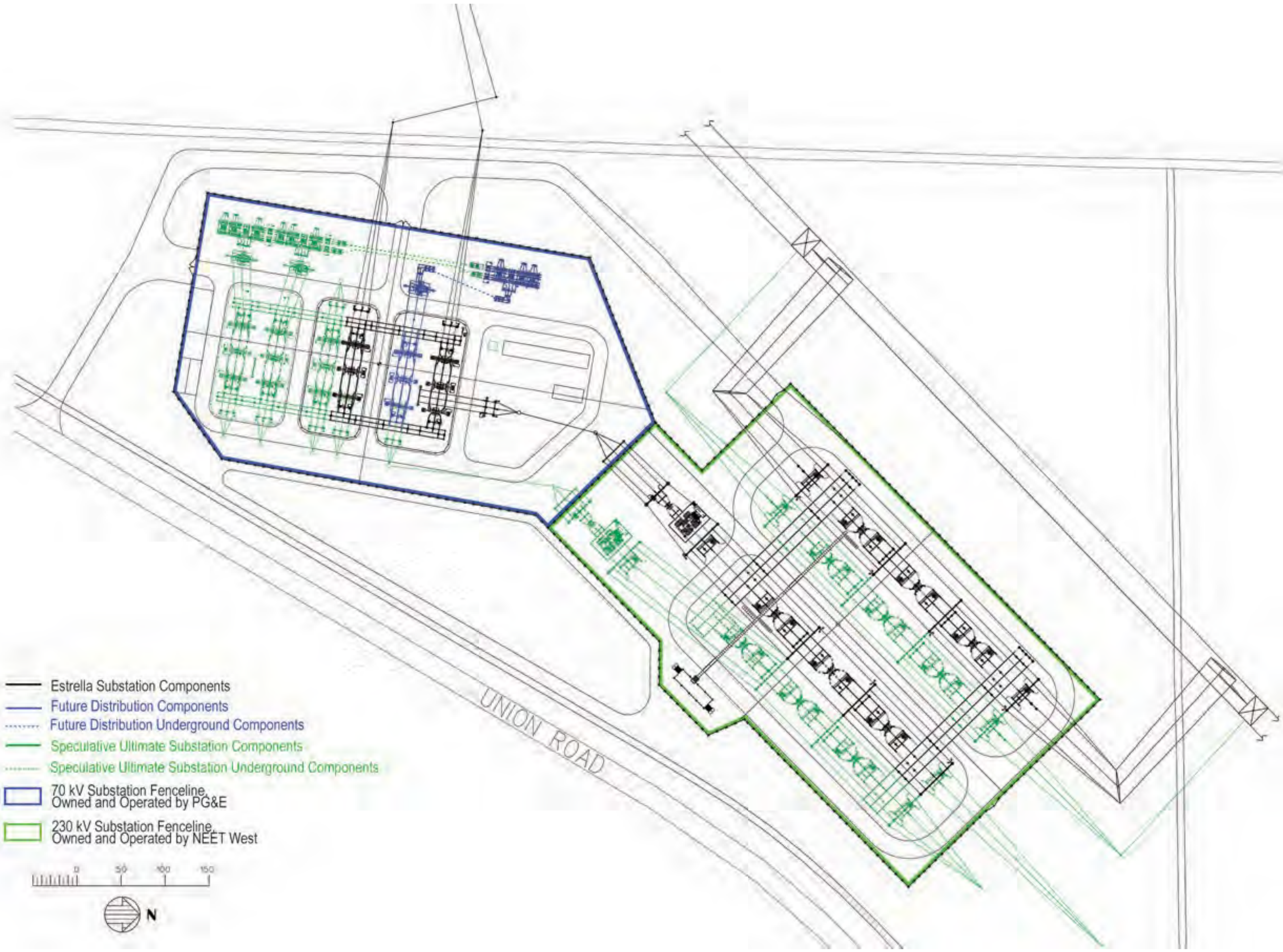
Estrella Substation and Paso Robles Area Reinforcement Project



Source: NEET West and PG&E 2017

Figure 2-18.
Ultimate Substation Buildout

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Estrella Substation and Paso Robles Area Reinforcement Project

2.3.5 Other Substation Modifications

Minor modifications within five existing area substations would be required for the Proposed Project. These modifications include installation and reconfiguration of system protection equipment and/or adjusting relays, and reprogramming supervisory control and data acquisition (SCADA) and telemetry equipment. In addition, the fiber optic telecommunications cable extending from Estrella Substation to Paso Robles Substation along the new 70 kV line will require new network and telecommunications equipment at Paso Robles Substation. The modifications would be made within existing substation fence lines at California Flats Switching Station and Morro Bay, San Miguel, and Templeton substations, while minor excavation outside the fence line of Paso Robles Substation may be required for the telecommunication connection. Table 2-6 below provides a summary of the modifications required at each substation.

Table 2-6. Other Substation Modifications Summary

Substation	Improvements
California Flats 230 kilovolt (kV) Switching Station	▪ Remove outdoor wave trap equipment and existing Morro Bay-California Flats 230 kV protection, and install new protection relays and related equipment within the existing control building. ▪ Remove existing relays and install dual-line differential protection relays on the existing Morro Bay-California Flats line to match new Estrella Substation terminal for permissive overreaching transfer tip (POTT) high-speed protection. ▪ Install regenerative catalytic oxidizer (RCO) switches, local/remote, and circuit breaker (CB) control through replaced CB relay. ▪ Provide breaker failure relay protection.
Morro Bay 230 kV Substation	▪ Remove wave trap equipment. ▪ Remove existing relays and install dual-line differential protection relays at CB 482 to match new Estrella Substation terminal for POTT high-speed protection. ▪ Install RCO switches, local/remote, and CB control through replaced CB relay. ▪ Provide breaker failure relay protection.
Templeton 230/70 kV Substation	▪ Install reverse power relay on the existing Templeton 230 / 70 kV #1 transformer banks to prevent the 70 kV system from feeding the 230 kV system.
San Miguel 70 kV Substation	▪ Remove existing directional overcurrent electro-mechanical relays at CB 22 breaker relay panel.

Substation	Improvements
	▪ Install two line protection relays in CB 22 relay panel to match new Estrella Substation terminal for step-distance protection. ▪ Provide breaker failure relay and reclosing relay protection.
Paso Robles 70 kV Substation	▪ Upgrade the new Estrella-Paso Robles 70 kV power line to meet line ampacity demands of 975A emergency. ▪ Upgrade terminal equipment such as insulators, jumpers, and any rigid bus at the breaker to meet 975A ampacity ratings. ▪ Remove existing Schweitzer Engineering Laboratories (SEL) 321 and SEL 267 relays at CB 72 breaker relay panel, along with associated auxiliary switch devices. ▪ Install two line protection relays in CB 72 relay panel to match new Estrella Substation terminal for step-distance protection. ▪ Provide breaker failure relay and reclosing relay protection. ▪ Connect new fiber optic line and common neutral into existing substation, including minor trenching outside the fence line. Connection of the fiber optic line requires a shallow trench, measuring 10 to 15 feet in length and a minimum of 24 inches of cover, to be excavated so the fiber optic line can be connected from the last reconductoring pole to inside of the substation.

Notes: CB = circuit breaker; kV = kilovolt; POTT = permissive overreaching transfer tip; RCO = regenerative catalytic oxidizer; SEL = Schweitzer Engineering Laboratories

2.4 Easement Requirements

The parcel of land where Estrella Substation would be constructed is under private ownership. An affiliate of HWT has an option agreement to purchase the approximately 20-acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately 20-acre area. This area is adequate to accommodate the approximately 15-acre substation facility including all considerations for site grading, equipment laydown and storage, fencing, access and internal circulation, spill and stormwater management, and other operational considerations. Once all of the environmental permits from the applicable siting and regulatory agencies have been obtained, and grading and drainage has been constructed for the entire substation site, HWT would sell PG&E the land necessary for construction of the 70 kV substation and 230 kV interconnection.

The relocated 230 kV tower and three LSTs associated with the 230 kV interconnection would be installed within the existing transmission line easement. Two additional LSTs would be used to complete the interconnection and would be installed on the parcel that would be acquired for the development of Estrella Substation.

New easements would be acquired for the majority of the new approximately 7-mile-long 70 kV power line segment. The easements would be up to 115 feet wide with the width to vary based on the location of the new power line. When on private property, the easement would typically be 70 feet wide, and the poles would be located in the center of the easement (35 feet on each side). In locations where the poles would be adjacent to a county or city road franchise, new poles may be located on private property ranging from 2 to 7 feet outside of the road franchise, so the easement would be 2 to 7 feet on one side and 35 feet on the other. There may be some locations where the pole line may be located within the road franchise. A list of properties likely to require new easements and/or acquisition is provided in the PEA (see Appendix H to the PEA).

The approximately 3-mile-long reconductoring segment would be mostly located within an existing 30- to 40-foot-wide PG&E easement. Easement documents may be updated in some locations to account for slight variations in the new alignment and pole placement, or to clarify or update existing rights. If PG&E discovers an encroachment in the existing 70 kV power line easement, it would determine whether it is a conflict with the operation of the 70 kV power line, and/or what action to take, if any, after further investigation. Such action might include working with the property owner(s) to remove the conflict or minor relocation of the alignment and potential modification of the structure type.

A new 30-foot-wide easement, approximately 0.6 mile in length, would need to be obtained on private property to the north of the 70 kV substation to connect the reasonably foreseeable new distribution facilities to existing distribution feeders on Mill Road. The reasonably foreseeable new 1.1-mile-long segment of distribution line is planned to be installed within the existing road right-of-way.

2.5 Proposed Project Construction

The construction process, methods, equipment and personnel needs, access, temporary work areas, and schedule for the Proposed Project components are described in the following subsections.

2.5.1 Construction Process and Methods

Substation Construction

Grading and Site Preparation

Construction of the Estrella Substation would follow a typical sequence beginning with survey marking of staging areas and work areas, establishment of the private access road, vegetation clearance, fencing installation, grading, installation of culverts and swales, excavation of foundations, installation of facilities, and cleanup and post-construction restoration. Vegetation removal would be limited to areas within survey-marked boundaries, and would be completed utilizing mechanized equipment. To the extent practical, removed vegetation may be disposed of at a landfill. Site construction fencing would be installed during the site preparation stage, and would require digging to a depth of 4 feet to install fencing anchors.

Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. Approximately 16,500 cubic yards of topsoil would be stripped and stockpiled and approximately 4,000 cubic yards of the stockpiled topsoil would be used during restoration, with the balance removed from the site. Generally, grading and excavation would be accomplished in a phased approach. Earthwork activities (e.g., grading, excavation) would be completed to meet project design specifications and match proposed grades, considering the geotechnical conditions atthe site. Maximum excavation depths would occur on the transmission portion of the site and at the steel dead-end structures in the 230 kV substation.

Geotechnical borings were performed in the vicinity of the substation site. The borings showed predominately gravel, clay sand and decomposed granite, which can be excavated. It is anticipated that these materials can be excavated using conventional earth-moving equipment. While not expected due to the clay soil, in the event there are areas where bulldozers and backhoes are not able to remove the material, scraping, ripping, drilling, hammering, and cutting may be used to break up the material into manageable pieces. Blasting is not anticipated.

During earthwork, soils and other surficial deposits that do not possess sufficient strength and stability and/or resistance to erosion of support structures, would be removed from the work area. No contaminated soils are expected on this site due to the long-term vineyard use of the site. All clean spoils excavated for the project would be used on site to balance cut and fill calculations, as feasible. All spoils that are not useable and/or reveal contamination, as determined through testing and/or based on visual appearance, would be sent to a properly licensed landfill facility. All recyclables would be taken to a licensed recycle facility, and all refuse would be taken to the Paso Robles Landfill or other suitable landfill facility. Topsoil reuse is not feasible within the fenced substation area; however, topsoil would be conserved at exterior temporary work areas where applicable.

Material that requires processing for construction of Estrella Substation would be mechanically processed on site to achieve a maximum particle size and distribution suitable for conventional placement in engineered fills. In addition to general earth-moving quantities, approximately 4-6 inches of surface gravel would be required to be imported and installed within the substation footprint and along the access road. Additionally, gravel would be placed in the substation staging areas.

Below-Ground Construction

Following site preparation, construction of the substation equipment foundations (consisting of drilled pier, mat, and pad type foundations), underground ducts, and the grounding grid would commence. Foundation construction excavation would be accomplished primarily by backhoes and drill rigs. Forms, reinforcing steel, and concrete would then be installed, as appropriate, to build the foundations for substation equipment and the control enclosures. Structure and equipment foundations would be excavated to an approximate depth of between 10 and 25 feet. Actual depths would depend on the equipment to be installed. Concrete pouring would be required to construct the foundations. Underground bundled polyvinyl chloride (PVC) conduit ducts and below-grade cable trench would be constructed within the substation pad for the power and control circuits.

Above-Ground Construction

Power lines and distribution circuits would be connected inside the substation after substation structures and equipment are installed. Control and protection wiring would be completed during above-ground structure installation. All equipment would be tested after installation and all wiring is landed, and before placing the substation in service. Equipment would be placed in service once individual power lines and circuits are ready to be energized and have been tested.

It is anticipated that all major electrical and substation equipment would be delivered to each substation site and placed directly on foundations and footings once all concrete footings have cured. All new components would be delivered to the site using a flatbed truck and positioned using a small crane or forklift. All equipment including breakers, bus supports, insulators, bus and switches would be installed or anchored into final position, grounded, and if required wired back to the control house. The control house will be delivered and installed on concrete piers. The control house building will then be ready for the installation of protective relay panels, batteries, AC and DC load centers, SCADA and telecommunication hardware and air conditioning systems. Final equipment testing and commissioning would then be performed in the substation and then in conjunction with PG&E's new and existing facilities.

Access Driveway and Interior Road Construction

Access road construction would begin by excavating to a depth of approximately 2 feet at the intersection with Union Road, increasing to 17 feet deep for the remainder of the road. Next, the road would be graded and compacted in accordance with engineering standards and geotechnical requirements. Following initial compaction, road base would be imported, distributed on site, and final compacted. Finally, conventional paving equipment would be used to distribute the asphalt road material along the main access route and driveway aprons. Paving of the access road would occur after major construction at the substation site is completed and all heavy equipment is removed from the site.

230 kV Transmission Interconnection Construction

Installation of the 230 kV transmission interconnection to Estrella Substation would require a number of activities including setting the new tower foundations, tower assembly, and partial erection for the new towers. Construction activities would include the following:

- Adjacent to the new 230 kV substation, a temporary connection (commonly referred to as a "shoo-fly") would be installed to ensure that the existing 230 kV transmission line remains in service. Near the existing tap structures at each location, one to three (depending on the orientation of the conductor wires) wood poles would be placed in the ground without foundation and guy-wired for stability. The temporary structures would connect the conductors as necessary for the existing 230 kV transmission line to remain in service.

- The first circuit on the existing double-circuit 230 kV transmission line would be cleared, and the phase conductors would be moved off the two existing LSTs onto the temporary poles. The first circuit would then be re-energized.

- The second circuit on the existing double-circuit 230 kV transmission line would be cleared, and the erection and interset of two new LSTs would be completed. The phase conductors for the circuit would be dead-ended and temporary jumpers would be installed.
- The OPGW at each new tower would be secured, an existing LST would be removed, and two LSTs would be installed for the Estrella Substation interconnection.
- The second circuit on the existing 230 kV transmission line would be re-energized and the first circuit cleared. The existing phase conductors would be transferred from the temporary poles to the new towers. The phase conductors on the new towers would be dead-ended and permanent jumpers installed; the phase conductors would be re-attached, and the first circuit would be re-energized.
- The temporary poles and anchors used for the shoo-fly would be removed.

The 230 kV interconnection LSTs would be installed on concrete pier foundations. Large augers and drill rigs would complete the required excavations and, if necessary, a reinforcing steel rebar cage would then be lowered into the excavation. An approximately 2-foot-tall form would be constructed. Concrete would then be poured to fill the excavation. Each completed foundation would be left to cure for 7 to 14 days. Typical foundation dimensions for the 230 kV interconnection are included in Table 2-7.

Table 2-7. 230 Kilovolt Interconnection Structure Foundation Summary

Foundation Type	Quantity	Approximate Diameter (feet)	Approximate Depth (feet)	Approximate Excavation Volume per LST (cy)	Approximate Concrete Volume per LST (cy)
230 kV Lattice Steel Tower	6	3–4	13–16	2.6–6.1	3.4–7.4

Notes: cy = cubic yards

Each LST is comprised of multiple steel members that are connected together with hardware to form the tower. Installation of the tower would begin with the assembly of the tower in one or more sections. This assembly process may occur at one of the staging areas or within the work area at the individual tower's location. Once the first section of the tower is complete, it would be placed onto the cured concrete foundation using cranes and secured using the appropriate hardware. This process would be repeated for any additional sections of the tower until it is complete. Insulators and additional hardware would be added to the tower using a bucket truck and cranes. In areas of difficult terrain, a helicopter may be used to assist with the tower installation process. If applicable, the existing conductor would then be attached to the new tower hardware.

As part of the 230 kV interconnection work, an existing LST would be removed and then replaced by a new LST in a slightly different location. The LST would be removed by disassembling the tower into three sections and lowering each section using a crane, or taking it down in one lift using a crane. Helicopters may be used to assist in the tower removal process.

Following disassembly of the tower, its segments would be transported for reuse, recycling, or disposal at an approved facility. Once the LST has been removed, the associated concrete pier foundations would be jackhammered to approximately 3 feet below grade. The remaining void would then be backfilled with native soil saved from other excavations in the surrounding area and returned to its original contours, to the extent feasible, or in accordance with prearranged landowner agreements.

Telecommunications and Power Line Interconnection Construction

For the 230 kV substation, the back-up electric power source and telecommunication lines would be brought to the site either on overhead distribution poles or in underground conduits. If overhead, up to six wood poles (distribution poles, approximately 30 feet tall) may be constructed within the substation permanent disturbance area. The poles would be direct-embedded up to approximately 6 feet. If undergrounded, the back-up power and communications could be brought into the 230 kV substation in up to three underground conduits. Open trenching and/or horizontal directional drilling (HDD) may be used to install the conduits for power and communications cables. Any directional drilling pits would occur within the permanent or temporary disturbance areas. Depending on the voltage level and distance from the PG&E distribution line, either a pole-mounted transformer (on a PG&E pole), located along the existing distribution line that intersects the utility corridor, or a pad-mounted transformer, located adjacent to the control enclosure, would be installed.

For the 70 kV substation, the OPGW cable would be cut at the existing LST that is to be removed. The OPGW cable would then be rolled back to the first LST located both northeast and southwest from where the cable is to be cut. The cable would then extend down a tower leg at each of the towers and enter into a pull box. The pull boxes located near the bases of the existing towers and pull boxes installed near the fence line of the substation would be connected by underground conduit. The OPGW cable would transition on the tower legs to an underground fiber optic duct cable and then travel through 4-inch PVC conduit until terminating inside the 70 kV substation control house. Approximately 3,000 feet of new 4-inch conduit would be installed to complete the telecommunications system extension.

The conduit would be installed using open trenching methods of construction, HDD techniques, or a combination of the two. The actual method of installation would be determined during final design.

Open Trench Method

Excavators and other earth-moving equipment would be used to establish trenches for telecommunication lines, which typically range between 36 and 60 inches in depth, and 24 and 36 inches wide. Depths may vary depending on soil stability, the presence of existing substructures, and discussions with adjacent property owners/farmers.

Once a trench is excavated, large-diameter gravel would be applied to the bottom of the trench to create a level bed for the conduit and act as a French drain. PVC conduit would then be placed in the trench and a granular substrate (typically sand) level would then be layered around the conduits for additional protection and stability. The excavated material would be used to backfill the remainder of the trench. During backfill operations, "warning tape" would be placed at least 12 inches above the conduit. Once the trench is backfilled, the area would be compacted using portable compaction devices.

Horizontal Directional Drilling Method

HDD is a highly specialized boring technique that may be used to install conduits beneath the existing vineyards in the vicinity of the telecommunications system extension. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the particular drill.

The first step would be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point in the entry pit. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections would be added as the drill head bores along the specified route. The drill head would then be articulated slightly by the operator to follow a designed path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger cutting heads and reamers would be pushed and pulled through the borehole until it is the appropriate size for the 4-inch conduit. Using this method, the conduit would be installed up to 10 feet under the existing grade.

An entry pit and an exit pit are required for each HDD to contain the drilling mud. In general, the work area required on both the entry and exit sites would be approximately 50 by 50 feet. A non-toxic, water-based lubricant containing water and bentonite clay, referred to as drilling mud, would be used to aid the drilling, coat the walls of the borehole, and maintain the opening. During the bore, drilling mud would be pumped under high pressure through the drill stem to rotate the cutting head and return the soil cuttings to a pit at the surface entry point. No additives considered hazardous according to federal and state laws would be used during the HDD process. The drilling mud would be received in an approximately 6-foot by 6-foot pit.

The drilling mud returned back through the bore-drilled hole would be pumped from the entry and exit pits to a processing/shaker unit where the soil cuttings are removed, allowing the drilling mud to be reused. It is anticipated that the majority of the drilling mud would be recycled by the drilling contractors and used on subsequent projects. Any excess clean drilling mud would be disposed of at an appropriate waste facility.

Once the borehole reaches the correct diameter, the conduit would be pulled through the borehole until it surfaces on the other side. The installed conduit would then be connected to adjacent splice boxes and/or other sections of conduit, and the entry and exit pits would be backfilled.

In order to facilitate the pulling and splicing of the cables, an underground pull/splice box would be installed at the base of an existing or newly installed structure. All pull/splice boxes used for the project would be pre-cast polymer concrete and traffic-rated boxes, measuring approximately 3 by 5 feet, as shown in Figure 2-19. These splice boxes would provide access during operations to the underground cables for maintenance, inspection, and repair.

An excavator or backhoe would be used to excavate a 5-foot-deep cavity near the base of the pull/splice box, measuring approximately 4 by 6 feet. The pull/splice box would be delivered to the project site on a flatbed truck and lowered into place using a small truck-mounted crane. The pull/splice box would then be connected to the underground conduits before being covered with at least 2.5 feet of compacted fill. The area around the pull/splice box would be restored with native soil saved from the initial excavation.

After installation of the conduit, the project proponents would install the communication cable in the conduits. Each cable segment would be pulled into the conduit, spliced at each splice box, and terminated at the transition where the lines convert to overhead. To pull the cable through the conduit, a cable reel would be placed at one end of the section and a pulling rig would be placed at the other end. A large rope would then be pulled into the conduit using a fish line, and attached to the cable-pulling eyes. The cable-pulling eyes would then be attached to the cable and the cable is then pulled through the conduit. A lubricant would be applied to the cable as it enters the conduit to decrease friction during pulling.

70 kV Power Line Construction

Site Preparation and Grading

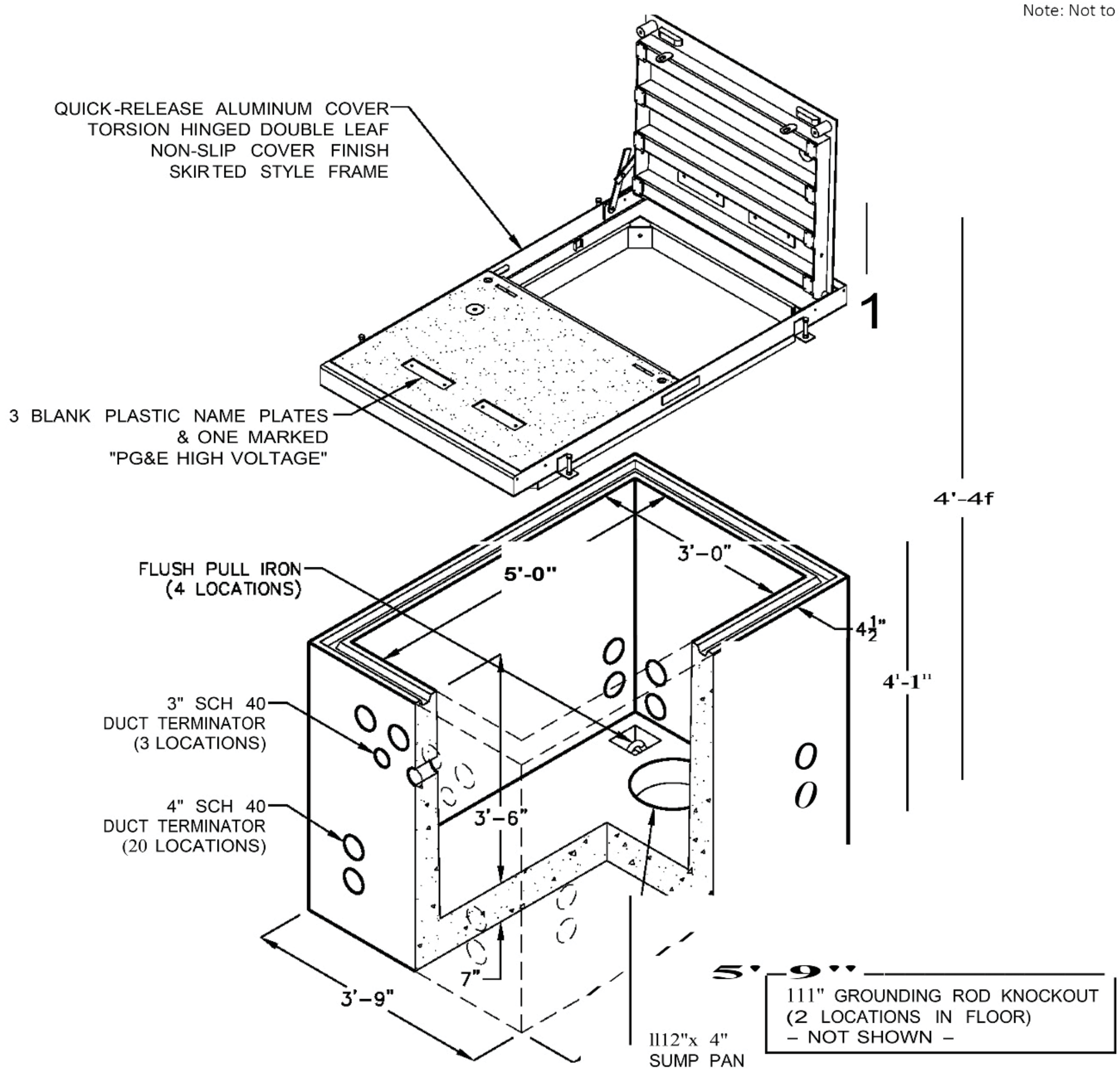
Power line installation would begin with the clearing of the work areas at the location of each structure using a mower and/or backhoe. If necessary, minor grading may be conducted to develop a flat, safe area.

Crossing Structure Installation

Crossing structures would be installed to protect existing roadways and other facilities from sagging conductors during construction. PG&E would auger an approximately 2-foot-diameter, 8-foot-deep hole within each crossing structure work area to facilitate the crossing structure installation. The temporary wood poles would then be placed in the excavations by using a small crane, line truck, or loader, and secured by backfilling and compacting the excavated material into the remaining void. In areas where crossing protection may be short in duration or of low risk, equipment (e.g., line trucks or cranes) may be used in place of crossing structures to shield the crossing from potentially sagging conductors. Crossing structures may also be mounted on line trucks rather than in the ground.

Netting may be used if required for crossing over major roads. A crossing structure would be installed on both sides of the road and netting would be strung between the structures. When crossing SR-46, an additional structure may be needed in the median to help support the netting over the highway. The crossing structure would be installed according to encroachment permit requirements.

Note: Not to scale.



Source: NEET West and PG&E 2017

Figure 2-19.
Typical Pull/Splice Box

Estrella Substation and Paso Robles Area Reinforcement Project

Power Line Structure Installation

The 70 kV TSPs would be installed on concrete pier foundations. Large augers and drill rigs would complete the required excavations and, if necessary, a reinforcing steel rebar cage would then be lowered into the excavation. An approximately 2-foot-tall form would be constructed, and concrete would then be poured to fill the excavation. Each completed foundation would be left to cure for 7 to 14 days. LDSPs would be direct-embedded and would not require a foundation. Table 2-8 shows a summary of the typical power line structure foundation dimensions.

Table 2-8. Power Line Route Structure Foundation Summary

Foundation Type	Quantity	Approximate Diameter (feet)	Approximate Depth (feet)	Approximate Excavation Volume (cy)	Approximate Concrete Volume (cy)
70 kilovolt (kV) Light Duty Steel Pole	110	3.0	12.0–20.0	3.1–5.2	0
70 kV Tubular Steel Pole	47	4.5–5.0	16.5–18.0	7.9–10.9	9.7–13.1

Notes: cy = cubic yards; kV = kilovolt

Source: NEET West and PG&E 2017

Typical equipment used for power pole installation includes truck-mounted augers and drills to excavate the holes. When foundations are needed, concrete trucks supply and pour concrete into installed holes. Cranes are used to lift and place new poles/towers into the newly installed holes or foundations. Cranes and/or bucket trucks lift workers into elevated positions to work on newly installed poles or towers. Crew cab and pickup trucks are used to transport workers and tools to each installation site. Water trucks and portable water tanks are used to minimize fugitive dust during excavation and restoration activities.

New TSPs, along with crossarms, insulators, and hardware, would be delivered to structure sites in two or more sections using a flatbed truck and assembled on site. The crossarms would be attached, the pole would be placed onto the cured concrete and anchor bolt foundation using cranes, and the pole would be secured using the appropriate hardware. If the pole is delivered in multiple segments due to access restrictions or other engineering considerations, the segments would be placed in order and secured using hardware. In areas of difficult terrain, poles may be delivered and assembled on their foundations using a helicopter. Once the pole is installed, additional hardware would be added to the crossarms using a bucket truck. If applicable, the existing conductor would then be attached to the new TSP hardware. Excess soils would be removed to the staging area and then covered, tested, and disposed of, as required.

Similar to TSPs, LDSPs, as well as crossarms, insulators, hardware, and any wood poles, would be delivered to structure sites in flatbed trucks. As noted above, the LDSPs would be embedded directly into the ground and would not require a separate concrete foundation. Installation includes excavation of an up to 3-foot-diameter, 12- to 20-foot-deep hole. Following the excavation process, the poles, insulators, and hardware would be assembled. The poles would then be placed into the excavated hole using line trucks or cranes, the remaining void would be backfilled, and the backfill area would be compacted using portable compacting machinery. Once the pole is embedded and the backfill area is compacted, additional hardware may be added to the pole using a bucket truck. If applicable, the existing distribution conductor would then be attached to the new LDSP hardware.

Existing Structure Removal

Following the transfer of the existing distribution and 70 kV conductors to the new poles along the reconductoring segment or transfer of the existing distribution line to the new 70 kV power line segment poles, crews would remove existing distribution and power line poles and hardware using cranes, aerial man lifts, and/or helicopters. In the new 70 kV power line segment, approximately 40 existing distribution poles would be removed. In the reconductoring segment, approximately 50 power line poles would be replaced and about 12 existing distribution poles would be removed or replaced. Old wood poles would simply be lifted out of the ground using mechanical equipment. Removal of steel poles would occur by excavating an area around the pole to a depth of approximately 2 to 4 feet, or deeper if requested by private property owners. The pole would then be cut off and the remaining base would be buried in place.

All removed poles would be transported off site to the staging area or to the PG&E Service Center for reuse evaluation. Bases of the poles would then be removed by excavating the area around the base. The remaining void would then be backfilled with native soil saved from other excavations in the surrounding area. The site would be returned, as near as practicable, to its original contours (or in accordance with prearranged landowner agreements, where applicable).

Electric Distribution Line Outages

During construction, sections of distribution lines that would cross the project or would be collocated on the new 70 kV power line segment may be temporarily taken out of service. As part of its normal operating procedures, PG&E's Distribution System Operations group would coordinate taking the distribution lines out of service (i.e., taking a clearance). The Distribution System Operations group would assess how to accomplish the clearances, identify where and when clearances may occur, notify customers being served by the distribution line that power outages could occur, manage the clearances, and retain balance in the system by routing power to minimize customer outages.

To accomplish the clearances and maintain balance in the system, the Distribution System Operations group must operate switches at locations along the distribution lines being taken out of service, or along other distribution lines that may be affected by taking a line out of service. Sometimes the switches are thrown at a central location such as a substation, and sometimes switches are operated remotely by System Operations. Other times, the System Operations team must physically drive to a field location and operate the switch manually. Because switches are often located above ground level on distribution poles, bucket trucks are used to enable a worker to reach the switches. Operating a switch takes a matter of minutes and the worker would return to other work once the switching is completed. These distribution-switching activities take place throughout PG&E's service territory and are an integral part of PG&E's ongoing operational activities.

Conductor Installation

The new pole line conductor installation process would begin by temporarily attaching sheaves and rollers to the lower end of the insulators to allow the conductor to be pulled along the line. A rope would then be pulled through the rollers from structure to structure. In instances where terrain is difficult, or the use of a bucket truck or aerial man lift is not feasible, this may be accomplished using a helicopter. Once the rope is in place, it would be attached to a steel cable and pulled back through the sheaves. The conductor would then be attached to the steel cable and also pulled back through the sheaves and into place. Pulling would be completed using conventional tractor-trailer pulling equipment located within one of the substations or within designated pull sites located along the alignments. The pulling through each structure would be done under a controlled tension to keep the conductor elevated and away from obstacles.

The reconductoring installation process would be completed in a similar manner to the new pole line conductor; beginning by temporarily attaching sheaves and rollers to the lower end of the insulators, and putting the old conductor into the roller. The new conductor would then be attached to the old conductor and pulled through the sheaves and into place using similar conventional tractor-trailer pulling equipment and methods, as described above.

After the new conductor has been pulled into place, the sag between the structures would be adjusted to a pre-calculated tension. The conductor would then be attached to the end of each insulator, the sheaves would be removed, and vibration dampers and other hardware accessories would be installed. The existing 12 kV distribution line would be transferred from the existing poles to new poles, where applicable. Old line would be removed from the sites on a line truck with trailer.

Reasonably Foreseeable Distribution Components

Construction of the reasonably foreseeable new distribution line segments would follow a similar process to the 70 kV power line construction, but on a smaller scale. No site preparation or grading would be required for the distribution line construction and reconductoring. Distribution poles would be direct-embedded and, once installed, conductors would be strung using reel trailers pulled behind trucks that park in flat areas. No outages would be required for construction of the new distribution line segments except to tie into the existing circuits. During reconductoring, any outages of the existing distribution lines should be minimal and limited to the close proximity to where the work is being done.

The work within the 70 kV substation to establish the reasonably foreseeable distribution feeders would follow a similar process to that described above for the Proposed Project (see "Below-Ground Construction" and "Above-Ground Construction"). This work would require some ground disturbance associated with construction of equipment foundations, but this would take place within the fence line of the already-constructed Estrella Substation. Equipment foundations would likely include drilled pier and pad type foundations. Trenching would likely be done to install additional conduits to route 21 kV cables and control cables between equipment and the existing control building. Once the 70/21 kV transformer is in place, a concrete curb would likely be poured to create a containment basin, then mineral oil would be delivered to complete the final assembly of the unit. The 70/21 kV transformer would be constructed with secondary containment design for oil containment in the event of a spill.

All equipment would be tested after installation and wiring, and before placing in service. Equipment would be placed in service once individual circuits are ready to be energized and have been tested outside the substation.

Ultimate Substation Buildout

Ultimate buildout of the Estrella Substation would follow a similar process to that described for the Proposed Project. Specifically, new equipment (e.g., transformer, breakers, switches, etc.) within the 230 and 70 kV substations would be installed, tested, and commissioned in a similar manner to that described under “Below-Ground Construction” and “Above-Ground Construction” for the Proposed Project. Some ground disturbance would be required for constructing the equipment foundations and substation wiring, but this would occur within the fence line of the already-constructed Estrella Substation. Construction of the additional 230 kV interconnection is assumed to follow a similar process to that described above for the Proposed Project, under the heading “230 kV Transmission Interconnection Construction”.

2.5.2 Construction Temporary Work Areas and Access

Construction of the Proposed Project would require establishment of temporary work areas, such as staging areas, structure work areas, conductor pull and tension sites, and helicopter landing areas. Construction of temporary access roads also would be required. While locations for temporary work areas and access roads may need to be adjusted as part of final engineering and at the time of construction due to land use changes, avoidance of unanticipated environmental impacts, and other factors, approximate locations of temporary works areas are shown in Figure 2-6 and Figure 2-7. Table 2-9 provides a summary of the approximated temporary work area/disturbance area requirements for construction of the Proposed Project.

Table 2-9. Proposed Project Temporary Disturbance Areas

Temporary Work Area	Anticipated Site Preparation	Total Approximate Area (Acres)[1]
Estrella Substation		
Substation Work and Staging Areas	Vegetation removal and grading, including grape vines (and roots) and grasses.	0.09
70 kV Power Line Alignment		
Staging Areas[2]	Vegetation removal may be required, temporary fencing and gates would be installed, gravel would be installed, and temporary power would be supplied by a distribution tap or generator.	35.3
Pole Work Areas[3]	Vegetation removal and minor grading may be required.	44.4
Crossing Structure Work Areas	Vegetation removal may be required.	1.1
Pull and Tension Sites	Vegetation removal may be required.	10.9

Temporary Work Area	Anticipated Site Preparation	Total Approximate Area (Acres)[1]
Landing Zones	Sites would be leveled free of obstacles and debris.	1.4
Access Roads	Existing unpaved roads may be improved within the existing road. Improvements include minor grading/blading and the placement of dirt and/or gravel. Overland access may require vegetation removal.	20.1
Reasonably Foreseeable Distribution Components[4, 5]		
Distribution Pole Work Areas	Vegetation removal may be required.	1.8
21/12 kV Pad-Mounted Transformer Work Areas	Vegetation removal and minor grading may be required.	1.5

Notes: kV = kilovolt; LDSP = light-duty steel pole; LST = lattice steel tower; TSP = tubular steel pole

1. Acreage totals do not account for overlapping work areas.
2. The Golden Hill Industrial Park Staging Area may be replaced with an approximately 10-acre staging area located on Paso Robles Municipal Airport property.
3. Includes work areas for new and replacement LSTs, TSPs, LDSPs, work areas required for removal of existing poles, and existing and new distribution poles.
4. If construction of the reasonably foreseeable distribution components occurs at the same time as the substation and 70 kV project components (not currently predicted), the staging area in the Golden Hill Industrial Park may be used. Otherwise, staging for construction of the distribution components may occur at the PG&E yard at Templeton Service Center.
5. Work within the Estrella Substation (installation of 70/21 kV transformer and associated equipment) for the reasonably foreseeable distribution components would not result in any new temporary disturbance outside of the substation fence line.
6. Specific temporary impact acreages associated with the additional 230 kV interconnection that could be installed as part of ultimate substation buildout are currently unknown. However, it is assumed that the additional 230 kV interconnection would be composed of LSTs, similar to the Proposed Project, which require a work area of 200 by 200 feet for each LST.

Source: NEET West and PG&E 2017

Staging Areas

Proposed Project construction would require four main staging areas: two staging areas supporting construction of the 70 kV power line alignment (one of which may also support construction of the distribution components), and two staging areas supporting construction of Estrella Substation. Depending on the timing of construction of the distribution components of the Proposed Project, an existing PG&E yard at Templeton Service Center may also be used. The largest staging area would be the Golden Hill Road Staging Area, which would be approximately 34.8 acres. The other staging area supporting the 70 kV power line construction would be located at Navajo Avenue, and would be approximately 0.5 acre. The two Estrella Substation staging areas supporting construction of the substation, totaling approximately 1.9 acres, would be located entirely within the 20-acre site..

Staging areas would be used for receiving and staging of materials and equipment, laydown areas, and employee parking. Staging areas would also serve as the assembly point for project personnel, as well as in some cases, the location for temporary, portable bathroom facilities; equipment storage during off-work hours and weekends; materials storage; office trailer staging; and a meeting area, as needed, for project management. For work activities at the substation site and the main staging sites, a temporary overhead service drop (tap) or an underground service (run) would be extended to the sites to provide power if existing distribution facilities are present. If a distribution service from nearby distribution lines is not feasible for the staging area sites, these areas could receive power from temporary, portable generators.

Preparation of the two main staging areas supporting the 70 kV power line alignment would take approximately 4 weeks to complete and would include the following actions and improvements:

- Site leveling and grading;
- Installation of temporary in-ground fencing (if not already present), including 6- to 8-foot-tall chain-link fence, with up to 2 feet of barbed wire around the perimeter of each staging area with locking gates to control access;
- Placement of gravel or equivalent material within staging area to control dust, sedimentation, equipment track-out, and prevention of stormwater runoff leaving the site during rain events;
- Installation of temporary power from portable generators and/or taps to existing distribution lines in the area; and,
- Installation of necessary construction office trailers, sanitary facilities, and storage buildings.

Structure Work Areas

Structure work areas would be established at each new or replacement tower or pole that would be installed as part of the Proposed Project. These work areas would be used to facilitate the tower/pole assembly, erection, and hardware assembly processes. They would also be used to support the conductor installation and/or removal processes. The final tower/pole locations would be determined when engineering is complete and, where feasible, would be adjusted to account for property owner preferences. Structure work areas may also be adjusted to accommodate the final tower/pole locations.

These work areas would typically be centered on the tower/pole location and would vary in size depending on the type of tower/pole being installed. Typical work areas are about 100 feet by 100 feet for LDSPs, 150 by 150 feet for TSPs, and 200 by 200 feet for LSTs. These work areas may be cleared of vegetation and graded, if necessary, prior to their use. Some sites may also require tree trimming, tree removal, and/or vine removal. Work areas for existing and new distribution poles would typically be about 50 by 50 feet.

Temporary work areas would similarly be required for installation of crossing structures. These work areas would typically measure approximately 40 by 40 feet. Preparation of the site would typically be limited to mowing vegetation, as needed, to minimize the risk of fire. Approximate crossing structure locations for the 70 kV power line are depicted on Figure 2-7.

Pull and Tension Sites

Pull and tension sites, also known as stringing sites, would be used to install conductor on support structures. Pull and tension sites would only be needed for the 70 kV power line (not the distribution line). Conductor installation activities at stringing sites would include pull and tension equipment staging, temporary pole anchor installation, and pulling and tensioning of the conductor. In addition, select pull sites may provide the necessary work area needed for telecom-related activities. Proposed pull site locations are depicted on Figure 2-7.

Pull sites would typically be located within the power line easement and can be spaced between 0.5 and 1 mile apart. In locations where pulling would be required through an angle, or at the start of a new direction of the alignment, the pull site may be located at an angle outside the easement or off the end of an easement corner. Pull sites would typically be 70 feet wide and would range between approximately 120 and 150 feet long. Each stringing site would require about 0.25 acre.

Typical equipment required for pull and tension sites includes pullers, tensioners, cranes, crawlers, water trucks, crew cab trucks, and pickup trucks. Construction crews would access pull and tension sites using rubber tire mounted trucks. Access may be required throughout the easement, away from structure work areas and pull sites, to support pull and tension activities.

All pull sites located outside of paved areas may require vegetation trimming/removal to minimize the risk of fire and, depending on the local terrain, some minor grading may be required to ensure a flat and safe work environment. Depending on the time of year and field conditions at the time of construction, gravel may be applied to help stabilize the ground for equipment use.

Helicopter Landing Zones

Helicopter landing zones may be used during construction for the staging, storage, refueling, and operation of helicopters during construction. While the number and exact locations of helicopter landing zones may change depending on site conditions at the time of construction, six sites have been identified for use during the Proposed Project:

- Landing Zone 1: Paso Robles Municipal Airport;
- Landing Zone 2: Estrella Substation site, south of existing temporary worker residence adjacent to Union Road;
- Landing Zone 3: new 70 kV power line segment site north of Golden Hill Road (may be collocated with a stringing site);

- Landing Zone 4: new 70 kV power line segment site south of Buena Vista Drive;
- Landing Zone 5: reconductoring segment site west of Palo Alto Court (may be used as a staging area instead and may be collocated with a stringing site); and
- Landing Zone 6: reconductoring segment site west of Navajo Avenue (may be collocated with a stringing site).

Approximate locations of these potential landing zones are depicted on Figure 2-7. The two non-airport landing zones would measure about 100 by 100 feet, with a 30- by 30-foot touchdown pad area. Because the identified landing zones are comprised of an airport and two disturbed areas within the Proposed Project area, these landing zones would not require extensive preparation.

Construction Access

Construction crews, materials, and equipment would primarily access the Proposed Project site by using U.S. Route 101 and SR-46, and by traveling along Union Road, Golden Hill Road, or North River Road. In addition to using a system of existing paved and unpaved roads, the Applicants may also grade or mow segments of new temporary unpaved roads, or travel overland to provide access to Estrella Substation and/or pole locations along the new 70 kV power line and reconductoring and pole replacement segments. The new and reconductored distribution line segments would be accessed via an existing dirt road north of the proposed substation site and along other existing paved and unpaved roads (no new access would be needed for construction of the distribution components).

Access to the work sites for workers and equipment would occur using rubber tire mounted vehicles. Some 70 kV poles may also be accessed on foot if sensitive resources preclude the use of heavy equipment. For roads that require improvements for access and equipment delivery, grading could be conducted, if necessary, followed by the addition of temporary rock bedding. Equipment required for this work may include a grader, dump truck for gravel delivery, and a loader or tractor to spread rock. Work along the new 70 kV power line segment would occur from the road shoulder, where feasible.

Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,700 feet long and about 20 feet wide. Construction access for the proposed 230 kV interconnection would occur using the same access route being used for substation construction. It is anticipated that access from the substation to the existing 230 kV transmission line would occur using PG&E's existing utility easement, immediately adjacent to the Estrella Substation property boundary.

Helicopter Access and Use

Light-duty and medium-duty helicopters with a maximum payload capacity of approximately 4,000 and 10,000 pounds may be used to assist with the installation of new 70 kV poles and/or conductor installation and removal. Helicopters would primarily be used for such activities in areas along the power line alignment where limited access or local terrain conditions prohibit the work from being conducted by ground-based crews and equipment. Based on preliminary assessment of the proposed alignment, and for quantitative discussion purposes in the EIR, it is projected that helicopter activities may occur approximately 132 days during the 18-month construction period for the substation and 70 kV power line. It is anticipated that only one helicopter would be used at any one time.

Typical helicopter payloads would include, but not be limited to, poles, sock lines, power line hardware, crewmembers, and equipment. Refueling activities would occur only at the Paso Robles Municipal Airport. Flight paths for helicopters would be from the Paso Robles Municipal Airport and would generally extend directly to and along the power line easement. Helicopter operation would be planned to avoid sensitive receptors. Hours of operations for helicopters would generally be the same as those for construction, 7:00 a.m. to 5:30 p.m., Monday through Friday, and would include Saturdays when needed. In some cases, residents may need to relocate from their home temporarily during helicopter activities; this is discussed further in Section 4.14, “Population and Housing.”

2.5.3 Construction Workforce, Equipment, and Schedule

Different phases of the construction process would require varying numbers of construction personnel. On a typical workday, about 12 to 15 construction crewmembers would be working at Estrella Substation. Similarly, about 10 to 15 construction crewmembers would be working on the installation and/or removal of power line structures and on reconductoring activities. During pulling activities, a larger work team would be required to complete the various work stages. Typically, this activity would require about 30 workers, for short periods of time. During construction of the power line segment, up to four crews of approximately six workers each would be working at any one time. Project equipment, personnel requirements, and task duration by construction activity are presented in Table 2-10.

Construction would typically occur 6 days per week (Monday through Saturday) throughout the duration of construction, although water trucks may be operated on Sundays for fugitive dust control in compliance with the Construction Activity Management Plan. Daily work hours would generally be 10 hours per day with construction typically occurring between 7:00 a.m. and 5:30 p.m. Occasionally, work may occur during the evening hours for activities such as monitoring the substation foundation curing process, and testing and commissioning the new substation components. However, such activities would not normally generate loud nose. Nighttime work may also be required (e.g., when electrical clearances are available or for safe completion of a construction procedure).

2.5.4 Construction Power, Water Use, and Domestic Supply Services

Electric power required for construction of the Estrella Substation would be supplied by tapping into the existing power lines adjacent to the substation site. Small generators may also be used to supply temporary power during construction at the substation site.

The proposed substation site is not located within a water district or sewer service area. Water required for construction may come from several sources, including a private well located adjacent to the western edge of the substation site, a municipal water source, delivery by water trucks, or Lake Nacimiento, which is located northwest of Paso Robles. Another potential water source for construction would be recycled water from the City’s newly upgraded wastewater treatment plant.

Table 2-10. Preliminary Construction Workforce and Equipment Use, and Approximate Task Durations

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Estrella Substation					
230 kV Substation					
Access Roads	Workers	10	Skip Loader	2	Month 1
	1-Ton Crew Cab Flat Bed, 4 x 4	1	Water Truck	1	
	Dump Truck	2	–	–	
Site Work Area Preparation Mobilization	Workers	10	Roller	2	Month 1-2
	Bulldozer	1	Grader	1	
	Articulating Dump Truck	4	Tandem Axle Dump Truck	2	
	Scraper	1	Water Truck	2	
	Rubber Tire Loader	1	Pickup Truck	1	
Fence and Gate Installation	Workers	5	3-Ton Flat Bed Truck	1	Month 2
	½-Ton Pickup Truck, 4 x 4	1	Bobcat	1	
	1-Ton Crew Cab Flatbed, 4 x 4	1	Water Truck	1	
Foundation Construction	Workers	2–12	Water Truck	1	Month 2-3
	Hole Digger	1	Pickup Truck	1	
	Backhoe/Dozer/Excavator	1	Crane or Boom Truck	1	
Ground Grid Conduit Installation	Workers	5	Water Truck	1	Month 3-4
	Trencher	1	–	–	
Steel Bus Erection	Workers	5	Aerial Manlift	1	Month 4
	Boom Truck	1	Water Truck	1	

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Install Yard Rock	Workers	8	Dump Truck	1	Month 4-5
	Bobcat	1	Water Truck	1	
Transformer and Equipment Delivery and Installation	Workers	5–8	Crane or Boom Truck	1	Month 4-5
	2-Ton Truck	1	Tractor/Trailer	1	
	Pickup Truck	1	Portable Gas/Diesel Generator	1	
	Bucket Truck	2	–	–	
Control Enclosure Delivery and Install	Workers	6	Crane	1	Month 5
Remaining Equipment Delivery and Install	Workers	2–5	Boom Truck	1	Month 5-6
Cable Installation and Termination	Workers	5	Aerial Manlift	1	Month 5-6
Testing and Commissioning	Workers	2–5	Pickup Truck with Trailer	2	Month 6-7
Cleanup and Restoration	Workers	3	Front-End Loader	1	Month 7
	Blader	1	Water Truck	1	
70 kV Substation					
Site Work Area Preparation Mobilization	Workers	6	Grader	1	Month 1-2
	Backhoe/Dozer/Excavator	1	1-Ton Pickup Truck, 4 x 4	2	
Foundation Construction	Workers	6	Trencher	1	Month 2-3
	Hole Digger	1	1-Ton Pickup Truck, 4 x 4	1.75	
	Backhoe/Dozer/Excavator	1	–	–	
Ground Grid/Conduit Installation	Workers	4	1-Ton Pickup Truck, 4 x 4	1	Month 2-3
	Backhoe/Dozer/Excavator	1	Trencher	1	

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Steel Bus Erection	Workers	8	Aerial Manlift	2	Month 3-4
	Boom Truck	2	1-Ton Pickup Truck, 4 x 4	2	
Equipment Delivery and Installation	Workers	6	Aerial Manlift	2	Month 4
	Boom Truck	1	1-Ton Pickup Truck, 4 x 4	2	
Control Enclosure Delivery and Install	Workers	5	1-Ton Pickup Truck, 4 x 4	2	Month 4
Cable Installation and Termination	Workers	5	1-Ton Pickup Truck, 4 x 4	2	Month 4-5
Install Yard Rock	Workers	6	Dump Truck	1	Month 5
	Bobcat	1	Backhoe/Dozer/Excavator	1	
Cleanup and Restoration	Workers	4	1-Ton Pickup Truck, 4 x 4	1	Month 5
Testing and Commissioning	Workers	4	1-Ton Pickup Truck, 4 x 4	1	Month 6
230 kV Transmission Interconnection					
Site Work Area Preparation Mobilization	Workers	8	Grader	1	Month 1-2
	½-Ton Pickup Truck, 4 x 4	1	1-Ton Crew Cab Flat Bed, 4 x 4	1	
	Backhoe/Dozer/Excavator	1	Water Truck	1	
Foundation Tower Installation/Removal of One Tower	Workers	10	Pickup Truck	2	Month 2-3
	Crane	3	Dump Truck	1	
	Bucket Truck	2	2-Ton Truck	2	
	Concrete Truck	2	Forklift	3	
	Drill	1	Line Truck	2	
	Backhoe	1	Water Truck	1	

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Conductor	Workers	15	Line Truck	2	Month 4
	Bucket Truck	2	Pickup Truck/Crew Truck	4	
	Crane	3	–	–	
Cleanup and Restoration	Workers	5	Pickup Truck	1	Month 5
	Grader	1	Water Truck	1	
	Backhoe	1	–	–	
70 kV Power Line					
Reconductoring Segment					
Site Work Area Preparation Mobilization	Workers	6	Grader	1	Month 1
	1-Ton Crew Cab Flat Bed, 4 x 4	1	Water Truck	1	
	Pickup Truck	1	Backhoe	1	
Pole Installation/Transfer/ Distribution/Removal	Workers	20	Water Truck	1	Month 2-7
	Crane/Basket	3	Helicopter	1	
	Heavy Crane	1	Bucket Truck	2	
	Drill	1	Line Truck	2	
	1-Ton Crew Cab Flat Bed, 4 x 4	3	2-Ton Truck	3	
	Pickup Truck	3	–	–	

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Conductor Installation	Workers	15	Wire Puller	1	Month 3-7
	Line Truck	2	Tensioner	1	
	Pickup Truck	2	Wire Truck/Trailer	1	
	2-Ton Truck	2	Forklift	1	
	Crane/Basket	2	Medium Duty Helicopter	1	
	Bucket Truck	2	Water Truck	1	
Cleanup and Restoration	Workers	6	Backhoe	1	Month 8
	Pickup Truck	1	Water Truck	1	
	Grader	1			
New 70 kV Power Line Segment					
Site Work Area Preparation Mobilization	Workers	6	Grader	2	Month 8
	1-Ton Crew Cab Flat Bed, 4 x 4	1	Backhoe	1	
	Pickup Truck	1	Water Truck	2	
Pole Tower Installation	Workers	21	2-Ton Truck	3	Month 9-16
	Concrete Truck	3	Line Truck	3	
	Backhoe	2	Utility Truck	1	
	Tractor Trailer	1	Water Truck	2	
	Pickup Truck	3	Crane	1	
	Bucket Truck	3	–	–	

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Conductor Installation	Workers	18	Wire Truck/Trailer	1	Month 17-18
	Line Truck	3	Crane with Basket	3	
	Pickup Truck	3	Bucket Truck	2	
	2-Ton Truck	3	Light Duty Helicopter	1	
	Wire Puller	1	Fork Lift	1	
	Tensioner	1	Water Truck	1	
Cleanup and Restoration	Workers	6	Backhoe	1	Month 18
	Pickup Truck	1	Water Truck	1	
	Grader	1	–	–	
Reasonably Foreseeable Distribution Facilities[1, 2]					**Total of 19 Weeks**
Mobilization	Workers	6	2-Ton Truck	1	2 weeks
	1-Ton Crew Cab Flat Bed, 4 x 4	3	Backhoe	1	
	Water Truck	1	–	–	
Foundation Construction	Workers	2–12	2-Ton Truck	1–3	6 weeks
	1-Ton Crew Cab Flat Bed, 4 x 4	1–3	Backhoe	1	
Ground Grid/Conduit Installation	Workers	5–10	2-Ton Truck	1	4 weeks
	1-Ton Crew Cab Flat Bed, 4 x 4	1-2	Crane	1	
Steel/Bus Erection	Workers	5	Pickup Truck	1	4 weeks
	Concrete Truck	2	2-Ton Truck	1	
Distribution Bank and Breaker Installation	Workers	5	Semi-trailer Truck	1	3 weeks
	1-Ton Crew Cab Flat Bed, 4 x 4	2	Crane	1	

Proposed Project Task	Workers, Equipment	Quantity per Day	Equipment	Quantity per Day	Estimated Work Dates
Distribution Feeder, Conduit, Boxes, Underground Cable, Riser Poles, Line Work	Workers	8	Line Truck	2	6 weeks
	1-Ton Crew Cab Flat Bed, 4 x 4	1	Backhoe	1	
	2-Ton Truck	1	Crew Truck	2	
Cable Installation and Termination and Indoor Control Building Work	Workers	3–5	I-Ton Pickup Truck, 4 x 4	1	4 weeks
	1-Ton Crew Cab Flat Bed, 4 x 4	2	2-Ton Truck	1	
	Backhoe	1	–	–	
Testing	Workers	3	I-Ton Pickup Truck, 4 x 4	3–4	4 weeks
Cleanup and Restoration	Workers	3	1-Ton Crew Cab Flat Bed, 4 x 4	1	2 weeks
	1-Ton Pickup Truck, 4 x 4	3	Water Truck	1	
	Backhoe (or similar)	1	–	–	

Notes: kV = kilovolt

1. Assumes build-out of the reasonably foreseeable 70/21 kV facilities within the 70 kV substation and construction/reconductoring of the new Estrella distribution feeders.
2. Specific construction schedule information and personnel and equipment requirements associated with ultimate substation buildout are not known at this time.

Source: NEET West and PG&E 2017

Construction of the substation and power line would require approximately 10.3 million gallons of water total during the construction period (about 32 acre-feet), with 8.3 million gallons required for the substation and 2 million gallons required for the power line. About 25 percent of the total water used would be for construction activities (e.g., concrete mixing), with the remaining 75 percent used for dust control during the construction period. Daily water use during the construction period would vary based on the construction phase, but it is estimated that the average water use per day would be about 68,600 gallons. Portable restroom facilities would be provided at the site for worker use during the construction period.

2.5.5 Cleanup and Restoration

Surplus material, equipment, and construction debris would be removed at the completion of construction activities. All man-made construction debris would be removed and recycled or disposed of at permitted landfill sites. Cleared trees would be chipped and stored for later use during site restoration, left on the property owner's site, or disposed of off-site, depending on landowner and agency agreements.

All areas temporarily disturbed by the Project would be restored to the extent practicable, following construction. These disturbed areas include staging areas and access roads, work areas around each tower/pole, and the areas used for conductor stringing and staging. Post-construction restoration activities would include returning areas to their original contours and drainage patterns in accordance with stormwater pollution prevention plan best management practices and as prearranged through landowner agreements, where applicable.

All temporarily disturbed areas within and around Estrella Substation would be restored to the extent necessary for safe operation. All construction waste would be disposed of in accordance with applicable federal, state, and local laws regarding solid and hazardous waste disposal through transport to an authorized landfill.

2.6 Proposed Project Operations and Maintenance

The Applicants would operate all new and existing components of the Proposed Project according to their respective standard operating protocols and procedures. The Applicants anticipate using similar substation monitoring, control, and data acquisition architecture (e.g., SCADA) as used for their other power delivery assets, including the use of standard monitoring, control, protection equipment, circuit breakers, and other line relay protection equipment. The substation would be dual scanned from PG&E and HWT data centers, and redundant Inter-Control Center Communications Protocol servers would exchange SCADA data with CAISO with real-time situational awareness. The SCADA support personnel would perform daily checks of the applications and hardware to ensure they are in proper working order. The SCADA system would also be maintained to ensure compliance with NERC Critical Infrastructure Protection Standard requirements.

The proposed 230 kV substation would be remotely operated from a control center operated by a HWT affiliate, while the proposed 70 kV substation would be remotely operated by PG&E from its Grid Control Center. HWT and PG&E operations and maintenance personnel would generally perform monthly inspections of their respective substation facilities. More invasive checks, calibrations, and maintenance on the substation components would be performed periodically.

HWT has a CPUC-approved 2020 Wildfire Mitigation Plan (WMP) that provides a strategic framework for systematic reduction of HWT's potential wildfire risk and enhanced transmission system reliability. The 230 kV Estrella Substation would be incorporated into a future annual HWT submission of its WMP.

The proposed 70 kV power line components would operate unattended. An approximately 10-foot radius (approximately 314 square feet) may be maintained around new 70 kV power poles depending on location and equipment installed as required by applicable law, including CPUC G.O. 95. Project proponents may, therefore, keep these areas clear of natural vegetation. Vegetation growing too close to conductors within the easement would be trimmed or removed for safety. Herbicides may be used for some vegetation maintenance activities.

Inspections of the 70 kV power line segments would be performed annually by PG&E routine patrols, either from the ground or by helicopter. A detailed inspection of the power lines is typically performed by staff every 2 years (wood structures), with an air patrol inspection performed in between, as outlined in PG&E's 2016 Electric Transmission Preventative Maintenance Manual. For lines constructed on steel structures, detailed inspections would occur every 5 years. The inspection process involves routine patrols from existing local staff either on the ground or by helicopter tasked with patrolling the power lines. Normal inspection and patrols would typically be completed in a pickup truck and/or an off-road utility vehicle. While not expected, if walking is required, the inspector would complete portions of the inspection on foot. Climbing inspections would be performed on an as-needed basis, based on specific identified conditions and in compliance with CAISO guidelines and regulations.

With build-out of the distribution components, PG&E would continue to operate the 70 kV substation remotely from its Grid Control Center. The distribution feeders would continue to be operated and controlled from PG&E's Distribution Operations Office located in Concord, California. Existing operation and maintenance crews would monitor the distribution facilities as part of their current operation and maintenance activities. The distribution feeders would operate unattended.

2.7 Anticipated Permits and Approvals

The Proposed Project may be subject to a number of other regulatory permits and approvals, depending in part on the environmental analysis contained in this EIR, further surveys of environmental resources on or near the Proposed Project site, and the discretion of the regulatory agencies. Anticipated required permits and regulatory approvals for the Proposed Project are listed in Table 2-11 below.

Table 2-11. Anticipated Permits and Approvals and Applicable Regulatory Requirements

Regulatory Agency	Jurisdiction/Purpose	Permit/Authorization Type
Federal		
Federal Aviation Administration	Determination of No Hazard to Air Navigation	Aeronautical Study (7460-2 form)
State		
California Public Utilities Commission	Construction, modification, or alteration of power line facilities	Permit to Construct (G.O. 131-D)
California Department of Transportation	For use of California State highways for other than normal transportation purposes, including construction activities completed within the easement.	Standard Encroachment Permit
California Department of Transportation	Some equipment, such as the 230/70kv transformer and the control house may require a permit for transporting oversize/overweight equipment.	Transportation Permit
State Water Resources Control Board	Construction activities disturbing 1 acre or more of soil must submit a Notice of Intent to comply with the terms of the general permit.	National Pollution Discharge Elimination System Storm Water Permit
Local or Regional		
San Luis Obispo Air Pollution Control District	For conducting activities which may result in air pollution.	Air Pollution Control District Permit
City of Paso Robles	Construction in and adjacent to City property and right-of-way.	Encroachment Permit
County of San Luis Obispo	Construction in and adjacent to County property and right-of-way.	Encroachment Permit

Source: NEET West and PG&E 2017

2.8 Applicant Proposed Measures

The Applicants propose to implement measures to avoid and/or reduce potential impacts of the Proposed Project. Applicant-proposed measures (APMs) that would be implemented for the

Proposed Project are listed in Table 2-12.

Table 2-12. Applicant-Proposed Measures

APM No.	Title/Description	Applicability		
		Estrella Substation	**Power Line**	**Distribution Components[10]**
General				
GEN-1	**Prepare and Implement a Worker Environmental Awareness Program.** The project proponents will prepare and implement a project-specific worker environmental awareness program (WEAP) for construction personnel. All on-site construction personnel will attend the training before they begin work on the project. WEAP training materials will include avoidance and minimization measures being implemented to protect biological resources, surface and groundwater resources, cultural resources, and paleontological resources; minimize air quality impacts; and manage hazardous materials. WEAP training will also discuss terms and conditions of any permits or agreements, information on federal and state environmental laws, and consequences and penalties for violation or noncompliance with these laws and regulations and project permits. Workers will be informed about the presence, identification, life history, and habitat requirements of the special-status species that have a potential to occur in the project area. More specifically, training will include: ▪ Recognizing/avoiding exclusion areas and sensitive habitat and specific avoidance or minimization measures for sensitive species and habitats; ▪ How to identify cultural resources; avoidance requirements and procedures to be followed if unanticipated cultural resources are discovered during construction; disciplinary actions that may occur when historic preservation laws and project proponent policies are violated;	✓	✓	✓

[10] If the distribution components are constructed at the same time as the rest of the Proposed Project.

APM No.	Title/Description	Applicability: Estrella Substation	Applicability: Power Line	Applicability: Distribution Components[10]
	▪ How to identify paleontological resources, including types of fossils that could occur in the project area and types of lithologies in which the fossils could be preserved; avoidance requirements and procedures to be followed if a fossil is discovered during construction; penalties for disturbing paleontological resources; ▪ Hazardous substance spill prevention and containment measures; and ▪ Review of mitigation and avoidance measures. A brochure prepared by the project proponents conveying this information will be prepared for distribution to all construction staff and other individuals who enter the construction footprint. All WEAP trainees will receive a project sticker for their hard hat to show they have been trained, and will sign a training sign-in sheet verifying participation and that they understand the training and will comply with the information presented. Focused trainings may be directed at an individual's job-specific task, provided that the worker conducts activities within a limited scope (pilots, delivery drivers, site visitors, etc.).			
Aesthetics				
AES-1	**<u>Substation Hardscaping.</u>** Decorative rock and/or other hardscape landscaping will be installed between Estrella Substation and Union Road.	✓	N/A	N/A
AES-2	**<u>Light and Glare Reduction.</u>** Construction lighting and permanent substation exterior lighting will be selectively placed and shielded to minimize nighttime glare.	✓	✓	✓

<table>
<tr><th rowspan="2">APM No.</th><th rowspan="2">Title/Description</th><th colspan="3">Applicability</th></tr>
<tr><th>Estrella Substation</th><th>Power Line</th><th>Distribution Components[10]</th></tr>
<tr><td colspan="5">Agriculture and Forest Resources</td></tr>
<tr><td>AG-1</td><td><u>Coordinate with Landowners, Farmers, and Ranchers Regarding Construction Activities.</u>
The project proponents will work with farmers, ranchers, and landowners to schedule project-related construction activities in a manner that avoids conflicts with harvest and planting periods, to the extent feasible, and in a manner that minimizes disruptions to agricultural operations. Access across active fields shall be negotiated with the landowner in advance of any construction activities.
Coordination will include advance notice of construction activities and reporting of complaints, as follows:
▪ Prior to construction, the project proponents will give at least 30 days' advance notice of the start of construction-related activities. Notification shall be provided by mailing notices to all properties within 300 feet of the substation or power line route. The notice will describe where and when construction activity is planned and shall provide contact information for a point of contact for complaints related to construction activities.
▪ Prior to commencing ground-disturbing activities, the project proponents will submit a copy of the template used for the notification letter and a list of the landowners notified to the California Public Utilities Commission (CPUC).</td><td>✓</td><td>✓</td><td>✓</td></tr>
</table>

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
Air Quality				
AIR-1	**<u>Minimize Reactive Organic Gases (ROG), Oxides of Nitrogen (NOx), and Particulate Matter (PM) Combustion.</u>** ▪ Maintain all construction equipment in proper tune according to manufacturer's specifications; ▪ Fuel all off-road and portable diesel-powered equipment with California Air Resources Board (CARB)-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road); ▪ Use on-road heavy-duty trucks that meet CARB's 2010 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the state On-Road Regulation; ▪ Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g., captive or NOx exempt area fleets) may be eligible by proving alternative compliance; ▪ All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated staging areas and substation site to remind drivers and operators of the 5-minute idling limit; ▪ Electrify equipment when feasible; ▪ Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and ▪ Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
AIR-2	**Air Quality Best Available Control Technology for Construction Equipment.** Best available control technology measures for the project include: ▪ Reducing emissions by expanding use of Tier 3 off-road- and 2010 on-road-compliant engines; and ▪ Installing California Verified Diesel Emission Control Strategies.	✓	✓	✓
AIR-3	**Minimize Fugitive Dust.** ▪ Reduce the amount of the disturbed area where possible. ▪ Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. ▪ All dirt stock pile areas should be sprayed daily as needed. ▪ All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by San Luis Obispo Air Pollution Control District. ▪ Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface. ▪ All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114. ▪ Sweep streets at the end of each day if visible soil material extending over 50 feet is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where possible.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
Biological Resources				
BIO-1	**<u>Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas.</u>** Biologists will conduct pre-construction survey(s) for special-status species and sensitive resource areas immediately prior to construction activities within suitable aquatic and upland habitat for special-status species. If a special-status species is encountered on the project site, the project proponents will be contacted immediately to determine the appropriate course of action. For federally or state listed species, the project proponents will contact the appropriate resource agency (U.S. Fish and Wildlife Service [USFWS] and/or California Department of Fish and Wildlife [CDFW]), as required.	✓	✓	✓
BIO-2	**<u>Avoid Impacts on Nesting Birds.</u>** If work is scheduled during the nesting season (February 1 through August 31), nest detection surveys will correspond with a standard buffer for individual species in accordance with the species-specific buffers set forth in the project proponent's *Nesting Birds: Specific Buffers for PG&E Activities*, and will occur within 15 days prior to the start of work activities at designated construction areas, staging areas, and landing zones to determine nesting status by a qualified biologist. Nest surveys will be accomplished by ground surveys and/or by helicopter and will support phased construction, with surveys scheduled to be repeated if construction lapses in a work area for 15 days between March and July. Access for ground surveys will be subject to property access permission. Helicopter flight restrictions for nest detection surveys may be in effect for densely populated residential areas, and will include observance of appropriate established buffers and avoidance of hovering in the vicinity of active nest sites.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	If active nests containing eggs or young are found, the biologist will establish a species-specific nest buffer, as defined in the project proponent's *Nesting Birds: Specific Buffers for PG&E Activities*. Where feasible, standard buffers will apply, although the biologist may increase or decrease the standard buffers in accordance with the factors set forth in *Nesting Birds: Specific Buffers for PG&E Activities*. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing nest buffers. The established buffers will remain in effect until the young have fledged or the nest is no longer active as confirmed by the biologist. Active nests will be periodically monitored until the biologist has determined that the young have fledged or once construction ends. Per the discretion of the biologist, vegetation removal by hand may be allowed within nest buffers or in areas of potential nesting activity. Inactive nests may be removed in accordance with PG&E's approved avian permits. The biologist will have authority to order cessation of nearby project activities if nesting pairs exhibit signs of disturbance. All references in this applicant-proposed measure (APM) to qualified wildlife biologists refer to qualified biologists with a bachelor's degree or above in a biological science field and demonstrated field expertise in ornithology, in particular, nesting behavior.			
BIO-3	**<u>Biological Monitoring.</u>** Biologists will monitor initial ground-disturbing activities in and adjacent to sensitive habitat areas to ensure compliance with best management practices and APMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the biologists. The monitor will have authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	If a listed wildlife species is encountered during construction, project activities will cease in the area where the animal is found until the qualified biologist determines that the animal has moved out of harm's way or, with prior authorization from USFWS and/or CDFW if required, relocates the animal out of harm's way and/or takes other appropriate steps to protect the animal. Work may resume once the qualified biologist has determined that construction activities will not harm any listed wildlife species. The project proponents will be responsible for any necessary reporting to USFWS and/or CDFW.			
BIO-4	**Special-Status Species Protection.** All trenches/excavations in excess of 2 feet deep will have a sloped escape ramp or be covered at the end of the day. All trenches and excavations will be inspected for wildlife at the beginning of the workday and prior to backfilling. In addition, open-ended project-related pipes 4 inches or greater in diameter will be capped if left overnight or inspected for wildlife prior to being moved. If a special-status species is discovered in a trench, excavation, or pipe, the animal will be left undisturbed, and the pipe will not be moved until the special-status species has left the area on its own accord. In the event that any special-status species is trapped and unable to leave on its own accord, a permitted biologist, defined as a qualified biologist that holds the appropriate federal and/or state permits, will recover and relocate the special-status species. In addition, all food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers or kept in closed vehicles. Trash containers will be removed from the project area on a regular basis.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
BIO-5	**<u>Dead or Injured Special-Status Wildlife.</u>** If any dead or injured special-status wildlife or birds protected by the Migratory Bird Treaty Act are discovered at the project site during construction, work will stop in the immediate vicinity. The project proponents will notify the on-call biologist and the appropriate resource agency (USFWS and/or CDFW) before construction is allowed to resume.	✓	✓	✓
Cultural Resources				
CUL-1	**<u>Retain a Qualified Cultural Principal Investigator.</u>** A cultural resources principal investigator, defined as an archaeologist who meets the Secretary of the Interior's Standards for professional archaeology, will be retained to ensure that all APMs related to archaeological and historical resources are properly implemented. The principal investigator may either be on staff with project proponents or an outside consultant, as appropriate for the project's needs, and will serve in a strictly supervisory capacity, overseeing crews charged with the application of the APMs in the field.	✓	✓	✓
CUL-2	**<u>Avoidance.</u>** The project is designed to avoid impacts to potentially CRHR-eligible resources identified within the study area. Potentially eligible (i.e., not evaluated) resources in the study area include archaeological sites 36052-S-001, 36052-S-002, and 36052-S-003. In addition, the Johnson House was evaluated for the project and is considered CRHR-eligible (pending CPUC concurrence). To avoid indirect and direct impacts to 36052-S-001, 36052-S-002, or 36052-S-003, a 50-foot buffer will be established around the boundary of each respective resource and designated as environmentally sensitive areas. If work within the 50-foot buffer cannot be avoided, then	N/A	✓	N/A

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		Estrella Substation	Power Line	Distribution Components[10]
	monitoring will be required. Methods of environmentally sensitive area delineation may include, as applicable, flagging, rope, tape, or fencing. The environmentally sensitive areas should be clearly marked on all pertinent construction plans. Construction activities will avoid impacts to the Johnson House entirely.			
CUL-3	**Inadvertent Discoveries.** In the event that unanticipated cultural materials are encountered during any phase of construction, all construction work within 50 feet of the discovery will cease and the principal investigator will be consulted to assess the find. Construction activities may continue in other areas. Avoidance of resources is the preferred option. However, if avoidance of a resource is not feasible, project proponents will assess the find for significance, as defined by PRC Section 21083.2, through implementation of Phase II investigations. If resources are found to be significant, a detailed archaeological treatment plan, including Phase III data recovery, will be developed and implemented by a qualified archaeologist.	✓	✓	✓
CUL-4	**Discovery of Human Remains.** If human remains are discovered, all work within 50 feet of the discovery will cease and the environmental inspector or construction supervisor will notify the County coroner immediately. State of California Health and Safety Code Section 7050.5 stipulates that no further disturbance will occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The lead cultural resource managers on staff with the project proponents (depending on the location of the remains) and the CPUC will also be notified of the find immediately. If the human remains are determined to be prehistoric, the County Coroner will notify the Native American Heritage Commission (NAHC), which would determine and notify a	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	most likely descendent. The most likely descendent will complete inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.			
CUL-5	**Tribal Construction Monitoring.** If it becomes necessary to work within 50 feet of Dry Creek, Huer Huero Creek, and the Salinas River, or known prehistoric archaeological sites, a tribal monitor will be selected by the CPUC and retained to conduct full-time monitoring of initial ground-disturbing activities (i.e., initial excavation and grading) in areas with high potential to discover prehistoric archaeological resources.	N/A	✓	N/A
CUL-6	**Archaeological Construction Monitoring.** If it becomes necessary to work within 50 feet of Dry Creek, Huer Huero Creek, and the Salinas River, or known prehistoric or historic sites, an archaeological monitor, approved by the principal investigator, will be retained to conduct monitoring of initial ground-disturbing activities (i.e., initial excavation and grading) in areas with high potential to discover prehistoric or historic archaeological resources.	N/A	✓	N/A
Geology and Soils (including Paleontological Resources)				
GEO-1	**Soft or Loose Soils.** Soft or loose soils, such as sands and loamy sands, are likely to be encountered during construction. Where soft or loose soils are encountered during design studies or construction, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils. Such measures may include the following:	✓	✓	✓

APM No.	Title/Description	Applicability Estrella Substation	Applicability Power Line	Applicability Distribution Components[10]
	▪ Locating construction facilities and operation away from areas of soft and loose soil. ▪ Over-excavating soft or loose soils and replacing them with non-expansive engineered fill. ▪ Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction. ▪ Treating soft or loose soils in place with binding or cementing agents. ▪ Construction activities in areas where soft or loose soils are encountered may be scheduled for the dry season, as necessary, to allow safe and reliable equipment access.			
PALEO-1	**Retain a Qualified Paleontological Principal Investigator.** A paleontological resources principal investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all APMs related to paleontological resources are properly implemented.	✓	✓	✓
PALEO-2	**Inadvertent Discoveries.** If paleontological resources are discovered during construction activities, the following procedures will be followed: ▪ Stop work immediately within 50 feet. ▪ Contact the designated lead on staff with the project proponents (depending on the location of the resource) immediately. The designated lead will notify the CPUC. ▪ Protect the site from further impacts, including looting, erosion, or other human or natural damage. ▪ The principal investigator will evaluate the discovery and make a recommendation to the CPUC as to whether or not it is a unique paleontological resource. The CPUC will have 24 hours to respond to	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	this recommendation, and the lack of response within 48 hours will indicate concurrence with the recommendation. ▪ If the resource is not a unique paleontological resource, then it will be documented appropriately, and no further measures will be required. ▪ If the resource is a unique paleontological resource, the principal investigator, in consultation with the project proponent, will recommend resource-specific measures to protect and document the paleontological resource, such as photo documentation and avoidance or collection. The CPUC will have 24 hours to respond to these measures, with no response within 48 hours indicating concurrence. Unique resources inadvertently discovered during augering will be documented as indicated above, but, due to safety concerns, any remaining resource below ground will not be salvaged. If the resource can be avoided, then CPUC concurrence will not be necessary. ▪ If collection is necessary, the fossil material will be properly prepared in accordance with the project proponents, Society of Vertebrate Paleontology guidelines, and CPUC requirements, and/or curation at a recognized museum repository. Appropriate documentation will be included with all curated materials. ▪ Any material discovered on private land is the property of the landowner and permission must be granted by the landowner for the material to be removed and curated. Once the resource is determined to be not unique, or appropriate treatment is completed as described above, work may resume in the vicinity.			

<table>
<tr><th rowspan="2">APM No.</th><th rowspan="2">Title/Description</th><th colspan="3">Applicability</th></tr>
<tr><th>Estrella Substation</th><th>Power Line</th><th>Distribution Components[10]</th></tr>
<tr><td>PALEO-3</td><td><u>Paleontological Construction Monitoring.</u>
Paleontological monitors, approved by the paleontological resources principal investigator, will be retained to conduct monitoring of the initial ground-disturbing activities as described below. Monitoring requirements vary with the sensitivity of the mapped sediments and the type of construction activity, as follows:
1. Estrella Substation:
High Surface Sensitivity – project areas mapped as older alluvium (Qoa) or Paso Robles formation (Qtp):
▪ In locations where the ground has been previously disturbed by agricultural or other development, monitoring is required only when excavations or grading exceed the depth of previous disturbance. For augering within the substation site, the proponents will follow the protocol identified below under Power Line.
▪ In locations where no previous disturbance exists, full-time monitoring is required when excavations, grading, or trenching exceeds 3 feet in depth. During monitoring, a qualified paleontological monitor, as determined by the principal investigator, will observe construction activity as well as check any spoils piles to watch for the appearance of fossil resources.
Low Surface Sensitivity – project areas mapped as Holocene alluvium (Qa or Qg) – no fossils at the surface:
▪ No monitoring is required for surface work.</td><td>✓</td><td>✓</td><td>✓</td></tr>
</table>

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	▪ Should ground disturbance exceed the depth of the Holocene sediments (estimated to be 5 feet), monitoring is required as described above for high sensitivity. 2. *Power Line:* High Surface Sensitivity – project areas mapped as older alluvium (Qoa) or Paso Robles formation (Qtp): ▪ Full-time monitoring will not be required along the power line route. ▪ Augering that uses a drill bit 3 feet, or less, in diameter will not be monitored. Small-diameter drill bits generally result in pulverized rock by the time they reach the surface, so any fossils contained within will not be identifiable. Larger-diameter drill bits (i.e., greater than 3 feet) often bring up intact chunks of rocks that may contain identifiable and scientifically important fossils (particularly microfossils). All large angled tubular steel pole locations will be monitored. ▪ During work, a portion of the excavated material will be examined visually and through screen-sifting, if necessary. If screening is necessary, then a sample of spoils may be collected and processed either on site or off site as work on the pole placement proceeds. Should unique fossil material be discovered, it may be recorded and collected if the resource is determined by the principal investigator to be worth salvaging. Otherwise it will be recorded and included in the final monitoring report. Should it be determined that the type of auger or drill being used renders monitoring not useful (i.e., materials come out of the hole in a			

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	pulverized powder or a silty mud), monitoring will be discontinued. ▪ Because it is extremely unsafe and impractical to excavate fossils from within an auger bore or drill hole, and to do so would unnecessarily disturb fossils further, no effort will be made to collect buried fossils indicated in spoils materials. However, the location and nature of the materials identified will be recorded, and this will be documented in the final monitoring report and reported to repositories as appropriate. These measures are based on the currently available data. As construction proceeds and additional data become available, the principal investigator could revise these measures with CPUC concurrence. Should monitors identify fossil remains during the course of construction, APM PALEO-2 will be implemented. All monitoring activities will be documented on daily logs. Monitoring logs and reports will include the activities observed, geology encountered, description of any resources encountered, and measures taken to protect or recover discoveries. Photographs and other supplemental information will be included as necessary. A final monitoring report will be developed to document locations, methods, and results of monitoring.			
PALEO-4	**Fossil Recovery.** In the event that unique paleontological resources are encountered, protection and recovery of those resources may be required. The principal investigator will oversee the recovery effort in consultation with the project proponents (depending on the location of the resource), the CPUC, and property owners as appropriate. The principal investigator may designate a paleontologist to implement the recovery, prepare specimens for	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	identification and preservation, and complete all field documentation in accordance with the project proponents, Society of Vertebrate Paleontology guidelines, and CPUC requirements, and/or curation at a recognized museum repository. If a fossil is not accepted by a museum for curation, then project proponents will have fulfilled their obligation for fossil recovery.			
Greenhouse Gas Emissions				
GHG-1	**Minimize Operational Sulfur Hexafluoride (SF_6) Emissions.** During operation and maintenance of Estrella Substation, the project proponents will do the following: ▪ Incorporate Estrella Substation into each of the project proponents' system-wide SF_6 emission reduction programs. CARB requires that company-wide SF6 emission rate not exceed 1 percent by 2020. ▪ Upon construction completion, the project proponents will have implemented a programmatic plan to inventory, track, and recycle SF_6 inputs, and inventory and monitor system-wide SF_6 leakage rates to facilitate timely replacement of leaking breakers. X-ray technology is used to inspect internal circuit breaker components to eliminate dismantling of breakers, reducing SF6 handling and accidental releases. As active members of the U.S. Environmental Protection Agency's SF_6 Emission Reduction Partnership for Electrical Power Systems, the project proponents have focused on reducing SF_6 emissions from their transmission and distribution operations. ▪ Require that the breakers at Estrella Substation have a manufacturer's guaranteed maximum leakage rate of 0.5 percent per year or less for SF_6.	✓	N/A	N/A

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	▪ Maintain substation breakers in accordance with the project proponents' maintenance standards. ▪ Comply with CARB's Early Action Items as these policies become effective.			
Hazards and Hazardous Materials				
HAZ-1	**<u>Hazardous Substance Control and Emergency Response.</u>** The project proponents will implement hazardous substance control and emergency response procedures as needed. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of project construction through operation. The procedures address worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it is necessary to store chemicals on site, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on site, as applicable. In the event that soils suspected of being contaminated (on the basis of visual, olfactory, or other evidence) are removed during site grading activities or excavation activities, the excavated soil will be tested and, if contaminated above hazardous waste levels, will be contained and disposed of at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations. All hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following: ▪ Proper disposal of potentially contaminated soils. ▪ Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources. ▪ Emergency response and reporting procedures to address hazardous material spills. ▪ Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.			
***Hydrology and* Water Quality**				
HYDRO-1	**Avoidance of Sensitive Aquatic Features.** The project will be designed to avoid sensitive aquatic features (i.e., jurisdictional wetlands, waters, and riparian areas) to the extent feasible. Specific avoidance strategies include the following: ▪ Siting permanent structures in uplands outside of existing drainage features. ▪ Siting staging areas, pole/tower work areas, pull sites, and other temporary staging/materials storage areas in uplands outside of existing drainage features/riparian areas, utilizing developed/urban, agricultural land, or ruderal land in preference to native terrestrial or riparian habitats.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	▪ Selecting access roads and overland travel routes in uplands while avoiding other sensitive features (e.g., steep slopes, rare plant localities, and sensitive wildlife habitats). ▪ Should access or work areas be required through or within jurisdictional wetlands and waters, all regulated activities within jurisdictional wetlands and waters (e.g., waters of the United States and waters of the State) will require regulatory approval/permitting from the appropriate agency including U.S. Army Corps of Engineers [USACE], CDFW, and/or Regional Water Quality Control Board [RWQCB] prior to any work within jurisdictional features. Prior to construction, sensitive aquatic features slated for avoidance will be identified in the field and clearly marked for avoidance using flagging tape, fencing, and/or high-visibility signage. Construction personnel will be trained on feature avoidance marking and associated restrictions.			
Noise				
NOI-1	**Construction Schedule Limits.** The project proponents will limit grading, scraping, augering, and pole installation to 7:00 a.m. to 7:00 p.m. daily. Exceptions for work outside of these hours will follow the notification requirements outlined in APM AG-1.	✓	✓	✓
NOI-2	**Noise Minimization.** The project will incorporate various measures to reduce construction-related noise where feasible using the following methods: ▪ Construction equipment will use noise reduction devices that are no less effective than those originally installed by the manufacturer. ▪ Stationary equipment used during construction will be located as far as practical from sensitive noise receptors.	✓	✓	✓

APM No.	Title/Description	Applicability		
		Estrella Substation	Power Line	Distribution Components[10]
	▪ "Quiet" equipment (i.e., equipment that incorporates noise control elements into the design—compressors have "quiet" models) will be used during construction when reasonably available.			
Transportation and Traffic				
TR-1	**Air Transit Control.** The project proponents will implement the following protocols that pertain to helicopter use during construction: ▪ Comply with all applicable Federal Aviation Administration regulations regarding air traffic; ▪ Helicopter operators will coordinate all project helicopter operations with the Paso Robles Municipal Airport before and during project construction; ▪ Coordinate with potentially affected residents or businesses to minimize the duration of necessary work and any resulting inconvenience; and ▪ Implement a congested area plan if the helicopter work will take place in a congested or densely populated area. A congested area is anywhere that includes the presence of the non-participating public. A densely populated area is an area of a city, town, or settlement that contains a large number of occupied homes, factories, stores, schools, and other structures.	N/A	✓	✓

Notes:

APM = applicant-proposed measure; CARB = California Air Resources Control Board; CDFW = California Department of Fish and Wildlife; CRHR = California Register of Historical Resources; CNG = compressed natural gas; CPUC = California Public Utilities Commission; LNG = liquefied natural gas; N/A = not applicable; NAHC =Native American Heritage Commission; NOx = oxides of nitrogen; PM = particulate matter; PRC = Public Resource Code; ROG = reactive organic gases; RWQCB = Regional Water Quality Control Board; SF_6 = sulfur hexafluoride; USACE = U.S. Army Corps of Engineers; USFWS = U.S. Fish and Wildlife Service; WEAP = worker environmental awareness program

2.9 Electric and Magnetic Fields

2.9.1 Overview

The CPUC does not consider electric and magnetic fields (EMF) to be an environmental issue in the context of CEQA because there is no agreement among scientists that EMF creates a potential health risk and because CEQA does not define or adopt standards for defining any potential risk from EMF.

The weather and the earth's geomagnetic field cause naturally occurring EMF, while various technological applications, such as communications technologies, personal electronic devices, electric generation and transmission, and radiological imaging cause man-made EMF. EMFs are typically characterized by their wavelength or frequency as either "non-ionizing" or "ionizing" [11] radiation, as shown in Table 2-13 below. In general, the higher the frequency of EMFs, the shorter their wavelength, and the shorter the wavelength, the greater the amount of energy is imparted when interacting with physical objects. From this table it can be seen that the EMF from the Proposed Project's power line would be "non-ionizing."

Hertz (Hz) is a unit of frequency that is defined as one cycle per second. With respect to EMF, Hz values reflect the rate at which electric and magnetic fields change their direction each second. In the U.S., electric transmission lines typically operate at 60 Hz, which is considered an extremely low frequency (ELF). By comparison, mobile phones operate at between 1.9 and 2.2 billion Hz (gigahertz), while X-rays operate at upwards of 30 X 10^{19} Hz (National Cancer Institute 2020).

Table 2-13. Types of EMF Radiation

Radiation Type	Definition	Forms of Radiation	Source Examples
Non-Ionizing	Low to mid-frequency radiation which is generally perceived as harmless due to its lack of potency.	Extremely Low Frequency Radiofrequency Microwaves Visual Light	Microwave ovens Computers House energy smart meters Wireless (WiFi) networks Cell phones Bluetooth devices Power lines

[11] Ionization is the process by which electrons are freed from atoms or electrons, thereby creating ions or charged particles. Ionizing radiation is radiation that carries enough energy to create ions.

Radiation Type	Definition	Forms of Radiation	Source Examples
			Magnetic resonance imaging devices
Ionizing	Mid to high-frequency radiation which can, under certain circumstances, lead to cellular and/or DNA damage with prolonged exposure.	Ultraviolet X-rays Gamma	Ultraviolet light X-rays ranging from 30 X 10^{16} Hertz (Hz) to 30 X 10^{19} Hz Some gamma rays

Notes: Hz = Hertz; WiFi = wireless

Source: National Institute of Environmental Health Sciences 2020

Electric Fields

Electric fields from power lines are created whenever the lines are energized, with the strength of the field dependent directly on the voltage of the line creating it. Electric field strength is typically described in terms of kV per meter (kV/m). Electric field strength attenuates (reduces) rapidly as the distance from the source increases. Electric fields are reduced in many locations because they are effectively shielded by most objects or materials such as trees or houses.

Unlike magnetic fields, which penetrate almost everything and are unaffected by buildings, trees, and other obstacles, electric fields are distorted by any object that is within the electric field including the human body. Even trying to measure an electric field with electronic instruments is difficult because the devices themselves will alter the levels recorded.

Magnetic Fields

Magnetic fields from power lines are created whenever current flows through power lines at any voltage. The strength of the field is directly dependent on the current in the line. Magnetic field strength is typically measured in milligauss (mG). Similar to electric fields, magnetic field strength attenuates rapidly with distance from the source. However, unlike electric fields, magnetic fields are not easily shielded by objects or materials. The nature of a magnetic field can be illustrated by considering a household appliance. When the appliance is energized by being plugged into an outlet but not turned on, no current flows through it. Under such circumstances, an electric field is generated around the cord and appliance, but no magnetic field is created. If the appliance is switched on, the electric field would still be present and a magnetic field would also be created. The electric field strength is directly related to the magnitude of the voltage from the outlet and the magnetic field strength is directly related to the magnitude of the current flowing in the cord and appliance.

The magnetic field levels of PG&E's overhead and underground transmission lines will vary depending upon the customer power usage. Magnetic field strengths for typical PG&E transmission line loadings at the edge of rights-of-way are approximately 10 to 90 mG (NEET West and PG&E 2017). Under peak load conditions, the magnetic fields at the edge of the right-of-way would not likely exceed 150 mG. The strongest magnetic fields around the outside of a substation come from the power lines entering and leaving the station. The strength of the magnetic fields from transformers and other equipment decreases quickly with distance, such that beyond the substation fence, these magnetic fields are typically indistinguishable from background levels (NEET West and PG&E 2017).

2.9.2 Scientific Background and Regulations Applicable to EMF

EMF Research

For more than 20 years, questions have been asked regarding the potential effects of EMFs from power lines and research has been conducted to provide some basis for response. Earlier studies focused primarily on interactions with the electric fields from power lines. In the late 1970s, the subject of magnetic field interactions began to receive additional public attention and research levels increased. A substantial amount of research investigating both electric and magnetic fields has been conducted over the past several decades; however, much of the body of national and international research regarding EMF and public health risks remains contradictory or inconclusive.

Research related to EMF can be grouped into three general categories: cellular level studies, animal and human experiments, and epidemiological studies. Epidemiological studies have provided mixed results, with some studies showing an apparent relationship between magnetic fields and health effects while other similar studies not showing such a relationship. Laboratory studies and studies investigating a possible mechanism for health effects (mechanistic studies) provide little or no evidence to support this link.

Since 1979, public interest and concern specifically regarding magnetic fields from power lines has increased. The increase has generally been attributed to publication of the results of a single epidemiological study (Wertheimer and Leeper 1979). This study observed a statistical association between the high-current configuration (the “wire code”) of electric power lines outside of homes in Denver and the incidence of childhood cancer. The “wire code” was assumed to be related to current flow of the line. The study did not take measurements of magnetic field intensity. Since publication of the Wertheimer and Leeper study, many epidemiological, laboratory, and animal studies regarding EMF have been conducted.

Methods to Reduce EMF

EMF levels from transmission lines can be reduced in three primary ways: shielding, field cancellation, or increasing the distance from the source. Shielding, which reduces exposure to electric fields, can be actively accomplished by placing trees or other physical barriers along the transmission line right-of-way. Shielding also results from existing structures the public may use or occupy along the line. Since electric fields can be blocked by most materials, shielding is effective for the electric fields but is not effective for magnetic fields.

Magnetic fields can be reduced either by cancellation or by increasing distance from the source. Cancellation is achieved in two ways. A transmission line circuit consists of three “phases”: three separate wires (conductors) on a transmission tower. The configuration of these three conductors can reduce magnetic fields. First, when the configuration places the three conductors closer together, the interference, or cancellation, of the fields from each wire is enhanced. This technique has practical limitations because of the potential for short circuits if the wires are placed too close together. There are also worker safety issues to consider if spacing is reduced. In underground lines, the three phases typically can be placed much closer together than for overhead lines because the cables have dielectric insulation.

The distance between the source of fields and the public can be increased by either placing the wires higher aboveground, burying underground cables deeper, or by increasing the width of the right-of-way. For transmission lines, these methods can prove effective in reducing fields because the reduction of the field strength drops rapidly with distance.

Scientific Panel Reviews

Numerous panels of expert scientists have convened to review the data relevant to the question of whether exposure to power-frequency EMF is associated with adverse health effects. These evaluations have been conducted in order to advise governmental agencies or professional standard-setting groups. These panels of scientists first evaluate the available studies individually, not only to determine what specific information they can offer, but also in terms of the validity of their experimental design, methods of data collection, analysis, and suitability of the authors' conclusions to the nature and quality of the data presented. Subsequently, the individual studies, with their previously identified strengths and weaknesses, are evaluated collectively in an effort to identify whether there is a consistent pattern or trend in the data that would lead to a determination of possible or probable hazards to human health resulting from exposure to these fields.

These reviews include those prepared by international agencies such as the World Health Organization (WHO), the international Non-Ionizing Radiation Committee of the International Radiation Protection Association, and governmental agencies of a number of countries, such as the U.S. Environmental Protection Agency, the National Radiological Protection Board of the United Kingdom, the Health Council of the Netherlands, and the French and Danish Ministries of Health. As noted below, these scientific panels have varied conclusions on the strength of the scientific evidence suggesting that power frequency EMF exposures pose any health risk.

In May 1999, the National Institute of Environmental Health Science (NIEHS) submitted to Congress its report titled, *Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields*, containing the following conclusion regarding EMF and health effects:

> Using criteria developed by the International Agency for Research on Cancer (IARC), none of the Working Group considered the evidence strong enough to label ELF-EMF exposure as a known human carcinogen or probable human carcinogen. However, a majority of the members of this Working Group concluded that exposure to power-line frequency ELF-EMF is a possible carcinogen.

In June 2001, a scientific working group of IARC (an agency of WHO) reviewed studies related to the carcinogenicity of EMF. Using standard IARC classification, magnetic fields were classified as "possibly carcinogenic to humans" based on epidemiological studies. "Possibly carcinogenic to humans" is a classification used to denote an agent for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals.

On behalf of the CPUC, the California Department of Health Services (DHS) completed a comprehensive review of existing studies related to EMF from power lines and potential health risks. This risk evaluation was undertaken by three staff scientists with the DHS. Each of these scientists is identified in the review results as an epidemiologist, and their work took place from 2000 to 2002. The results of this review, titled *An Evaluation of the Possible Risks from Electric and Magnetic Fields from Power Lines, Internal Wiring, Electrical Occupations, and Appliances,* were published in June 2002. The conclusions contained in the executive summary are provided below:

- To one degree or another, all three of the DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.
- They strongly believe that EMFs do not increase the risk of birth defects or low birth weight.
- They strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.
- To one degree or another, they are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's Disease, depression, or symptoms attributed by some to sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide.
- For adult leukemia, two of the scientists are "close to the dividing line between believing or not believing" and one was "prone to believe" that EMFs cause some degree of increased risk.

The report indicates that the DHS scientists are more inclined to believe that EMF exposure increased the risk of the health problems than the majority of the members of scientific committees that have previously convened to evaluate the scientific literature. With regard to why the DHS review's conclusions differ from those of other recent reviews, the report states:

> The three DHS scientists thought there were reasons why animal and test tube experiments might have failed to pick up a mechanism or a health problem; hence, the absence of much support from such animal and test tube studies did not reduce their confidence much or lead them to strongly distrust epidemiological evidence from statistical studies in human populations. They therefore had more faith in the quality of the epidemiological studies in human populations and hence gave more credence to them.

While the results of the DHS report indicate these scientists believe that EMF can cause some degree of increased risk for certain health problems, the report did not quantify the degree of risk or make any specific recommendations to the CPUC.

In addition to the uncertainty regarding the level of health risk posed by EMF, individual studies and scientific panels have not been able to determine or reach consensus regarding what level of magnetic field exposure might constitute a health risk. In some early epidemiological studies, increased health risks were discussed for daily time-weighted average field levels greater than 2 mG. However, the IARC scientific working group indicated that studies with average magnetic field levels of 3 to 4 mG played a pivotal role in their classification of EMF as a possible carcinogen.

The 2007 WHO [Environmental Health Criteria 238] report concluded that:

- Evidence for a link between ELF (50 to 60 Hz) magnetic fields and health risks is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. However, "…virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status…the evidence is not strong enough to be considered causal but sufficiently strong to remain a concern."
- "For other diseases, there is inadequate or no evidence or health effects at low exposure levels."

2.9.3 Policies, Standards, and Regulations

A number of counties, states, and local governments have adopted or considered regulations or policies related to EMF exposure. The reasons for these actions have been varied; in general, however, the actions can be attributed to addressing public reaction to and perception of EMF as opposed to responding to the findings of any specific scientific research.

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures or regulations. Following is a brief summary of CPUC guidelines and regulatory activity regarding EMF.

CPUC Decision No. 93-11-013

In Decision No. 93-11-013, the CPUC took interim steps to address EMFs related to electric utility facilities and power lines. Based on its investigation of the possible impacts of EMF exposure associated with electric utility installations, the CPUC recommended the following:

- No-cost and low-cost steps to reduce EMF levels;
- Workshops to develop EMF design guidelines;
- Uniform residential and workplace EMF measurement programs;
- Stakeholder and public involvement; and
- Funding for educational and research programs.

In explaining and justifying its decision, the CPUC stated that although the scientific community had not yet isolated the impact, if any, of utility-related EMF exposures on public health, other jurisdictions and agencies have concluded that the best response to EMFs is to avoid unnecessary new exposure to EMFs if such avoidance can be achieved at a cost that is reasonable in light of the risk identified. The decision stated that “low-cost” steps to reduce EMF levels should be defined as roughly 4 percent of the total cost of a budgeted project, but emphasized that this should not be a hard-and-fast rule and that utilities should implement more or less costly solutions as they are determined to be effective.

CPUC Decision No. 06-01-042 and More Information

In 2006, the CPUC revisited the EMF issue it had covered in its Decision No. 93-11-013 and affirmed its “low-cost/no-cost” policy for mitigation of EMF exposure for new utility transmission and substation projects. Decision No. 06-01-042 also reaffirmed the CPUC’s policy of using a benchmark of 4 percent of transmission and substation project costs for EMF mitigation. In addition, Decision No, 06-01-042 adopted rules and policies to improve utility design guidelines for reducing EMF, and provided for a utility workshop to implement the policies and standardize design guidelines. Finally, Decision No. 06-01-042 restated the CPUC’s position that it is unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences.

The CPUC’s EMF Design Guidelines for Electrical Facilities (July 21, 2006) document is available at www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=4884. More information about activities taken by the CPUC with respect to EMFs can be found at: www.cpuc.ca.gov/General.aspx?id=4879.

Attachment 3

Detailed Comment Table

<u>ATTACHMENT 3</u> to the
Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Proposed Estrella Substation and Paso Robles Area Reinforcement Project, December 2020
California State Clearinghouse No. 2018072071

Detailed Comment Table

Page #	DEIR Language	Horizon West Transmission Comments
EXECUTIVE SUMMARY		
ES-2	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level.	The maximum elevation of substation parcel is approximately 970 feet. Please revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to <u>970</u>~~608~~ feet above mean sea level.
ES-4	The 70 kV substation would be located immediately adjacent to the 230 kV substation within the same 15-acre site.	HWT is acquiring a 20-acre parcel Please revise text to read: The 70 kV substation would be located immediately adjacent to the 230 kV substation within the same <u>15-</u>acre ~~site~~ <u>area of the 20-acre site</u>.
ES-4	Electrical equipment at the 230 kV substation would be located within a fenced area and would include breakers, breaker-and-a-half bays, operating buses, transformers, air break switches, insulated circuit breakers, dead-end steel structures, and lightning surge arresters.	Please revise text to read: Electrical equipment at the 230 kV substation would be located within a<u>n enclosed</u> ~~fenced~~ area and would include breakers, breaker-and-a-half bays, operating buses, transformers, air break switches, insulated circuit breakers, dead-end steel structures, and lightning surge arresters.
ES-5	Ultimate buildout of the Estrella Substation could include an additional 230 kV interconnection, a second 230/70 kV transformer, three additional 70/21 kV transformers, and associated equipment (e.g., breakers, switches). The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR.	Please revise text to read: Ultimate buildout of the Estrella Substation could include an additional 230 kV interconnection, a second 230/70 kV transformer, three additional 70/21 kV transformers, and associated equipment (e.g., breakers, switches). <u>The ultimate substation buildout could also accommodate future inside-the-fence improvements, including the potential future construction of ballistic walls around the transformer or fire walls between the proposed 230 kV transformer and the additional 230 kV transformer.</u> The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR.

Page #	DEIR Language	Horizon West Transmission Comments
ES-6	Earthwork activities for the substation are anticipated to result in approximately 50,000 cubic yards of cut and fill, which would be balanced on the site to the extent feasible.	Please revise text to read: Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately ~~50,000~~ 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. Approximately 16,500 cubic yards of topsoil would be stripped and stockpiled and approximately 4,000 cubic yards of the stockpiled topsoil would be used during restoration, with the balance removed from the site.
CHAPTER 1 - INTRODUCTION		
1-1	Per CEQA Guidelines section 15022, CEQA's basic purposes are to:	The applicable CEQA Guidelines section is15002. Please revise text to read: Per CEQA Guidelines section ~~15022~~15002, CEQA's basic purposes are to:
CHAPTER 2 - PROJECT DESCRIPTION		
2-4	Figure 2-1	The 500kV line is north of the 230 kV line, not south as currently depicted in the figure.
2-15	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level	Please revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 9~~6~~70 feet above mean sea level
2-15	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level.	The maximum elevation of substation parcel is approximately 970 feet. Revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 9~~6~~70 feet above mean sea level.
2-15	Estrella Substation would be located on an approximately 15-acre portion of a 98.6-acre parcel of land. This entire site is currently planted with grape vines of 10-foot-wide span lengths.	Estrella Substation would be located on an approximately 15 acres of a ~~15~~20-acre site. The site was created from ~~portion of~~ a 98.6-acre parcel of land. This entire 20-acre site ~~is~~ and the parcel of land are currently planted with grape vines of 10-foot-wide span lengths.
2-7	Figure 2-4	The 500kV line is north of the 230 kV line, not south as currently depicted in the figure.
2-20	Permanent ground disturbance for Estrella Substation is approximately 15 acres, including the area that would be permanently disturbed outside of the 230 kV and 70 kV substation fence lines.	HWT is acquiring a 20-acre parcel. Please revise text to read: Permanent ground disturbance for Estrella Substation is approximately ~~15~~ 20 acres, including the area that would be permanently disturbed outside of the 230 kV and 70 kV substation fence lines.

Page #	DEIR Language	Horizon West Transmission Comments
2-21	Estrella Substation would be comprised of two separate and distinct substations on an approximately 15-acre site.	HWT is acquiring a 20-acre parcel. Please revise text to read: Estrella Substation would be comprised of two separate and distinct substations on ~~an~~ approximately 15 acres within a 20-acre site.
2-21	Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV substation (approximately 715 feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points	Please revise text to read: Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV substation (approximately 700~~15~~ feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points
2-22	Figure 2-7	Replace figure to include new substation parcel and update temporary and permanent disturbance areas
2-46	Figure 2-11	Replace figure with new substation layout
2-47	Figure 2-12	Replace figure with new substation layout
2-48	Figure 2-13	Replace figure with new substation layout
2-49	The fenced portion of the 230 kV substation would be approximately 4 acres in size. An approximately 7-foot-tall chain-link fence with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.	Please revise text to read: The fenced portion of the 230 kV substation would be approximately 4 acres in size. A~~n~~ ~~approximately 7-foot-tall~~ chain-link fence, a minimum of 7 feet tall, with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.
2-56	The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.	Please revise text to read: The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.

Page #	DEIR Language	Horizon West Transmission Comments
2-57	The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.	Please revise text as follows: The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.
2-59	Figure 2-18	Replace figure with new substation layout
2-61	An affiliate of HWT has an option agreement to purchase the approximately 15-acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately 15-acre area.	Please revise text to read: An affiliate of HWT has an option agreement to purchase the approximately ~~15~~-20 acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately ~~15~~20-acre area. This area is adequate to accommodate the ~~entire~~ approximately 15-acre substation facility including all considerations for site grading, equipment laydown and storage, fencing, access and internal circulation, spill and stormwater management, and other operational considerations.
2-63	Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately 50,000 cubic yards of cut and fill, balanced on site to the maximum extent possible.	Please revise text to read: Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately ~~50,000~~ 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. Approximately 16,500 cubic yards of topsoil would be stripped and stockpiled and approximately 4,000 cubic yards of the stockpiled topsoil would be used during restoration, with the balance removed from the site.
2-64	Access road construction would begin by excavating a maximal depth of 7 feet at the intersection with Union Road, tapering off to 2 feet deep for the remainder of the road.	The least amount of excavation (approximately 2 feet) will occur at the connection to Union Road. The greatest amount of excavation (approximately 17 feet) will be in the area just past the second entrance to the PG&E 70kV yard. Please revise text to read: Access road construction would begin by excavating a ~~maximal~~ to a depth of approximately ~~7~~2 feet at the intersection with Union Road, ~~tapering off~~ increasing to ~~2~~17 feet deep for the remainder of the road.
2-73	Table 2-9. Total Approximate Area (acres)—6.20	Please revise text to read: Total Approximate Area (acres)—~~6.20~~0.09
2-74 & 2-75	The two staging areas supporting construction of the substation, totaling 1.9 acres, would be located entirely within the 15-acre permanent disturbance area.	Please revise text to read: The two Estrella Substation staging areas supporting construction of the substation, totaling approximately 1.9 acres, would be located entirely within the ~~15~~20-acre site ~~permanent disturbance area.~~

Page #	DEIR Language	Horizon West Transmission Comments
2-77	Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,100 feet long and about 20 feet wide.	Please revise text to read: Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,~~1~~700 feet long and about 20 feet wide.
2-78	Construction would typically occur 6 days per week (Monday through Saturday) throughout the duration of construction.	Please revise text to read: Construction would typically occur 6 days per week (Monday through Saturday) throughout the duration of construction, although water trucks may be operated on Sundays for fugitive dust control in compliance with the Construction Activity Management Plan.
2-88	Table 2-11. Anticipated Permits and Approvals and Applicable Regulatory Requirements.	Some equipment, such as the 230/70kV transformer and the control house, may require Caltrans Transportation Permit for transporting oversize/overweight equipment. As such, please revise Table 2-11 to include Caltrans Transportation Permits.
CHAPTER 3 – ALTERNATIVES DESCRIPTION		
3-4	The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (approximately 15,290 gallons) as the Proposed Project.	The proposed Estrella substation would use between 16,000 to 18,000 gallons of mineral oil. Please revise text to read: The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (between approximately ~~15,290~~ 16,000-18,000 gallons) as the Proposed Project.
3-91	The quantity of mineral oil to be used for transformers for Alternative SE-1A would be the same (approximately 15,290 gallons) as the Proposed Project.	The proposed Estrela substation would use between 16,000 to 18,000 gallons of mineral oil. Please revise text to read: The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (between approximately ~~15,290~~ 16,000-18,000 gallons) as the Proposed Project.
CHAPTER 4 – ENVIRONMENTAL ANALYSIS		
AESTHETICS		
4.1-3	The proposed Estrella Substation site occupies an approximately 15-acre area to the north of Union Road.	HWT is acquiring a 20-acre parcel. Please revise text to read: The proposed Estrella Substation site occupies ~~an~~ approximately 15 acres of a 20-acre site to the north of Union Road.

Page #	DEIR Language	Horizon West Transmission Comments
4.1-39	Construction of the new substation would occur on a 15-acre parcel adjacent to Union Road.	HWT is acquiring a 20-acre parcel. Please revise text to read: Construction of the new substation would occur on approximately 15 acres within a 20-acre parcel adjacent to Union Road.
4.1-46	General comment regarding SS-1 analysis	The analysis does not adequately consider permanent impacts to the visual character. SS-1 would be sited directly adjacent to the Estrella River. While the viewer concern and exposure may in fact be lower at this site than the Estrella site, the analysis undervalues the visual sensitivity of this scenic area and neglects consideration of the substantial degree that this substation would contrast with and dominate the landscape from an aesthetics perspective.
4.1-50	This alternative site would result in less adverse effects on visual character and visual quality than the Proposed Project because the new substation would be sited adjacent to an existing substation and the area is already characterized by electrical infrastructure.	Average daily traffic is greater along El Pomar Drive than along Union Road adjacent to the proposed substation. Therefore, viewer exposure would be greater than the Estrella substation. Additionally, the interconnection line would be longer than the interconnection line for the Estrella substation. While it is true that the substation expansion area is directly adjacent to an existing substation, the expanded substation would be constructed on undeveloped land and would require the removal of oak trees and other vegetation. As such, the visual dominance of the substation would increase. For these reasons, aesthetic impacts would be similar to the Estrella substation. Please revise text to read: This alternative site would result in ~~less~~ similar adverse effects on visual character and visual quality than the Proposed Project because the new substation would be sited adjacent to an existing substation and the area is already characterized by electrical infrastructure.
4.1-50	Development of the substation at the Bonel Ranch site would substantially alter the visual character of this immediate area and its agricultural setting due to the large scale and industrial nature of the substation facilities.	The analysis under criterion B never identifies that impacts would be significant, contrary to the proposed Estrella substation and Alternative SE-1A. Please revise text to read: Development of the substation at the Bonel Ranch site would substantially alter the visual character or quality of this immediate area and its agricultural setting due to the large scale and industrial nature of the substation facilities, which would be a significant impact.

<table>
<tr><th>Page #</th><th>DEIR Language</th><th>Horizon West Transmission Comments</th></tr>
<tr><td colspan="3">AGRICULTURE AND FORESTRY RESOURCES</td></tr>
<tr><td>4.2-4</td><td>Table 4.2-1. FMMP Acreage at the Estrella Substation Site</td><td>Update table to account for the Important Farmland on the 20-acre parcel as follows:

<table>
<tr><td>Type</td><td>Percentage</td><td>Acres</td></tr>
<tr><td>Importance</td><td>3.13</td><td>0.626</td></tr>
<tr><td>Grazing Land</td><td>2.28</td><td>0.456</td></tr>
<tr><td>Statewide Importance</td><td>13.12</td><td>2.624</td></tr>
<tr><td>Unique</td><td>81.47</td><td>16.294</td></tr>
</table></td></tr>
<tr><td>4.2-4</td><td>As shown in Table 4.2-1, approximately 17 percent (2.66 acres) of the site is Farmland of Statewide Importance, while 77 percent (11.70 acres) is Unique Farmland and a small percentage is Farmland of Local Importance and Grazing Land.</td><td>Please revise text to read:

As shown in Table 4.2-1, approximately ~~17~~ 13 percent (2.62~~6~~ acres) of the site is Farmland of Statewide Importance, while ~~77~~ approximately 81 percent (16.30 ~~1.70~~ acres) is Unique Farmland and a small percentage is Farmland of Local Importance and Grazing Land.</td></tr>
<tr><td>4.2-2</td><td>Table 4.2-2. Agricultural Land Impacts from the Proposed Project</td><td>Update table to account for the disturbance to the 20-acre parcel as follows:

<table>
<tr><td>Type</td><td>Percentage</td><td>Acres</td></tr>
<tr><td>Importance</td><td>3.13</td><td>0.626</td></tr>
<tr><td>Grazing Land</td><td>2.28</td><td>0.456</td></tr>
<tr><td>Statewide Importance</td><td>13.12</td><td>2.624</td></tr>
<tr><td>Unique</td><td>81.47</td><td>16.294</td></tr>
</table></td></tr>
<tr><td>4.2-14</td><td>As described in the PEA, based on the utility exemption in the Williamson Act, the approximately 15-acre substation site would be created as a separate legal parcel and removed from the larger 98-acre Williamson Act contract.</td><td>HWT is acquiring a 20-acre parcel.

Please revise text to read:

As described in the PEA, based on the utility exemption in the Williamson Act, the approximately ~~15~~20-acre substation site would be created as a separate legal parcel and removed from the larger 98-acre Williamson Act contract.</td></tr>
<tr><td>4.2-15</td><td>Therefore, the reduction of the current 98-acre Williamson Act parcel down to 83 acres would not disqualify the proposed 15-acre substation parcel as an agricultural preserve according to San Luis Obispo County.</td><td>HWT is acquiring a 20-acre parcel.

Please revise text to read:

Therefore, the reduction of the current 98-acre Williamson Act parcel down to 83 acres would not disqualify the proposed ~~15~~20-acre substation parcel as an agricultural preserve according to San Luis Obispo County.</td></tr>
</table>

Page #	DEIR Language	Horizon West Transmission Comments
4.2-15	However, placing the substation within the existing parcel under Williamson Act contract would conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use.	California Government Code §51238 states that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Further, as noted in the DEIR, removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve. The remaining land under the modified contract will continue to be cultivated and will limit land uses to compatible uses as outlined by the County's Rules of Procedure, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract. As such, HWT disagrees with the conclusion that placing the substation within the existing parcel under Williamson Act contract would conflict with the Williamson Act contract. Please revise text to read: ~~However, p~~ Placing the substation within the existing parcel under Williamson Act contract would not conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use, because Government Code Section 51238 specifies that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract.
4.2-17	The Bonel Ranch parcel is not under a Williamson Act contract; therefore, there would be no potential to conflict with a Williamson Act contract. As a result, impacts under significance criterion B would be less than significant	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. Please revise text to read: The Bonel Ranch parcel is ~~not under~~ subject to a Williamson Act contract; therefore, placing the substation within the existing parcel under Williamson Act contract would conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use to the same extent as the Proposed Project.
AIR QUALITY		
4.3-17	Even with the implementation of APM measures, construction-related ROG and NOX emissions threshold exceedances would be considered a significant impact. Mitigation Measure AIR-1 is proposed to reduce potentially significant impacts, requiring implementation of SLOCAPCD standard mitigation measures, BACT, and preparation of a site-specific CAMP that must be reviewed and approved by the APCD prior to the start of construction. The CAMP would be a comprehensive document that captures all pollutant emission reduction measures to be implemented for the approved project. Approval by the APCD would ensure all feasible and appropriate mitigation measures have been incorporated.	Construction related emissions following implementation of APM-1 through APM-3 and Mitigation Measure AIR-1 were not estimated in the EIR. Mitigated emissions should be estimated to support this finding.

Page #	DEIR Language	Horizon West Transmission Comments
BIOLOGICAL RESOURCES		
4.4-9	Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected in California.	The applicable CFGC section should be referenced. Please revise text to read: Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected ~~in California.~~ under California Fish and Game Code Section 3503 *et seq.*
4.4-42	Crotch’s bumble bee, which utilize rodent burrows, tufts of grass, old bird nests on the ground, rock piles, or cavities in dead trees for nest construction, has potential to occur within the Proposed Project area. Direct impacts to Crotch’s bumble bee could occur if rodent burrows within the Proposed Project disturbance area were utilized as nests and destroyed through construction activities. Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch’s bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, implementation of APMs BIO-3 and GEN-1 would further reduce potential for any impacts to Crotch’s bumble bee during construction. As a State candidate endangered species, the Applicants would be required to notify and coordinate with CDFW regarding any Crotch’s bumble bee nests or individuals identified during pre-construction surveys or during the course of construction activities.	While preconstruction surveys would help avoid and minimize impacts to special-status species, surveying rodent burrows for the state candidate endangered Crotch’s bumblebee within the project footprint is impracticable due to the abundance of burrow systems and absence of protocol survey guidance for identification of nest colonies. Current review of iNaturalist (https://www.inaturalist.org/taxa/271451-Bombus-crotchii accessed: January 4, 2021) show observation of the species occurring south and southeast of Santa Maria. The document recognizes the potential of species occurrence in the region, but little is known about its current distribution, hibernacula, or overwintering sites, and direct impacts cannot be adequately concluded due to the lack of this information. Applicants are required to follow all provisions of CESA in regard to California candidate or listed species, but are not specifically required to “notify and coordinate with CDFW” on any candidate or listed species identified during pre-construction surveys. Please revise text to read: ~~Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch’s bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, i~~Implementation of APMs BIO-3 and GEN-1 would ~~further~~ reduce potential for any impacts to Crotch’s bumble bee during construction. As a State candidate endangered species, the Applicants would be required to follow all provisions of CESA in regard to California candidate or listed species ~~notify and coordinate with CDFW regarding any Crotch’s bumble bee nests or individuals~~ identified during ~~pre-construction surveys or during~~ the course of construction activities.

Page #	DEIR Language	Horizon West Transmission Comments
4.4-44	Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts would be significant.	Please revise text to read: Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts may be ~~would be~~ significant.
GEOLOGY, SOILS, SEISMICITY, AND PALEONTOLOGICAL RESOURCES		
4.7-35	Further, design and construction requirements in G.O. 95 and 174, as well as the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils, ensuring the potential for such impacts would be less than significant.	G.O. 95 does not apply to substations. Please revise text to read: Further, design and construction requirements in G.O. ~~95 and~~ 174~~, as well as~~ and the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils, ensuring the potential for such impacts would be less than significant.
HAZARDS AND HAZARDOUS MATERIALS		
4.9-7	Estrella Substation would be located on approximately 15 acres of land that is currently under agricultural cultivation as a vineyard.	HWT is acquiring a 20-acre parcel. Please revise text to read: Estrella Substation would be located on approximately 20 acres that is currently under agricultural cultivation as a vineyard.
LAND USE AND PLANNING		
4.11-2	The substation would be constructed on an approximately 15-acre site, carved out of a 98-acre parcel of land designated as agriculture and currently being used as a vineyard (one of five contiguous parcels operated by Steinbeck Vineyards & Winery).	HWT is acquiring a 20-acre parcel. Please revise text to read: The substation would be constructed on an approximately 15 acres within a 20-acre site, carved out of a 98-acre parcel of land designated as agriculture and currently being used as a vineyard (one of five contiguous parcels operated by Steinbeck Vineyards & Winery).

Page #	DEIR Language	Horizon West Transmission Comments
PUBLIC SERVICES		
4.15-11	Therefore, the Proposed Project would not require the construction of new or expanded school facilities, which could result in substantial adverse physical environmental effects. This impact would be less than significant.	The project would not directly or indirectly induce population growth and would not require the relocation of non-local construction workers given the limited nature of construction activities. Therefore, there is no basis for the less than significant determination on schools and this impact should be changed to no impact, as described in the PEA. Please revise text to read: Therefore, the Proposed Project would not require the construction of new or expanded school facilities, which could result in substantial adverse physical environmental effects. ~~This impact would be less than significant.~~ No impact would occur.
TRANSPORTATION		
4.17-23	The number of construction vehicle trips and the frequency of the trips for Alternative SS-1 is estimated to be the same as for the Proposed Project (see Table 4.17-3).	Construction of BS-1 will be longer in duration than the propped Estrella substation. Therefore, construction related effects would last longer. Please revise text to read: The number of construction vehicle trips and the frequency of the trips for Alternative SS-1 is estimated to be the same as for the Proposed Project (see Table 4.17-3). However, the effects of construction related transportation impacts would last longer due to the longer construction schedule for Alternative SS-1.
4.17-27	The number of construction vehicle trips and the frequency of the trips for Alternative SE-1A is estimated to be the same as for the Proposed Project (see Table 4.17-3).	Construction of SE-1A will be longer in duration than the propped Estrella substation. Therefore, construction related effects would last longer. Please revise text to read: The number of construction vehicle trips and the frequency of the trips for Alternative SE-1A is estimated to be the same as for the Proposed Project (see Table 4.17-3). However, the effects of construction related transportation impacts would last longer due to the longer construction schedule for Alternative SS-1.
WILDFIRE		
4.20-5	The proposed Estrella Substation would be located on approximately 15 acres of land within an existing vineyard.	HWT is acquiring a 20-acre parcel. Please revise text to read: The proposed Estrella Substation would be located on approximately 15 acres within a 20 acre~~s~~ ~~of land~~ site within an existing vineyard.

Page #	DEIR Language	Horizon West Transmission Comments
	Construction and operation of the reasonably foreseeable distribution components, including installation of the 21/12 kV pad-mounted transformer, and ultimate buildout of Estrella Substation, would not be expected to substantially exacerbate wildfire risks, such that people would be exposed to pollutant concentrations from a wildfire, the uncontrolled spread of a wildfire, and/or people or structures would be exposed to significant risks (e.g., downslope or downstream flooding, landslides, post-fire slope instability, or drainage changes.) Construction and operation activities would be on a much smaller scale than that of the Proposed Project, and similar to the Proposed Project, would occur within areas under irrigated agriculture cultivation (generally a low fire risk land use) or road rights-of-way. Construction and operation activities would comply with the PRC wildland fire safety requirements for grass- and brush-covered lands, as well as the California Fire Code. Once constructed, the reasonably foreseeable distribution components and ultimate substation buildout facilities would need to comply with applicable vegetation clearance requirements (see Section 4.20.2; fire prevention standards for electric utilities) and would not be located in high fire risk areas or the SRA (apart from one pad-mounted transformer that would be located on the border of the SRA). Therefore, impacts under significance criteria B and D would be less than significant.	Please revise text to read: Construction and operation of the reasonably foreseeable distribution components, including installation of the 21/12 kV pad-mounted transformer, and ultimate buildout of Estrella Substation, would not be expected to substantially exacerbate wildfire risks, such that people would be exposed to pollutant concentrations from a wildfire, the uncontrolled spread of a wildfire, and/or people or structures would be exposed to significant risks (e.g., downslope or downstream flooding, landslides, post-fire slope instability, or drainage changes.) Construction and operation activities would be on a much smaller scale than that of the Proposed Project, and similar to the Proposed Project, would occur within areas under irrigated agriculture cultivation (generally a low fire risk land use) or road rights-of-way. Construction and operation activities would comply with the PRC wildland fire safety requirements for grass- and brush-covered lands, as well as the California Fire Code. Once constructed, the reasonably foreseeable distribution components and ultimate substation buildout facilities would need to comply with applicable vegetation clearance requirements (see Section 4.20.2; fire prevention standards for electric utilities) and would not be located in high fire risk areas or the SRA (apart from one pad-mounted transformer that would be located on the border of the SRA). Therefore, impacts under significance criteria B and D would be less than significant.
CHAPTER 5 – ALTERNATIVES ANALYSIS SUMMARY AND COMPARISON OF ALTERNATIVES		
5-11	Additionally, while the Bonel Ranch site is currently in agricultural use (alfalfa production), it is not on land classified as one of the protected categories of Important Farmland under CEQA (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland); thus, placing the substation at this location would reduce the Proposed Project's significant impacts on agriculture resources.	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. Please revise text to read: Additionally, while the Bonel Ranch site is currently in agricultural use (alfalfa production) and is subject to Williamson Act contract, it is not on land classified as one of the protected categories of Important Farmland under CEQA (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland); thus, placing the substation at this location would reduce the Proposed Project's significant impacts on agriculture resources.
CHAPTER 6 – OTHER STATUTORY CONSIDERATIONS AND CUMULATIVE IMPACTS		
6-13	Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant on their own.	This statement conflicts with the findings from the Aesthetics analysis. As described therein, the DEIR found significant impacts for SS-1, PLR-1A, and PLR-1C. Mitigation was identified to reduce impacts to less than significant. As such, these alternatives are not less than significant on their own. Please revise text to read: Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant with implementation of mitigation ~~on their own.~~

Page #	DEIR Language	Horizon West Transmission Comments
6-21	None of the other alternatives, nor the reasonably foreseeable distribution components, would significantly affect agricultural resources at the project level.	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. The cumulative analysis should be revised to account for this impact.
APPENDIX F — MMRP		
MM AES-1	HWT and PG&E shall implement the following measures: • Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk. • At the substation, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast.	The 230 kV yard would be most visible to motorists along its southeastern perimeter fronting Union Road. As such, the measure should be revised to limit the installation of chain link fence slats to this portion of the substation's perimeter. Please revise text to read: HWT and PG&E shall implement the following measures: • Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk. • At the substation's southeastern perimeter fronting Union Road, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast.

Page #	DEIR Language	Horizon West Transmission Comments
MM AG-1	HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall contribute sufficient funds (i.e., adequate to support the conservation ratio described below) to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements. The amount of HWT's and PG&E's contribution shall ensure the conservation of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by the Proposed Project or alternatives, based on the market price for the commensurate agricultural land at the time that the impacts occur.	As explained in more detail in HWT's comment letter, MM AG-1 needs to be revised to allow HWT and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation MM AG-1 also needs to be revised to recognize that PG&E and HWT will have different contribution amounts that are based on their respective impacts to Important Farmland. For these reasons, please revise the text to read: HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.
APM BIO-1.	Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants	The title of APM BIO-1 does not match the title of APM BIO-1 in Table ES-1 and Table 2-12. Please revise text to read: Table F-1: APM BIO-1. ~~Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants~~ Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas

Page #	DEIR Language	Horizon West Transmission Comments
MM BIO-1	Wildlife Protection from Work Areas: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment.	Please revise text to read: Wildlife Protection from Work Areas: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all uncovered and unfenced steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment.
MM BIO-1	Weekly biological construction monitoring reports shall be prepared and submitted to the appropriate permitting and responsible agencies throughout the duration of the ground-disturbing and vegetation-removal construction phase.	Reports will be submitted to the to the CPUC only since no permits are held with regulatory agencies. Please revise text to read: Weekly biological construction monitoring reports shall be prepared and submitted to the CPUC ~~appropriate permitting and responsible agencies~~ throughout the duration of the ground-disturbing and vegetation-removal construction phase.
MM BIO-1	Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction. Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.	Gravel bags and erosion and sediment controls would be implemented per the SWPPP. Further, the project has been designed to avoid impacts to wetlands and/or waters of the state as per HYDRO-1. In addition, indirect effects to wetlands and/or riparian areas present along and within the project (e.g., discharge of sediment and pollutants, fugitive dust) would be minimized through implementation of APMs HYDRO-1, HAZ-1, GEN-1, and AIR-3. Please revise text to read: ~~Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction.~~ Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.
APM BIO-2	If work is scheduled during the nesting season (January 15 through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).	Standard nesting season dates are March 1st through August 15th or 31st; occasionally starting as early as February 1st. January 15th is still in winter timeframes with only select species such as golden eagles beginning to nest. As such, the January 15 nesting season restriction should only apply to golden eagles. Please revise text to read: If work is scheduled during the nesting season (commencing January 15 for golden eagle and February 1 for all other birds through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).

Page #	DEIR Language	Horizon West Transmission Comments
MM BIO-2	If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness.	The substation site is an active vineyard with very low potential to support special-status plant species. This measure should not apply to HWT. Please revise text to read: If avoidance of special-status plants is not feasible, ~~HWT and~~ PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness.
MM BIO-3	Operational construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible. If infeasible, HWT and PG&E shall retain a CPUC-approved biologist to conduct a nesting bird survey of the surrounding 500-foot area to determine if any active nest is present. If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If operational construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.	Please revise text to read: ~~Operational~~ ~~c~~<u>C</u>onstruction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible. If infeasible, HWT and PG&E shall retain a CPUC-approved biologist to conduct a nesting bird survey of the surrounding 500-foot area to determine if any active nest is present. If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If ~~operational~~ construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.
MM BIO-4	HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat.	The substation will not impact blue oak woodland habitat. This measure should apply to PG&E components only. Please revise text to read: ~~HWT,~~ PG&E and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat.
MM GEO-1	HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017). These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.	Please revise text to read: HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017)<u>, including any subsequent addendums to such reports</u>. These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.

Page #	DEIR Language	Horizon West Transmission Comments
MM NOI-1	Mitigation Measure NOI-1: General Construction Noise.	The DEIR on page 4.13-18 states that “ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously).” However, the DEIR states that Mitigation Measure MM NOI-1 is applicable to all construction activities. Because the DEIR concluded that ground level construction activities would result in less than significant impacts, MM NOI 1 should not apply to ground-level construction activities. APM NOI-1 and APM NOI-2 would further reduce already less than significant ground-level construction noise.

California Public Utilities Commission’s Data Request No. 6 – Information Requests Related to the Project Revision Included in Horizon West Transmission’s Comments on the Draft Environmental Impact Report

From: Tom Engels
To: Scott Castro; Tracy Davis; Flajole, Andy; Swain, Mathew; Tom Johnson
Cc: Rob Peterson; Patrick Donaldson; Julie Allison
Subject: Data Request #6 - Estrella Substation and Paso Robles Area Reinforcement Project
Date: Friday, April 30, 2021 11:52:08 AM
Attachments: 2021_0430_EstrellaDataRequestNo.6_FINAL.docx

Hello All,

On behalf of Rob Peterson, attached is Data Request #6 for the Estrella Substation and Paso Robles Area Reinforcement Project.

Rob would like to set up a video call to discuss this data request. Please let me know your team's availability in the coming week. Thank you.

Tom

Tom Engels, Ph.D.
Principal

Horizon Water and Environment
400 Capitol Mall, Suite 2500
Sacramento, CA 95814

[redacted]

Data Request No. 6 (April 30, 2021) for the Estrella Substation and Paso Robles Area Reinforcement Project (A.17-01-023)

Information Requests Related to the Project Revision Included in Horizon West Transmission's Comments on the Draft Environmental Impact Report

#	Resource Area / Topic	Data Request Item	Request Date	Reply Date	Status	Follow-Up Request / Notes
1	Project Description (Attachment 2, Updated Project Description)	Please provide Attachment 2, Updated Project Description, as a track changes version. This will help highlight individual revisions recommended. ***This data request is critical; a detailed, and expedited response is needed to avoid follow-up data request(s) and allow for timely review of the Proposed Project revision(s).***	4/30/21			
2	Project Description (Attachment 2, Updated Project Description)	The attached Table 1, Comparison of Key Changes to the Project Description (page 3) provides a summary of key revisions captured from Attachment 2. Please confirm the accuracy of the information presented. Where information is incorrect, please update accordingly. ***This data request is critical; a detailed, and expedited response is needed to avoid follow-up data request(s) and allow for timely review of the Proposed Project revision(s).***	4/30/21			
3	Project Description (MPR Technical Memorandum)	Please provide GIS and CAD data depicting the modified layout, as included in the MPR technical memorandum. Please ensure GIS and CAD data depict the modified permanent access road extension, as described in Attachments 2 and 3. ***This data request is critical; a detailed, and expedited response is needed to avoid follow-up data request(s) and allow for timely review of the Proposed Project revision(s).***	4/30/21			
4	Project Description (MPR Technical Memorandum)	It is unclear from the Project Revision Technical Memorandum how and whether the additional five acres acquired would be used during, and following, construction. Please provide a detailed description as to the purpose of the land acquisition, describing how the additional land would be used during construction, and following construction of the Proposed Project. Please describe what construction activities would occur within these five acres (e.g., vegetation removal, grading, staging, construction trailers, etc.)	4/30/21			

#	Resource Area / Topic	Data Request Item	Request Date	Reply Date	Status	Follow-Up Request / Notes
5	Project Description (MPR Technical Memorandum)	Please confirm whether the Project Revision would change the location of the 15-acre site within the 20-acre parcel. In other words, will the same 15 acres originally proposed for development of the Estrella Substation Facility be developed for this purpose?	4/30/21			
6	Project Description (MPR Technical Memorandum)	Please provide a revised Figure 2-7 (and GIS data for the figure) of the DEIR. This figure should clearly depict updated areas of permanent and temporary impacts as described in the MPR. Please ensure the extended access road is clearly depicted.	4/30/21			
7	Project Description (MPR Technical Memorandum)	The Project Revision memorandum states on Page 1 that construction activities would, "require approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible." However, Attachment 2 and 3 of HWT's comment letter state that 16,500 cubic yards of topsoil would be stripped and stockpiled, of which 4,000 cubic yards would be used during restoration, with the balance to be removed from the site. This leaves 12,500 cubic yards of topsoil and 51,500 cubic yards of other soils to be removed from the site. Please clarify how excavated soils would be stored, reused, and/or removed on- and off-site.	4/30/21			
8	Project Description (MPR Technical Memorandum)	The Project Revision memorandum states on Page 1 that construction activities would extend the construction schedule by one week. It is unclear what specific activities would be extended by one week. Please indicate what changes would be necessitated to the DEIR in Table 2 10 (Preliminary Construction Workforce and Equipment Use, and Approximate Task Durations).	4/30/21			
9	Project Description (MPR Technical Memorandum)	The Project Revision memorandum states, "[a] design change to the Estrella Substation was necessitated after it was determined that the substation, as originally proposed, would preclude access to the additional five acres of land." Please clarify the	4/30/21			

#	Resource Area / Topic	Data Request Item	Request Date	Reply Date	Status	Follow-Up Request / Notes
		meaning of this statement and the purpose of the land acquisition.				
10	Project Description (MPR Technical Memorandum)	The Project Revision technical memorandum describes a "design change" to the proposed Estrella Substation. The memorandum indicates that the 230 kV and 70 kV yards and associated equipment would be reoriented and relocated closer to Union Road. Outside of reorientation, please confirm no other design changes have been proposed and no additional equipment would be included in the modified design. If other design changes are proposed, please provide a detailed description of the differences included in the modified layout.	4/30/21			
11	Project Description (MPR Technical Memorandum)	Table 1 of the Project Revision technical memorandum states under Tribal Cultural Resources, "The MPR would not increase the amount of permanent or temporary disturbance area, involve a change in the ground-disturbing activity..." This statement conflicts with what is indicated in the revisions to the Project Description, as included in Attachments 2 and 3. Please resolve inconsistencies related to proposed refinements.	4/30/21			

Table 1: Comparison of Key Changes to the Project Description

Original Project Description	**Revised Project Description**
15-acre Estrella Substation facility	15-acre Estrella Substation facility
15-acre parcel site	20-acre parcel site
15 acres of permanent disturbance	20 acres of permanent disturbance
6.2 acres of temporary disturbance	0.09 acres of temporary disturbance
50,000 cubic yards of cut and fill	68,000 cubic yards of cut and fill (*16,500 cubic yards of topsoil stripped and stockpiled of which 4,000 would be used during restoration; leaving 12,500 cubic yards of topsoil and 51,500 cubic yards of other soils to be removed from the site*)
Main permanent and construction access road (located off Union) - 1,100 feet long and 20 feet wide	Main permanent and construction access road (located off Union) - 1,700 feet long and 20 feet wide
15-foot Estrella Substation paved access road	700-foot Estrella Substation paved access road
7-foot chain link perimeter fence	A minimum of 7-foot chain link perimeter fence

Access road excavation depth (7 to 21 feet)	Access road excavation depth (2 to 7 feet)
Staging area for Estrella Substation 1.9 acres (located within the 15-acre site)	Staging area for Estrella Substation approximately 1.9 acres (located within the 20-acre site)
Construction Schedule (Table 2-10)	Construction schedule to extend by one week
Estrella Substation Estimated Work Dates (7-month duration)	Estrella Substation Estimated Work Dates (21-month duration)

May 26, 2021

Mr. Rob Peterson
California Public Utilities Commission
300 Capitol Mall, 4th Floor
Sacramento California 95814

Re: Response to California Public Utilities Commission Data Request No. 6

Dear Mr. Peterson

The documents enclosed with this letter provide the responses of Horizon West Transmission, LLC (HWT) to Data Request Number 6 for the Estrella Substation and Paso Robles Area Reinforcement Project (project). Responses to each data request item are provided directly in the data request tracking table included as Attachment A. The accuracy of the project description changes provided in Table 1 of this Data Request is provided in Attachment B. The following figures are provided in Attachment C:

- Revised Draft Environmental Impact Report (DEIR) Project Description Figures
    - Figure 2-7: Estrella Substation and 70 kV Power Line Components - Detailed View (Sheet 1 of 8)
    - Figure 2-11: Preliminary Substation Layout
    - Figure 2-12: Proposed 230 Kilovolt Substation General Arrangement
    - Figure 2-13: Proposed 230 Kilovolt Substation Profile View
    - Figure 2-15: Proposed 70 Kilovolt Substation General Arrangement
    - Figure 2-18: Ultimate Substation Buildout
- Comparison of Substation Parcel Boundaries
- Revised Preliminary Site Grading Plan
- Revised Proponent's Environmental Assessment (PEA) Figure 2-4: Estrella Substation Site Overview Map
- Original PEA Figure 2-4: Estrella Substation Site Overview Map

The revised and original PEA Figure 2-4 provide an overview of the substation components for comparative purposes. A track change Word version of the Updated Project Description, as well as GIS and CAD data depicting the revised layout, are being provided in the email transmittal of HWT's response to Data Request 6.

Errata to the cover letter to HWT's DEIR comments are provided in Attachment D. Errata to Attachment 3 (Detailed Comment Table) of HWT's DEIR comments are provided in Attachment E. A redline version of the errata to Attachment 3 (Detailed Comment Table) of HWT's DEIR comments is provided in Attachment F.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Marcos Mora
Executive Director of Development

ATTACHMENT A

Data Request Responses

#	Resource Area / Topic	Data Request Item	Request Date	Reply Date	Status	Follow-Up Request / Notes	HWT Response
1	Project Description (Attachment 2, Updated Project Description)	Please provide Attachment 2, Updated Project Description, as a track changes version. This will help highlight individual revisions recommended. ***This data request is critical; a detailed, and expedited response is needed to avoid follow-up data request(s) and allow for timely review of the Proposed Project revision(s).***	4/30/21	5/21/21			A tracked change version of the Updated Project Description was provided as Attachment 2 to HWT's DEIR comments. An updated track changes version that reflects the responses and corrections specified herein is being provided with this response (provided in the email transmittal of HWT's response to Data Request #6).
2	Project Description (Attachment 2, Updated Project Description)	The attached Table 1, Comparison of Key Changes to the Project Description (page 3) provides a summary of key revisions captured from Attachment 2. Please confirm the accuracy of the information presented. Where information is incorrect, please update accordingly. ***This data request is critical; a detailed, and expedited response is needed to avoid follow-up data request(s) and allow for timely review of the Proposed Project revision(s).***	4/30/21	5/21/21			Attachment B confirms or clarifies the project description changes provided in Table 1 of Data Request #6.
3	Project Description (MPR Technical Memorandum)	Please provide GIS and CAD data depicting the modified layout, as included in the MPR technical memorandum. Please ensure GIS and CAD data depict the modified permanent access road extension, as described in Attachments 2 and 3. ***This data request is critical; a detailed, and expedited response is needed to avoid follow-up data request(s) and allow for timely review of the Proposed Project revision(s).***	4/30/21	5/21/21			GIS and CAD data depicting the revised layout, including the access road, are provided in the email transmittal of HWT's response to Data Request #6.
4	Project Description (MPR Technical Memorandum)	It is unclear from the Project Revision Technical Memorandum how and whether the additional acres acquired would be used during, and following, construction. Please provide a detailed description as to the purpose of the land acquisition, describing how the additional land would be used during construction, and following construction of the Proposed Project. Please describe what construction activities would occur within these 5 acres (e.g., vegetation removal, grading, staging, construction trailers, etc.)	4/30/21	5/21/21			The additional 5 acres were acquired as part of property owner negotiations. These 5 acres will not be used during or following construction for any project activities, and HWT is not asking for any CPUC approval or authorization to utilize these 5 acres for any new or different use. The additional 5 acres will be separated from the substation site by a steep, approximately 17-foot elevation change, and HWT does not intend to use these 5 acres as part of the project or for any other utility use services. These additional 5 acres will remain available for continued agricultural use. HWT has initiated conversations with the current landowner for continued farming of these additional 5 acres. The substation footprint was reoriented to accommodate a slight adjustment of the parcel boundary to accommodate access to an existing vineyard road and to reflect the as-built location and easement boundary of the existing 230 kV transmission line. The Comparison of Substation Parcel Boundaries figure in Attachment C shows the slight adjustments to the parcel boundaries that occurred to accommodate the vineyard access road and the 230 kV transmission line right-of-way, and the resulting slight reorientation of the substation footprint. Other design changes were done to accommodate PG&E's request for two access points in the 70 kV yard, and to reflect design refinements that are typical at this engineering stage. No project activities would occur within the additional 5 acres being acquired. Moreover, the access road to the 230 kV yard would not facilitate access to the additional 5 acres due to the substantial difference in elevation between the additional 5 acres and the 15-acre substation site, as depicted in Revised Preliminary Site Grading Plan figure in Attachment C.
5	Project Description (MPR Technical Memorandum)	Please confirm whether the Project Revision would change the location of the 15-acre site within the 20-acre parcel. In other words, will the same 15 acres originally proposed for development of the Estrella Substation Facility be developed for this purpose?	4/30/21	5/21/21			The Project Revision would slightly reorient the substation closer to Union Road. However, the substation components would continue to be sited within a 15-acre area as originally proposed for development of the Estrella Substation Facility. As stated above, the substation footprint was reoriented to accommodate a slight adjustment of the parcel boundary to avoid encroachment on the adjacent vineyard access road (to allow continued access to that road by the landowner) and to avoid encroachment on the 230 kV transmission line right-of-way. The boundary of the 230 kV transmission line right-of-way was adjusted based on surveys showing the as-built location of the line. The Comparison of Substation Parcel Boundaries figure in Attachment C shows the slight adjustments to the parcel boundaries that occurred to accommodate the vineyard access road and the 230 kV transmission line right-of-way, and the resulting slight reorientation of the substation footprint. No project activities would occur within the additional 5 acres being acquired.
6	Project Description (MPR Technical Memorandum)	Please provide a revised Figure 2-7 (and GIS data for the figure) of the DEIR. This figure should clearly depict updated areas of permanent and temporary impacts as described in the MPR. Please ensure the extended access road is clearly depicted.	4/30/21	5/21/21			Revised Figure 2-7 (Sheet 1 of 8) is provided in Attachment C. The corresponding GIS data has been provided in the email transmittal of HWT's response to Data Request #6.

#	Resource Area / Topic	Data Request Item	Request Date	Reply Date	Status	Follow-Up Request / Notes	HWT Response
7	Project Description (MPR Technical Memorandum)	The Project Revision memorandum states on Page 1 that construction activities would, "require approximately 68,000 cubic yards of cut and fill, which would be balanced on site to the extent feasible." However, Attachment 2 and 3 of HWT's comment letter state that 16,500 cubic yards of topsoil would be stripped and stockpiled, of which 4,000 cubic yards would be used during restoration, with the balance to be removed from the site. This leaves 12,500 cubic yards of topsoil and 51,500 cubic yards of other soils to be removed from the site. Please clarify how excavated soils would be stored, reused, and/or removed on- and off-site.	4/30/21	5/21/21			Based on the results of the project's geotechnical study, design refinements were made in the grading plan. Since the geotechnical study showed a much thicker topsoil layer for the same project footprint than was anticipated, the overall cut and fill numbers were modified and increased accordingly. The amount of earthwork is now estimated to be about 68,000 cubic yards of cut and fill. The cut and fill would remain on site. The additional earthwork would extend the rough grading of the substation site by 1 week, without impacting the construction duration, which remains at 7 months. The cut and fill figure does not include about 16,500 cubic yards of topsoil, which would be stripped and stockpiled during construction. Of the 16,500 cubic yards, about 4,000 cubic yards would be used on site, and the balance would be removed. It is likely that the balance of the topsoil would be transferred within a 5-mile radius of the project site for a beneficial use.
8	Project Description (MPR Technical Memorandum)	The Project Revision memorandum states on Page 1 that construction activities would extend the construction schedule by one week. It is unclear what specific activities would be extended by one week. Please indicate what changes would be necessitated to the DEIR in Table 2 10 (Preliminary Construction Workforce and Equipment Use, and Approximate Task Durations).	4/30/21	5/21/21			The Project Revision would extend rough grading of the substation by 1 week, but would not extend the total 230 kV substation construction schedule of 7 months. Specifically, 1 additional week would be added to the Site Work Area Preparation Mobilization activity associated with the substation identified in Table 2-10 of the DEIR's Project Description. As part of this submittal, we have revised Table 2-10 to reflect the overall 21-month project construction schedule, which includes the transmission line and substation components. The updated Table 2-10 is included in the tracked change version of the Updated Project Description included with this transmittal in response to Data Request Item #1. Air quality emissions were remodeled to account for the additional truck trips associated with rough grading of the site, which was included as part of PG&E's comments on the DEIR.
9	Project Description (MPR Technical Memorandum)	The Project Revision memorandum states, "[a] design change to the Estrella Substation was necessitated after it was determined that the substation, as originally proposed, would preclude access to the additional five acres of land." Please clarify the meaning of this statement and the purpose of the land acquisition.	4/30/21	5/21/21			The statement was not correct. The mistake occurred due to an internal miscommunication between the engineering and environmental team members. At the request of the landowner, the parcel boundary was adjusted slightly to avoid encroachment on the adjacent vineyard access road (to allow continued access to that road by the landowner), and to avoid encroachment on the 230 kV transmission line right-of-way. The boundary of the 230 kV transmission line right-of-way was adjusted based on surveys showing the as-built location of the line. The substation footprint was reoriented slightly to accommodate these adjustments to the parcel boundary. The Comparison of Substation Parcel Boundaries figure in Attachment C shows the slight adjustments to the parcel boundaries that occurred to accommodate the vineyard access road and the 230 kV transmission line right-of-way, and the resulting slight reorientation of the substation footprint. Other design changes were done to accommodate design refinements that are typical at the advanced engineering stage (i.e., an additional access point into the 230 kV yard and a modified access point into the 70 kV yard). No project activities would occur within the additional 5 acres being acquired. The additional 5 acres also will not be accessible via the substation road. There will be a steep, approximately 17-foot elevation change between the substation footprint and the 5-acre area, which would preclude direct access.
10	Project Description (MPR Technical Memorandum)	The Project Revision technical memorandum describes a "design change" to the proposed Estrella Substation. The memorandum indicates that the 230 kV and 70 kV yards and associated equipment would be reoriented and relocated closer to Union Road. Outside of reorientation, please confirm no other design changes have been proposed and no additional equipment would be included in the modified design. If other design changes are proposed, please provide a detailed description of the differences included in the modified layout.	4/30/21	5/21/21			The Project Revision is limited to a slight reorientation of the substation closer to Union Road. The layout of some of the equipment within the substation yards has been modified, but no additional equipment has been included.
11	Project Description (MPR Technical Memorandum)	Table 1 of the Project Revision technical memorandum states under Tribal Cultural Resources, "The MPR would not increase the amount of permanent or temporary disturbance area, involve a change in the ground-disturbing activity..." This statement conflicts with what is indicated in the revisions to the Project Description, as included in Attachments 2 and 3. Please resolve inconsistencies related to proposed refinements.	4/30/21	5/21/21			The Project Revision would result in approximately 0.2 acre of temporary impact and 15 acres of permanent impact. An additional 5 acres has been included in the overall project site and would continue to be available for agricultural use. The additional 5 acres would not be disturbed by the project.

ATTACHMENT B

Table 1. Confirmation of Project Description Changes

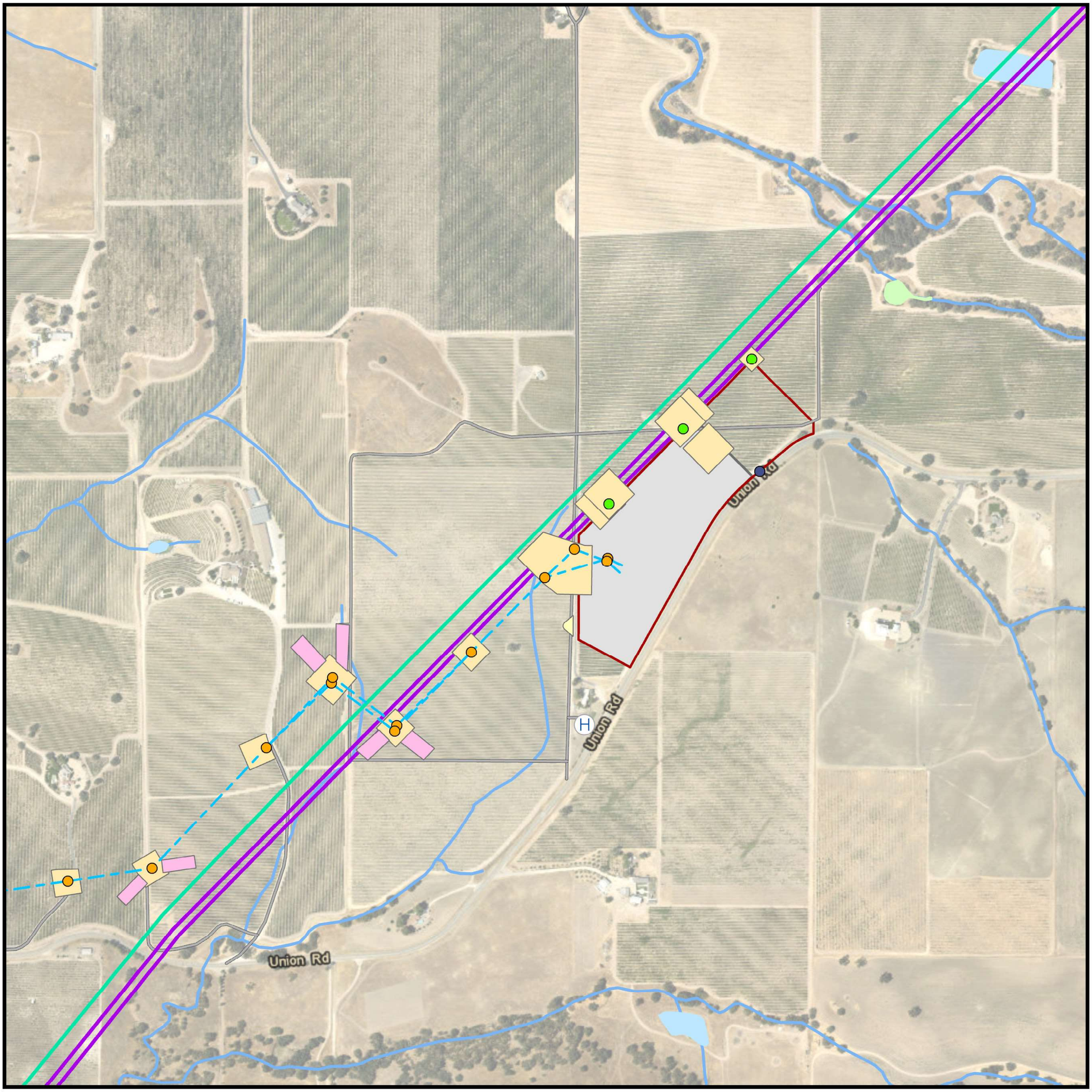
Table 1. Confirmation of Project Description Changes

DEIR Assumption	Project Description Change	Project Description Change Accurately Described?
15-acre parcel site	20-acre parcel site	Yes
15 acres of permanent disturbance	20 acres of permanent disturbance	No The Project Revision would result in 15 acres of permanent disturbance. An additional 5 acres has been included in the overall parcel that includes the project site and would continue to be available for agricultural use. The additional 5 acres would not be disturbed by the project. Therefore, no additional impact to Important Farmland would result, and impacts to Important Farmland from the substation would remain at 15 acres, as currently described in the DEIR.
6.2 acres of temporary disturbance	0.09 acres of temporary disturbance	No The Project Revision would result in approximately 0.2 acre of temporary disturbance.
50,000 cubic yards of cut and fill	68,000 cubic yards of cut and fill (16,500 cubic yards of topsoil stripped and stockpiled of which 4,000 would be used during restoration; leaving 12,500 cubic yards of topsoil and 51,500 cubic yards of other soils to be removed from the site)	Yes Based on the results of the project's geotechnical study, design refinements were made in the grading plan. Since the geotechnical study showed a much thicker topsoil layer for the same project footprint than was anticipated, the overall cut and fill numbers were modified and increased accordingly. The amount of earthwork is now estimated to be about 68,000 cubic yards of cut and fill. The cut and fill would remain on site. The additional earthwork would extend the rough grading of the substation site by 1 week without impacting the overall construction duration since it overlaps with another activity. Even with the 1 week of extra earthwork, the construction duration remains at 7 months. The cut and fill figure does not include about 16,500 cubic yards of topsoil, which would be stripped and stockpiled during construction. Of the 16,500 cubic yards, about 4,000 cubic yards would be used on site, and the balance would be removed. It is likely that the balance of the topsoil would be transferred within a 5-mile radius of the project site for a beneficial use. The truck trips for removing the topsoil were included in the revised air quality analysis.
Main permanent and construction access road (located off Union) – 1,100 feet long and 20 feet wide	Main permanent and construction access road (located off Union) - 1,700 feet long and 20 feet wide	Yes
15-foot Estrella Substation paved access road	700-foot Estrella Substation paved access road	No In the DEIR's Project Description on page 2-21, the main access driveway is described as being paved up to the second entrance of the 70 kV substation or a length of 715 feet. The Project Revision we submitted shows a 700-foot paved driveway.
7-foot chain-link perimeter fence	A minimum of 7-foot chain link perimeter fence	Yes
Access road excavation depth (7 to 21 feet)	Access road excavation depth (2 to 7 feet)	Yes

DEIR Assumption	Project Description Change	Project Description Change Accurately Described?
Staging area for Estrella Substation 1.9 acres (located within the 15-acre site)	Staging area for Estrella Substation approximately 1.9 acres (located within the 20-acre site)	No Staging areas would be entirely within the 15-acre substation footprint and would remain at 1.9 acres. No staging of materials and equipment would occur in the additional 5 acres.
Construction Schedule (Table 2-10)	Construction schedule to extend by one week	Yes
Estrella Substation Estimated Work Dates (7-month duration)	Estrella Substation Estimated Work Dates (21-month duration)	No The Project Revision would extend the rough grading of the site by 1 week. This additional week of activity would overlap with the Fence and Gate Installation activity identified in Table 2-10 of the Updated Project Description. Therefore, the total duration of construction activities at the substation site would still be 7 months as described in the DEIR. The total duration of construction of the project (including power line components and substation) would be 21 months. Refer to the updated Table 2-10 of the DEIR provided in track changes in the Updated Project Description submitted in response to Data Request Item #1.

ATTACHMENT C

Figures



N

0 200 400 800 Feet

1:12,000

Legend

Alignment Components

- New 70 kV Pole
- 70 kV Poweline Segment

Substation Components

- Substation Interconnection
- Temporary Shoofly Pole
- Substation Permanent Disturbance Area
- Estrella Substation Parcel

Construction Temporary Disturbance Area

- Helicopter Landing Zone
- Access Routes
- Substation Temporary Disturbance Area
- Temporary Pull Sites
- Pole Temporary Work Area

Existing Infrastructure

- 70 kV Powerline Segment
- 500 kV Transmission Line
- 230 kV Transmission Line

National Wetland Inventory

- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine

Estrella Substation and Paso Robles Area Reinforcement Project

Estrella Substation and 70 kV Power Line Components

Prepared by SWCA Environmental Consultants (5/25/2021, 7:59 AM) -
File: Estrella_2021_Estrella_Substation_Site_Overview - Basemap source: ESRI World Imagery

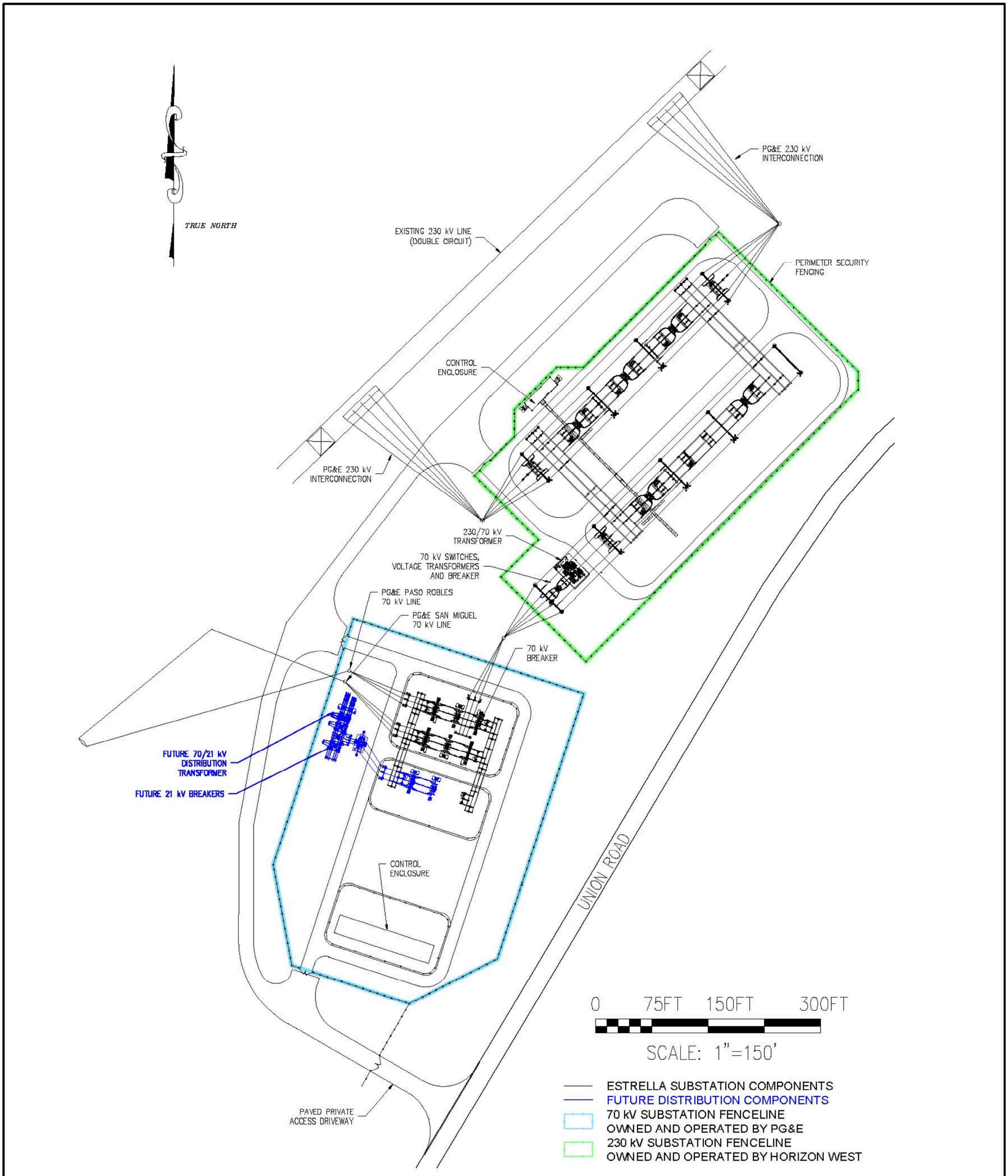


FIGURE 2-11
Preliminary Substation Layout

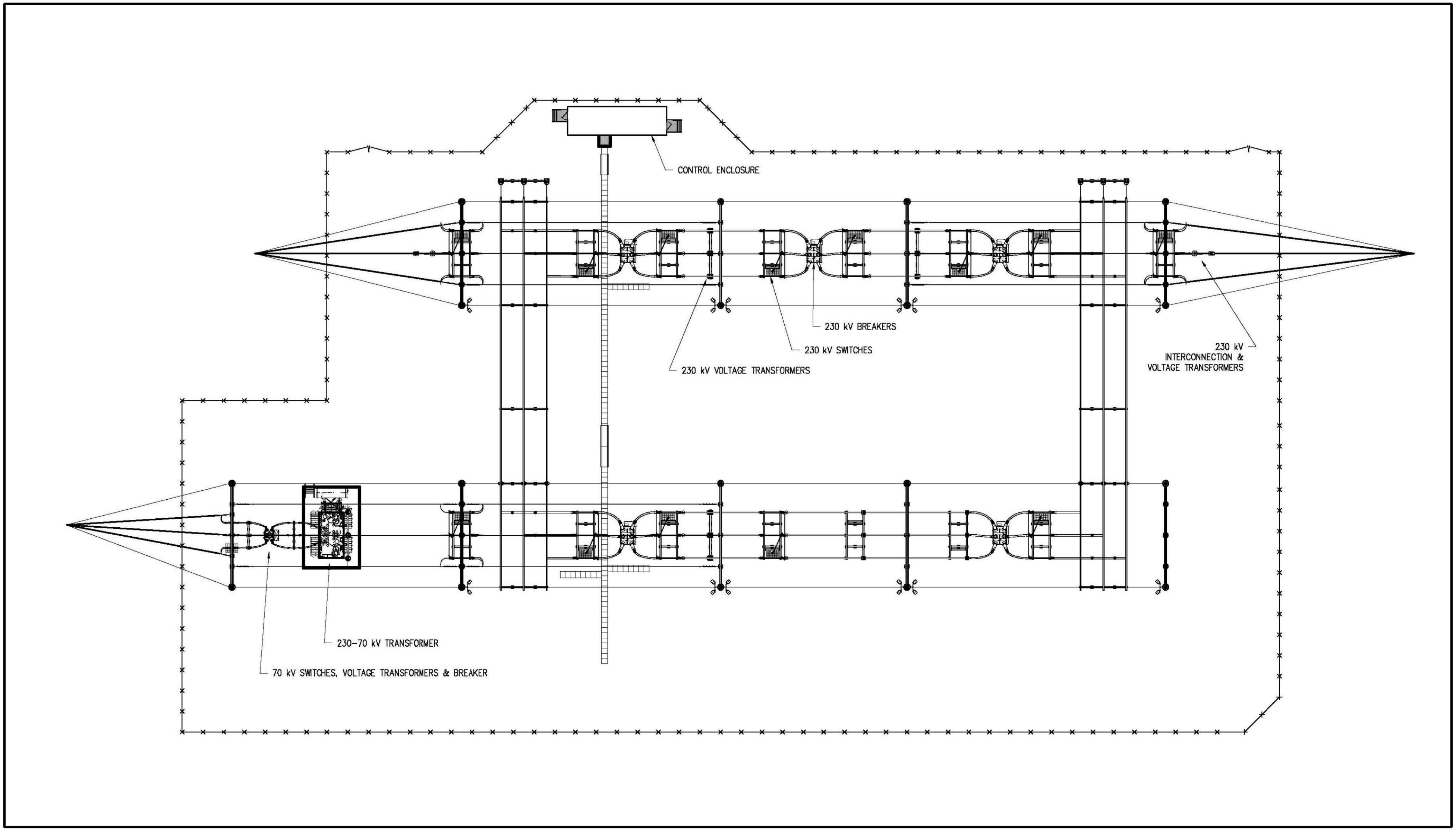


FIGURE 2-12
Proposed 230 Kilovolt Substation General Arrangement

Estrella Substation and Paso Robles
Area Reinforcement Project

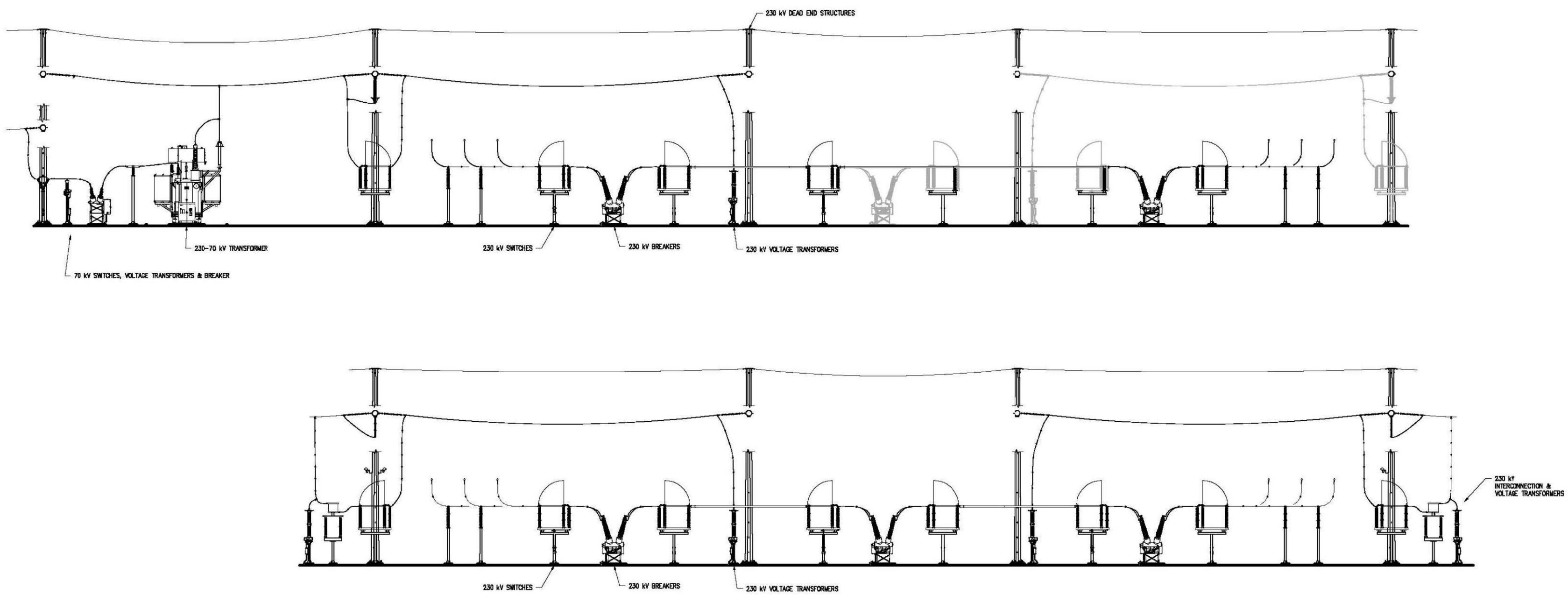


FIGURE 2-13

Proposed 230 Kilovolt Substation Profile View

Estrella Substation and Paso Robles
Area Reinforcement Project

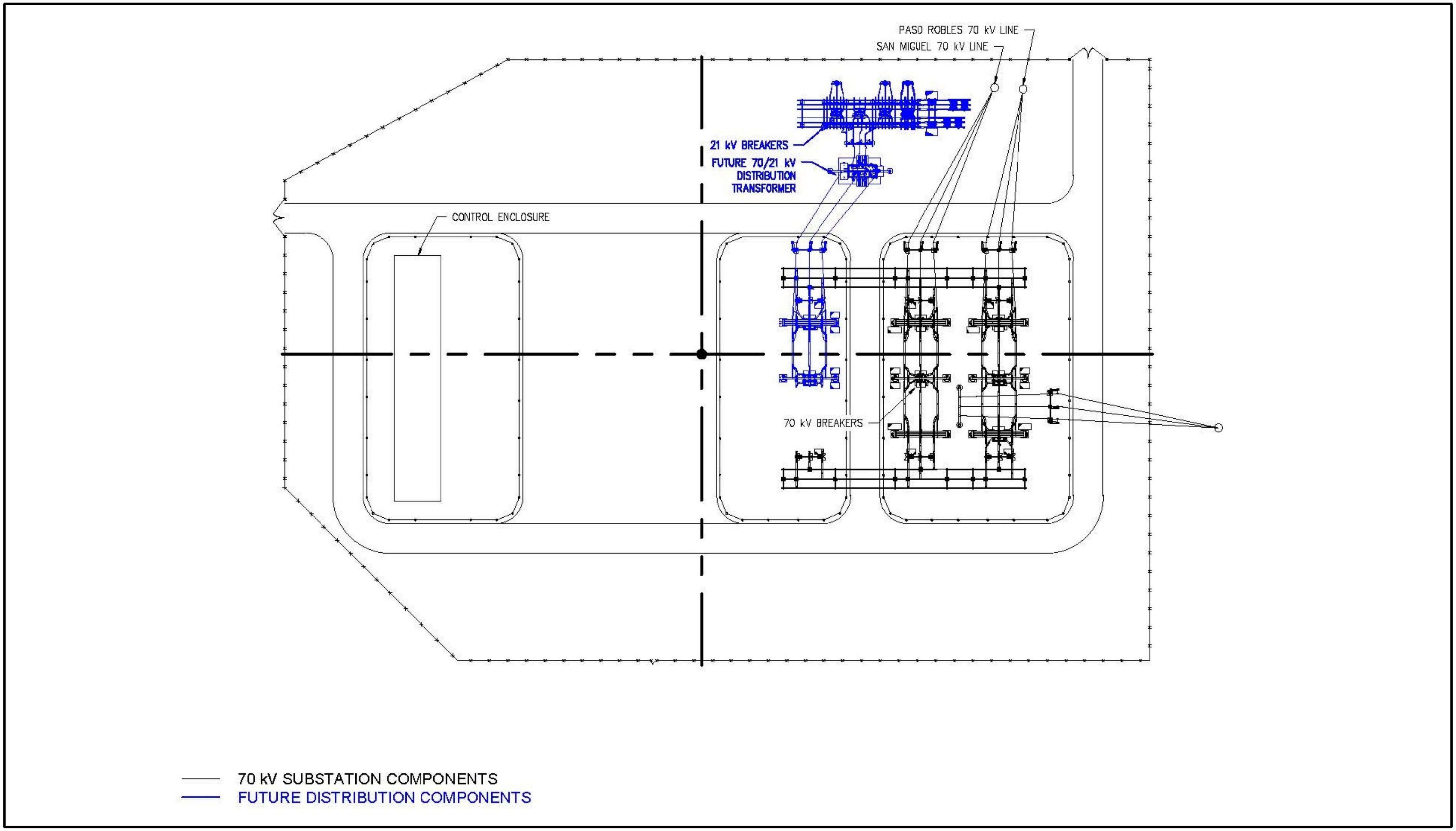


FIGURE 2-15
Proposed 70 Kilovolt Substation General Arrangement

Estrella Substation and Paso Robles Area Reinforcement Project

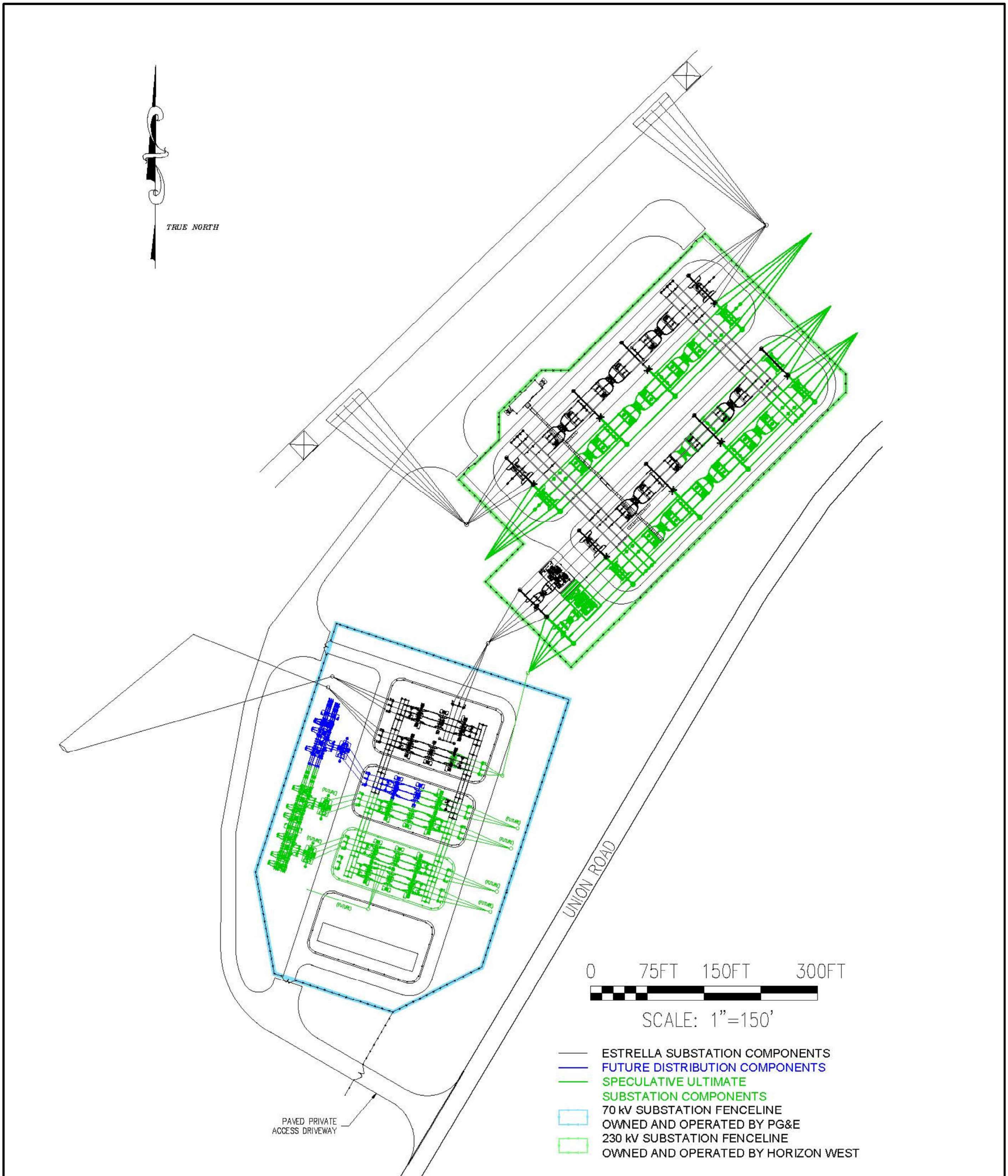
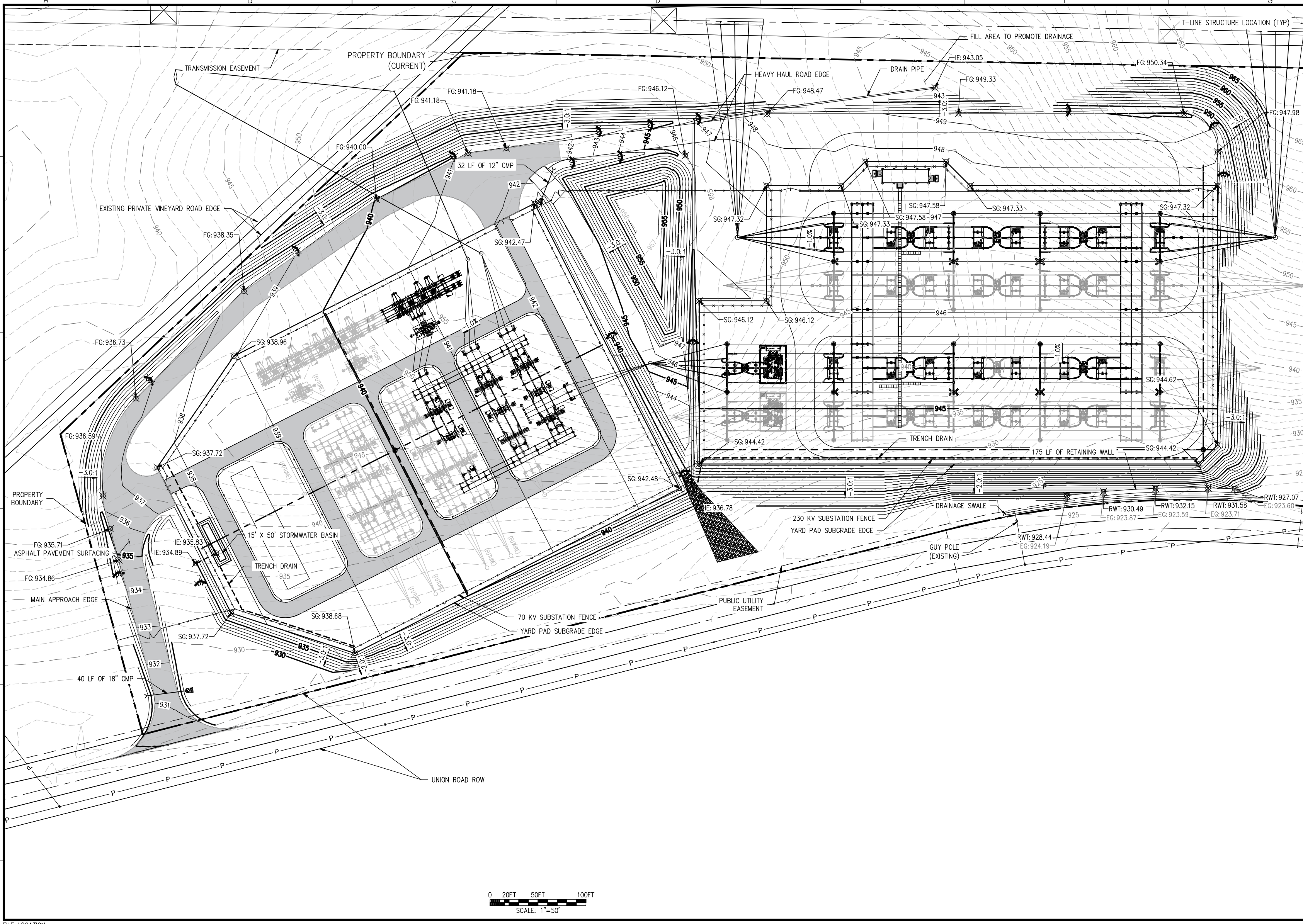


FIGURE 2-18
Ultimate Substation Buildout

Comparison of Substation Parcel Boundaries

Estrella Substation and Paso Robles
Area Reinforcement Project



LEGEND

	EXISTING GRADE MAJOR CONTOUR
	EXISTING GRADE MINOR CONTOUR
	PROPOSED GRADE MAJOR CONTOUR
	PROPOSED GRADE MINOR CONTOUR
	PROPOSED SUBSTATION BASELINE
	CHAINLINK FENCE
	SILT FENCE
	PROPERTY BOUNDARY
	ROCK CHECK DAM
RTW:	RETAINING WALL
FG:	FINISH GRADE (TOP OF SURFACE ROCK)
SG:	SUBGRADE (TOP OF FLEXIBLE BASE)
RG:	ROUGH GRADE (TOP OF DIRT)
EG:	EXISTING GRADE

NOTES

1. Contractor shall strip approximately 10 inches of soils from the working area; stripped top soil shall be used for embankments and slopes outside of the immediate area of the pad.
2. Suitable excess fill including waste top soils may be used for embankments and slopes outside of the immediate area of the pad.
3. Site and roadway to be covered by a 8 inch road base gravel as a working surface.
4. Slope access roads for drainage.
5. New yard contours indicate subgrade and do not include crushed rock surfacing; new approach contours indicate finish grade; yard subgrade to match approach finish grade; yard finish rock will feather out onto approach.
6. All areas not receiving crushed rock surfacing or road mix (Flexible Base) shall be filled with topsoil and re-seeded.
7. Crushed rock surfacing shall not be placed until all subgrade conduit, grounding and utilities are complete.
8. Subgrade includes Flexible Base material.
9. The earthwork contractor shall furnish and install compacted non-expansive backfill.

PRELIMINARY

FILE LOCATION:

"Engineering with Distinction"
ECI ELECTRICAL CONSULTANTS, INC.
BILLINGS, MONTANA

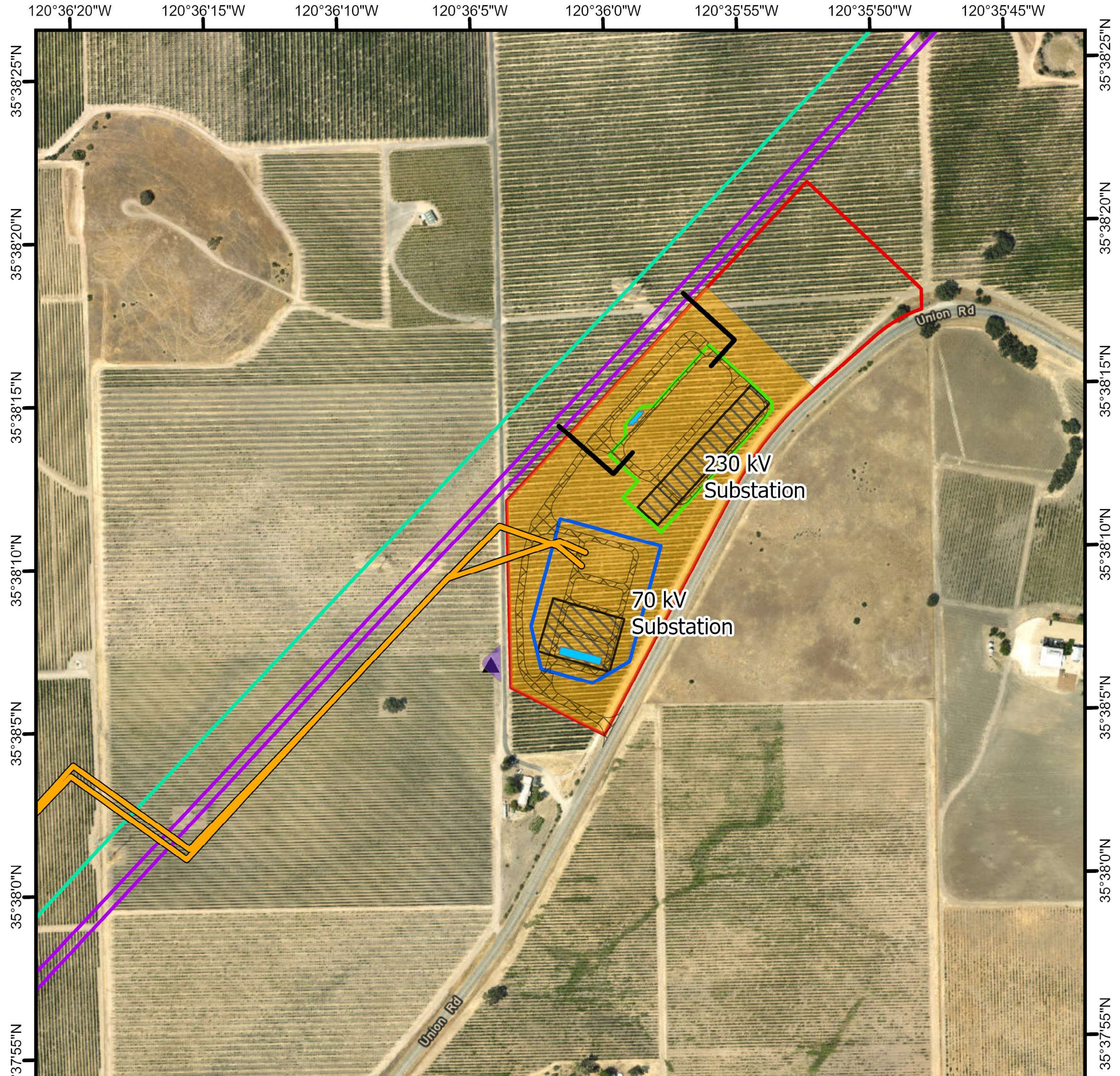
NO	REVISION	DATE	BY	APR
A	ISSUED FOR CPUC REVIEW	05/19/21		

HORIZONWEST TRANSMISSION

ENGINEERING RECORD		DATE
DRAWN		
DESIGNED		
CHECKED		
APPROVED		
DWG SCALE: 1"=50'	PLT SCALE:	

ESTRELLA
230–70 kV SUBSTATION
SITE GRADING PLAN–OVERALL

DWG. NAME: EST-D-P002-2 | REVISION NO.: A



0 125 250 500 Feet

1:6,500

Legend

- 230 kV Substation Fenceline
- 70 kV Substation Fenceline
- Substation Permanent Disturbance Area
- Substation Temporary Disturbance Area
- Temporary Substation Staging Area
- Substation Access Roads
- Estrella Substation Parcel
- Control Enclosures
- New 70 kV Power Line Segment
- 230kV Interconnection

Existing Infrastructure

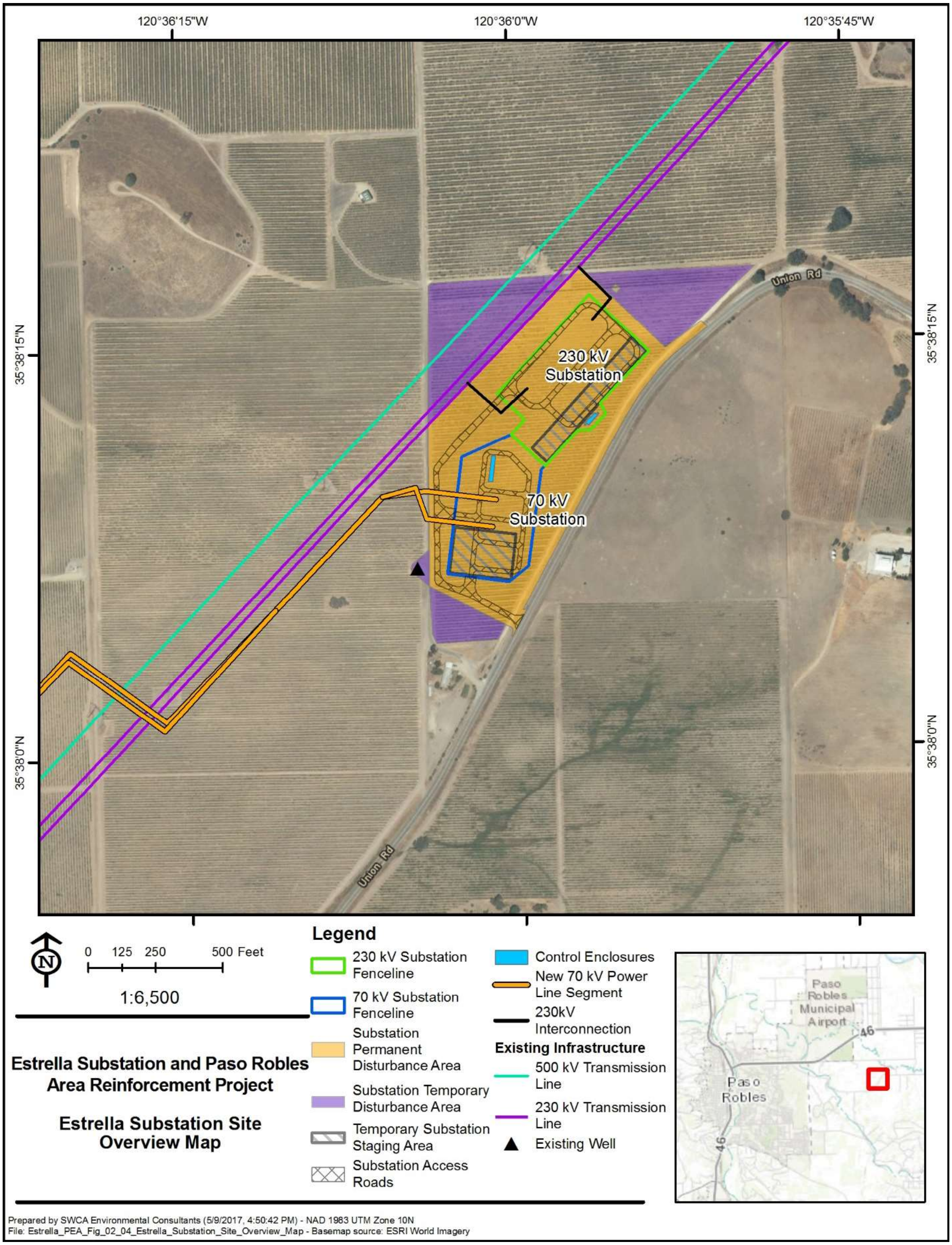
- 500 kV Transmission Line
- 230 kV Transmission Line
- Existing Well

Estrella Substation and Paso Robles Area Reinforcement Project

Estrella Substation Site Overview Map

Prepared by SWCA Environmental Consultants (5/24/2021, 3:51 PM) -
File: Estrella_2021_Estrella_Substation_Site_Overview - Basemap source: ESRI World Imagery

Figure 2-4. Estrella Substation Site Overview Map



ATTACHMENT D

Errata to the Cover Letter to HWT's DEIR Comments

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February 22, 2021—ERRATA Submitted May 26, 2021

By Electronic Mail

Robert Peterson, c/o Tom Engels
Horizon Water and Environment
suncrestproject@horizonh20.com

Re: Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project, December 2020 (California State Clearinghouse No. 2018072071)

Dear Mr. Peterson and Mr. Engels:

This letter and the enclosed documents provide the comments of Horizon West Transmission, LLC ("Horizon West") on the Draft Environmental Impact Report ("DEIR") for the Estrella Substation and Paso Robles Area Reinforcement Project ("Estrella Project" or "Proposed Project") proposed by Horizon West and Pacific Gas and Electric Company ("PG&E"). Horizon West appreciates the time and effort of staff of the California Public Utilities Commission ("Commission" or "CPUC") and its consultants in preparing the DEIR. Horizon West's comments are intended to ensure that the final environmental impact report for the Estrella Project ("FEIR") will be accurate, complete, and consistent with the California Environmental Quality Act ("CEQA").

Section I below provides an overview of the Proposed Project and describes a minor project refinement ("MPR") involving Horizon West's acquisition of an additional five acres for the parcel that includes the site of the substation portion of the Proposed Project (the "Estrella Substation Site"). The MPR also involves the slight reorientation of facilities and equipment at the Estrella Substation Site ~~for access purposes.~~to accommodate a slight adjustment of the parcel boundary to accommodate access to an existing vineyard road and to reflect the as-built location and easement boundary of the existing 230 kV transmission line. The MPR is described in greater detail in the memorandum provided as **Attachment 1** hereto and the updated Project Description provided as **Attachment 2** hereto. Horizon West requests that the Commission incorporate into the FEIR (i) the addition of five acres to the parcel that includes the Estrella Substation Site and the other design refinements described in the MPR in **Attachment 1** hereto, (ii) the additional changes specified in the updated Project Description in **Attachment 2** hereto, and (iii) the comments and corrections specified in the detailed comment table in **Attachment 3** hereto.

Section II below describes the most significant of Horizon West's comments on the DEIR, which are a subset of the comments and corrections specified in the detailed comment table in **Attachment 3** hereto. Specifically, Horizon West requests that the following modifications be incorporated into the FEIR:

- In Agriculture and Forestry Resources, revise Mitigation Measure AG-1 to (i) allow Horizon West and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation, and (ii) recognize that PG&E and Horizon West will have different contribution amounts that are based on their respective impacts to important farmland;

- Also in Agriculture and Forestry Resources, revise the FEIR to recognize that placing the Estrella Substation Site within the existing parcel that is under a Williamson Act contract would not conflict with that contract, including its underlying intent;

- In Noise, revise Mitigation Measure NOI-1 so that it will not apply to ground-level construction noise activities determined to have less than significant impacts;

- In the Alternatives Analysis, correct the DEIR's understatement of the visual impacts of Alternative SS-1 (the Bonel Ranch Substation Site), and apply consistent findings regarding Williamson Act contracts to the Estrella Substation Site and the Bonel Ranch Substation Site;

- In the Alternatives Analysis, revise the FEIR to recognize that Alternatives BS-2 and BS-3 are purely speculative and have not been shown to be potentially feasible; and

- Also in the Alternatives Analysis, revise the FEIR to find that Alternative BS-2 and Alternative BS-3 also do not meet the key project objective of increasing reliability and should be eliminated.

I. OVERVIEW OF THE PROPOSED PROJECT AND MPR

On January 25, 2017, Horizon West and PG&E filed a joint application (pending in CPUC Docket Application ("A.") 17-01-023) in which each applicant requests a separate Permit to Construct ("PTC") for its portion of the Proposed Project ("Joint Application").[1] The Proposed Project is a reliability-driven transmission solution that was identified by the California Independent System Operator Corporation ("CAISO") and approved in its 2013-2014

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[1] Horizon West is the entity formerly known as NextEra Energy Transmission West, LLC. On May 10, 2019, Horizon West submitted a Notice of Name Change to the Commission. On May 22, 2019, Horizon West filed a *Motion to Change Caption Due to Change in Name* in Docket A.17-01-023. The motion included copies of the California Secretary of State's Amended Certificate of Registration confirming the name change and the Delaware Secretary of State's certification of the name change.

Transmission Plan. The Proposed Project is comprised of the Estrella Substation, which is a new 230 kilovolt ("kV")/70 kV substation, plus a new approximately seven-mile overhead 70 kV double-circuit power line, and replacement and reconductoring of approximately three miles of an existing 70 kV power line. Together, these components comprise the reliability-driven upgrade that the CAISO identified and approved.

The CAISO identified certain components of the Proposed Project as being eligible for competition pursuant to its Tariff and Federal Energy Regulatory Commission ("FERC") Order 1000,[2] including the new 230 kV substation, buswork, and termination equipment and a new 230/70 kV transformer bank. The CAISO conducted a competitive solicitation process and ultimately awarded those components to Horizon West as the approved project sponsor. The other components of the Proposed Project were not eligible for competitive solicitation and were awarded to PG&E as the incumbent utility. Because the Horizon West components and the PG&E components together form a single, integrated transmission project, the parties filed the Joint Application together to request a separate PTC for each applicant's components.[3] As proposed in the Joint Application, Horizon West would construct, own, and operate the new 230 kV buswork and termination equipment and a new 230/70 kV transformer bank at the Estrella Substation, while PG&E would construct the new 70 kV buswork and termination equipment at the Estrella Substation, new 230 kV interconnection facilities needed to interconnect the Estrella Substation to PG&E's existing 230 kV facilities, the new approximately seven-mile 70 kV power line, and the approximately three miles of 70 kV reconductoring.[4]

Since filing the Joint Application and the Proponents' Environmental Assessment ("PEA") in 2017, Horizon West and its engineers have refined the detailed design and engineering plans for the Estrella Substation. This work resulted in an MPR involving the Estrella Substation Site. The elements of the MPR are the following:

- Horizon West will acquire an additional five acres as part of the parcel that includes the Estrella Substation Site. The Estrella Substation ~~thus~~ will be located on the same fifteen acres as originally proposed, but the overall parcel will be a twenty-acre parcel instead of a fifteen-acre parcel. The inclusion of the five acres

2 *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, FERC Stats. & Regs. ¶ 31,323 (2011), *order on reh'g*, Order No. 1000-A, 139 FERC ¶ 61,132 (2012), *order on reh'g and clarification*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012).

3 *See* Joint Application at 3 ("[Horizon] West could not successfully interconnect and energize its 230 kV project components without the project components that only PG&E can build and own. Conversely, PG&E would have no reason to seek a PTC for its 70 kV project components or its 230 kV interconnection facilities unless the [Horizon] West 230 kV project components also were being constructed.").

4 Joint Application at 10-12.

is reflected in the comments and corrections in **Attachment 1**, **Attachment 2**, and **Attachment 3** hereto.

- ~~Adding~~Unrelated to the addition of the five acres to the parcel, information identified through the engineering process and discussions with the landowner necessitated slight adjustments to the parcel boundary, which required a design change to the Estrella Substation to reorient it to ~~allow access to~~align with the ~~five-acre addition~~adjusted parcel boundary. Specifically, the parcel boundary was adjusted to avoid encroachment on the adjacent vineyard access road (to allow continued access to that road by the landowner) and to avoid encroachment on the 230 kV transmission line right-of-way. As a result, the 230 kV and 70 kV yards and associated equipment will be slightly reoriented closer to Union Road. At its closest point, the fence line will be located approximately 64 feet northwest of Union Road, as shown in Figure 2 in **Attachment 1** hereto. ~~Without this change, the design would preclude access to the five-acre addition to the site. This slight reorientation will require approximately 72,000 cubic yards of cut and fill, which will be balanced on site to the extent feasible.~~ The MPR will only result in a slight reconfiguration of the yard equipment and will not affect the type of electrical equipment to be housed within the site's fence line as originally proposed.

As demonstrated in the analysis presented in the memorandum in **Attachment 1** hereto, construction and operation activities associated with the MPR would not result in a new, significant impact or a substantial increase in the severity of a previously identified significant impact based on the criteria applied in the DEIR. Table 1 in **Attachment 1** hereto provides a summary of the potential impacts for resource area analyzed in the DEIR. The elements of the MPR reflect the updated design plan for the Estrella Substation and should be reflected in the FEIR as insignificant changes to the Estrella Substation design.

II. KEY SUBSTANTIVE COMMENTS ON THE DEIR

A. In Agriculture and Forestry Resources, Mitigation Measure AG-1 should be revised to allow use of comparable mitigation measures and recognize that Horizon West and PG&E will have different contribution amounts.

The DEIR finds that the Proposed Project would convert 2.66 acres of Farmland of Statewide Importance and 11.76 acres of Unique Farmland to non-agricultural uses, and concludes that the conversion of this small amount of acreage would constitute a significant impact.[5] This suggests that the permanent conversion of any amount of designated farmland acreage, however small, is a significant impact.

[5] DEIR at 4.2-12 through 4.2-13. ~~The acreage numbers in Tables 4.2-1 and 4.2-2 in the DEIR are updated in the comments in **Attachment 3** hereto to reflect the addition of five acres to the Estrella Substation Site.~~

Use of this stringent threshold would create a precedent for any project with any conversion of designated farmland, however small, to result in a significant agricultural impact. This negates the use of the California Agricultural Land Evaluation and Site Assessment Model ("LESA") which is endorsed by the Department of Conservation ("DOC") as an alternative and arguably more rigorous approach to assessing impacts to designated farmland.[6] The DOC's website states: "The California LESA Model was developed to provide lead agencies with an optional methodology to ensure that potentially significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095), including in California Environmental Quality Act (CEQA) reviews."[7] The DEIR's approach negates any quantitative assessment of potentially significant effects on the environment of agricultural land conversions by rendering any conversion of any acreage, regardless of overall quality or viability for agricultural purposes, a significant impact. Rote application of the DEIR's stringent threshold, without more analysis of factors specific to the Proposed Project and its location, would be contrary to CEQA because "thresholds cannot be used to determine automatically whether a given effect will or will not be significant."[8] Indeed, Section 15064(b)(2) of the CEQA Guidelines was revised in 2018 to reflect this.

Use of the DEIR's stringent threshold also is a departure from the thresholds applied for the conversion of agricultural lands by other CPUC-approved projects. The PEA evaluated the impacts of the Proposed Project's conversion of agricultural land based on the CPUC's analysis of PG&E's Shepherd Substation project in A.10-12-003, approved May 2013. For that project, the CPUC recognized a standard of significance based on Government Code Section 51222, which identifies 10 acres as the size of a parcel large enough to sustain agricultural use in the case of Prime Farmland, and 40 acres in the case of Farmland of Statewide Importance, Unique Farmland, and non-Prime Williamson Act lands.[9] The Commission also applied a minimum size threshold of significance in the 2015 Mitigated Negative Declaration and Supporting Initial Study ("MND/IS") for the Southern California Edison Company ("SCE") Banducci Substation Project in A.12-11-011. In that case, the CPUC found no significant impacts for SCE's substation project, even though 6.3 acres of Prime Farmland would be converted to non-agricultural use.[10] Specifically, the CPUC found a less than significant impact based on the conclusion that the 6.3 acres of converted Prime Farmland represents 0.001 percent of the 608,789 acres of Prime

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[6] The LESA model is described on the DOC website at: https://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx.

[7] *Id.*

[8] *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1108-1109.

[9] PEA at 3.2-21, citing the PG&E Shepherd Substation Project IS/MND (May 2012) at 3.2-8 through 3.2-9.

[10] *See* SCE Banducci Substation Project MND/IS at 5-59.

Farmland in Kern County.[11] Under these thresholds, the Proposed Project's impacts are less than significant because the Proposed Project would convert a *de minimis* amount of Prime Farmland, less than 40 acres of the other categories addressed in Government Code Section 51222, only 0.~~001~~0001 percent of the approximately 22,697 acres of Farmland of Statewide Importance in San Luis Obispo County, and only 0.~~0004~~0003 percent of the 45,175 acres of Unique Farmland in San Luis Obispo County.~~[12]~~ The Commission should consider whether the threshold applied in the DEIR should be adjusted in the FEIR for consistency with these statutory standards and prior Commission precedent.

Additionally, although the Commission has applied the DEIR's stringent standard in a recent case,[13] this "binary" standard of deeming significant any loss of farmland fails to consider additional factors such as the overall acreage subject to conversion (which in this case is a small number), or the value of the farmland to be converted, using for example, the LESA model as supported by the DOC, or the relative percentage of Prime and other farmland to be converted compared to the overall acreage in the county. Under the DEIR's approach, any conversion of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland is automatically a significant and unavoidable impact. This approach overstates the Proposed Project's impacts.

To the extent mitigation is required, Mitigation Measure AG-1 should be revised to allow Horizon West and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation requirement.[14] Mitigation Measure AG-1 requires contributions to the California Farmland Conservancy Program, which promotes the long-term preservation of agricultural lands in California though agricultural conservation easements. Based on preliminary outreach, the California Farmland Conservancy Program is not aware of the Proposed Project and

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11 *Id.*

~~12 These percentage are calculated using the adjusted acreage numbers in the detailed comments in **Attachment 3** hereto, which include the addition of five acres to the Estrella Substation Site.~~

13 *See* SCE Circle City Substation and Mira Loma-Jefferson 66 kV Line Project (A.15-12-007).

14 In addition to applying the stringent threshold, the DEIR finds that Mitigation Measure AG-1 (as discussed in the DEIR on page 4.2-13) "would not fully offset the significant impact because it would not create any new Important Farmland . . . ." This finding may be intended to follow the decision in *King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814 addressing a situation involving a vastly larger permanent loss of designated farmland acreage. It should be recognized, however, that CPUC precedent has allowed the use of conservation easements to mitigate such impacts to less than significant levels, and that the 2018 revisions to the Section 15370(e) of the CEQA Guidelines make clear that "mitigation" includes "[c]ompensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements." Cal. Code Regs., tit. 14, § 15370(e). The holding in *King and Gardiner Farms* therefore is not appropriate here.

does not have a clear plan for implementing this mitigation measure. To provide flexibility and ensure that Horizon West and PG&E can comply, Mitigation Measure AG-1 should be revised to allow comparable mitigation as shown below and in the detailed comment table in **Attachment 3** hereto. The changes below also are necessary to clarify the scope and required timing of the mitigation, as well as the specific criteria that will be applied to confirm that the mitigation measure has been satisfied.

> Mitigation Measure AG-1: Provide Compensation for Loss of Agricultural Land.
>
> HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.

B. Also in Agriculture and Forestry Resources, the DEIR's conclusion of significant and unavoidable agricultural impacts due to conflict with an existing Williamson Act contract misapplies the law and should be corrected.

The DEIR also contradicts applicable law in its conclusion that the Proposed Project's agricultural impacts are significant and unavoidable due to conflict with an existing Williamson

Act contract.[15] The DEIR concludes that removing 15 acres[16] for the Estrella Substation Site from the current 98-acre Williamson Act parcel would conflict with the existing Williamson Act contract's "intent" to "preserve agricultural land in agricultural use."[17] This is not correct, however, because Government Code Section 51238 expressly provides that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Further, as noted in the DEIR, removing the acreage for the proposed substation parcel from the 98-acre Williamson Act parcel would not disqualify the remainder (*i.e.*, 78 acres) from being an agricultural preserve under the County of San Luis Obispo's Rules of Procedure to Implement the California Land Conservation Act of 1965. Indeed, the remaining 78 acres under the modified Williamson Act contract satisfy the acreage under the County's rules, (*i.e.*, 40-acre minimum parcel size) and will continue to be cultivated and with land uses limited to compatible uses. In short, the Proposed Project does not present a conflict with the existing Williamson Act contract, and the DEIR's conclusion of a significant and unavoidable impact is contrary to law and lacks a factual basis.

To be consistent with Government Code Section 51238, the language in the DEIR on page 4.2-15 should be modified in the FEIR as follows:

> ~~However, p~~ Placing the substation within the existing parcel under Williamson Act contract would not conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use, because Government Code Section 51238 specifies that "the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve." Removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract.

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15 DEIR at 4.2-14.

16 As explained above, five acres will be added to the parcel that includes the Estrella Substation Site, but only fifteen acres will be used for the Estrella Substation Site.

17 DEIR at 4.2-15.

C. The DEIR incorrectly applies Mitigation Measure NOI-1 to all construction activities, even though ground-level construction noise impacts are determined to be less than significant.

CEQA is clear that mitigation measures are not required for effects which are not found to be significant.[18] The DEIR on page 4.13-18 states that "ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously)." Notwithstanding the DEIR's finding that ground-level construction noise impacts will be less than significant, the DEIR states that Mitigation Measure NOI-1 is applicable to all construction activities. The DEIR provides no basis for this requirement, and it appears wholly unnecessary and onerous given that Applicant Proposed Measure (APM) NOI-2 is expressly discussed in the DEIR as a way to further reduce the already less than significant ground-level construction noise impacts.[19] Given this, Horizon West requests that the FEIR not require NOI-1 for ground-level construction activities.

D. The DEIR correctly selects the Estrella Substation Site as the environmentally superior alternative, but understates or ignores significant impacts that would result from Alternative SS-1 (the Bonel Ranch Substation Site).

The DEIR concludes that Alternative Combination #2 "offers the most advantages and least drawbacks among the Proposed Project and other alternative combinations."[20] Alternative Combination #2 consists of the Estrella Substation (*i.e.*, the Proposed Project), Alternative PLR-1A, Alternative BS-2, and Alternative BS-3.[21] Horizon West agrees with the DEIR's assessment that the Estrella Substation as proposed by Horizon West is the environmentally superior alternative as compared with the other alternatives for the substation site.

Although the DEIR correctly selects the Estrella Substation as environmentally superior, the DEIR ignores or understates some of the impacts associated with the alternative substation site labeled as Alternative SS-1 (also referred to as the Bonel Ranch Substation Site). As Horizon

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18 Pub. Res. Code § 21002; CEQA Guidelines, Cal. Code Regs., tit. 14, §§ 15126.4, subd. (a)(3) and 15091.

19 DEIR at 4.13-18.

20 DEIR at 5-13.

21 DEIR at 5-1.

West detailed in its comments on the Alternatives Screening Report,[22] which is included in the DEIR as Appendix B, the Bonel Ranch Substation Site would result in significant impacts. The DEIR ignores or understates those impacts, as explained below.

First, the DEIR fails to recognize the significant visual effects of locating the substation at the Bonel Ranch Substation Site. As discussed in the DEIR on page 4.1-45, the Bonel Ranch Substation Site would be located adjacent to the Estrella River in an agricultural area, with the closest residence located approximately 0.5 mile west on Estrella Road. While the DEIR states that "[d]evelopment of the substation at the Bonel Ranch site would substantially alter the visual character of this immediate area and its agricultural setting," the DEIR concludes incorrectly that the alternative would have a "less severe effect on the area's visual character and visual quality" compared to the Proposed Project due to lower "viewer concern" and "exposure."[23] The DEIR reaches this conclusion by asserting that the Estrella Substation Site would be visible from numerous wineries and from motorists along Union Road, whereas the Bonel Ranch Substation Site would reduce aesthetic impacts because it would not be visible from any vineyards or wineries and would affect a fewer number of motorists because the average daily traffic along Estrella Road is substantially less than along Union Road. This analysis fails, however, to consider potential changes to the visual character and quality of the Bonel Ranch Substation Site that would result if the substation were located there, including potential visual incompatibility with the surrounding landscape as seen from Estrella Road. In fact, comparison of the visual simulations in the DEIR for key observation points ("KOPs") 1 and 2 (near the proposed Estrella Substation Site) compared to those for KOPS 11, 12 and 13 (near the Bonel Ranch Substation Site) contradict the DEIR's conclusion.[24] As can be seen in the visual simulations for KOPs 1 and 2 (near the proposed Estrella Substation Site), the existing transmission line structures already present a degraded visual landscape in KOPs 1 and 2. In contrast, KOPs 11, 12 and 13 (near the Bonel Ranch Substation Site) all have agrarian landscapes untarnished by industrial structures. Additionally, construction of the Alternative PLR-1C route (or minor route variation) could result in additional visual impacts to these KOPs, but the DEIR does not discuss these potentially significant impacts. The DEIR thus lacks substantial evidence supporting the conclusion that visual impacts from Alternative SS-1 would be less significant than those for the Estrella Substation Site.

Second, the DEIR fails to identify potentially significant agricultural impacts from the Bonel Ranch Substation Site due to cancellation of a Williamson Act contract, despite finding a significant impact for the Estrella Substation Site due to such cancellation. As stated above, the DEIR's finding of a significant impact for the Estrella Substation Site for Williamson Act reasons is contrary to the Government Code. But if the Commission retains that conclusion in the FEIR for the Estrella Substation Site, then the FEIR must reach the same conclusion regarding the Bonel

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[22] *See* Comments of Horizon West Transmission, LLC (formerly known as NextEra Energy Transmission West, LLC) (U 222 E) on Draft Alternatives Screening Report for the Estrella Substation and Paso Robles Area Reinforcement Project (A.17-01-023), dated May 10, 2019.

[23] DEIR at 4.1-46.

[24] *Cf.*, DEIR, Figures 4.1-2 through 4.1-3 with Figures 4.1-11 through 4.1-12.

Ranch Substation Site. According to the San Luis Obispo County Land Use View GIS mapper, the Bonel Ranch Substation Site parcel is under an existing Williamson Act contract. The DEIR erroneously reaches the opposite conclusion. This should be corrected in the FEIR, and the FEIR's findings regarding Williamson Act contract implications should be consistent for the Estrella Substation Site and the Bonel Substation Site. Recognizing impacts accurately and consistently will provide additional support for selection of the Estrella Substation Site as the environmentally superior substation alternative.

E. Alternatives BS-2 and BS-3 are purely speculative, have not been shown to be potentially feasible, and should be eliminated.

As noted above, the DEIR selects Alternative Combination #2 as the environmentally superior alternative based on the conclusion that it "offers the most advantages and least drawbacks among the Proposed Project and other alternative combinations."[25] Alternative Combination #2 includes as distribution components Alternative BS-2 and Alternative B-3. Alternative BS-2 would involve installation of front-of-the-meter ("FTM") battery energy storage systems ("BESSs") connected to the distribution system to defer the need for additional distribution capacity in the Paso Robles Distribution Planning Area ("DPA").[26] The DEIR used "illustrative" and "potentially feasible" sites for Alternative BS-2, and acknowledges that: "Because site-specific analyses are speculative at this time, this DEIR uses the illustrative sites to demonstrate the feasibility of this alternative, and the relatively small footprint these facilities would occupy throughout the project area."[27] Alternative BS-3 would involve behind-the-meter ("BTM") solar and battery storage to reduce loading on circuits within the Paso Robles DBA.[28] The DEIR does not identify site locations for Alternative BS-3 based on statements that: "Because it is unknown which specific customers will opt into the BTM resources program and install BTM resources on their property, the specific locations of activities under Alternative BS-3 are unknown;" and "In general, BESS would be anticipated to be installed within existing commercial and industrial buildings, and within existing residential homes or apartment complexes."[29]

These statements in the DEIR confirm that Alternative BS-2 and Alternative BS-3 are purely speculative and are not potentially feasible alternatives to the Proposed Project. An EIR is required to describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.[30] An EIR is not required to consider alternatives that are infeasible, and

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[25] DEIR at 5-13.

[26] DEIR at 3-112.

[27] DEIR at 3-122.

[28] DEIR at 3-132.

[29] DEIR at 3-134.

[30] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(a).

an EIR need examine in detail only those alternatives that "could feasibly attain most of the basic objectives of the project."[31]

For Alternative BS-2 and Alternative BS-3, there is no evidence in the record demonstrating that the theoretical FTM or BTM BESS systems are potentially feasible.[32] The Commission should find that Alternative BS-2 and Alternative BS-3 are remote and speculative because they are unlikely as a practical matter to be carried out within the reasonable future, and because they are contingent on the occurrence of uncertain future events such as future procurement activities that may or may not result in a sufficient addition of BESS to meet the distribution objective.[33] The DEIR acknowledges that "[i]t is not possible to identify with certainty FTM BESS sites that could be selected by PG&E in the future" and concedes that "site-specific analyses are speculative at this time."[34] Alternative BS-3 is even more speculative and is based upon the assumption that 17,000 customers could and would implement solar and battery storage, which would result in 88 megawatts ("MW") of solar and 125 MW/240 MWh of storage.[35] But there is no evidence presented in the DEIR that any of these potential customers would adopt these technologies, or where any such future facilities would be located: "Because it is unknown which specific customers will opt into the BTM resources program and install BTM resources on their property, the specific locations of activities under Alternative BS-3 are unknown."[36]

As a result, each of Alternative BS-2 and Alternative BS-3 fails the most basic CEQA standards. Both, as expressly admitted in the DEIR, are inherently speculative. There is no evidence the FTM or BTM batteries could or would be deployed, and even if there were, there is nothing more than pure speculation regarding where such batteries and related facilities might be

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31 CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(f).

32 CEQA defines "Feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." Pub. Resources Code § 21061.1; CEQA Guidelines, Cal. Code Regs., tit. 14, § 15364. The CEQA Guidelines enumerate which factors should be assessed: "Among the factors that may be taken into account when addressing feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects within a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(f)(1), citing *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 and *Save Our Residential Environment v. City of West Hollywood* (1992) 9 Cal.App.4th 1745, 1753, fn. 1.

33 *See Al Larson Boat Shop Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 745; *Bowman v. City of Petaluma* (1986) 185 Cal.App.3d 1065, 1084.

34 DEIR at 3-112.

35 DEIR at 3-132.

36 DEIR at 3-134.

deployed. The DEIR also acknowledges that deployment of the hypothetical is likely to occur over many years, demonstrating substantial delay in completion. A substantial delay could, by itself, render an alternative incapable of being "accomplished in a successful manner within a reasonable period of time," and hence infeasible.[37] As noted above, in the context of alternative locations for a project, the CEQA Guidelines recognize that another factor in the determination of feasibility is whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.[38] The DEIR lacks sufficient information and analysis regarding the potential environment impacts of Alternative BS-2 and Alternative BS-3. Selection of these two BESS alternatives as the environmentally superior distribution alternative therefore is not supported by substantial evidence.

F. Alternatives BS-2 and BS-3 also should be eliminated because they do not meet the Proposed Project's objective to ensure transmission and distribution reliability.

The CAISO designated the Proposed Project as a "reliability" project that is needed to mitigate thermal overloads and low voltage conditions in the Los Padres 70 kV system. The Proposed Project was identified in the CAISO's 2013-2014 Transmission Plan as a project needed to mitigate thermal overloads and voltage concerns in the Los Padres 70 kV system (specifically in the San Miguel, Paso Robles, Templeton, Atascadero, Cayucos, and San Luis Obispo areas). CAISO modeling determined that thermal overloads and very low voltage conditions, including voltage collapse in the area, could occur in this system following either one of two Category B1 contingencies: (1) loss of the Templeton 230 kV/70 kV #1 Transformer Bank; or (2) loss of the Paso Robles-Templeton 70 kV Transmission Line. If either the #1 Transformer Bank at the Templeton Substation or the 70 kV transmission line connecting the Paso Robles and Templeton Substations were to fail for any reason, that failure would result in dangerous overloading and low voltage conditions in the regional system.

This occurs due to both high load (*i.e.*, electrical service demand) in the Paso Robles area relative to substation capacity, and a lack of transmission redundancy in the system. Currently, the only sources of power to the Paso Robles Substation are the San Miguel-Paso Robles 70 kV Transmission Line from the north and the Paso Robles-Templeton 70 kV Transmission Line from the south, with the latter providing the bulk of the power and the nearest connection to a 230 kV power source. The San Miguel-Paso Robles 70 kV Transmission Line does not have the capacity to accommodate the load served through the Paso Robles Substation should the power source from Templeton Substation fail; therefore, thermal overloads, low voltages, and/or voltage collapse in the area could occur during one of the Category B contingencies identified by the CAISO. Because PG&E has an interim operational plan (an under-voltage load shedding scheme) that serves to protect the transmission system infrastructure in the event of such overload scenarios, load would

[37] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15364; *Bowman v. City of Petaluma*, *supra*, 185 Cal.App.3d at 1084 (condition of project approval requiring development of ring road that would result in long delay was infeasible).

[38] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15126.6(f)(1).

be systematically dropped to bring voltages to acceptable levels. This operational plan could result in 60 to 70 MW of load in Paso Robles being dropped during one of the Category B contingencies described above.

The Proposed Project is designed to meet this CAISO-identified reliability need. The CAISO specified that: "As described in the ISO Functional Specification for the Estrella Substation project, the substation will address reliability issues in the Paso Robles area by providing Paso Robles Substation with more reinforced 70 kV sources from Templeton and Estrella Substations."[39] The CAISO's functional specifications explain that the Proposed Project would meet the reliability need as follows:

> The project will mitigate the thermal overloads and voltage concerns identified in the Los Padres 70 kV system, specifically in the San Miguel, Paso Robles, Templeton, Atascadero, Cayucos and San Luis Obispo areas following a Category B contingency due to loss of either the Templeton 230/70 kV #1 Bank or the Paso Robles-Templeton 70 kV Line. These two Category B contingencies put approximately 60-70 MW of load at Paso Robles at risk by activating the existing Paso Robles UVLS during summer peak conditions to alleviate the thermal and low voltage concerns. Also, a Category C3 contingency condition involving loss of Morro Bay-Templeton and Templeton-Gates 230 kV lines results in thermal overloads and low voltages in the underlying 70 kV system. With the additional source from the Gates 230 kV system, the Estrella Substation Project will provide robust system reinforcement to the Paso Robles and Templeton 70 kV system operations.[40]

Consistent with this fundamental reliability purpose, the Joint Application and PEA specified the following project objectives:

(1) **Reinforce Electrical Reliability by Implementing the CAISO-Approved Electrical Plan of Service.** Increase reliability and mitigate thermal overloads and voltage concerns in the area by having an additional 230 kV source of power that will increase service reliability in San Luis Obispo County, and maintain compliance with North American Electric Reliability Corporation reliability standards, as described in the *Estrella Substation Project Functional Specifications* issued by the CAISO in June 2014. The Proposed Project also is intended to allow Horizon West and PG&E to meet their obligation to add the

[39] Joint Application, Exhibit H—CAISO Estrella Substation Project—Project Sponsor Selection Report at 2.

[40] Joint Application, Exhibit K—CAISO Estrella Substation Project Description and Functional Specifications for Competitive Solicitation at 2-3.

CAISO-approved project to the CAISO-controlled grid, as defined in the *Functional Specifications* and the Approved Project Sponsor Agreement.[41]

(2) **Meet Expected Future Electric Distribution Demand.** Provide a location for future 21 kV distribution facilities with a 230/70 kV source near the anticipated growth areas in northern Paso Robles to efficiently add distribution capacity and improve service reliability when required in the Paso Robles DPA.[42]

(3) **Balance Safety, Cost, and Environmental Impacts.** Locate, design, and build the project in a safe, cost-effective manner that will also minimize environmental impacts.[43]

The CAISO's updated studies confirm that the Proposed Project is still needed as soon as possible for reliability at the transmission and distribution level. The CAISO performed revised transmission planning studies for the 2017-2018 transmission planning process. The CAISO restudied the need for the Proposed Project in the near-term planning horizon using the 2019 and 2022 summer peak base cases used in the 2017-2018 transmission planning process with the Proposed Project removed from the model. The CAISO explained that the results "would be very similar in 2027" and explained:

> For the P1 (N-1) contingency, the reliability constraint is overloading of the Coalinga-San Miguel 60 kV and San Miguel Paso-Robles 60 kV lines as well as voltage collapse in the area.
>
> . . .
>
> The reliability studies are consistent with the current loading and reliability constraints in the area. . . . an outage of the Templeton-Paso Robles 60 kV will result in an overloading of the San Miguel-Paso Robles 60 kV lines in addition to voltage stability in the area. The loading on the Coalinga-San Miguel 60 kV line is the same as the San Miguel-Paso Robles 60 kV line and would also be overloaded. The interim operational action plan to address the reliability constraints in the area, until the Estrella Substation project is in-service, is to rely on an under voltage load shedding (UVLS) scheme that will trip load in the area that addresses the overload and voltage stability conditions under the P1 contingency condition.
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> The Estrella Substation project was originally approved in the 2012-2013 transmission planning process to address the transmission reliability constraints identified above in addition to

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41 Joint Application at 7-8; PEA at 2-1; DEIR at 2-14.

42 PEA at 2-2; DEIR at 2-14.

43 Joint Application at 7-8; PEA at 2-2; DEIR at 2-14.

> the need PG&E has identified for a new load interconnection point for the distribution system in the area. The ISO has reviewed an alternative that would add an additional 230/70 kV transformer at the Templeton substation, reconstruction of the Templeton substation by PG&E, upgrades to the Paso Robles substation, and a new Templeton-Paso Robles 70 kV line. The alternative would address the transmission reliability constraints but at a higher estimated cost than the Estrella Substation Project and does not address the need identified by PG&E for a new load interconnection point for the distribution system in the area.[44]

In the DEIR, Commission staff developed its own project objectives and used those objectives "to inform the CEQA process/evaluation, including the development and screening of project alternatives."[45] The DEIR articulates those objectives as consisting of the following separate "Transmission Objective" and "Distribution Objective":

- **Transmission Objective:** Mitigate thermal overload and low voltage concerns in the Los Padres 70 kV system during Category B contingency scenarios, as identified by the CAISO in its 2013-2014 Transmission Plan.

- **Distribution Objective:** Accommodate expected future increased electric distribution demand in the Paso Robles DPA, particularly in the anticipated growth areas in northeast Paso Robles.[46]

In its Transmission Objective, the DEIR partly recognizes the reliability need, but fails to fully capture the nature of the reliability need, the objective for avoiding loss of load, and the fundamental dual transmission/distribution reliability objective served by adding a 230/70 kV substation to support the 70 kV system while also adding a new load interconnection point for the distribution system in the area. The DEIR also fails to recognize the need to increase service reliability at the distribution level as part of the "Distribution" objective. To the contrary, the DEIR specifies that: "The issue of long feeders and poor service reliability was not identified as a fundamental project objective by the CPUC; however, it is considered a beneficial effect of the Proposed Project."[47]

Omission of this reliability objective resulted in the DEIR's incorrect selection of two BESS alternatives—Alternative BS-2 and Alternative BS-3—as the distribution component of the

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44 CAISO Letter from J.E. (Jeff) Billinton, Manager, Regional Transmission—North to Mr. Rob Peterson, Energy Division, Infrastructure Permitting and CEQA, California Public Utilities Commission (February 23, 2018) at 4-5.

45 DEIR at 2-14.

46 DEIR at 2-14 through 2-15.

47 DEIR at 2-15.

environmentally superior alternative. A BESS alternative would not meet the reliability objective of the Proposed Project to "improve service reliability when required in the Paso Robles DPA."[48] The addition of BESS in lieu of upgrading the distribution system could, if they materialize, help address load growth. But BESS alone would not increase reliability of the distribution system. The BESSs cannot solve the issue of long feeders and poor service reliability that are one of the Proposed Project's objectives. A BESS alternative therefore would not meet the reliability objective of the Proposed Project to "improve service reliability when required in the Paso Robles DPA."[49] PG&E's comments on the DEIR provide a more detailed explanation of the problems associated with the BESS alternatives. In sum, Alternative BS-2 and Alternative BS-3 do not meet the key project objective of increasing reliability at the distribution level and should be eliminated in the FEIR.

III. CONCLUSION

Horizon West appreciates the opportunity to submit these comments and requests that the modifications described above and in **Attachment 1**, **Attachment 2**, and **Attachment 3** hereto be incorporated into the FEIR.

Very truly yours,

/s/ Lisa Cottle

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Enclosed: Additional Documents Provided With This Letter:

Attachment 1	**Memorandum Regarding Minor Project Refinement**
Attachment 2	**Updated Project Description**
Attachment 3	**Detailed Comment Table**

48 PEA at 2-2; DEIR at 2-14.

49 *Id.*

ATTACHMENT E

Errata to Attachment 3 (Detailed Comment Table) of HWT's DEIR Comments

Errata to Attachment 3 to the Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project

Introduction

Horizon West Transmission, LLC (HWT) is providing an errata to its comments on the Draft Environmental Impact Report (DEIR) for the Estrella Substation and Paso Robles Area Reinforcement Project (project). HWT's comments as revised in this errata provide minor revisions and clarifications to the text of the DEIR published by the CPUC on December 8, 2020. The minor text changes are within the scope of the analysis presented within the DEIR for the project. No new impacts are presented, and the significance conclusions identified in the DEIR will not be altered. In addition, the severity of impacts identified in the DEIR will not substantially increase. Therefore, the minor text changes do not substantially change any of the findings or conclusions of the DEIR and, therefore, do not constitute significant new information pursuant to CEQA Guidelines Section 15088.5.

Errata Items

The table on the following page provides the errata version of Attachment 3 to HWT's comments on the DEIR.

Errata Version of ATTACHMENT 3 to the
Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Proposed Estrella Substation and Paso Robles Area Reinforcement Project, December 2020
California State Clearinghouse No. 2018072071

Detailed Comment Table

Page #	DEIR Language	Horizon West Transmission Comments
EXECUTIVE SUMMARY		
ES-2	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level.	The maximum elevation of substation parcel is approximately 970 feet. Please revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 970~~608~~ feet above mean sea level.
ES-4	The 70 kV substation would be located immediately adjacent to the 230 kV substation within the same 15-acre site.	HWT is acquiring a 20-acre parcel Please revise text to read: The 70 kV substation would be located immediately adjacent to the 230 kV substation within the same 15-acre ~~site~~ area of the 20-acre site.
ES-4	Electrical equipment at the 230 kV substation would be located within a fenced area and would include breakers, breaker-and-a-half bays, operating buses, transformers, air break switches, insulated circuit breakers, dead-end steel structures, and lightning surge arresters.	Please revise text to read: Electrical equipment at the 230 kV substation would be located within an enclosed ~~fenced~~ area and would include breakers, breaker-and-a-half bays, operating buses, transformers, air break switches, insulated circuit breakers, dead-end steel structures, and lightning surge arresters.
ES-5	Ultimate buildout of the Estrella Substation could include an additional 230 kV interconnection, a second 230/70 kV transformer, three additional 70/21 kV transformers, and associated equipment (e.g., breakers, switches). The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR.	Please revise text to read: Ultimate buildout of the Estrella Substation could include an additional 230 kV interconnection, a second 230/70 kV transformer, three additional 70/21 kV transformers, and associated equipment (e.g., breakers, switches). The ultimate substation buildout could also accommodate future inside-the-fence improvements, including the potential future construction of ballistic walls around the transformer or fire walls between the proposed 230 kV transformer and the additional 230 kV transformer. The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR.

Page #	DEIR Language	Horizon West Transmission Comments
ES-6	Earthwork activities for the substation are anticipated to result in approximately 50,000 cubic yards of cut and fill, which would be balanced on the site to the extent feasible.	Please revise text to read: Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately ~~50,000~~ 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. The cut and fill figure does not include approximately 16,500 cubic yards of topsoil which would be stripped and stockpiled during construction. Of the 16,500 cubic yards, about 4,000 cubic yards would be used on site, and the balance would be removed.
CHAPTER 1 - INTRODUCTION		
1-1	Per CEQA Guidelines section 15022, CEQA's basic purposes are to:	The applicable CEQA Guidelines section is15002. Please revise text to read: Per CEQA Guidelines section ~~15022~~15002, CEQA's basic purposes are to:
CHAPTER 2 - PROJECT DESCRIPTION		
2-4	Figure 2-1	The 500kV line is north of the 230 kV line, not south as currently depicted in the figure.
2-15	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level	Please revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 9~~6~~70 feet above mean sea level
2-15	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level.	The maximum elevation of substation parcel is approximately 970 feet. Revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 9~~6~~70 feet above mean sea level.
2-15	Estrella Substation would be located on an approximately 15-acre portion of a 98.6-acre parcel of land. This entire site is currently planted with grape vines of 10-foot-wide span lengths.	Estrella Substation would be located on an approximately 15 acres of a ~~15~~20-acre site. The site was created from ~~portion of~~ a 98.6-acre parcel of land. This entire 20-acre site ~~is~~ and the parcel of land are currently planted with grape vines of 10-foot-wide span lengths.
2-7	Figure 2-4	The 500kV line is north of the 230 kV line, not south as currently depicted in the figure.
2-21	Estrella Substation would be comprised of two separate and distinct substations on an approximately 15-acre site.	HWT is acquiring a 20-acre parcel. Please revise text to read: Estrella Substation would be comprised of two separate and distinct substations on ~~an~~ approximately 15 acres within a 20-acre site.

Page #	DEIR Language	Horizon West Transmission Comments
2-21	Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV substation (approximately 715 feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points	Please revise text to read: Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV substation (approximately 700~~15~~ feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points
2-22	Figure 2-7	Replace figure to include new substation parcel and update temporary and permanent disturbance areas
2-46	Figure 2-11	Replace figure with new substation layout
2-47	Figure 2-12	Replace figure with new substation layout
2-48	Figure 2-13	Replace figure with new substation layout
2-49	The fenced portion of the 230 kV substation would be approximately 4 acres in size. An approximately 7-foot-tall chain-link fence with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.	Please revise text to read: The fenced portion of the 230 kV substation would be approximately 4 acres in size. A~~n~~ ~~approximately 7-foot-tall~~ chain-link fence, a minimum of 7 feet tall, with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.
2-56	The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.	Please revise text to read: The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.
2-57	The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.	Please revise text as follows: The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.
2-59	Figure 2-18	Replace figure with new substation layout

Page #	DEIR Language	Horizon West Transmission Comments
2-61	An affiliate of HWT has an option agreement to purchase the approximately 15-acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately 15-acre area.	Please revise text to read: An affiliate of HWT has an option agreement to purchase the approximately ~~15-~~20 acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately ~~15~~20-acre area. ~~This~~ The 15-acre substation footprint would be located entirely within the 20-acre parcel ~~area~~ ~~,and~~ is adequate to accommodate the entire substation facility including all considerations for site grading, equipment laydown and storage, fencing, access and internal circulation, spill and stormwater management, and other operational considerations.
2-63	Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately 50,000 cubic yards of cut and fill, balanced on site to the maximum extent possible.	Please revise text to read: Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately ~~50,000~~ 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. The cut and fill figure does not include approximately 16,500 cubic yards of topsoil which would be stripped and stockpiled during construction. Of the 16,500 cubic yards, about 4,000 cubic yards would be used on site, and the balance would be removed.
2-64	Access road construction would begin by excavating a maximal depth of 7 feet at the intersection with Union Road, tapering off to 2 feet deep for the remainder of the road.	The least amount of excavation (approximately 2 feet) will occur at the connection to Union Road. The greatest amount of excavation (approximately 17 feet) will be in the area just past the second entrance to the PG&E 70kV yard. Please revise text to read: Access road construction would begin by excavating ~~a maximal~~ to a depth of approximately ~~7~~2 feet at the intersection with Union Road, ~~tapering off~~ increasing to ~~2~~17 feet deep for the remainder of the road.
2-64	Next, the road would be graded and compacted in accordance with engineering standards and geotechnical requirements. Following initial compaction, approximately 15,000 cubic yards of road base would be imported, distributed on site, and final compacted.	Please revise text to read: Next, the road would be graded and compacted in accordance with engineering standards and geotechnical requirements. Following initial compaction, ~~approximately 15,000 cubic yards of~~ road base would be imported, distributed on site, and final compacted.
2-73	Table 2-9. Total Approximate Area (acres)—6.20	Please revise text to read: Total Approximate Area (acres)~~—6.20~~0.2
2-74 & 2-75	The two staging areas supporting construction of the substation, totaling 1.9 acres, would be located entirely within the 15-acre permanent disturbance area.	Please revise text to read: The two Estrella Substation staging areas supporting construction of the substation, totaling approximately 1.9 acres, would be located entirely within the 15-acre permanent disturbance area.

Page #	DEIR Language	Horizon West Transmission Comments
2-77	Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,100 feet long and about 20 feet wide.	Please revise text to read: Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,~~1~~700 feet long and about 20 feet wide.
2-78	Construction would typically occur 6 days per week (Monday through Saturday) throughout the duration of construction.	Please revise text to read: Construction would typically occur 6 days per week (Monday through Saturday) throughout the duration of construction, although water trucks may be operated on Sundays for fugitive dust control in compliance with the Construction Activity Management Plan.
2-88	Table 2-11. Anticipated Permits and Approvals and Applicable Regulatory Requirements.	Some equipment, such as the 230/70kV transformer and the control house, may require Caltrans Transportation Permit for transporting oversize/overweight equipment. As such, please revise Table 2-11 to include Caltrans Transportation Permits.
CHAPTER 3 – ALTERNATIVES DESCRIPTION		
3-4	The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (approximately 15,290 gallons) as the Proposed Project.	The proposed Estrella substation would use between 16,000 to 18,000 gallons of mineral oil. Please revise text to read: The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (between approximately ~~15,290~~ 16,000-18,000 gallons) as the Proposed Project.
3-91	The quantity of mineral oil to be used for transformers for Alternative SE-1A would be the same (approximately 15,290 gallons) as the Proposed Project.	The proposed Estrela substation would use between 16,000 to 18,000 gallons of mineral oil. Please revise text to read: The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (between approximately ~~15,290~~ 16,000-18,000 gallons) as the Proposed Project.
CHAPTER 4 – ENVIRONMENTAL ANALYSIS		
AESTHETICS		
4.1-3	The proposed Estrella Substation site occupies an approximately 15-acre area to the north of Union Road.	HWT is acquiring a 20-acre parcel. Please revise text to read: The proposed Estrella Substation site occupies ~~an~~ approximately 15 acres of a 20-acre site to the north of Union Road.

Page #	DEIR Language	Horizon West Transmission Comments
4.1-39	Construction of the new substation would occur on a 15-acre parcel adjacent to Union Road.	HWT is acquiring a 20-acre parcel. Please revise text to read: Construction of the new substation would occur on approximately 15 acres within a 20-acre parcel adjacent to Union Road.
4.1-46	General comment regarding SS-1 analysis	The analysis does not adequately consider permanent impacts to the visual character. SS-1 would be sited directly adjacent to the Estrella River. While the viewer concern and exposure may in fact be lower at this site than the Estrella site, the analysis undervalues the visual sensitivity of this scenic area and neglects consideration of the substantial degree that this substation would contrast with and dominate the landscape from an aesthetics perspective.
4.1-50	This alternative site would result in less adverse effects on visual character and visual quality than the Proposed Project because the new substation would be sited adjacent to an existing substation and the area is already characterized by electrical infrastructure.	Average daily traffic is greater along El Pomar Drive than along Union Road adjacent to the proposed substation. Therefore, viewer exposure would be greater than the Estrella substation. Additionally, the interconnection line would be longer than the interconnection line for the Estrella substation. While it is true that the substation expansion area is directly adjacent to an existing substation, the expanded substation would be constructed on undeveloped land and would require the removal of oak trees and other vegetation. As such, the visual dominance of the substation would increase. For these reasons, aesthetic impacts would be similar to the Estrella substation. Please revise text to read: This alternative site would result in ~~less~~ similar adverse effects on visual character and visual quality than the Proposed Project because the new substation would be sited adjacent to an existing substation and the area is already characterized by electrical infrastructure.
4.1-50	Development of the substation at the Bonel Ranch site would substantially alter the visual character of this immediate area and its agricultural setting due to the large scale and industrial nature of the substation facilities.	The analysis under criterion B never identifies that impacts would be significant, contrary to the proposed Estrella substation and Alternative SE-1A. Please revise text to read: Development of the substation at the Bonel Ranch site would substantially alter the visual character or quality of this immediate area and its agricultural setting due to the large scale and industrial nature of the substation facilities, which would be a significant impact.
AGRICULTURE AND FORESTRY RESOURCES		
4.2-14	As described in the PEA, based on the utility exemption in the Williamson Act, the approximately 15-acre substation site would be created as a separate legal parcel and removed from the larger 98-acre Williamson Act contract.	HWT is acquiring a 20-acre parcel. Please revise text to read: As described in the PEA, based on the utility exemption in the Williamson Act, the approximately ~~15~~20-acre substation site would be created as a separate legal parcel and removed from the larger 98-acre Williamson Act contract.

Page #	DEIR Language	Horizon West Transmission Comments
4.2-15	Therefore, the reduction of the current 98-acre Williamson Act parcel down to 83 acres would not disqualify the proposed 15-acre substation parcel as an agricultural preserve according to San Luis Obispo County.	HWT is acquiring a 20-acre parcel. Please revise text to read: Therefore, the reduction of the current 98-acre Williamson Act parcel down to 83 acres would not disqualify the proposed ~~15~~20-acre substation parcel as an agricultural preserve according to San Luis Obispo County.
4.2-15	However, placing the substation within the existing parcel under Williamson Act contract would conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use.	California Government Code §51238 states that “the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve.” Further, as noted in the DEIR, removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve. The remaining land under the modified contract will continue to be cultivated and will limit land uses to compatible uses as outlined by the County’s Rules of Procedure, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract. As such, HWT disagrees with the conclusion that placing the substation within the existing parcel under Williamson Act contract would conflict with the Williamson Act contract. Please revise text to read: ~~However, p~~ Placing the substation within the existing parcel under Williamson Act contract would not conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use, because Government Code Section 51238 specifies that “the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve.” Removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract.
4.2-17	The Bonel Ranch parcel is not under a Williamson Act contract; therefore, there would be no potential to conflict with a Williamson Act contract. As a result, impacts under significance criterion B would be less than significant	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. Please revise text to read: The Bonel Ranch parcel is ~~not under~~ subject to a Williamson Act contract; therefore, placing the substation within the existing parcel under Williamson Act contract would conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use to the same extent as the Proposed Project.

Page #	DEIR Language	Horizon West Transmission Comments
AIR QUALITY		
4.3-17	Even with the implementation of APM measures, construction-related ROG and NOX emissions threshold exceedances would be considered a significant impact. Mitigation Measure AIR-1 is proposed to reduce potentially significant impacts, requiring implementation of SLOCAPCD standard mitigation measures, BACT, and preparation of a site-specific CAMP that must be reviewed and approved by the APCD prior to the start of construction. The CAMP would be a comprehensive document that captures all pollutant emission reduction measures to be implemented for the approved project. Approval by the APCD would ensure all feasible and appropriate mitigation measures have been incorporated.	Construction related emissions following implementation of APM-1 through APM-3 and Mitigation Measure AIR-1 were not estimated in the EIR. Mitigated emissions should be estimated to support this finding.
BIOLOGICAL RESOURCES		
4.4-9	Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected in California.	The applicable CFGC section should be referenced. Please revise text to read: Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected ~~in California.~~ under California Fish and Game Code Section 3503 *et seq.*

Page #	DEIR Language	Horizon West Transmission Comments
4.4-42	Crotch's bumble bee, which utilize rodent burrows, tufts of grass, old bird nests on the ground, rock piles, or cavities in dead trees for nest construction, has potential to occur within the Proposed Project area. Direct impacts to Crotch's bumble bee could occur if rodent burrows within the Proposed Project disturbance area were utilized as nests and destroyed through construction activities. Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch's bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, implementation of APMs BIO-3 and GEN-1 would further reduce potential for any impacts to Crotch's bumble bee during construction. As a State candidate endangered species, the Applicants would be required to notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals identified during pre-construction surveys or during the course of construction activities.	While preconstruction surveys would help avoid and minimize impacts to special-status species, surveying rodent burrows for the state candidate endangered Crotch's bumblebee within the project footprint is impracticable due to the abundance of burrow systems and absence of protocol survey guidance for identification of nest colonies. Current review of iNaturalist (https://www.inaturalist.org/taxa/271451-Bombus-crotchii accessed: January 4, 2021) show observation of the species occurring south and southeast of Santa Maria. The document recognizes the potential of species occurrence in the region, but little is known about its current distribution, hibernacula, or overwintering sites, and direct impacts cannot be adequately concluded due to the lack of this information. Applicants are required to follow all provisions of CESA in regard to California candidate or listed species, but are not specifically required to "notify and coordinate with CDFW" on any candidate or listed species identified during pre-construction surveys. Please revise text to read: ~~Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch's bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, i~~Implementation of APMs BIO-3 and GEN-1 would ~~further~~ reduce potential for any impacts to Crotch's bumble bee during construction. As a State candidate endangered species, the Applicants would be required to follow all provisions of CESA in regard to California candidate or listed species ~~notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals~~ identified during ~~pre-construction surveys or during~~ the course of construction activities.
4.4-44	Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts would be significant.	Please revise text to read: Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts may be ~~would be~~ significant.

Page #	DEIR Language	Horizon West Transmission Comments
GEOLOGY, SOILS, SEISMICITY, AND PALEONTOLOGICAL RESOURCES		
4.7-35	Further, design and construction requirements in G.O. 95 and 174, as well as the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils, ensuring the potential for such impacts would be less than significant.	G.O. 95 does not apply to substations. Please revise text to read: Further, design and construction requirements in G.O. ~~95 and~~ 174~~, as well as~~ and the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils, ensuring the potential for such impacts would be less than significant.
HAZARDS AND HAZARDOUS MATERIALS		
4.9-7	Estrella Substation would be located on approximately 15 acres of land that is currently under agricultural cultivation as a vineyard.	HWT is acquiring a 20-acre parcel. Please revise text to read: Estrella Substation would be located on approximately 20 acres that is currently under agricultural cultivation as a vineyard.
LAND USE AND PLANNING		
4.11-2	The substation would be constructed on an approximately 15-acre site, carved out of a 98-acre parcel of land designated as agriculture and currently being used as a vineyard (one of five contiguous parcels operated by Steinbeck Vineyards & Winery).	HWT is acquiring a 20-acre parcel. Please revise text to read: The substation would be constructed on an approximately 15 acres within a 20-acre site, carved out of a 98-acre parcel of land designated as agriculture and currently being used as a vineyard (one of five contiguous parcels operated by Steinbeck Vineyards & Winery).

Page #	DEIR Language	Horizon West Transmission Comments
PUBLIC SERVICES		
4.15-11	Therefore, the Proposed Project would not require the construction of new or expanded school facilities, which could result in substantial adverse physical environmental effects. This impact would be less than significant.	The project would not directly or indirectly induce population growth and would not require the relocation of non-local construction workers given the limited nature of construction activities. Therefore, there is no basis for the less than significant determination on schools and this impact should be changed to no impact, as described in the PEA. Please revise text to read: Therefore, the Proposed Project would not require the construction of new or expanded school facilities, which could result in substantial adverse physical environmental effects. ~~This impact would be less than significant.~~ No impact would occur.
TRANSPORTATION		
4.17-23	The number of construction vehicle trips and the frequency of the trips for Alternative SS-1 is estimated to be the same as for the Proposed Project (see Table 4.17-3).	Construction of BS-1 will be longer in duration than the propped Estrella substation. Therefore, construction related effects would last longer. Please revise text to read: The number of construction vehicle trips and the frequency of the trips for Alternative SS-1 is estimated to be the same as for the Proposed Project (see Table 4.17-3). However, the effects of construction related transportation impacts would last longer due to the longer construction schedule for Alternative SS-1.
4.17-27	The number of construction vehicle trips and the frequency of the trips for Alternative SE-1A is estimated to be the same as for the Proposed Project (see Table 4.17-3).	Construction of SE-1A will be longer in duration than the propped Estrella substation. Therefore, construction related effects would last longer. Please revise text to read: The number of construction vehicle trips and the frequency of the trips for Alternative SE-1A is estimated to be the same as for the Proposed Project (see Table 4.17-3). However, the effects of construction related transportation impacts would last longer due to the longer construction schedule for Alternative SS-1.
WILDFIRE		
4.20-5	The proposed Estrella Substation would be located on approximately 15 acres of land within an existing vineyard.	HWT is acquiring a 20-acre parcel. Please revise text to read: The proposed Estrella Substation would be located on approximately 15 acres within a 20 acre~~s~~ ~~of land~~ site within an existing vineyard.

Page #	DEIR Language	Horizon West Transmission Comments
	Construction and operation of the reasonably foreseeable distribution components, including installation of the 21/12 kV pad-mounted transformer, and ultimate buildout of Estrella Substation, would not be expected to substantially exacerbate wildfire risks, such that people would be exposed to pollutant concentrations from a wildfire, the uncontrolled spread of a wildfire, and/or people or structures would be exposed to significant risks (e.g., downslope or downstream flooding, landslides, post-fire slope instability, or drainage changes.) Construction and operation activities would be on a much smaller scale than that of the Proposed Project, and similar to the Proposed Project, would occur within areas under irrigated agriculture cultivation (generally a low fire risk land use) or road rights-of-way. Construction and operation activities would comply with the PRC wildland fire safety requirements for grass- and brush-covered lands, as well as the California Fire Code. Once constructed, the reasonably foreseeable distribution components and ultimate substation buildout facilities would need to comply with applicable vegetation clearance requirements (see Section 4.20.2; fire prevention standards for electric utilities) and would not be located in high fire risk areas or the SRA (apart from one pad-mounted transformer that would be located on the border of the SRA). Therefore, impacts under significance criteria B and D would be less than significant.	Please revise text to read: Construction and operation of the reasonably foreseeable distribution components, including installation of the 21/12 kV pad-mounted transformer, and ultimate buildout of Estrella Substation, would not be expected to substantially exacerbate wildfire risks, such that people would be exposed to pollutant concentrations from a wildfire, the uncontrolled spread of a wildfire, and/or people or structures would be exposed to significant risks (e.g., downslope or downstream flooding, landslides, post-fire slope instability, or drainage changes.) Construction and operation activities would be on a much smaller scale than that of the Proposed Project, and similar to the Proposed Project, would occur within areas under irrigated agriculture cultivation (generally a low fire risk land use) or road rights-of-way. Construction and operation activities would comply with the PRC wildland fire safety requirements for grass- and brush-covered lands, as well as the California Fire Code. Once constructed, the reasonably foreseeable distribution components and ultimate substation buildout facilities would need to comply with applicable vegetation clearance requirements (see Section 4.20.2; fire prevention standards for electric utilities) and would not be located in high fire risk areas or the SRA (apart from one pad-mounted transformer that would be located on the border of the SRA). Therefore, impacts under significance criteria B and D would be less than significant.
CHAPTER 5 – ALTERNATIVES ANALYSIS SUMMARY AND COMPARISON OF ALTERNATIVES		
5-11	Additionally, while the Bonel Ranch site is currently in agricultural use (alfalfa production), it is not on land classified as one of the protected categories of Important Farmland under CEQA (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland); thus, placing the substation at this location would reduce the Proposed Project's significant impacts on agriculture resources.	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. Please revise text to read: Additionally, while the Bonel Ranch site is currently in agricultural use (alfalfa production) and is subject to Williamson Act contract, it is not on land classified as one of the protected categories of Important Farmland under CEQA (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland); thus, placing the substation at this location would reduce the Proposed Project's significant impacts on agriculture resources.
CHAPTER 6 – OTHER STATUTORY CONSIDERATIONS AND CUMULATIVE IMPACTS		
6-13	Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant on their own.	This statement conflicts with the findings from the Aesthetics analysis. As described therein, the DEIR found significant impacts for SS-1, PLR-1A, and PLR-1C. Mitigation was identified to reduce impacts to less than significant. As such, these alternatives are not less than significant on their own. Please revise text to read: Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant with implementation of mitigation ~~on their own.~~

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6-21	None of the other alternatives, nor the reasonably foreseeable distribution components, would significantly affect agricultural resources at the project level.	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. The cumulative analysis should be revised to account for this impact.
APPENDIX F — MMRP		
MM AES-1	HWT and PG&E shall implement the following measures: • Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk. • At the substation, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast.	The 230 kV yard would be most visible to motorists along its southeastern perimeter fronting Union Road. As such, the measure should be revised to limit the installation of chain link fence slats to this portion of the substation's perimeter. Please revise text to read: HWT and PG&E shall implement the following measures: • Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk. • At the substation's southeastern perimeter fronting Union Road, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast.

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MM AG-1	HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall contribute sufficient funds (i.e., adequate to support the conservation ratio described below) to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements. The amount of HWT's and PG&E's contribution shall ensure the conservation of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by the Proposed Project or alternatives, based on the market price for the commensurate agricultural land at the time that the impacts occur.	As explained in more detail in HWT's comment letter, MM AG-1 needs to be revised to allow HWT and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation MM AG-1 also needs to be revised to recognize that PG&E and HWT will have different contribution amounts that are based on their respective impacts to Important Farmland. For these reasons, please revise the text to read: HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.
APM BIO-1.	Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants	The title of APM BIO-1 does not match the title of APM BIO-1 in Table ES-1 and Table 2-12. Please revise text to read: Table F-1: APM BIO-1. ~~Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants~~ Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas

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MM BIO-1	Wildlife Protection from Work Areas: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment.	Please revise text to read: Wildlife Protection from Work Areas: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all uncovered and unfenced steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment.
MM BIO-1	Weekly biological construction monitoring reports shall be prepared and submitted to the appropriate permitting and responsible agencies throughout the duration of the ground-disturbing and vegetation-removal construction phase.	Reports will be submitted to the to the CPUC only since no permits are held with regulatory agencies. Please revise text to read: Weekly biological construction monitoring reports shall be prepared and submitted to the CPUC ~~appropriate permitting and responsible agencies~~ throughout the duration of the ground-disturbing and vegetation-removal construction phase.
MM BIO-1	Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction. Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.	Gravel bags and erosion and sediment controls would be implemented per the SWPPP. Further, the project has been designed to avoid impacts to wetlands and/or waters of the state as per HYDRO-1. In addition, indirect effects to wetlands and/or riparian areas present along and within the project (e.g., discharge of sediment and pollutants, fugitive dust) would be minimized through implementation of APMs HYDRO-1, HAZ-1, GEN-1, and AIR-3. Please revise text to read: ~~Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction.~~ Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.
APM BIO-2	If work is scheduled during the nesting season (January 15 through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).	Standard nesting season dates are March 1st through August 15th or 31st; occasionally starting as early as February 1st. January 15th is still in winter timeframes with only select species such as golden eagles beginning to nest. As such, the January 15 nesting season restriction should only apply to golden eagles. Please revise text to read: If work is scheduled during the nesting season (commencing January 15 for golden eagle and February 1 for all other birds through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).

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MM BIO-2	If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness.	The substation site is an active vineyard with very low potential to support special-status plant species. This measure should not apply to HWT. Please revise text to read: If avoidance of special-status plants is not feasible, ~~HWT and~~ PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness.
MM BIO-3	Operational construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible. If infeasible, HWT and PG&E shall retain a CPUC-approved biologist to conduct a nesting bird survey of the surrounding 500-foot area to determine if any active nest is present. If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If operational construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.	Please revise text to read: ~~Operational~~ ~~c~~Construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible. If infeasible, HWT and PG&E shall retain a CPUC-approved biologist to conduct a nesting bird survey of the surrounding 500-foot area to determine if any active nest is present. If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If ~~operational~~ construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.
MM BIO-4	HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat.	The substation will not impact blue oak woodland habitat. This measure should apply to PG&E components only. Please revise text to read: ~~HWT,~~ PG&E and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat.
MM GEO-1	HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017). These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.	Please revise text to read: HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017), including any subsequent addendums to such reports. These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.

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MM NOI-1	Mitigation Measure NOI-1: General Construction Noise.	The DEIR on page 4.13-18 states that “ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously).” However, the DEIR states that Mitigation Measure MM NOI-1 is applicable to all construction activities. Because the DEIR concluded that ground level construction activities would result in less than significant impacts, MM NOI 1 should not apply to ground-level construction activities. APM NOI-1 and APM NOI-2 would further reduce already less than significant ground-level construction noise.

ATTACHMENT F

Redline Version of the Errata to
Attachment 3 (Detailed Comment Table) of HWT's DEIR Comments

Errata to Attachment 3 to the Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project

Introduction

Horizon West Transmission, LLC (HWT) is providing an errata to its comments on the Draft Environmental Impact Report (DEIR) for the Estrella Substation and Paso Robles Area Reinforcement Project (project). HWT's comments as revised in this errata provide minor revisions and clarifications to the text of the DEIR published by the CPUC on December 8, 2020. The minor text changes are within the scope of the analysis presented within the DEIR for the project. No new impacts are presented, and the significance conclusions identified in the DEIR will not be altered. In addition, the severity of impacts identified in the DEIR will not substantially increase. Therefore, the minor text changes do not substantially change any of the findings or conclusions of the DEIR and, therefore, do not constitute significant new information pursuant to CEQA Guidelines Section 15088.5.

Errata Items

The table on the following page provides the errata version of Attachment 3 to HWT's comments on the DEIR.

Errata Version of ATTACHMENT 3 to the
Comments of Horizon West Transmission, LLC on the Draft Environmental Impact Report for the Proposed Estrella Substation and Paso Robles Area Reinforcement Project, December 2020
California State Clearinghouse No. 2018072071

Detailed Comment Table

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EXECUTIVE SUMMARY		
ES-2	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level.	The maximum elevation of substation parcel is approximately 970 feet. Please revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 970~~608~~ feet above mean sea level.
ES-4	The 70 kV substation would be located immediately adjacent to the 230 kV substation within the same 15-acre site.	HWT is acquiring a 20-acre parcel Please revise text to read: The 70 kV substation would be located immediately adjacent to the 230 kV substation within the same 15-acre ~~site~~ area of the 20-acre site.
ES-4	Electrical equipment at the 230 kV substation would be located within a fenced area and would include breakers, breaker-and-a-half bays, operating buses, transformers, air break switches, insulated circuit breakers, dead-end steel structures, and lightning surge arresters.	Please revise text to read: Electrical equipment at the 230 kV substation would be located within an enclosed ~~fenced~~ area and would include breakers, breaker-and-a-half bays, operating buses, transformers, air break switches, insulated circuit breakers, dead-end steel structures, and lightning surge arresters.
ES-5	Ultimate buildout of the Estrella Substation could include an additional 230 kV interconnection, a second 230/70 kV transformer, three additional 70/21 kV transformers, and associated equipment (e.g., breakers, switches). The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR.	Please revise text to read: Ultimate buildout of the Estrella Substation could include an additional 230 kV interconnection, a second 230/70 kV transformer, three additional 70/21 kV transformers, and associated equipment (e.g., breakers, switches). The ultimate substation buildout could also accommodate future inside-the-fence improvements, including the potential future construction of ballistic walls around the transformer or fire walls between the proposed 230 kV transformer and the additional 230 kV transformer. The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR.
ES-6	Earthwork activities for the substation are anticipated to result in approximately 50,000 cubic yards of cut and fill, which would be balanced on the site to the extent feasible.	Please revise text to read: Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately ~~50,000~~ 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. ~~Approximately~~The cut and fill figure does not include approximately 16,500 cubic yards of topsoil which would be stripped and

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		stockpiled ~~and approximately~~during construction. Of the 16,500 cubic yards, about 4,000 cubic yards ~~of the stockpiled topsoil~~ would be used ~~during restoration~~on site, ~~with~~and the balance would be removed ~~from the site~~.
CHAPTER 1 - INTRODUCTION		
1-1	Per CEQA Guidelines section 15022, CEQA's basic purposes are to:	The applicable CEQA Guidelines section is15002. Please revise text to read: Per CEQA Guidelines section ~~15022~~15002, CEQA's basic purposes are to:
CHAPTER 2 - PROJECT DESCRIPTION		
2-4	Figure 2-1	The 500kV line is north of the 230 kV line, not south as currently depicted in the figure.
2-15	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level	Please revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 9~~6~~70 feet above mean sea level
2-15	Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 960 feet above mean sea level.	The maximum elevation of substation parcel is approximately 970 feet. Revise text to read: Topography in the vicinity of the Proposed Project is generally rolling hills, with existing elevations ranging from approximately 920 feet to 9~~6~~70 feet above mean sea level.
2-15	Estrella Substation would be located on an approximately 15-acre portion of a 98.6-acre parcel of land. This entire site is currently planted with grape vines of 10-foot-wide span lengths.	Estrella Substation would be located on an approximately 15 acres of a ~~15~~20-acre site. The site was created from ~~portion of~~ a 98.6-acre parcel of land. This entire 20-acre site ~~is~~ and the parcel of land are currently planted with grape vines of 10-foot-wide span lengths.
2-7	Figure 2-4	The 500kV line is north of the 230 kV line, not south as currently depicted in the figure.
~~2-20~~	~~Permanent ground disturbance for Estrella Substation is approximately 15 acres, including the area that would be permanently disturbed outside of the 230 kV and 70 kV substation fence lines.~~	~~HWT is acquiring a 20-acre parcel.~~ ~~Please revise text to read:~~ ~~Permanent ground disturbance for Estrella Substation is approximately 15 20 acres, including the area that would be permanently disturbed outside of the 230 kV and 70 kV substation fence lines.~~
2-21	Estrella Substation would be comprised of two separate and distinct substations on an approximately 15-acre site.	HWT is acquiring a 20-acre parcel. Please revise text to read: Estrella Substation would be comprised of two separate and distinct substations on ~~an~~ approximately 15 acres within a 20-acre site.
2-21	Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV	Please revise text to read:

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	substation (approximately 715 feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points	Access to the Estrella Substation site would be off of Union Road, along a new private access road. The access road would be paved up to the second entrance to the 70 kV substation (approximately 700~~15~~ feet) and have an aggregate-surface up to the 230 kV substation access point and the 70 kV substation would have two separate access points
2-22	Figure 2-7	Replace figure to include new substation parcel and update temporary and permanent disturbance areas
2-46	Figure 2-11	Replace figure with new substation layout
2-47	Figure 2-12	Replace figure with new substation layout
2-48	Figure 2-13	Replace figure with new substation layout
2-49	The fenced portion of the 230 kV substation would be approximately 4 acres in size. An approximately 7-foot-tall chain-link fence with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.	Please revise text to read: The fenced portion of the 230 kV substation would be approximately 4 acres in size. A~~n approximately 7-foot-tall~~ chain-link fence, a minimum of 7 feet tall, with an additional 1 foot of barbed wire would be installed around the remaining perimeter of the 230 kV substation.
2-56	The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.	Please revise text to read: The equipment and facilities associated with ultimate substation buildout would primarily be placed within the fence line of the already-constructed Estrella Substation. The anticipated layout of the Estrella Substation at ultimate buildout is shown in Figure 2-18. The additional 230/70 kV transformer under ultimate buildout is assumed to include the same amount of mineral oil (16,000 to 18,000 gallons) as described for the Proposed Project (see Section 2.3.1), and the same secondary containment structure (i.e., designed to allow sufficient freeboard to include the oil volume of the transformer plus the precipitation from a 25-year, 24-hour storm event). The additional 230 kV interconnection is assumed to include similar structures (LSTs) and follow a similar interconnection process to that described for the Proposed Project in Section 2.3.1 under the header for “230 kV Transmission Interconnection.” The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.
2-57	The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.	Please revise text as follows: The additional 70/21 kV transformers that may be installed to support additional distribution feeders are assumed to include secondary containment, as necessary to contain spills of any stored mineral oil.
2-59	Figure 2-18	Replace figure with new substation layout
2-61	An affiliate of HWT has an option agreement to purchase the approximately 15-acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately 15-acre area.	Please revise text to read: An affiliate of HWT has an option agreement to purchase the approximately ~~15-~~20 acre portion of this parcel. Prior to construction, HWT would purchase and hold fee title of this approximately ~~15~~20-acre area. ~~This~~ The 15-acre substation footprint would be located entirely within the 20-acre parcel ~~area~~ , ~~and~~ is adequate to accommodate the entire

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		~~approximately 15-acre~~ substation facility including all considerations for site grading, equipment laydown and storage, fencing, access and internal circulation, spill and stormwater management, and other operational considerations.
2-63	Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately 50,000 cubic yards of cut and fill, balanced on site to the maximum extent possible.	Please revise text to read: Based on preliminary grading design, earthwork activities for the substation are anticipated to result in approximately ~~50,000~~ 68,000 cubic yards of cut and fill, balanced on site to the maximum extent possible. ~~Approximately~~The cut and fill figure does not include approximately 16,500 cubic yards of topsoil which would be stripped and stockpiled ~~and approximately~~during construction. Of the 16,500 cubic yards, about 4,000 cubic yards ~~of the stockpiled topsoil~~ would be used ~~during restoration~~on site, ~~with~~and the balance would be removed ~~from the site~~.
2-64	Access road construction would begin by excavating a maximal depth of 7 feet at the intersection with Union Road, tapering off to 2 feet deep for the remainder of the road.	The least amount of excavation (approximately 2 feet) will occur at the connection to Union Road. The greatest amount of excavation (approximately 17 feet) will be in the area just past the second entrance to the PG&E 70kV yard. Please revise text to read: Access road construction would begin by excavating ~~a maximal~~ to a depth of approximately ~~7~~2 feet at the intersection with Union Road, ~~tapering off~~ increasing to ~~2~~17 feet deep for the remainder of the road.
2-64	Next, the road would be graded and compacted in accordance with engineering standards and geotechnical requirements. Following initial compaction, approximately 15,000 cubic yards of road base would be imported, distributed on site, and final compacted.	Please revise text to read: Next, the road would be graded and compacted in accordance with engineering standards and geotechnical requirements. Following initial compaction, ~~approximately 15,000 cubic yards of~~ road base would be imported, distributed on site, and final compacted.
2-73	Table 2-9. Total Approximate Area (acres)—6.20	Please revise text to read: Total Approximate Area (acres)—~~6.20~~~~0.09~~~~6.20~~0.2
2-74 & 2-75	The two staging areas supporting construction of the substation, totaling 1.9 acres, would be located entirely within the 15-acre permanent disturbance area.	Please revise text to read: The two Estrella Substation staging areas supporting construction of the substation, totaling approximately 1.9 acres, would be located entirely within the 15~~20~~-acre ~~site~~ permanent disturbance area.
2-77	Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,100 feet long and about 20 feet wide.	Please revise text to read: Permanent and construction access to the proposed substations would be immediately off Union Road on a new private access road. The main access road would be paved and measure about 1,~~1~~700 feet long and about 20 feet wide.
2-78	Construction would typically occur 6 days per week (Monday through Saturday)	Please revise text to read:

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	throughout the duration of construction.	Construction would typically occur 6 days per week (Monday through Saturday) throughout the duration of construction, although water trucks may be operated on Sundays for fugitive dust control in compliance with the Construction Activity Management Plan.
2-88	Table 2-11. Anticipated Permits and Approvals and Applicable Regulatory Requirements.	Some equipment, such as the 230/70kV transformer and the control house, may require Caltrans Transportation Permit for transporting oversize/overweight equipment. As such, please revise Table 2-11 to include Caltrans Transportation Permits.
CHAPTER 3 – ALTERNATIVES DESCRIPTION		
3-4	The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (approximately 15,290 gallons) as the Proposed Project.	The proposed Estrella substation would use between 16,000 to 18,000 gallons of mineral oil. Please revise text to read: The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (between approximately ~~15,290~~ 16,000-18,000 gallons) as the Proposed Project.
3-91	The quantity of mineral oil to be used for transformers for Alternative SE-1A would be the same (approximately 15,290 gallons) as the Proposed Project.	The proposed Estrela substation would use between 16,000 to 18,000 gallons of mineral oil. Please revise text to read: The quantity of mineral oil to be used for transformers for Alternative SS-1 would be the same (between approximately ~~15,290~~ 16,000-18,000 gallons) as the Proposed Project.
CHAPTER 4 – ENVIRONMENTAL ANALYSIS		
AESTHETICS		
4.1-3	The proposed Estrella Substation site occupies an approximately 15-acre area to the north of Union Road.	HWT is acquiring a 20-acre parcel. Please revise text to read: The proposed Estrella Substation site occupies ~~an~~ approximately 15 acres of a 20-acre site to the north of Union Road.
4.1-39	Construction of the new substation would occur on a 15-acre parcel adjacent to Union Road.	HWT is acquiring a 20-acre parcel. Please revise text to read: Construction of the new substation would occur on approximately 15 acres within a 20-acre parcel adjacent to Union Road.
4.1-46	General comment regarding SS-1 analysis	The analysis does not adequately consider permanent impacts to the visual character. SS-1 would be sited directly adjacent to the Estrella River. While the viewer concern and exposure may in fact be lower at this site than the Estrella site, the analysis undervalues

<table>
<tr><th>Page #</th><th>DEIR Language</th><th>Horizon West Transmission Comments</th></tr>
<tr><td></td><td></td><td>the visual sensitivity of this scenic area and neglects consideration of the substantial degree that this substation would contrast with and dominate the landscape from an aesthetics perspective.</td></tr>
<tr><td>4.1-50</td><td>This alternative site would result in less adverse effects on visual character and visual quality than the Proposed Project because the new substation would be sited adjacent to an existing substation and the area is already characterized by electrical infrastructure.</td><td>Average daily traffic is greater along El Pomar Drive than along Union Road adjacent to the proposed substation. Therefore, viewer exposure would be greater than the Estrella substation. Additionally, the interconnection line would be longer than the interconnection line for the Estrella substation. While it is true that the substation expansion area is directly adjacent to an existing substation, the expanded substation would be constructed on undeveloped land and would require the removal of oak trees and other vegetation. As such, the visual dominance of the substation would increase. For these reasons, aesthetic impacts would be similar to the Estrella substation.

Please revise text to read:

This alternative site would result in ~~less~~ similar adverse effects on visual character and visual quality than the Proposed Project because the new substation would be sited adjacent to an existing substation and the area is already characterized by electrical infrastructure.</td></tr>
<tr><td>4.1-50</td><td>Development of the substation at the Bonel Ranch site would substantially alter the visual character of this immediate area and its agricultural setting due to the large scale and industrial nature of the substation facilities.</td><td>The analysis under criterion B never identifies that impacts would be significant, contrary to the proposed Estrella substation and Alternative SE-1A.

Please revise text to read:

Development of the substation at the Bonel Ranch site would substantially alter the visual character or quality of this immediate area and its agricultural setting due to the large scale and industrial nature of the substation facilities, which would be a significant impact.</td></tr>
<tr><td colspan="3">AGRICULTURE AND FORESTRY RESOURCES</td></tr>
<tr><td>~~4.2-4~~</td><td>~~Table 4.2-1. FMMP Acreage at the Estrella Substation Site~~</td><td>~~Update table to account for the Important Farmland on the 20-acre parcel as follows:~~
<table>
<tr><td>~~Type~~</td><td>~~Percentage~~</td><td>~~Acres~~</td></tr>
<tr><td>~~Importance~~</td><td>~~3.13~~</td><td>~~0.626~~</td></tr>
<tr><td>~~Grazing Land~~</td><td>~~2.28~~</td><td>~~0.456~~</td></tr>
<tr><td>~~Statewide Importance~~</td><td>~~13.12~~</td><td>~~2.624~~</td></tr>
<tr><td>~~Unique~~</td><td>~~81.47~~</td><td>~~16.294~~</td></tr>
</table></td></tr>
<tr><td>~~4.2-4~~</td><td>~~As shown in Table 4.2-1, approximately 17 percent (2.66 acres) of the site is Farmland of Statewide Importance, while 77 percent (11.70 acres) is Unique Farmland and a small percentage is Farmland of Local Importance and Grazing Land.~~</td><td>~~Please revise text to read:~~

~~As shown in Table 4.2-1, approximately 17 13 percent (2.626 acres) of the site is Farmland of Statewide Importance, while 77 approximately 81 percent (16.30 1.70 acres) is Unique Farmland and a small percentage is Farmland of Local Importance and Grazing Land.~~</td></tr>
<tr><td>~~4.2-2~~</td><td>~~Table 4.2-2. Agricultural Land Impacts from the Proposed Project~~</td><td>~~Update table to account for the disturbance to the 20-acre parcel as follows:~~</td></tr>
</table>

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		| ~~Type~~ | ~~Percentage~~ | ~~Acres~~ | | ~~Importance~~ | ~~3.13~~ | ~~0.626~~ | | ~~Grazing Land~~ | ~~2.28~~ | ~~0.456~~ | | ~~Statewide Importance~~ | ~~13.12~~ | ~~2.624~~ | | ~~Unique~~ | ~~81.47~~ | ~~16.294~~ |
4.2-14	As described in the PEA, based on the utility exemption in the Williamson Act, the approximately 15-acre substation site would be created as a separate legal parcel and removed from the larger 98-acre Williamson Act contract.	HWT is acquiring a 20-acre parcel. Please revise text to read: As described in the PEA, based on the utility exemption in the Williamson Act, the approximately ~~15~~20-acre substation site would be created as a separate legal parcel and removed from the larger 98-acre Williamson Act contract.
4.2-15	Therefore, the reduction of the current 98-acre Williamson Act parcel down to 83 acres would not disqualify the proposed 15-acre substation parcel as an agricultural preserve according to San Luis Obispo County.	HWT is acquiring a 20-acre parcel. Please revise text to read: Therefore, the reduction of the current 98-acre Williamson Act parcel down to 83 acres would not disqualify the proposed ~~15~~20-acre substation parcel as an agricultural preserve according to San Luis Obispo County.
4.2-15	However, placing the substation within the existing parcel under Williamson Act contract would conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use.	California Government Code §51238 states that “the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve.” Further, as noted in the DEIR, removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve. The remaining land under the modified contract will continue to be cultivated and will limit land uses to compatible uses as outlined by the County’s Rules of Procedure, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract. As such, HWT disagrees with the conclusion that placing the substation within the existing parcel under Williamson Act contract would conflict with the Williamson Act contract. Please revise text to read: ~~However, p~~ Placing the substation within the existing parcel under Williamson Act contract would not conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use, because Government Code Section 51238 specifies that “the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve.” Removing the proposed substation parcel from the 98-acre Williamson Act would not disqualify the remaining contracted area from an agricultural preserve, and the remaining parcel will exceed the 40-acre minimum parcel size specified in the original contract.

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4.2-17	The Bonel Ranch parcel is not under a Williamson Act contract; therefore, there would be no potential to conflict with a Williamson Act contract. As a result, impacts under significance criterion B would be less than significant	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. Please revise text to read: The Bonel Ranch parcel is ~~not under~~ subject to a Williamson Act contract; therefore, placing the substation within the existing parcel under Williamson Act contract would conflict with that contract, including its underlying intent, which is to preserve agricultural land in agricultural use to the same extent as the Proposed Project.
AIR QUALITY		
4.3-17	Even with the implementation of APM measures, construction-related ROG and NOX emissions threshold exceedances would be considered a significant impact. Mitigation Measure AIR-1 is proposed to reduce potentially significant impacts, requiring implementation of SLOCAPCD standard mitigation measures, BACT, and preparation of a site-specific CAMP that must be reviewed and approved by the APCD prior to the start of construction. The CAMP would be a comprehensive document that captures all pollutant emission reduction measures to be implemented for the approved project. Approval by the APCD would ensure all feasible and appropriate mitigation measures have been incorporated.	Construction related emissions following implementation of APM-1 through APM-3 and Mitigation Measure AIR-1 were not estimated in the EIR. Mitigated emissions should be estimated to support this finding.
BIOLOGICAL RESOURCES		
4.4-9	Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected in California.	The applicable CFGC section should be referenced. Please revise text to read: Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be “rare, threatened, or endangered in California” (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected ~~in California.~~ under California Fish and Game Code Section 3503 *et seq.*
4.4-42	Crotch’s bumble bee, which utilize rodent burrows, tufts of grass, old bird nests on the ground, rock piles, or cavities in dead trees for nest construction, has potential to occur within the Proposed Project area. Direct impacts to Crotch’s bumble bee could occur if rodent burrows within the Proposed Project disturbance area were utilized as nests and destroyed through construction activities. Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch’s bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, implementation of APMs BIO-3 and GEN-1 would further reduce potential for any impacts to Crotch’s bumble bee during construction. As a State candidate endangered species, the Applicants would be	While preconstruction surveys would help avoid and minimize impacts to special-status species, surveying rodent burrows for the state candidate endangered Crotch’s bumblebee within the project footprint is impracticable due to the abundance of burrow systems and absence of protocol survey guidance for identification of nest colonies. Current review of iNaturalist (https://www.inaturalist.org/taxa/271451-Bombus-crotchii accessed: January 4, 2021) show observation of the species occurring south and southeast of Santa Maria. The document recognizes the potential of species occurrence in the region, but little is known about its current distribution, hibernacula, or overwintering sites, and direct impacts cannot be adequately concluded due to the lack of this information.

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	required to notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals identified during pre-construction surveys or during the course of construction activities.	Applicants are required to follow all provisions of CESA in regard to California candidate or listed species, but are not specifically required to "notify and coordinate with CDFW" on any candidate or listed species identified during pre-construction surveys. Please revise text to read: ~~Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch's bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, i~~Implementation of APMs BIO-3 and GEN-1 would ~~further~~ reduce potential for any impacts to Crotch's bumble bee during construction. As a State candidate endangered species, the Applicants would be required to follow all provisions of CESA in regard to California candidate or listed species ~~notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals~~ identified during ~~pre-construction surveys or during~~ the course of construction activities.
4.4-44	Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts would be significant.	Please revise text to read: Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts may be ~~would be~~ significant.
GEOLOGY, SOILS, SEISMICITY, AND PALEONTOLOGICAL RESOURCES		
4.7-35	Further, design and construction requirements in G.O. 95 and 174, as well as the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils, ensuring the potential for such impacts would be less than significant.	G.O. 95 does not apply to substations. Please revise text to read: Further, design and construction requirements in G.O. ~~95 and~~ 174~~, as well as~~ and the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils, ensuring the potential for such impacts would be less than significant.
HAZARDS AND HAZARDOUS MATERIALS		
4.9-7	Estrella Substation would be located on approximately 15 acres of land that is currently under agricultural cultivation as a vineyard.	HWT is acquiring a 20-acre parcel. Please revise text to read: Estrella Substation would be located on approximately 20 acres that is currently under agricultural cultivation as a vineyard.

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LAND USE AND PLANNING		
4.11-2	The substation would be constructed on an approximately 15-acre site, carved out of a 98-acre parcel of land designated as agriculture and currently being used as a vineyard (one of five contiguous parcels operated by Steinbeck Vineyards & Winery).	HWT is acquiring a 20-acre parcel. Please revise text to read: The substation would be constructed on an approximately 15 acres within a 20-acre site, carved out of a 98-acre parcel of land designated as agriculture and currently being used as a vineyard (one of five contiguous parcels operated by Steinbeck Vineyards & Winery).
PUBLIC SERVICES		
4.15-11	Therefore, the Proposed Project would not require the construction of new or expanded school facilities, which could result in substantial adverse physical environmental effects. This impact would be less than significant.	The project would not directly or indirectly induce population growth and would not require the relocation of non-local construction workers given the limited nature of construction activities. Therefore, there is no basis for the less than significant determination on schools and this impact should be changed to no impact, as described in the PEA. Please revise text to read: Therefore, the Proposed Project would not require the construction of new or expanded school facilities, which could result in substantial adverse physical environmental effects. ~~This impact would be less than significant.~~ No impact would occur.
TRANSPORTATION		
4.17-23	The number of construction vehicle trips and the frequency of the trips for Alternative SS-1 is estimated to be the same as for the Proposed Project (see Table 4.17-3).	Construction of BS-1 will be longer in duration than the propped Estrella substation. Therefore, construction related effects would last longer. Please revise text to read: The number of construction vehicle trips and the frequency of the trips for Alternative SS-1 is estimated to be the same as for the Proposed Project (see Table 4.17-3). However, the effects of construction related transportation impacts would last longer due to the longer construction schedule for Alternative SS-1.
4.17-27	The number of construction vehicle trips and the frequency of the trips for Alternative SE-1A is estimated to be the same as for the Proposed Project (see Table 4.17-3).	Construction of SE-1A will be longer in duration than the propped Estrella substation. Therefore, construction related effects would last longer. Please revise text to read: The number of construction vehicle trips and the frequency of the trips for Alternative SE-1A is estimated to be the same as for the Proposed Project (see Table 4.17-3). However, the effects of construction related transportation impacts would last longer due to the longer construction schedule for Alternative SS-1.
WILDFIRE		
4.20-5	The proposed Estrella Substation would be located on approximately 15 acres of land	HWT is acquiring a 20-acre parcel.

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	within an existing vineyard.	Please revise text to read: The proposed Estrella Substation would be located on approximately 15 acres within a 20 acre~~s of land~~ site within an existing vineyard.
	Construction and operation of the reasonably foreseeable distribution components, including installation of the 21/12 kV pad-mounted transformer, and ultimate buildout of Estrella Substation, would not be expected to substantially exacerbate wildfire risks, such that people would be exposed to pollutant concentrations from a wildfire, the uncontrolled spread of a wildfire, and/or people or structures would be exposed to significant risks (e.g., downslope or downstream flooding, landslides, post-fire slope instability, or drainage changes.) Construction and operation activities would be on a much smaller scale than that of the Proposed Project, and similar to the Proposed Project, would occur within areas under irrigated agriculture cultivation (generally a low fire risk land use) or road rights-of-way. Construction and operation activities would comply with the PRC wildland fire safety requirements for grass- and brush-covered lands, as well as the California Fire Code. Once constructed, the reasonably foreseeable distribution components and ultimate substation buildout facilities would need to comply with applicable vegetation clearance requirements (see Section 4.20.2; fire prevention standards for electric utilities) and would not be located in high fire risk areas or the SRA (apart from one pad-mounted transformer that would be located on the border of the SRA). Therefore, impacts under significance criteria B and D would be less than significant.	Please revise text to read: Construction and operation of the reasonably foreseeable distribution components, including installation of the 21/12 kV pad-mounted transformer, and ultimate buildout of Estrella Substation, would not be expected to substantially exacerbate wildfire risks, such that people would be exposed to pollutant concentrations from a wildfire, the uncontrolled spread of a wildfire, and/or people or structures would be exposed to significant risks (e.g., downslope or downstream flooding, landslides, post-fire slope instability, or drainage changes.) Construction and operation activities would be on a much smaller scale than that of the Proposed Project, and similar to the Proposed Project, would occur within areas under irrigated agriculture cultivation (generally a low fire risk land use) or road rights-of-way. Construction and operation activities would comply with the PRC wildland fire safety requirements for grass- and brush-covered lands, as well as the California Fire Code. Once constructed, the reasonably foreseeable distribution components and ultimate substation buildout facilities would need to comply with applicable vegetation clearance requirements (see Section 4.20.2; fire prevention standards for electric utilities) and would not be located in high fire risk areas or the SRA (apart from one pad-mounted transformer that would be located on the border of the SRA). Therefore, impacts under significance criteria B and D would be less than significant.
CHAPTER 5 – ALTERNATIVES ANALYSIS SUMMARY AND COMPARISON OF ALTERNATIVES		
5-11	Additionally, while the Bonel Ranch site is currently in agricultural use (alfalfa production), it is not on land classified as one of the protected categories of Important Farmland under CEQA (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland); thus, placing the substation at this location would reduce the Proposed Project's significant impacts on agriculture resources.	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. Please revise text to read: Additionally, while the Bonel Ranch site is currently in agricultural use (alfalfa production) and is subject to Williamson Act contract, it is not on land classified as one of the protected categories of Important Farmland under CEQA (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland); thus, placing the substation at this location would reduce the Proposed Project's significant impacts on agriculture resources.
CHAPTER 6 – OTHER STATUTORY CONSIDERATIONS AND CUMULATIVE IMPACTS		
6-13	Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant on their own.	This statement conflicts with the findings from the Aesthetics analysis. As described therein, the DEIR found significant impacts for SS-1, PLR-1A, and PLR-1C. Mitigation was identified to reduce impacts to less than significant. As such, these alternatives are not less than significant on their own.

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		Please revise text to read: Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant with implementation of mitigation ~~on their own.~~
6-21	None of the other alternatives, nor the reasonably foreseeable distribution components, would significantly affect agricultural resources at the project level.	According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. According to the San Luis Obispo County Land Use View GIS mapper, the SS-1 parcel is under a Williamson Act contract. The cumulative analysis should be revised to account for this impact.
APPENDIX F — MMRP		
MM AES-1	HWT and PG&E shall implement the following measures: • Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk. • At the substation, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast.	The 230 kV yard would be most visible to motorists along its southeastern perimeter fronting Union Road. As such, the measure should be revised to limit the installation of chain link fence slats to this portion of the substation's perimeter. Please revise text to read: HWT and PG&E shall implement the following measures: • Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk. • At the substation's southeastern perimeter fronting Union Road, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast.
MM AG-1	HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall contribute sufficient funds (i.e., adequate to support the conservation ratio described below) to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements. The amount of HWT's and PG&E's contribution shall ensure the conservation of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by the Proposed Project or alternatives, based on the market price for the commensurate agricultural land at the time that the impacts occur.	As explained in more detail in HWT's comment letter, MM AG-1 needs to be revised to allow HWT and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for important farmland, such as through agreements with landowners to establish and record a conservation easement, or through contributions to a local agency to achieve the agricultural land conservation MM AG-1 also needs to be revised to recognize that PG&E and HWT will have different contribution amounts that are based on their respective impacts to Important Farmland. For these reasons, please revise the text to read: HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to

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		the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.
APM BIO-1.	Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants-	The title of APM BIO-1 does not match the title of APM BIO-1 in Table ES-1 and Table 2-12. Please revise text to read: Table F-1: APM BIO-1. ~~Design Project to Avoid or Minimize Impacts on Known Occurrences of Special-Status Plants~~ Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas
MM BIO-1	Wildlife Protection from Work Areas: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment.	Please revise text to read: Wildlife Protection from Work Areas: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all uncovered and unfenced steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment.
MM BIO-1	Weekly biological construction monitoring reports shall be prepared and submitted to the appropriate permitting and responsible agencies throughout the duration of the ground-disturbing and vegetation-removal construction phase.	Reports will be submitted to the to the CPUC only since no permits are held with regulatory agencies. Please revise text to read: Weekly biological construction monitoring reports shall be prepared and submitted to the CPUC ~~appropriate permitting and responsible agencies~~ throughout the duration of the ground-disturbing and vegetation-removal construction phase.
MM BIO-1	Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction. Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as	Gravel bags and erosion and sediment controls would be implemented per the SWPPP. Further, the project has been designed to avoid impacts to wetlands and/or waters of the state as per HYDRO-1. In addition, indirect effects to wetlands and/or riparian areas present along and within the project (e.g., discharge of sediment and pollutants, fugitive

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	determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.	dust) would be minimized through implementation of APMs HYDRO-1, HAZ-1, GEN-1, and AIR-3. Please revise text to read: ~~Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction.~~ Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.
APM BIO-2	If work is scheduled during the nesting season (January 15 through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).	Standard nesting season dates are March 1st through August 15th or 31st; occasionally starting as early as February 1st. January 15th is still in winter timeframes with only select species such as golden eagles beginning to nest. As such, the January 15 nesting season restriction should only apply to golden eagles. Please revise text to read: If work is scheduled during the nesting season (commencing January 15 for golden eagle and February 1 for all other birds through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).
MM BIO-2	If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness.	The substation site is an active vineyard with very low potential to support special-status plant species. This measure should not apply to HWT. Please revise text to read: If avoidance of special-status plants is not feasible, ~~HWT and~~ PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness.
MM BIO-3	Operational construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible. If infeasible, HWT and PG&E shall retain a CPUC-approved biologist to conduct a nesting bird survey of the surrounding 500-foot area to determine if any active nest is present. If an active nest is	Please revise text to read: ~~Operational~~ ~~c~~Construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible. If infeasible, HWT and PG&E

Page #	DEIR Language	Horizon West Transmission Comments
	found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If operational construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.	shall retain a CPUC-approved biologist to conduct a nesting bird survey of the surrounding 500-foot area to determine if any active nest is present. If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If ~~operational~~ construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.
MM BIO-4	HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat.	The substation will not impact blue oak woodland habitat. This measure should apply to PG&E components only. Please revise text to read: ~~HWT,~~ PG&E and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat.
MM GEO-1	HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017). These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.	Please revise text to read: HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017), including any subsequent addendums to such reports. These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.
MM NOI-1	Mitigation Measure NOI-1: General Construction Noise.	The DEIR on page 4.13-18 states that "ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously)." However, the DEIR states that Mitigation Measure MM NOI-1 is applicable to all construction activities. Because the DEIR concluded that ground level construction activities would result in less than significant impacts, MM NOI 1 should not apply to ground-level construction activities. APM NOI-1 and APM NOI-2 would further reduce already less than significant ground-level construction noise.

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Total changes	89

Adams Broadwell Joseph & Cardozo's Comments on Draft Environmental Impact Report

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February 22, 2021

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Re: **Comments on Draft Environmental Impact Report for Estrella Substation and Paso Robles Area Reinforcement Project**

Dear Mr. Peterson & Mr. Engels:

On behalf of California Unions for Reliable Energy ("CURE" or "Commenters"), we submit these comments on the Draft Environmental Impact Report ("DEIR") prepared by the California Public Utilities Commission ("CPUC") for the Estrella Substation and Paso Robles Area Reinforcement Project ("Project"). The Project is proposed by Horizon West Transmission ("HWT") (formerly NextEra Energy Transmission West, LLC) and Pacific Gas & Electric Company ("PG&E") (collectively referred to as "Applicants"). The Proposed Project would construct and operate a new 230 kilovolt (kV) /70 kV substation and a new 7-mile-long 70 kV power line, and replacement/reconductoring of approximately 3 miles of existing 70 kV power line interconnecting with the substation.[1]

The Project would be located in unincorporated San Luis Obispo County and within the City of Paso Robles, approximately 9 miles southeast of the San Miguel community, and 8.5 miles northeast of Templeton.[2] The DEIR estimates the Proposed Project will take 18 months to construct.[3] Construction will take 8 months for the Estrella Substation, and an additional 10 months for the 70 kV power line.[4] Proponent's environmental assessment estimated that the project would take 7 months to construct.[5] The distribution components are expected within 15 years.[6]

We have reviewed the DEIR, its technical appendices, and reference documents with assistance of Commenters' expert consultants, whose comments and qualifications are attached. Based on our review of the DEIR, it is clear that the DEIR fails as an informational document under CEQA and lacks substantial evidence to support its conclusions that the Project's significant impacts would be mitigated to the greatest extent feasible.

There is also substantial evidence demonstrating that the Project's potentially significant environmental impacts are far more extensive than disclosed in the DEIR. Commenters and their expert consultants have identified numerous potentially significant impacts that the DEIR either mischaracterizes, underestimates, or fails to identify. Moreover, many of the mitigation measures described in the DEIR will not, in fact, mitigate impacts to the extent claimed. For example, Commenters' air quality expert Phyllis Fox Ph.D. found that Project construction emissions will exceed applicable significance thresholds, the risk of Valley Fever is significant and unmitigated, and Greenhouse Gas ("GHG") emissions from Project construction and operation are underestimated.[7] The DEIR

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[1]Horizon Water and Environment, Estrella Substation and Paso Robles Area Reinforcement Project - *Draft Environmental Impact Report* ("DEIR"), December 2020, p. ES-1.
[2] DEIR, p. 2-15.
[3] DEIR, p. 2-78.
[4] DEIR, p. 4.8
[5] Proponent's Environmental Assessment Estrella Substation and Paso Robles Area Reinforcement Project ("PEA"), p. 2-59.
[6] DEIR, p. 2-16.
[7] See **Exhibit A,** Phyllis Fox, Ph.D., P.E., Comments on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project (Fox Comments").

fails to accurately disclose the severity of these impacts, and fails to effectively mitigate them.

Commenters' expert biologist Scott Cashen, M.S. concludes that the Project will have potentially significant and unmitigated impacts to wildlife and sensitive natural communities including Blue Oak Woodland, and special-status wildlife including Golden Eagle and other special status birds, amphibians, and bumble bees.[8]

Expert utility consultant David Marcus concludes that the DEIR fails to accurately describe the Project's environmental setting. Mr. Marcus explains that the Estrella substation is not needed to meet Paso Robles Distribution Planning Area ("DPA") peak loads, to improve distribution system reliability by reducing outages, or to mitigate the impacts of an outage of the Templeton-Paso Robles 70 kV transmission line, to mitigate the impacts of an outage of the Templeton 230/70 kV transformer, to mitigate the impacts of an N-2 (Category C) outage of both 230 kV lines that connect to the Templeton 230/70 kV transformer.[9] Further, the DEIR fails to reference the additional transmission line to Cholame Substation to create a looped circuit referred in the Updated Appendix G of Proponent's Environmental Assessment. The failure to address this "likely" element of the Project is impermissible piecemealing under CEQA.[10]

Finally, agricultural consultant Gregory House concludes that Project construction will have significant permanent and temporary impacts to Important Agricultural areas that were not adequately analyzed or mitigated in the DEIR. As discussed further herein, the mitigation measures proposed to offset the permanent loss of agricultural lands are inadequate because they do not create new Important farmland, additionally replacement, de-compaction, and replanting measures were not adequately analyzed.[11]

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[8] See **Exhibit B,** Scott Cashen, M.S., Comments on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project (January 22, 2021) ("Cashen Comments").
[9] See **Exhibit C,** David Marcus, M.S., Comments on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project (January 22, 2021) ("Marcus Comments").
[10] 14 14 Cal. Code Regs. ("CCR") § 15165.
[11] See **Exhibit D,** Gregory House, Review of Mitigation Measures Proposed for Agriculture and Forestry Resources, Estrella Substation and Paso Robles Area Reinforcement Project DEIR (February 11, 2021) ("House Comments").

CEQA prohibits a lead agency from approving a project if feasible alternatives or mitigation measures exist which would substantially lessen a project's significant environmental effects.[12] As discussed herein, there is substantial evidence demonstrating that adoption of Alternative PLR-3A and PLR-3B is feasible, and would substantially lessen the Project's previously disclosed significant environmental effects, and would meet all Project objectives. Commenters' experts present additional substantial evidence demonstrating that additional mitigation measures are necessary to mitigate the Project's numerous potentially significant environmental effects.

CEQA requires recirculation of a DEIR for public review and comment when significant new information must be added to the DEIR following public review, but before certification.[13] The CEQA Guidelines clarify that new information is significant if "the DEIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect."[14] The purpose of recirculation is to give the public and other agencies an opportunity to evaluate the new data and the validity of conclusions drawn from it.[15]

The CPUC is tasked with ensuring that Californians receive safe, reliable utility service and infrastructure at reasonable rates, with a *commitment to environmental quality* and a prosperous California economy.[16] In order to comply with this mandate, and the mandates of CEQA, the DEIR must be revised to resolve its inadequacies and recirculated for public review and comment.

I. STATEMENT OF INTEREST

CURE is a coalition of labor organizations whose members encourage sustainable development of California's energy and natural resources. CURE's members help solve the State's energy problems by building, maintaining, and

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[12] Pub. Resources Code ("PRC") §21002; *Cal. Clean Energy Comm. v. City of Woodland* (2014) 225 Cal.App.4th 173, 203; 14 CCR §15126.6.
[13] PRC § 21092.1.
[14] CEQA "Guidelines," 14 Cal. Code Regs. § 15088.5.
[15] *Save Our Peninsula Comm. v. Monterey City Bd. of Supervisors* (1981) 122 Cal.App.3d 813, 822.
[16] California Public Utilities Commission Annual Report, January 26, 2016, Cover letter to Honorable Edmund G. Brown Jr., Governor of the State of California, and distinguished members of the California State Legislature, *available at*: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Annual_Reports/2015%20CPUC%20Performance%20and%20Accountability%20Annual%20Report_v004.pdf.

operating conventional and renewable energy power plants and transmission facilities. Since its founding in 1997, CURE has been committed to building a strong economy and a healthier environment. CURE has helped cut smog-forming pollutants in half, reduced toxic emissions, increased the use of recycled water for cooling systems, and pushed for groundbreaking pollution control equipment as the standard for all new power plants, all while helping to ensure that new power plants and transmission facilities are built with highly trained, professional workers who live and raise families in nearby communities.

Individual members of CURE and its member organizations include [redacted] These individuals live, work, recreate, and raise their families in Paso Robles, in the vicinity of the Project. Accordingly, they will be directly affected by the Project's environmental and health and safety impacts. Individual members may also work on the Project itself. They will be the first in line to be exposed to any health and safety hazards that exist onsite.

CURE has an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for the members that they represent. Environmental degradation destroys cultural and wildlife areas, consumes limited fresh surface and ground water resources, causes water pollution, and imposes other stresses on the environmental carrying capacity of the state. This in turn jeopardizes future development by causing construction moratoriums and otherwise reducing future employment opportunities for CURE's members. CURE therefore has a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment.

Finally, CURE members are concerned about projects that risk serious environmental harm without providing countervailing economic benefits. For these reasons, CURE's mission includes improving California's economy and the environment by ensuring that new conventional and renewable power plants and their related transmission facilities use the best practices to protect our clean air, land and water and to minimize their environmental impacts and footprint.

II. LEGAL BACKGROUND

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in limited circumstances).[17] The EIR is the very heart of CEQA.[18] "The foremost principle in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language."[19]

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.[20] "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'"[21] The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[22]

Second, CEQA directs public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures.[23] The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced."[24] If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns."[25]

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. *A clearly inadequate or unsupported*

[17] See, e.g., PRC § 21100.
[18] *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652.
[19] *Comtys. for a Better Envv. Cal. Res. Agency* (2002) 103 Cal. App.4th 98, 109 ("*CBE v. CRA*").
[20] 14 CCR § 15002(a)(1).
[21] *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564.
[22] *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs*. (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[23] 14 CCR § 15002(a)(2) and (3); *see also Berkeley Jets*, 91 Cal.App.4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564.
[24] 14 CCR §15002(a)(2).
[25] PRC § 21081; 14 CCR § 15092(b)(2)(A) & (B).

study is entitled to no judicial deference."[26] As the courts have explained, "a prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decision making and informed public participation, thereby thwarting the statutory goals of the EIR process."[27] Further, "an agency may abuse its discretion under CEQA by either failing to proceed in the manner CEQA provides or by reaching factual conclusions unsupported by substantial evidence."[28]

III. THE DEIR FAILS TO PROVIDE A COMPLETE AND ACCURATE PROJECT DESCRIPTION

The DEIR does not meet CEQA's requirements because it fails to include an accurate, complete and stable Project description, rendering the entire analysis inadequate. CEQA requires that an EIR "set forth a project description that is sufficient to allow an adequate evaluation and review of the environmental impact."[29] An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.[30] "An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR."[31] Accordingly, a lead agency may not hide behind its failure to obtain a complete and accurate project description.[32]

"Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal ... and weigh other alternatives in the balance."[33] As articulated by the court in *County of Inyo v. City of Los Angeles*, "a curtailed, enigmatic or unstable project description draws a red herring across the path of public input."[34] Without a

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[26] *Berkeley Jets*, 91 Cal. App. 4th at 1355 (emphasis added), *quoting, Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391 409, fn. 12.
[27] *Berkeley Jets*, 91 Cal.App.4th at 1355; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist*. (1997) 60 Cal.App.4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 946.
[28] PRC § 21168.5.
[29] *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 654 (citing 14 C.C.R. § 15124).
[30] McQueen v. Board of Directors (1988) 202 Cal. App. 3d 1136, 1143.
[31] *Santiago County Water Dist. v. County of Orange* 118 Cal. App. 3d 818, 829-830.
[32] *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311 ("*Sundstrom*").
[33] *Santiago County Water Dist. v. County of Orange* 118 Cal. App. 3d 818, 829-830.
[34] *Id.* at 197-198.

complete project description, the environmental analysis under CEQA is impermissibly limited, thus minimizing the project's impacts and undermining meaningful public review.[35]

The purpose of an EIR is to reveal to the public "the basis on which its responsible officials either approve or reject environmentally significant action," so that the public, "being duly informed, can respond accordingly to action with which it disagrees."[36] Further, "[t]o be adequate, the EIR must include sufficient detail to enable those who did not participate in its preparation to understand and 'meaningfully' consider the issues raised by the proposed project."[37]

A. The DEIR's Project Description is Inadequate Because it Fails to Provide an Adequate Description of Vegetation Management Activities

The DEIR fails to provide a clear description of the vegetation management activities that would be implemented to comply with CPUC General Order ("G.O.") 95 and PG&E and HWT wildfire mitigation plans.[38] As a result, the DEIR fails to provide sufficient detail about the environmental impacts associated with the Project's vegetation management activities.

The DEIR indicates that "Project proponents may [keep the 10-foot radius around new 70 kV power poles] clear of natural vegetation. Vegetation growing too close to conductors within the easement would be trimmed or removed for safety. Herbicides may be used for some vegetation maintenance activities."[39]

Commenters' biological expert, Mr. Cashen determined that this description is too vague to understand the environmental impacts of the Project.[40] Thus, to enable an accurate evaluation of environmental impacts from vegetation

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[35] *See, e.g., Laurel Heights Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376.
[36] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392
[37] *California Oak Foundation v. City of Santa Clarita* 133 Cal.App.4th 1219, 1237 quoting *Santa Clarita Organization for Planning the Environment* 106 Cal.App.4th 715, 721; see also *Concerned Citizens of Costa Mesa Inc, v. 32nd Dist. Agricultural Assn.* (1986) 42 Cal.3d 929,935 ["To facilitate CEQA's informational role, the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions"].
[38] Cal. Pub. Util. Code § 8386(c)(8).
[39] DEIR, p. 2-87.
[40] Cashen Comments p. 2.

management, the CPUC must clearly articulate: (1) the vegetation management activities that would be conducted between power poles and the distance those activities would extend from the power lines (conductors); (2) the methods that would be used to remove, trim, or otherwise manipulate vegetation (e.g., masticators, chainsaws, loppers, etc.); (3) the herbicide products that may be used; (4) the frequency (return interval) of vegetation management activities (by vegetation community, if applicable); (5) the vegetation communities that may be manipulated to comply with G.O. 95; (6) whether the 10-foot radius would be limited to vegetation that grows within 10 horizontal feet of any conductor (as indicated on DEIR p. 4.4-53), or whether it also would include vegetation within 10 vertical feet; and (7) why numerous oak trees along the 70 kV route, but not within a 10-foot radius of the power poles, would be trimmed or removed.[41]

The DEIR should be revised and recirculated to include an adequate description of the Project's vegetation management activities.

B. The DEIR's Project Description is Inadequate Because of Impermissible Piecemealing

1. *Cholame Substation Reliability Piecemealing*

The DEIR fails to explain that Estrella is not needed to mitigate reliability issues at and around the Cholame substation. As Mr. Marcus explains, although there are approximately 1500 Cholame-area customers at risk for scheduled outages every 1-2 years for maintenance work on the 70 kV line feeding Cholame substation, those outages are not a violation of NERC or CAISO or PG&E reliability criteria. PG&E has stated clearly that it has no plans to use the proposed Estrella substation as a source for a new 70 kV line to Cholame to supplement the existing single line there.[42]

The updated Appendix G to the PEA states that "The proposed project provides a future opportunity to add an additional transmission line to Cholame Substation to create a looped circuit to improve reliability and operational flexibility on the 70 kV system. This line would likely be constructed within 2 to 3 years after

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[41] *See* DEIR, Figure 3-7.
[42] CPUC, Data Request No. 5 (November 13, 2019) for the Estrella Substation and Paso Robles Area Reinforcement Project (A.17-01-023) *available at*: https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/docs/2019-1113%20EstrellaDataRequestNo.5%20and%20Follow%20Ups.docx.

Estrella Substation is built."[43] To the extent that building the Estrella Substation would lead to construction of a new 70 kV or 21 kV line from Estrella to Cholame, the DEIR should have addressed that result. The failure to do so constitutes impermissible piecemealing.

CEQA forbids piecemeal review of the significant environmental impacts of a project.[44] Agencies cannot allow "environmental considerations [to] become submerged by chopping a large project into many little ones-each with a minimal potential impact on the environment-which cumulatively may have disastrous consequences."[45] The CEQA Guidelines provide "Where an individual project is a necessary precedent for action on a larger project, or commits the Lead Agency to a larger project, with significant environmental effect, an EIR must address itself to the scope of the larger project."[46] The statement in the Updated Appendix G to the PEA that the "line [to Cholame substation] would likely be constructed within 2 to 3 years after Estrella Substation is built" should have been analyzed in the DEIR. The CEQA Guidelines provide "the agency may prepare one EIR for all projects, or one for each project, but shall in either case comment upon the cumulative effect."[47] The DEIR should be revised and recirculated to include an analysis of the cumulative impact of the additional line to Cholame, otherwise the impact must be analyzed in a subsequent EIR.

The DEIR must be revised and recirculated to address the piecemealing issues related to utility reliability.

IV. THE DEIR'S DESCRIPTION OF THE ENVIRONMENTAL SETTING IS INADEQUATE

The DEIR fails to adequately describe the environmental setting against which the Project's environmental impacts are to be measured for several critical aspects of the Project. This contravenes the fundamental purpose of the

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[43] Proponent's Environmental Assessment Estrella Substation and Paso Robles Area Reinforcement Project, Updated Appendix G Distribution Need Analysis (August 2017) *available at*: https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/docs/App%20G%20-%20Update%202%20v2.pdf.
[44] 14 CCR § 15165; *Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1222; *Berkeley Jets,* 91 Cal.App.4th at 1358.
[45] *Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 283-284.
[46] 14 CCR § 15165.
[47] *See* 14 CCR § 15165.

environmental review process, which is to determine whether there is a potentially substantial, adverse change compared to the existing setting. CEQA requires that a lead agency include a description of the physical environmental conditions, or "baseline," in the vicinity of the project as they exist at the time environmental review commences.[48] As the courts have repeatedly held, the impacts of a project must be measured against the "real conditions on the ground."[49] The description of the environmental setting constitutes the "baseline" physical conditions against which the lead agency assesses the significance of a project's impacts.[50]

A. The DEIR Fails to Accurately Describe the Project's Environmental Setting Related to Utility Capacity

CEQA requires a DEIR to identify baseline physical conditions in the environmental setting section "to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.[51]

1. *Estrella Substation is Not Needed to Meet DPA Peak Loads*

The DEIR failed to adequately describe the environmental setting with regard to utility service in the Project area. The DEIR states that the DPA loads "will exceed the available capacity of the Paso Robles system within 5 to 15 years."[52] Mr. Marcus found that the Paso Robles DPA loads will not exceed the DPA capacity of 212.55 Mw until 2047.[53] Mr. Marcus determined that Estrella Substation is not needed to meet a DPA capacity problem, because such a problem does not exist today, and is not projected to exist in this decade, nor well into the 2040s. The DEIR therefore mischaracterizes the environmental setting regarding utility capacity, in violation of CEQA.

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[48] 14 CCR § 15125(a); *Communities for a Better Environment v. South Coast Air Quality Management Dist*. (2010) 48 Cal. 4th 310, 321 ("*CBE v. SCAQMD*").
[49] *CBE v.* SCAQMD, 48 Cal. 4th at 321; Save *Our Peninsula Com. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 121-22; *City of Carmel-by-the-Sea v. Bd. of Supervisors of Monterey County* (1986) 183 Cal.App.3d 229, 246.
[50] 14 CCR § 15125(a); *CBE v.* SCAQMD, 48 Cal. 4th at 321.
[51] 14 CCR § 15125(a).
[52] DEIR, p. 2-12.
[53] Marcus Comments p. 1.

Without an accurate description of the environmental setting, the DEIR fails as an informational document under CEQA. A revised DEIR must be revised and recirculated.

2. *Templeton Outage*

The environmental setting analysis in the DEIR is inadequate because it fails to adequately explain the existing conditions related to power outages which would support the DEIR's conclusion that Estrella Substation is needed to mitigate an outage of the Templeton 230/70 kV transformer.[54] The DEIR does not explain why the new 230/70 kV substation could not be located 2 miles, which Mr. Marcus explains would result in reduced impacts.[55] Relocating the 230/70 kV substation farther from Templeton substation would also increase the claimed distribution benefits of the new substation, should it ever be used as a distribution substation.[56] The DEIR fails to adequately analyze these issues because it relies on an illusory baseline.

3. *N-2 Outage*

The DEIR fails to explain that the Project is not needed in light of existing conditions. Mr. Marcus determined that Estrella Substation is not needed to mitigate the impacts of an N-2 (Category C) outage of both 230 kV lines that connect to the Templeton 230/70 kV transformer.[57] Reliability rules allow load to be dropped after the outage of two separate transmission lines.[58] A double 230 kV line outage on the lines feeding Templeton would make the Templeton transformer unusable, as the DEIR asserts, and thus cause overloads on the underlying 70 kV system during high load periods. But the Project would not resolve this issue. As Mr. Marcus explains, even if Estrella were built as proposed, Paso Robles would still face a blackout after an N-2 outage of the Estrella-Paso Robles and Templeton-Paso Robles 70 kV lines.[59] The same is true for the environmentally preferred alternative described in the DEIR. Paso Robles is currently at risk of blackouts from a double transmission line outage, and Estrella would not change that fact. The DEIR explains that CAISO's original authorization of Estrella was based on

[54] Marcus Comments, p. 5.
[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*
[59] *Id.*

mitigating N-1 contingencies, and Estrella cannot be justified by its impact on N-2 contingencies.[60]

Mr. Marcus determined that even if it were appropriate to build new facilities just to mitigate the consequences of an N-2 outage, it is unclear that Estrella would be adequate.[61] The year after Estrella was approved, the CAISO concluded that the proposed new Estrella-Paso Robles line would overload after an N-2 outage of the two 230 kV lines connected to the Templeton substation.[62] Therefore, the DEIR must be revised and recirculated to provide an accurate description of the existing utility conditions.

B. The DEIR Fails to Provide Sufficient Baseline Information on Golden Eagles

The DEIR fails to provide a complete and accurate description of the Project's environmental setting related to golden eagles, and thus, the DEIR's impact assessment and proposed mitigation for impacts to golden eagles are inadequate.

Golden eagles are protected under the federal Bald and Golden Eagle Protection Act, which prohibits take of golden eagles and their occupied and unoccupied nests, and are a fully protected species under State law.[63] The DEIR was required to carefully evaluate the Project's baseline conditions for golden eagles in order to evaluate whether the Project would disturb eagles, nests or habitat. Biologist Mr. Cashen determined that CPUC did not conduct adequate baseline surveys to establish these existing conditions.

First, the CPUC did not conduct protocol-level surveys for eagle nests. As Mr. Cashen explains, the USFWS recommends protocol-level surveys for occupied nesting territories within two miles of the area where take may occur.[64] Without this information, the DEIR lacks substantial evidence to conclude that the Project will not adversely impact eagles, nests, or habitat.

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[60] *Id.* at 6.
[61] *Id.* at 6.
[62] CAISO, Preliminary Reliability Assessment Results (September 24-25, 2014) p. 91 *available at*: https://www.caiso.com/Documents/Presentation-PreliminaryReliabilityAssessmentResults-Sep24_2014.pdf.
[63] DEIR, p. 4.4-1,
[64] Cashen Comments, p. 4.

Further, DEIR Figure 4.4-5 does not distinguish between active and inactive nests. Project impacts have the potential to be severe on golden eagles due to their intolerance to anthropogenic forms of disturbance, and their susceptibility to collision with, and electrocution from, power lines.[65] Additional information is required to determine Impacts of the Proposed Project and Project alternatives on golden eagle nest territories and important eagle-use areas.[66] A revised DEIR should clarify whether Figure 4.4-5 depicts all active and inactive nests, or only active nests. The DEIR should explain the methods used to confirm a nest was inactive, and identify the years each nest was last surveyed to determine its status.

Third, the DEIR appears to rely on incomplete reporting data. The California Natural Diversity Database ("CNDDB") staff often have a backlog of occurrence data that have not been entered into the database. This appears to be the case for golden eagle nest records. A revised DEIR should clarify whether the information provided in the DEIR includes unprocessed data that can be obtained by contacting CNDDB staff and the US Fish and Wildlife Service.

Finally, the DEIR fails to mention that the eBird database has multiple records of golden eagles within the Paso Robles city limits between 2016 and 2020.[67] The DEIR erroneously suggests that the most recent observation on eBird was in 2015.[68] The eBird database suggest that four sightings of golden eagles have been registered since 2018, at Barney Schwartz Park, a distance of less than three miles from the Estrella Substation site.[69]

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[65] *Id.* at 3; U.S. Fish and Wildlife Service, Division of Migratory Bird Management. 2009. Final Environmental Assessment, Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act. Washington: Dept. of Interior. *See also* U.S. Fish and Wildlife Service. 2013 Apr. Eagle Conservation Plan Guidance: Module 1—Land-based Wind Energy, Ver 2. pp. ii and iii.
[66] Important eagle-use area is defined as: "an eagle nest, foraging area, or communal roost site that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nest, foraging area, or roost site that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles" (as defined at 50 CFR 22.26).
[67] eBird.org, Map Function, Golden Eagle Search, https://ebird.org/map/goleag?neg=true&env.minX=-120.74407377548609&env.minY=35.52383762834864&env.maxX=-120.4924181968728&env.maxY=35.74316208344104&zh=true&gp=false&ev=Z&mr=1-12&bmo=1&emo=12&yr=all&byr=1900&eyr=2021.
[68] DEIR, p. 4.4-19.
[69] eBird.org, Barney Schwartz Park, San Luis Obispo County, California, US: Sightings, *available at*: https://ebird.org/hotspot/L3558694.

A revised DEIR must identify the methods that were used to obtain information on golden eagle nests in the vicinity of the Proposed Project and Project alternatives.

V. THE DEIR RELIES ON INFORMATION BURIED IN PROPONENT'S ENVIRONMENTAL ASSESSMENT APPENDICES

The DEIR is inadequate as an informational document because readers of the DEIR are expected to search through appendices of the Proponent's Environmental Assessment in order to find pertinent information regarding greenhouse gas emissions, and utility distribution. For example, the GHG emission sulfur hexafluoride ("SF_6") calculations that the DEIR says are in appendix C of the DEIR are actually in appendix C of the Proponent's Environmental Assessment. It is not reasonable for the CPUC to approve this DEIR without the inclusion of the necessary information in the EIR that Applicants cite to.

The court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* determined that a reader of the EIR could not reasonably be expected to ferret out an unreferenced discussion in an earlier document, interpret that discussion's unexplained figures without assistance, and spontaneously incorporate them into the EIR's own discussion.[70] The court held "[t]he data in the EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project."[71]

Further, "information scattered here and there in EIR appendices or a report buried in an appendix, is not a substitute for a good faith reasoned analysis."[72] The requirement of a detailed analysis ensures that stubborn problems or serious criticism are not "swept under the rug."[73] Here, the DEIR fails to include the detailed analysis required for the SF_6 analysis within the Greenhouse Gas Emissions section. Without persistent searching by Commenters' experts, we would have been unable to find the relevant information undergirding the DEIR's

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[70] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 442.
[71] *Id.*
[72] *Id., quoting California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219, 1239, *quoting Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715, 723.
[73] *Cleary v. County of Stanislaus* (1981) 118 Cal.App.3d 348, 357.

analyses. The CPUC cannot certify the DEIR, as is, because the relied on information is not actually incorporated or described and referenced clearly in the DIER.[74]

The DEIR must be revised and recirculated to include the reference information undergirding the determinations made in the EIR.

VI. THE DEIR FAILS TO ADEQUATELY ANALYZE IMPACTS AND INCORPORATE ALL FEASIBLE MITIGATION MEASURES AND ALTERNATIVES AS REQUIRED BY CEQA

CEQA's purpose is to "[p]revent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the chances to be feasible."[75] CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures.[76]

"CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible."[77] A public agency cannot approve a project if there are feasible alternatives or mitigation measures available that would substantially lessen any significant effects that the project would have on the environment.[78] CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors."[79]

"The core of an EIR is the mitigation and alternatives sections."[80] The CEQA Guidelines define mitigation as a measure which (1) avoids the impact altogether by not taking a certain action or parts of an action, (2) minimizes the impact by limiting the degree or magnitude of the action and its implementation, (3)

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[74] *See Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 442.
[75] 14 CCR § 15002(a)(3).
[76] 14 CCR § 15002(a)(2) and (3); *see also Berkeley Jets*, 91 Cal.App.4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564.
[77] 14 CCR § 15021(a).
[78] 14 CCR § 15021(a)(2).
[79] 14 CCR § 15364.
[80] *Citizens of Goleta Valley v. Bd. of Supervisors ("Goleta II")* (1990) 52 Cal.3d 553, 564.

rectifies the impact by repairing, rehabilitating, or restoring the impacted environment, (4) reduces or eliminates the impact overtime by preservation and maintenance operations during the life of the action, and (5) compensates for the impact by replacing or providing substitute resources or environments.[81] "In deciding whether changes in a project are feasible, an agency may consider specific economic, environmental, legal, social, and technological factors."[82]

A lead agency is prohibited from approving a project with significant impacts unless it makes one or more of three findings:

(1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.[83]
(2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.[84]
(3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.[85]

Findings as to mitigation measures must be supported by substantial evidence.[86] Substantial evidence means "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached."[87] Substantial evidence "shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts,"[88] but it should not include "[a]rgument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do

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[81] 14 CCR § 15370.
[82] 14 CCR § 15021(b).
[83] 14 CCR § 15091(a)(1).
[84] 14 CCR § 15091(a)(2).
[85] 14 CCR § 15091(a)(3).
[86] 14 CCR § 15091(b); *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 449.
[87] 14 CCR § 15384(a).
[88] 14 CCR § 15384(b).

not contribute to or are not caused by physical impacts on the environment."[89] The DEIR should be revised and recirculated to incorporate all feasible mitigation measures recommended by Commenters, including undergrounding the entire 70 kV line as the environmentally superior alternative. [90,91]

A. The DEIR Fails to Adequately Analyze Undergrounding the Entire 70 kV Line as a Feasible Alternative

CEQA provides that public agencies should not approve a project if there are feasible mitigation measures that would substantially lessen the significant environmental effects of the project.[92] An agency may reject a mitigation measure if it finds it to be infeasible.[93] A feasible mitigation measure is one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, legal, and technological factors.[94]

The DEIR failed to explain why only a portion of the line was considered for undergrounding when, in fact, undergrounding the whole line is a feasible alternative which would reduce one or more significant impacts to less than significant levels, including aesthetic impacts, which the DEIR asserts are significant and unavoidable. The DEIR states that "[b]ecause of the extremely limited space, some of the new 70 kV line sections would have to be undergrounded using 70 kV solid dielectric cables and pothead structures."[95] This rationale does not explain why undergrounding the entire 70 kV line is not feasible. Commenters recommend that feasible mitigation includes undergrounding the entire 70 kV power line, not just a 1.2 mile portion. It is without question, that an agency need not "adopt every nickel and dime mitigation scheme brought to its attention or proposed in the project EIR," but it must incorporate "feasible mitigation measures" "when such measures would 'substantially lessen' a significant environmental

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[89] 14 CCR § 15384(a).
[90] *Russel Covington, et al v. Great Basin Unified Air Pollution Control District, et al.* (2019) 43 Cal.App.5th 867, 882 ("*Covington*").
[91] Fox Comments, p. 2.
[92] PRC § 21002.
[93] PRC § 21081.
[94] PRC §21061.1; 14 CCR § 15364.
[95] NextEra Transmission West and PG&E Co., Estrella Substation and Paso Robles Reinforcement Project Proponent's Environmental Assessment, Response to Deficiency List No. 4, *available at*: https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/docs/Estrella%20Def%204%20Response.pdf.

effect."[96] Here, undergrounding the entire 70 kV line would substantially lessen significant impacts to biological resources and fire risk.

We concur with the DEIR that cost is not a sufficient reason to show that the alternative is financially infeasible.[97] CEQA Guidelines Section 15126.6(b) requires consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of the project objectives, or would be more costly".[98] The Court of Appeals determined in *Citizens of Goleta Valley v. Board of Supervisors*, "[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the California Public Utilities Commission alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project."[99] Here, the DEIR contains no evidence demonstrating that the additional cost of undergrounding the 7-mile 70 kV power line would not render the project impractical. The DEIR therefore failed to adequately the infeasibility of undergrounding alternatives PLR-3A and PLR-3B.

1. *Undergrounding Is Feasible*

The DEIR fails to sufficiently demonstrate undergrounding's infeasibility. In *Russel Covington, et al v. Great Basin Unified Air Pollution Control District, et al.*, the court determined the EIR's response to comments was inadequate because the EIR made no attempt to explain whether mitigation measures proposed in public comments to address an impacts which the District's EIR had declared significant and unavoidable were infeasible.[100] The court's holding is consistent with CEQA's statutory requirement that a lead agency cannot declare an impact to be significant and unavoidable unless it first adopts all feasible mitigation to reduce the impact to the greatest extent feasible.[101]

[96] *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1989) 209 Cal.App.3d 1502, 1519.
[97] DEIR, p. 3-2, 3.
[98] 14 CCR § 15126.6(b).
[99] *Citizens of Goleta Valley v. Board of Supervisors* 197 Cal.App.3d 1167, 1181; see also *Kings County Farm Bureau v. City of Hanford* 221 Cal.App.3d 692, 736.
[100] *Covington* 43 Cal.App.5th at 883.
[101] Pub. Res. Code §21081.

The DEIR did not determine whether undergrounding the entire 70 kV line was infeasible. Geotechnical investigations by Project proponent were conducted for the Estrella Substation and the 70kV power line.[102] Bedrock was not encountered at any of the boring sites drilled.[103] Undergrounding the entire 70kV line was not considered and DEIR made no attempt to explain whether undergrounding the entire 70 kV line was infeasible. The route of Alternative PLR-3 would follow existing roads, would not exacerbate geologic hazards, and would not bring the project above the 10,000 MT CO_2e/yr.

There is insufficient evidence in the DEIR to establish that undergrounding the entire 70 kV power line is not a feasible mitigation measure. An EIR must contain a sufficient degree of analysis to enable the decisionmakers to make an intelligent and informed decision.[104] The DEIR made no attempt to explain why undergrounding the entire line was not feasible. The DEIR must be recirculated to determine whether undergrounding the entire transmission line is a feasible alternative, and if not, to include substantial evidence supporting a conclusion that undergrounding is not a feasible alternative.

2. *Undergrounding Would Mitigate Biological Impacts*

The DEIR indicates undergrounding the Project's power lines would reduce impacts to special-status birds by reducing the potential for avian collision and electrocutions.[105] In addition, the DEIR indicates undergrounding would substantially reduce the wildfire risk and associated ecological consequences.[106] Nevertheless, the DEIR's analysis of undergrounding is limited to Alternative PLR-3, which would involve undergrounding a relatively short segment of the power line route in the Golden Hill Road area north of SR 46. The DEIR provides the following rationale for Alternative PLR-3:

> Alternative PLR-3: Strategic Undergrounding would involve undergrounding the portion of the Proposed Project's new 70 kV power line which has the greatest potential for aesthetic and other environmental impacts. During scoping for the Proposed Project, and based on CPUC staff and consultant's preliminary analysis of the Proposed Project's potential impacts, it was determined that the portion of the

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[102] DEIR, p. 4.7-5.
[103] DEIR, p. 4.7-5.
[104] 14 CCR § 15151.
[105] DEIR, Table 5-1.
[106] DEIR, p. 4.20-18.

> line that passes through the Golden Hill Road area north of SR 46 had the greatest potential for impacts because this area does not have existing aboveground transmission or distribution electrical infrastructure and is an up-and-coming area with new commercial development, recreational uses, and existing single-family residential development.[107]

The benefits of Alternative PLR-3 in reducing the risks of wildfire and avian impacts would be relatively limited because the majority of the Proposed Project's 70-kV route would be above ground, including in areas that currently do not have existing aboveground transmission or distribution electrical infrastructure. The DEIR provides no evidence that the risks of wildfire and avian impacts are greater in the Golden Hill Road area north of SR 46 relative to other portions of the Proposed Project's 70-kV route. Therefore, if the objective of undergrounding is to reduce "aesthetic and other environmental impacts," the CPUC must analyze a Project alternative that involves undergrounding the 70-kV power line along its entire route.[108]

The CPUC recognized the benefits of undergrounding power lines in Rulemaking 00-01-005, in implementing Assembly Bill 1149, on January 6, 2000.[109] The CPUC recognized the benefits of undergrounding include aesthetics, increases in property value, public and worker safety, service reliability, reduction of fire danger, and reduced utility costs. [110] Further, the rulemaking recognized "Increased public and worker safety is another undergrounding benefit. The potential reduction in fatalities and injuries due to contact with overhead facilities, as well as reduction of power outages caused by overhead incidents is a desirable goal."[111] The DEIR should be revised and recirculated to analyze the decrease in adverse biological impacts that would be accomplished by undergrounding the entire transmission line.

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[107] DEIR, p. 3-74.
[108] Cashen Comments, p. 11.
[109] Order Instituting Rulemaking into Implementation of Assembly Bill 1149, Regarding Underground Electric and Communication Facilities (January 6, 2000) pp. 6, *available at*: http://docs.cpuc.ca.gov/word_pdf/RULINGS/5510.doc.
[110] *Id.*
[111] *Id.*

3. *Undergrounding Would Mitigate Fire Risk*

CPUC further recognized that undergrounding may reduce the danger of fire and other threats to life and property.[112] When power lines are near trees, direct contact can start fires (and of course cause outages). Such fires can endanger both lives and property. Further, fallen power poles, and live electric wires can frustrate emergency evacuation; as shown by vivid reports from the Oakland Hills fire.

For the reasons CPUC recognized in enacting Rulemaking 00-01-005, undergrounding in this Project is a preferable alternative to reduce fire risk associated with the 70kV power lines. Tree clearing, or fire retardant coatings would not be sufficient because if there is a lapse in tree clearing direct contact with trees can start fires and endanger public health and safety.

San Diego Gas Electric Company, in conjunction with the California Public Utilities Commission:

> Adopted an ordinance creating an underground district in the area in which both the existing and new electric facilities are and will be located, requiring, among other things, (1) that, where practical and economically feasible, all existing overhead electric high voltage distribution facilities in such district shall be removed, (2) that, where practical and economically feasible, each property served from such overhead electric high voltage distribution facilities shall have installed, in accordance with the Utility's rules for underground service, all electrical facility changes on the premises necessary to receive service from the underground facilities of the Utility as soon as it is available, and (3) authorizing the Utility to discontinue its high voltage overhead service.[113]

This Project's 70 kV line should be undergrounded "in keeping with the [California Public Utilities] Commission's policy of encouraging, and when necessary ordering… utilities' distribution systems to be buried."[114]

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[112] *Id* at 10.
[113] San Diego Gas & Electric, Rule 20 Replacement of Overhead with Underground Electric Facilities (2014) *available at*: http://regarchive.sdge.com/tm2/pdf/ELEC_ELEC-RULES_ERULE20.pdf.
[114] Public Utilities Commission of the State of California, Rules for Construction of Underground Electric Supply and Communication Systems, General Order No. 128, January 2006, *available at*: https://www.sandiego.gov/sites/default/files/52591.pdf.

4. *Undergrounding Would Mitigate Impacts from Electro Magnetic Radiation*

Overhead transmission lines are a source of two fields: the electric field produced by the voltage and the magnetic field produced by the current. CPUC guidance specifically requires that "[t]he construction of a new transmission line will incorporate no-cost and low-cost magnetic field reduction measures. Magnetic field modeling is required."[115] The DEIR failed to discuss these fields and their impacts on sensitive receptors even though the proposed transmission line is within 50 feet of many homes.[116] It also fails to comply with the CPUC design guidelines.

Contrary to assertions in the PEA, significant public health impacts have been consistently documented from exposure to electromagnetic fields, both extremely low-frequency ELF-EMF from sources like power lines and radiofrequency radiation (RFR) in referenced journal articles.[117] These include short- and long-term health impacts, including those discussed in Dr. Fox's Comments.[118,119]

B. The DEIR Lacks Substantial Evidence to Conclude that Alternative Combination #2 is the Environmentally Superior Alternative.

The CPUC identified Alternative Combination #2 as the Environmentally Superior Alternative for this DEIR. Alternative Combination #2 would include Estrella Substation, Alternative PLR-1A, Alternative BS-2, and Alternative BS-3. There is substantial evidence that the proposed alternatives BS-2: Battery Storage to Address Distribution Objective, and BS-3: Third Party, Behind-the-Meter Solar and Battery Storage would increase the Project's significant environmental effects. Commenters urge the CPUC to not select nor approve the Alternatives BS-2, or BS-3.

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115 California Public Utility Commission, EMF Design Guidelines for Electrical Facilities, Table 3-1, pdf 9, July 21, 2006; https://www.cpuc.ca.gov/General.aspx?id=4879.
116 PEA, Appendix A.
117 Fox Comments, p. 85.
118 *Id.* at 86; Cindy Sage and David O. Carpenter (Editors), BioInitiative Report: A Rationale for Biologically Based Exposure Standards for Low-Intensity Electromagnetic Radiation, BioInitiative Working Group, December 31, 2012, Exhibit13.
119 Jiguparmar, How HV Transmission Lines Affects Humans and Plants; https://electrical-engineering-portal.com/how-hv-transmission-lines-affects-humans-plants.

Alternative Combination #*2* is not environmentally superior to the Proposed Project because it would have a number of environmental impacts that could be avoided by the Proposed Project. Those impacts include increased fire risk, accidents leading to significant on-site and off-site public health and off-site property damage, and significant increases in criteria pollutant and greenhouse gas emissions.[120] The DEIR lacks substantial evidence to conclude that Alternative Combination #2 is the environmentally superior alternative.

1. *Fire Risk*

Commenters concur with the DEIR that fire risk is associated with the Battery Storage Alternatives BS-2 and BS-3. The DEIR explains that there may be potentially increased fire risk associated with FTM BESS installations, particularly lithium-ion BESSs, and could pose a hazard to fire fighters and other first responders due to their chemical components.[121] But, the DEIR fails to adequately analyze the significant impacts from BESS facilities accidents causing fires to on-site and off-site locations, and property damage worker and public health impacts associated with the release of hazardous air pollutants.

Lithium-ion batteries contain a flammable electrolyte and have the potential for "thermal runaway," which is a self-perpetuating cascade process where one compromised battery cell ignites adjacent cells, potentially resulting in a large-scale fire.[122] Fires have occurred at utility-scale lithium-ion BESS installations, including one at the 2 MW APS McMicken Battery Energy Storage facility in Surprise, Arizona in April of 2019.[123] The McMicken explosion injured four firefighters and destroyed the BESS and its container.[124]

If Alternatives BS-2 or BS-3 are implemented, Dr. Fox recommends that the Project utilize available technologies and design methods to address thermal

[120] Fox Comments p. 62.
[121] DEIR, p. 4.9-39.
[122] DEIR, p. 4.9-39.
[123] *Id.*
[124] Fox Comments, p. 68, Arizona Public Service, *Technical Support for APS Related to McMicken Thermal Runaway and Explosion: McMicken Battery Energy Storage System Event Technical Analysis and Recommendations.* Available at: https://www.aps.com/-/media/APS/APSCOM-PDFs/About/Our-Company/Newsroom/McMickenFinalTechnicalReport.ashx?la=en&hash=50335FB5098D9858BFD276C40FA54FCE. Accessed December 14, 2020.

runaway propagation.[125] In addition, better practices for ventilation, extinguishing, and cooling thermal runaway scenarios should be implemented in any BESS for this Project. Clean agent or aerosol extinguishing methods should not be the only barrier against thermal runaway, as they were in the McMicken BESS explosion.[126]

The DEIR asserts, without substantial evidence, that flow battery technology, which could be used at FTM Sit 6, "would have reduced fire risk because the electrolyte material is not flammable."[127] However, "reduced fire risk" does not mean the impact would not be significant.[128]

The National Fire Protection Association identified impacts of energy storage systems, which were not adequately analyzed in the DEIR including: 1) Thermal runaway (rapid uncontrolled release of heat energy, resulting in fire or explosion; 2) Shock hazard from stranded energy; 3) Release of toxic and flammable gases; 4) Deep seated fires within metal or plastic casing, blocking firefighting agents; 5) Mechanical abuse; 6) Thermal abuse from exposure to external heat source; 7) Electrical abuse from overcharging; 8) Environmental impacts including rodent damage to wiring extreme heat, and floods.[129]

Dr. Fox describes the serious risks of fires, explosions, and wildfires associated with the proposed BESS facilities.[130] These risks are mentioned, but not analyzed, in the DEIR. The DEIR must be revised and recirculated to adequately analyze the impacts from proposed Alternatives BS-2 and BS-3.

The Final Alternatives Screening Report for this Project states that "fire risk is a concern with BESS installations (particularly lithium-ion BESSs)… should BESS facilities catch fire, they could potentially pose a hazard to fire fighters and other first responders due to their chemical components. These issues will need to be fully evaluated in the EIR…"[131] But the DEIR fails to adequately evaluate

[125] Fox Comments, p. 64.
[126] *Id.*
[127] DEIR, p. 4.9-39.
[128] Fox comment, p. 51.
[129] NFPA, Fire & Life Safety Policy Institute, Safety Through Better Public Policy, August 2019; https://www.nfpa.org/News-and-Research/Resources/Emergency-Responders/High-risk-hazards/Energy-Storage-Systems.
[130] Fox Comments, p. 48-55.
[131] Estrella Substation and Paso Robles Area Reinforcement Project DEIR Appendix B, Final Alternatives Screening Report, p. 3-73.

impacts from BESSs. The DEIR fails to analyze these issues in a "risk of upset analysis." CEQA requires that CPUC prepare a risk of upset analysis for Alternatives BS-2 and BS-3 if either alternative is being considered for adoption. Dr. Fox determined that an accident at these facilities would result in significant impacts, including potentially property damage, health impacts from toxic chemicals, and even mortality.[132] The DEIR fails as an informational document under CEQA for failing to analyze and mitigate these risks.

The failure to conduct a risk of upset analysis in the DEIR constitutes impermissibly deferred analysis in violation of CEQA. CEQA Guidelines § 15126.4(a)(1)(B) provide that formulation of mitigation measures shall not be deferred until some future time.[133] "By deferring environmental assessment to a future date, the conditions run counter to that policy of CEQA which requires environmental review at the earliest feasible stage in the planning process."[134] The DEIR must be revised and recirculated to include adequate analysis of the impacts from fire risks associated with BESS facilities.

2. GHG Impacts from BESSs

The DEIR fails to take into account the GHG emissions resultant from operating the proposed BESSs. Batteries in BESS facilities must be charged with energy from the grid.[135] Generation of this energy emits GHGs and criteria pollutants. Further, a BESS requires electricity to operate its ancillary cooling and control systems, including inverters, transformers, and HVAC units.[136] The DEIR did not include emissions from any of these sources. As demonstrated below and by Dr. Fox's comments GHG emissions from the Project are significant and unmitigated.[137]

The DEIR contains no information on the next generation of electricity needed to operate the proposed BESSs. The DEIR is silent on the sources of the charging energy and makes no commitment that the batteries will be charged with renewable energy.[138] As the facility is a net consumer of electricity (to operate support equipment), operation of the Project will increase GHG and criteria

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[132] Fox Comments, p. 67.
[133] 14 CCR 15126.4(a)(1)(B).
[134] *Sundstrom* (1998) 202 Cal.App.3d 296, 305.
[135] Fox Comments, p. 70.
[136] *Id.*
[137] *Id.*
[138] *Id.* at 71.

pollutant emissions to operate the BESS and when the batteries are charged with nonrenewable energy sources, which will occur whenever wind and solar are not available to meet incremental charging loads because they are already being fully used.[139]

The DEIR fails to provide the key information required to estimate charging emissions, including the battery storage efficiency and expected energy output of the batteries. The storage capacity of the various BESS options, the amount of energy the batteries can store, is included in Table 3-18 of the DEIR. However, the expected energy output was not provided. All of this information is required to estimate emissions from Project operation.

The DEIR fails as an informational document under CEQA for failing to calculate direct and indirect GHG emissions from BESS battery charging and for failing to include the information required to calculate these emissions. Because the DEIR does not provide any data on the expected efficiency, capacity factor, or its expected charging energy requirements or energy generation, we used CAISO data for existing energy storage projects. Commenters' expert analysis is summarized in Exhibits 2A and 2B.[140]

VII. THE DEIR FAILS TO ADEQUATELY ANALYZE AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS TO AGRICULTURAL RESOURCES

The DEIR states that the Proposed Project would permanently convert roughly 15 acres of Important Farmland to non-agricultural uses.[141] Specifically, the DEIR states that the Estrella Substation would be located on an approximately 15-acre portion of a 98.6-acre parcel of land which is currently planted with grape vines of 10-foot-wide span lengths.[142] The DEIR fails to analyze and mitigate temporary and permanent significant impacts to farmland. The impacts to agricultural land from this Project are inconsistent with the San Luis Obispo General Plan Agriculture Element. The DEIR fails to analyze the Project's inconsistency with the General Plan.

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[139] *Id.*
[140] Emission calculations by David Marcus. Calculations in Exhibits 2A and 2B and Marcus resume in Exhibit 3.
[141] DEIR, p. 4.11-17.
[142] DEIR, p. 2-15.

CEQA requires the agency to determine whether the Project would "Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect."[143]

In 1993, the California State Legislature added a requirement to CEQA that the Resources Agency create an appendix to the CEQA Guidelines.[144] The Legislature required that this appendix propose methods to analyze significant effects on the environment from conversion of agricultural land. The findings for this statutory requirement states that:

(a) Agricultural is the State's leading industry and is important to the State's economy.
(b) The continued productivity of agricultural lands in California is important in maintaining a healthy agricultural economy.
(c) The conversion of agricultural lands to nonagricultural use threatens the long-term health of the State's agricultural industry."[145]

A. The DEIR Fails to Adequately Analyze Impacts to Farmland

The DEIR concludes that the Project would have significant and unavoidable impacts on agricultural resources.[146] The Project would entail the permanent conversion of Important Farmland including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Permanent conversion of agricultural land would occur as a result of removal of existing vineyards at the substation site and removal of existing vineyard and row crops for the placement of structures as part of the 70 kV power line route construction.[147] The County of San Luis Obispo Agriculture Element states that it is the policy of the County to preserve agricultural land from development, because "[o]nce agricultural land is

[143] 14 CCR § 15000 Appendix G.
[144] Osha R. Meserve, *Overview of Legal Restraints on Agricultural Land Mitigation Programs,* Prepared for Department of Conservation Division of Land Resource Protection (February 16, 2011) p. 2 *available at:* http://www.caff.org/wp-content/uploads/2010/07/Ag-Mitigation-Handout-2-16-111.pdf.
[145] Section 1 of Stats. 1993, c. 812 (SB 850).
[146] DEIR, p. 4.2-13.
[147] DEIR, p. 4.2-12.

converted to non-agricultural use, it is virtually impossible to remove the non-agricultural use and convert the land back to agricultural production."[148]

1. Temporary Impacts

The DEIR states that temporary work for the Substation and staging areas would require "vegetation removal and grading, including grape vines (and roots) and grasses" of approximately 6.2 acres.[149] Mitigation measure AG2 would not be effective mitigation because the impact to farmland is not temporary. Removal of grape vines and roots is not a temporary impact. Grape vines do not reach full production until the third through fifth year, at which time the area could be fully restored.[150]

The Proponent's Environmental Assessment estimated that approximately 96.74 acres of farmland will be temporarily affected during construction of the Estrella Substation and power line route.[151] This information, though, is not present in the DEIR. As discussed above, the court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* held "[t]he data in the EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project."[152] Further, "information scattered here and there in EIR appendices or a report buried in an appendix, is not a substitute for a good faith reasoned analysis."[153] The requirement of a detailed analysis ensures that stubborn problems or serious criticism are not "swept under the rug."[154] The extent of temporary impacts to farmland was not adequately analyzed in the DEIR.

The DEIR addresses the temporary impacts as follows:

> "[T]emporary impacts to Prime Farmland, Farmland of Statewide Importance, and Unique Farmland would be significant if agricultural

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148 *Id.*
149 DEIR, p. 2-73.
150 House Comments, p. 4; Jancis Robinson et.al., *The Oxford Companion to Wine,* Third Edition, p. 741-742, Oxford University Press 2006.
151 PEA, p. 3.2-23.
152 *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 442.
153 *Id., quoting California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219, 1239, *quoting Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2003) 106 Cal.App.4th 715, 723.
154 *Cleary v. County of Stanislaus* (1981) 118 Cal.App.3d 348, 357.

uses/crops were not adequately restored following construction and/or if soil productivity were adversely affected over the long term (e.g., due to soil compaction)."[155]

Here, the DEIR recognizes that "temporary" impacts to Farmland may be permanent "if soil productivity were adversely affected over the long term."[156] However, the DEIR mischaracterized the impact here as temporary instead of a permanent conversion of farmland. Agricultural expert Mr. House comments that the lack of specificity as to how temporary impacts will be mitigated "is just a cipher or placeholder to acknowledge that something will need to be done after the construction is completed."[157] This would constitute impermissibly deferred analysis under CEQA Guidelines § 15126.4(a)(1)(B) which provide that formulation of mitigation measures shall not be deferred until some future time.[158]

The DEIR also fails to specify the degree of soil disturbance.[159] The depth of disturbance through excavation or severe compaction may make it impracticable to fully restore the disturbed site to pre-project conditions, and thus the mitigation measures will be insufficient. The DEIR should be revised to fully analyze the depth and degree of disturbance and compaction that will result from the Project.

The DEIR must be revised and recirculated to disclose the temporary impacts that may become permanent, and to require all feasible mitigation necessary to reduce temporary impacts to agricultural land to less than significant levels.

2. Land Evaluation and Site Assessment

The DEIR fails to provide a California Land Evaluation and Site Assessment ("LESA") for the Estrella Substation site. The purpose of a LESA is provide agencies and decision makers with a succinct and technically developed methodology to assist with the assessment of the potentially significant effects on

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[155] DEIR, p. 4.2-18.
[156] *Id.*
[157] House Comments, p. 2.
[158] 14 CCR 15126.4(a)(1)(B).
[159] House Comments, p. 2.

the environment related to agricultural land conversions considered in the environmental review process including in CEQA reviews.[160]

The California LESA Model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands.[161] For any given project, the factors are rated, weighted, and combined, resulting in a single numeric score.[162] The final project score becomes the basis for making a determination of a project's potential significance.[163] The California Land Evaluation and Site Assessment (LESA) Instruction Manual (1997) developed by the California Department of Conservation, Office of Land Conservation should be the guidance and instructional document utilized to conduct analysis for this Project.[164]

A revised DEIR must be circulated to adequately analyze impacts to agricultural lands through a LESA Model.

B. The DEIR Fails to Adequately Mitigate Impacts to Farmland

1. Mitigation Measure AG-1

The DEIR in Mitigation Measure AG-1 provides for Compensation for Loss of Agricultural Land through a conservation easement. A conservation easement would not "replace or provide a substitute resource" for the permanent loss of unique farmland as required by CEQA.[165] A conservation easement to "promote the long-term preservation of agricultural lands in California" would not replace the 15.17 acres of Important Farmland on the Estrella Substation Site being converted to nonagricultural use.[166]

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[160] PRC § 21095.
[161] California Department of Conservation, Land Evaluation & Site Assessment (LESA) Model, (2020) available at: https://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx.
[162] *Id.*
[163] *Id.*
[164] California Department of Conservation, California Agricultural Land Evaluation and Site Assessment Model: Instruction Manual (1997) *available at*: https://www.conservation.ca.gov/dlrp/Documents/lesamodl.pdf.
[165] CEQA Guidelines § 15370(e); *Friends of Kings River v. County of Fresno* (2014) 232 Cal.App.4th 105,123.
[166] DEIR, p. 4.2-13.

The court in *King & Gardiner Farms, LLC v. County of Kern* determined that:

> "Entering into a binding agricultural conservation easement does not create new agricultural land to replace the agricultural land being converted to other uses. Instead, an agricultural easement merely prevents the future conversion of agricultural land subject to the easement. Because the easement does not offset the loss of agricultural land (in whole or in part), the easement does not reduce a project's impact on agricultural land. Therefore, [the mitigation measure] does not provide effective mitigation for the conversion of agricultural land."[167]

Here, Proposed Mitigation Measure AG-1 does not provide effective mitigation for the conversion of agricultural land because a contribution of funds to the California Farmland Conservancy does not create any new Important Farmland.[168]

The DEIR concludes that impacts from the permanent conversion of agricultural land are significant and unavoidable. However, the DEIR lacks the underlying analysis necessary to support this conclusion, and fails to demonstrate that all feasible mitigation is being implemented. An impact can only be labeled as significant and unavoidable after all available, feasible mitigation is considered. Review of the DEIR demonstrates that the Project fails to consider all feasible mitigation measures that would provide for new agricultural land to offset that which is being permanently converted. "[P]ublic agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects…"[169]

Mr. House concurs with the DEIR's conclusion that a conservation easement at a 1:1 ratio does not fully offset the significant impact because it does not create new Important Farmland.[170] Other California counties with comparably valuable agricultural lands to those that will be disrupted by the Project required notably higher mitigation ratios. In Yolo County, California, a county ordinance requires a

[167] *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 876.
[168] DEIR, p. 4.2-13.
[169] California Code of Regulation, Title 14, Chapter 3, § 21002.
[170] DEIR, p. 4.2-13.

3:1 ratio when prime agricultural land is converted from agricultural land to nonagricultural land, and 2:1 when converting non-prime farmland.[171] The City of Davis implemented a 2:1 mitigation requirement for changes from agricultural land to nonagricultural land.[172] Mr. House concludes that Mitigation Measure AG-1 should require replanting at a ratio of 3:1 because agricultural land is being converted to nonagricultural use. Mr. House further opines that the compensatory easement(s) should be located within 15 miles of the Project or within San Luis Obispo County, in order to adequately mitigate the loss of agricultural land.

If such land for a compensatory easement is not available, the mitigation measure is inadequate.[173] HWT and PG&E would not be required to identify a specific location, but such a location must actually exist.[174] A satisfactory mitigation measure would be to require HWT and PG&E to purchase the conservation easement with the oversight and approval of the CPUC.[175]

The DEIR states that the amount of HWT's and PG&E's contribution shall be based on the market price for the commensurate land at the time the impacts occur.[176] The DEIR does not define what "commensurate" land means. Mr. House explains that "commensurate" must be defined by metrics such as soil quality, and equivalent supply of water for irrigation, in order to provide substantial evidence to support the selection of mitigation lands. Further, Mr. House explains that the mitigation land should have an equal or better LESA score than the land lost.[177]

The DEIR should be revised to include feasible mitigation measures to reduce permanent impacts to agricultural resources to less than significant levels.

2. Mitigation Measure AG-2

Mitigation Measure AG-2 requires "removing any rock or material imported to stabilize the site, replacement of topsoil, de-compacting any soil that has been

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[171] Yolo County Zoning Code, Chapter 1, Article 4, Section 8-2.404(c)(1).
[172] City of Davis Mun. Code, § 40A.03.025(c): ("Total mitigation for a development project shall not be less than a ratio of two acres of protected agricultural land for each acre converted from agricultural land to nonagricultural land.")
[173] *King & Gardiner Farms* (2020) 45 Cal.App.5th 814, 877-878.
[174] *California Native Plant Society v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603,
[175] House Comments, p. 2.
[176] DEIR, p. 4.2-13.
[177] House Comments, p. 1.

compacted by heavy equipment and re-planting agricultural crops."[178] As Mr. House explains, this mitigation measure is inadequate for the following reasons.

First, removal of all the rock that has been imported to stabilize the site is generally economically infeasible.[179] Mr. House determined that "a 95% cleanup job is about the best likely outcome, thus this aspect of the temporary construction will not be fully restored to pre-construction conditions."[180] He concludes that this measure will thus not reduce the impact to a less-than-significant level. The DEIR should be revised and recirculated to fully mitigate the impacts from the introduction of rocks and material to the agricultural land on the Project site.

Second, Mr. House explains that replacement of topsoil "with fresh fill is insufficient to restore the landscape to its original condition."[181] Restoration of the site will take more than one year. HWT and PG&E should provide a plan to monitor the site and continue with restoration practices for two to three years in order to achieve the stated goals of restoring the soil to its pre-project condition.[182] The DEIR's Appendix F Mitigation Monitoring and Reporting Plan should be revised to clarify how long "Following Construction" the measure will be analyzed for effectiveness of restoration.[183] The CPUC should not "[c]onfirm restoration of agricultural lands is completed" until three to five years after construction is complete.

Third, de-compacting the soil on the Project should be done when the soil is dry, because ripping into wet soil "only causes additional damage" according to Mr. House.[184] The disruption of dry soil must take into account impacts to Air Quality from Valley Fever. But decompaction of wet soil may increase greenhouse gas emissions from the Project.

Fourth, GHG Emissions from decompaction of soil are significant and unmitigated. Research suggests that "tillage, soil decompaction after heavy machinery passages…impact not only primary production and soil [organic matter] inputs but also [organic matter] mineralization and therefore soil to atmosphere

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[178] DEIR Appendix F, p. F-14.
[179] House Comments, p. 2.
[180] *Id.*
[181] *Id.*
[182] House Comments, p. 2.
[183] DEIR Appendix F, p. F-14.
[184] House Comments, p. 2.

carbon fluxes."[185] This means, decompaction may release carbon stored in the soil into the atmosphere.[186] These emissions are a significant impact, but the DEIR failed to analyze them.

Further research suggests that "[t]he rapid rewetting of a dry soil often yields a pulse in soil CO_2 production."[187] Additionally, "[t]he drying and rewetting process also releases physically protected soil organic matter, increasing the amount of extractable [carbon] by up to 200%."[188] Soil compaction is also associated with increased risk of erosion and some studies have linked an increase in CO2 following rewetting to mineralization of freshly exposed organic matter, and the subsequent mineralization of microbial carbon.[189] The physical breakdown of soil aggregates, which occurs due to compaction and exposure to rainfall has been associated with increased CO2.[190] The DEIR should be revised and recirculated to analyze the impacts from decompaction of soil on GHG emissions.

Mr. House explains that replanting of agricultural crops may not be fully grown back to the size they were when removed until three to five years after replanting.[191] Grape vines take more than one year to reach crop bearing age.[192] Commenters' agriculture expert Greg House determined that "it is therefore necessary for the mitigation that the act of replanting of the grape vines encompasses the several years (typically 3 to 5 years) it takes to develop mature grape vines.[193] The Mitigation Measure AG-2 should only allow confirmation that restoration of agricultural land is completed, after the 5th year following replanting. Further, the Mitigation Monitoring and Reporting Program must restore the

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[185] Marie-France Dignac et al., *Increasing Soil Carbon Storage: Mechanisms, Effects of Agricultural Practices and Proxies. A Review,* 37 Agronomy for Sustainable Development 14 (2017).
[186] House Comments, p. 2.
[187] Agata Novara et. al., *Effects of Soil Compaction, Rain Exposure and Their Interaction on Soil Carbon Dioxide Emission* 37 Earth Surface Processes and Landforms 994–999 (2012).
[188] *Id.*
[189] *Id.*
[190] Agata Novara et. al., *Effects of Soil Compaction, Rain Exposure and Their Interaction on Soil Carbon Dioxide Emission* 37 Earth Surface Processes and Landforms 994–999 (2012).
[191] House Comments, p. 4.
[192] *Id.*
[193] *Id.*

temporary construction sites to their original slopes and contours for proper surface water drainage.[194]

Finally, the impacts of hazardous waste on the future of agricultural land were not sufficiently analyzed in the DEIR. The monitoring of hazardous substances in the soil should be continued after construction. Monitoring on temporary construction sites should ensure hazardous substances do not remain in the soil after restoration of agricultural land.[195] The DEIR should be revised and recirculated to adequately analyze and mitigate impacts to agricultural resources.

C. Loss of Agricultural Land is Inconsistent with the San Luis Obispo County General Plan Agriculture Element

This Project's impacts to agricultural land conflicts with the San Luis Obispo County General Plan. The County of San Luis Obispo General Plan Agriculture Element provides that "It is the policy of San Luis Obispo County to protect and encourage agricultural operations as stated in the county general plan and in the right-to-farm ordinance."[196] The County determined "it is important to protect agricultural land now" because over 90 percent of the County's "prime" agricultural land, almost all of the "unique" agricultural land, over 60 percent of the lands of "local importance," and lands defined as being of local "potential" are in areas experiencing development activities.[197] The Agriculture Element further provides that "If the protection of agricultural land is not given a high priority now, the industry will not be able to withstand the pressure to convert to other uses and move on…The long-term result will be the loss of productive lands for future generations, as well as the loss of the history and lifestyle that provides the rural character that is San Luis Obispo County."[198]

The CEQA Guidelines require a lead agency conducting environmental review of a project to consider whether the project would "conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over a project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an

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[194] *Id.*
[195] *Id.*
[196] County of San Luis Obispo Agriculture Element (2010) p. 2-9.
[197] County of San Luis Obispo Agriculture Element (2010) p. 2-10.
[198] *Id.*

environmental effect."[199] Here, the CPUC failed to consider that the project conflicts with the Agriculture Element, in violation of CEQA.

The DEIR must be revised to disclose and mitigate the inconsistency with the San Luis Obispo County General Plan Agriculture Element.

VIII. THE DEIR FAILS TO ADEQUATELY DISCLOSE AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS ON BIOLOGICAL RESOURCES

The failure to provide information required by CEQA is a failure to proceed in the manner required by CEQA.[200] Challenges to an agency's failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project's environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency's factual conclusions.[201] In reviewing challenges to an agency's approval of an EIR based on a lack of substantial evidence, the court will "determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements."[202]

Even when the substantial evidence standard is applicable to agency decisions to certify an EIR and approve a project, reviewing courts will not 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference.'"[203]

A. The DEIR Fails to Analyze and Mitigate Potentially Significant Impacts to Sensitive Vegetative and Riparian Communities

1. *The DEIR Fails to Analyze Potentially Significant Impacts to Sensitive Communities*

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[199] 14 CCR § 15000 Appendix G.
[200] *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.
[201] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.
[202] *Id., Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.
[203] *Berkeley Jets*, 91 Cal.App.4th at 1355.

The DEIR states that "the Proposed Project has been designed to avoid all riparian habitats."[204] This statement is not supported by substantial evidence. The 70 kV power line would cross a number of drainage features[205] that qualify as "riparian areas."[206] The DEIR points to APM HYDRO-1 to justify the statement that: "riparian areas would be avoided and no direct impacts to riparian areas would occur as a result of Proposed Project construction."[207] However, APM HYDRO-1 only requires that permanent structures, staging and work areas, and access roads be sited outside of existing drainage features *to the extent feasible*.

The DEIR does not discuss factors that would make it infeasible to avoid impacts to riparian areas, nor does it explain why it was impractical for the CPUC to conduct the feasibility analysis prior to publication of the DEIR. Because avoidance of riparian areas is contingent on an undefined level of feasibility, it is impossible for the public to understand the likelihood that Project impacts to riparian areas would indeed be avoided. Similarly, because the DEIR does not discuss factors that would make restoration impracticable, it is impossible for the public to understand the likelihood that temporary impact areas would indeed be restored. This issue is compounded by the lack of ecological performance standards for restoration of habitat in temporary impact areas (except those containing blue oak woodland).

2. *The DEIR Fails to Mitigate Potentially Significant Impacts to Sensitive Communities*

The proposed mitigation measure for hydrological impacts, APM HYDRO-1 is not legally enforceable because it states that "permanent structures, staging and work areas, and access roads be sited outside of existing drainage features to the extent feasible."[208] "To the extent feasible" is not binding. Mitigation measures must be fully enforceable through permit conditions, agreements or other legally binding instruments.[209] Failure to include enforceable mitigation measures is

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[204] DEIR, p. 4.4-10.
[205] DEIR, p. 4.4-53.
[206] Riparian areas in the Project area are not limited to the Central Coast cottonwood-willow riparian forest vegetation community discussed in the DEIR. *See definition in* National Research Council 2002. Riparian Areas: Functions and Strategies for Management. Washington, DC: The National Academies Press. p. 3.
[207] DEIR, p. 4.4-51.
[208] DEIR, p. 4.4-10.
[209] Id. at §15126.4(a)(2).

considered a failure to proceed in the manner required by CEQA.[210] In order to meet this requirement, mitigation measures must be incorporated directly into the EIR to be enforceable.[211] The DEIR fails as an informational document for its lack of clear mitigation methods and lack of sufficient data to evaluate the proposed project.[212] The DEIR must be revised and recirculated to mitigate impacts to sensitive vegetative and riparian communities.

B. The DEIR Fails to Adequately Analyze and Mitigate Potentially Significant Impacts to Blue Oak Woodlands

1. The DEIR Fails to Adequately Analyze Impacts to Blue Oak Woodlands

The DEIR states that impacts on blue oak woodland from the Proposed Project would be less than significant with mitigation. But Mitigation Measure BIO-4 is inadequate according to Commenters' expert biologist Scott Cashen to reduce impacts to oak trees to a less than significant level.[213]

The DEIR states, "up to 0.13 acre of direct permanent impacts to blue oak woodlands would occur as a result of pole and tower installation, vegetation removal, and clearing activities. This would include up to three oak trees that would need to be removed for Proposed Project construction. Further, approximately 6.41 acres of blue oak woodlands would be temporarily affected from construction activities."[214]

Mr. Cashen concludes that the DEIR's statement that permanent impacts to oak trees would be limited to removal of "up to three oak trees" is not supported by substantial evidence and does not appear to be accurate. According to Mr. Cashen's analysis, the statement is inconsistent with DEIR Figure 3-7, which depicts numerous locations along the reconductoring segment that would require "oak tree trimming/removal."[215] This suggests the CPUC has yet to determine how many oak

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[210] *San Joaquin Raptor Rescue Ctr. v. County of Merced* (2007) 149 Cal.App.4th 645, 672.
[211] *Lotus v. Dept of Transportation* (2014) 223 Cal. App. 4th 645, 651-52.
[212] *Id.*
[213] Cashen Comments, p. 19.
[214] DEIR, p. 4.4-51.
[215] It is unclear if the proposed alignment (and MRV) for the 70 kV route between the Estrella Substation and North River Road would require additional trimming/removal of oak trees because unlike the detailed maps of the Project alternatives, the detailed map of the Proposed Project does not depict locations requiring oak tree trimming/removal.

trees require removal. Further, it does not appear to account for tree removal activities associated implementation of G.O. 95. Additionally, it does not appear to account for tree removal or mortality in the Project's "temporary" impact areas.

The DEIR must be revised and recirculated to clarify the extent and severity of the Project's tree removal activities.

Further, PG&E's fuel reduction programs can cause significant environmental impacts that were not analyzed in the DEIR. For example, fuels reduction treatments in coastal scrub communities promote invasion by non-native plants and may cause type conversion (i.e., one vegetation type is converted into another vegetation type), especially if the treatments exceed the historical disturbance regime frequency.[216] Therefore, the CPUC and Applicants need to clarify whether a fuel reduction program would (or might) be implemented as part of the Project. If a fuel reduction program might be implemented as part of the Project, the DEIR must disclose and analyze the environmental impacts of that fuel reduction program.

2. *The DEIR Fails to Mitigate Potentially Significant Impacts to Blue Oak Woodlands*

Temporary impacts disturbed by the Proposed Project would be restored "to the extent practicable, following construction."[217] This is not a sufficient mitigation measure because it is not *enforceable.* CEQA requires enforceable mitigation measures.[218]

In *Save the Agoura Cornell Knoll v. City of Agoura Hills*, the court determined that proposed mitigation measure of replanting trees was not adequate mitigation because "prior attempts to restore oak woodlands have failed."[219] The court cited a September 2016 letter to the City of Agoura Hills Planning Director, the Resources Conservation District of the Santa Monica Mountains that reported: "To date, there have been no successful restorations of oak woodlands. It is relatively easy to plant oak trees, but the extensive ecological network and soils

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216 Keeley JE. 2006. Fire management impacts on invasive plants in the Western United States. Conservation Biology 20(2):375-384.
217 DEIR, p. 4.4-51.
218 14 CCR § 15126.4(a)(2).
219 *Save the Agoura Cornell Knoll v. City of Agoura Hills* (2020) 46 Cal.App.5th 665, 702.

that make a forest from those trees has been thus far impossible to recreate."[220] Further, the court went on to cite Appellants findings that "[a]ttempts to recreate oak woodlands as mitigation for other developments are often unsuccessful."[221] The court concluded that, based on the record, substantial evidence supported a fair argument that the mitigation measure was inadequate to mitigate the project's impacts to oak trees to a less than significant level.[222]

A case study from northwestern California similarly illustrates why blue oak has difficulty regenerating on sites where oaks were removed. [223] Deciduous trees including blue oak and California black oak on the site, were not regenerating.[224] The study authors determined that deciduous oaks, particularly blue oak, required artificial plantings given shade and protection from browsing for successful restoration.[225] Restoration of a site on the Sierra Foothill Range and Field Station where blue oaks had been completely removed in the 1960s was finally successful after 2 attempts were thwarted by grasshopper and rodent browsing.[226]

The success criterion proposed in MM BIO-4 (i.e., "a minimum of 65 percent survival of woody plantings after 5 years") provides no assurances that the replacement trees are likely to survive, or that they will ever provide structural elements and characteristics comparable to the trees that were removed. The CPUC should not assume blue oak plantings have a reasonable likelihood of replacing impacted trees until the plantings: (a) are at least 10 years old, (b) have reached the sapling stage, and (c) are protected from herbivory by cattle and deer.[227]

The DEIR states that "Blue oak woodland restoration or compensation may be completed at the work area, in the vicinity, or at a conservation bank with a service area that covers the Proposed Project or selected alternative."[228] It does not

[220] *Id.* at 701.
[221] *Id.*
[222] *Id.*
[223] Brooks, Colin N.; Merenlender, Adina M. 2001 *Determining the pattern of oak woodland regeneration for a cleared watershed in northwest California: a necessary first step for restoration* Ecology. 9(1): 1-12.
[224] *Id.*
[225] *Id.*
[226] Fryer, Janet L. 2007. *Quercus douglasii* Fire Effects Information System, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory, Available at: https://www.fs.fed.us/database/feis/plants/tree/quedou/all.html.
[227] Cashen Comments, p. 19.
[228] DEIR, p. 4.4-52.

appear that there exists a conservation bank with a service are that covers the Proposed Project. The court in *King & Gardiner Farms* determined that because there was no evidence in the administrative record that a mitigation bank existed, the measure did not constitute sufficient mitigation under CEQA.[229] Here, the DEIR does not contain substantial evidence showing that there are mitigation banks or preservation programs with a service area that covers the Proposed Project or selected alternative. Therefore, DEIR does not contain substantial evidence to support a finding that participation in a banking program would actually offset the impacts to Blue Oak Woodlands.

The DEIR should be revised and recirculated to ensure the mitigation measures proposed reduce oak woodland impacts to less than significant.

3. *The Project Contravenes the City of El Paso de Robles Oak Tree Preservation Ordinance*

The Paso Robles Oak Tree Preservation Ordinance was enacted for the "preservation of oak trees in order to maintain the heritage and character of the city of El Paso de Robles ("The Pass of the Oaks") as well as preserve the beauty and identify of the community."[230] The removal of oak trees for this Project contravenes the intent of the ordinance.

Even if the Project does comply with the City of El Paso de Robles Oak Tree Preservation Ordinance ("Oak Tree Ordinance"), the impacts are not sufficiently mitigated. The Oak Tree Ordinance only applies to trees that have a dbh of 6 inches or greater, and it only requires replacement at a ratio of 25 percent of the diameter of trees that are removed. In addition, MM BIO-4 only requires 65 percent of the replacement trees to survive beyond 5 years. Thus, MM BIO-4 does not require replacement of small oaks (< 6 inches dbh), but it allows the Applicants to replace large oaks with small ones.[231] Commenters' expert Mr. Cashen determined this would not mitigate the impacts because small oaks do not provide the same ecological values as large ones, and even if the replacement trees survive to maturity (most do not), it would take decades for them replace the ecological values associated with the trees that are removed.[232]

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[229] *King & Gardiner Farms* (2020) 45 Cal.App.5th 814, 877.
[230] El Paso de Robles Code of Ordinances, § 10.01.010.
[231] Under the City's Oak Tree Ordinance, replacement trees may be as small as 1.5-inch (trunk caliper) in size.
[232] Cashen Comments, p. 20.

4. *The DEIR is not in Compliance with the City Paso Robles General Plan Conservation Element*

The Paso Robles General Plan requires the City "Preserve existing oak trees and oak woodlands. Promote the planting of new oak trees."[233] The DEIR fails to recognize that the Project is not consistent with the City of Paso Robles General Plan Conservation Element. CEQA Guidelines require a lead agency conducting environmental review of a project to consider whether the project would "conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over a project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect."[234] The DEIR violates CEQA. The DEIR should be revised and recirculated to analyze and mitigate the inconsistency with the City of Paso Robles General Plan.

C. The DEIR Fails to Analyze and Mitigate Potentially Significant Impacts to Golden Eagle and Other Special Status Birds

The DEIR fails to ensure adequate mitigation for special-status species that are detected during the pre-construction survey. According to the DEIR, buffers would be installed around bird nests. However, mitigation for all other terrestrial wildlife species has been deferred to the pre-construction survey report, which would identify the "anticipated impacts and proposed mitigation." This approach does not comply with CEQA, which prohibits deferral of: (a) the impact assessment; and (b) the mitigation, unless the lead agency establishes specific performance criteria for the mitigation and explains why it was impractical for the lead agency to identify the mitigation in the EIR."

D. The DEIR Fails to Analyze and Mitigate Potentially Significant Impacts to Amphibians

1. *Western Spadefoot and California Red-Legged Frog*

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[233] City of El Paso de Robles General Plan 2003, Conservation Element p. CO-4, *available at*: https://www.prcity.com/DocumentCenter/View/25852/20141119-Conservation-Element.
[234] 14 CCR § 15000 Appendix G.

The DEIR failed to adequately analyze impacts to the Western spadefoot toads. Western spadefoot toads and California red-legged frog ("CRLF") spend majority of the year below ground and are only detectable during a few weeks or months of the year.[235] CRLF that disperse from aquatic habitat seek shelter under objects or in small mammal burrows.[236] Terrestrial movements of both species generally occur at night. Therefore, Mr. Cashen explains that standard preconstruction surveys are not sufficient for detection.[237] The DEIR does not require adequate analysis because the DEIR does not require special survey techniques designed to survey the California Red-legged Frog.[238]

The DEIR states that APM BIO-3 would require exclusion fencing as one of the measures that would ensure CRLF and Western Spadefoot toad individuals are not present during construction. But, neither APM BIO-3 nor MM-BIO-1 require installation of an exclusion fence around construction work areas. Thus, the claim that APM BIO-3 and Mitigation Measure BIO-1 "would ensure that CRLF and western spadefoot toad individuals are not present during these activities, such that they could be directly impacted" is not supported by substantial evidence.[239]

Mr. Cashen explains that the threat of trenches to CRLF and Western Spadefoot was not adequately analyzed in the DEIR. The DEIR states that APM BIO-4 and Mitigation Measure BIO-1 would require that all trenches and excavations in excess of 2 feet deep have a sloped escape ramp or be covered at the end of the day, which would minimize potential for CRLF or western spadefoot toad individuals to become entrapped in Proposed Project construction areas.[240] The threat to CRLF and Western Spadefoot individuals is not limited to trenches in excess of 2 feet deep. Mortality to these species may occur if mitigation is limited to escape ramps and if trenches are not covered.[241] Mr. Cashen determined that inspecting trenches at the beginning of the workday would be effective for CRLF, but would not be effective for Western Spadefoots toads, which burrow under soil during the day.[242]

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[235] Cashen Comments, p. 12.
[236] *Id.*
[237] *Id.*
[238] *See* U.S. Fish and Wildlife Service. 2005 Aug. Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog. 26 pp.
[239] DEIR, p. 4.4-43.
[240] DEIR, p. 4.4-43.
[241] Cashen Comments, p. 13.
[242] *Id.*

E. The DEIR Fails to Mitigate Potentially Significant Impacts from Invasive Plants

The DEIR failed to provide adequate mitigation measures for impacts from invasive plants. Mr. Cashen explains that the best management practices in the California Invasive Plant Council guidelines are feasible and should be incorporated as mitigation measures for this Project.[243] The DEIR does not incorporate any mitigation measures for invasive plants, nor does it establish performance standards for invasive plants in the "restoration" area. As a result, potentially significant impacts associated with the colonization or spread of invasive plants remains unmitigated.

The DEIR provides that after the 5 year monitoring period under Mitigation Measure BIO-2, the mitigation shall have ensured "[l]ess than 5 percent cover of invasive weeds within the restoration area."[244] But the Proponent's Environmental Assessment (PEA) provided a stronger mitigation measure than the DEIR to prevent the spread of invasive plants. The PEA provides "Required construction best management practices (BMPs) will include dust suppression using water or soil binders and vehicle cleaning to prevent the spread of nonnative invasive plant species."[245] The DEIR fails to explain why it proposed less stringent mitigation for invasive plants, when the severity of the impact has not decreased. The CPUC should revise and recirculate the DEIR to require vehicle cleaning and additional mitigation recommended by Mr. Cashen in order to prevent the spread of invasive plants.

IX. THE DEIR FAILS TO ACCURATELY ANALYZE, QUANTIFY, AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS TO AIR QUALITY

An EIR must fully disclose all potentially significant impacts of a Project and implement all feasible mitigation to reduce those impacts to less than significant levels. The lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.[246] An agency cannot

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[243] *Id.*
[244] DEIR, p. 4.4-49.
[245] PEA, p. 3.4-53.
[246] 14 CCR § 15064(b).

conclude that an impact is less than significant unless it produces rigorous analysis and concrete substantial evidence justifying the finding.[247]

Moreover, the failure to provide information required by CEQA is a failure to proceed in the manner required by CEQA.[248] Challenges to an agency's failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project's environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency's factual conclusions.[249] In reviewing challenges to an agency's approval of an EIR based on a lack of substantial evidence, the court will "determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements."[250]

Even when the substantial evidence standard is applicable to agency decisions to certify an EIR and approve a project, reviewing courts will not 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference.'"[251]

A. The DEIR Fails to Adequately Analyze the Project's Potentially Significant Impacts from Construction Emissions

The DEIR violates CEQA Guidelines section 15126.2, subdivision (a), which requires an EIR to "analyze any significant environmental effects the project might cause by bringing development and people into the area affected."[252] The CEQA Guidelines require an EIR identify "relevant specifics of … health and safety problems caused by the physical changes."[253] The DEIR and its appendices make no mention of a health risk analysis (HRA). The DEIR's discussion of health impacts is

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[247] *Kings Cty. Farm Bur. v. Hanford* (1990) 221 Cal.App.3d 692, 732.
[248] *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.
[249] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.
[250] *Id., Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.
[251] *Berkeley Jets*, 91 Cal.App.4th at 1355.
[252] 14 CCR § 15126.2(a).
[253] *Id.*

therefore inadequate as a matter of law and the DEIR fails as an informational document.[254]

In *Sierra Club*, the County's failure to include a health risk analysis in the EIR enabled the California Supreme Court to find "the EIR insufficient because it failed to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences."[255] Here, the DEIR is likewise insufficient because it fails to connect the Project's air quality impacts with human health consequences.

1. *The DEIR Fails to Conduct a Health Risk Analysis*

The DEIR fails to analyze the health risk posed to sensitive receptors within 1000 feet of the Project's construction zone, in violation of CEQA. In *Sierra Club v. County of Fresno*, the County's failure to include a health risk analysis in the EIR enabled the California Supreme Court to find "the EIR insufficient because it failed to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences."[256] Here, the DEIR is likewise insufficient because it fails to connect the Project's air quality impacts with human health consequences. "Without such information, the general public and its responsible officials cannot make an informed decision on whether to approve the project."[257] The DEIR should be revised and recirculated to include a quantified health risk analysis to connect the Project's impacts with human health consequences.

"CEQA requires that an EIR make a reasonable effort to discuss relevant specifics regarding the connection between two segments of information already contained in the EIR, the general health effects associated with a particular pollutant and the estimated amount of that pollutant the project will likely

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[254] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 519; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 134 Cal.App.4th 1184, *1220 (*"After reading the EIRs, the public would have no idea of the health consequences that result when more pollutants are added to a nonattainment basin. On remand, the health impacts resulting from the adverse air quality impacts must be identified and analyzed in the new EIRs.").
[255] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 525.
[256] *Id.*
[257] *Santa Clarita Organization for Planning the Environment* 106 Cal.App.4th 715, 724.

produce."[258] Further, "[t]his discussion will allow the public to make an informed decision, as CEQA requires."[259]

Proponent's Environmental Assessment states "[s]ensitive receptors have been identified with a 1-mile radius of the [Estrella Substation] site, with the nearest residence located within 265 feet of the substation site."[260] Sensitive receptors are within 1,000 feet of the Proposed Project site, and therefore a health risk analysis is required. This omission of this information makes the DEIR's impact analysis inadequate. The DEIR should be revised and recirculated to include a health risk analysis, and, if health risk is found to be significant, to implement all feasible mitigation to reduce impacts to less than significant levels.

Additionally, the DEIR failed to analyze construction-related health risks through a Health Risk Assessment. A Health Risk Assessment is defined in the Health and Safety Code as a type of analysis undertaken in connection with the siting of hazardous substances, "a detailed comprehensive analysis … to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure."[261]

The Office of Environmental Health Hazard Assessment ("OEHHA") recommends a formal health risk assessment for construction exposures lasting longer than 2-months, and "[e]xposures from projects lasting more than 6 months should be evaluated for the duration of the project."[262] Here, Proposed Project construction will last longer than 18 months, which is significantly longer than the two-month short-term threshold set by OEHHA to trigger an HRA. Because Project construction will last more than six months, the OEHHA guidance specifies that cancer exposure from Project construction "should be evaluated for the duration of

[258] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 521.
[259] *Id.*
[260] PEA, p. 3.3-19.
[261] Health & Saf. Code, § 44306.
[262] Office of Environmental Health Hazard Assessment (OEHHA), Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015 (OEHHA 2015), Section 8.2.10: Cancer Risk Evaluation of Short Term Projects, pp. 8-17/18; https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

the project."[263] Therefore, CPUC must revise and recirculate the DEIR to include an HRA that quantifies and evaluates the health risks from Project construction.

The DEIR fails to include an HRA to determine the adverse health risk impacts that will be caused by exposure to toxic air contaminants ("TACs") from the Project's construction emissions. The DEIR fails to disclose the potentially significant cancer and asthma risk posed to nearby residents and children from TACs, and fails to mitigate it. Because the DEIR fails to support its conclusion that the Project will not have significant health impacts from diesel particulate matter emissions with the necessary health risk analysis, this finding is not supported by substantial evidence. The DEIR states, "Project construction-related diesel particulate matter and other TAC emissions would not be of a magnitude and duration great enough to result in significant air toxic risks to exposed sensitive receptors."[264] This statement lacks substantial evidence absent the completion of an HRA.

In *Sierra Club v. County of Fresno,* the court rejected the argument that the EIR sufficiently accounted for its lack of specificity by explaining that a Health Risk Assessment is typically prepared later in the CEQA process.[265] The court held, absent a detailed analysis of the Project's health risks, including analysis linking the emissions with human health impacts, the DEIR's discussion of air quality impacts was inadequate. Here, the same standard applies. The CPUC must include a quantified health risk analysis in a revised DEIR to comply with *Sierra Club* and CEQA.

2. *Commenters' Experts Conducted a Health Risk Assessment*

Commenters' experts Dr. Fox and Mr. Marcus conducted a health risk assessment for construction impacts from this Project. Commenters' health risk assessment determined that cancer and acute health impacts from diesel DPM would be significant for on-site construction workers and nearby residents and other sensitive receptors.[266]

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[263] OEHHA 2015 p. 8-18.
[264] DEIR, p. 4.3-18.
[265] *Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502, 521.
[266] Fox Comments, p. 20.

Dr. Fox determined cancer health risks from Project construction are highly significant, "requiring additional construction mitigation."[267] Dr. Fox further determined that sensitive receptors in the vicinity of the Project will experience significant respiratory impacts.[268] Further, Dr. Fox determined that the California 1-hour NOx standard would be exceeded along the reconductoring line.[269]

The significant health and air quality impacts in the Health Risk Assessment are summarized as follows:[270]

Summary of Maximum Project Level Health Risks				
Risk Metric	Scenario 1	Scenario 2	Significance Threshold	Significant?
Maximum Residential Cancer Risk	0.5 to 40 cancers per million	5 to 75 cancers/million	10 (per million)	Scenario 1 – Yes Scenario 2 - Yes
Maximum Acute Hazard Index from 1-Hour Exposure to DPM	0.1 to less than 0.5	1 to < 4	1.0	Scenario 1 – No Scenario 2 - Yes
Maximum Acute Impact from Exposure to 1-Hour NOx	100 to 500 ug/m^3	00 to 760 ug/m^3	339 ug/m^3	Scenario 1 – Yes Scenario 2 - Yes

The DEIR must be revised and recirculated to disclose these significant health risks and to incorporate additional mitigation to reduce health risk to less than significant levels.

3. *Sensitive Receptors*

The San Luis Obispo County Air Pollution Control District ("SLOCAPCD") states that, if sensitive receptors are within 1,000 feet of the project site, an HRA may be required.[271]

[267] Fox Comments, p. 26.
[268] *Id.* at 30.
[269] *Id.* at 33.
[270] *Id.* at 35.
[271] "CEQA Air Quality Handbook", SLO County Air Pollution Control District, April 2012, *available at*: https://storage.googleapis.com/slocleanair-

Numerous sensitive receptors are within 1,000 feet of the Project site. The DEIR states that the nearest residence to the Estrella Substation site is approximately 265 feet southwest of the site."[272] Numerous residences are located in proximity to the Project's new 70 kV power line segment. The nearest of these are two residences within 20 feet of the alignment, with another two within 100 feet.[273] The Proponent's Environmental Assessment lists 660 residents within 300 feet of project work areas.[274]

Construction of the Proposed Project's 70 kV reconductoring segment passes through an existing residential area of Paso Robles and would be near numerous sensitive receptors (i.e., residences).[275] The Proposed Project's new 70 kV power line segment would pass adjacent to Barney Schwartz Park and the Paso Robles Sports Club, as well as the Cava Robles RV Resort. Based on aerial imagery, the power line would pass approximately 100 feet west of the nearest RV campsite at the Cava Robles RV Resort.[276] Tots Landing Daycare is located approximately 265 feet east of the reconductoring segment and Grace Baptist Church is located approximately 790 feet east of the reconductoring segment.[277]

The DEIR failed to adequately analyze health risk impacts to these sensitive receptors. Dr. Fox's analysis demonstrates that the impacts are significant and unmitigated. The DEIR must be revised and recirculated to disclose and mitigate impacts to these receptors.

4. *MM AIR-1 Constitutes Impermissibly Deferred Analysis*

Mitigation AIR-1 is inadequate because it constitutes deferred analysis. CEQA Guidelines § 15126.4(a)(1)(B) provide that formulation of mitigation

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org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Map2019%29_LinkedwithMemo.pdf (SLOAPCD, CEQA Air Quality Handbook).

[272] DEIR, p. 4.13-10; PEA, p. 3.3-19.

[273] *Id.*

[274] Proponent's Environmental Assessment Estrella Substation and Paso Robles Area Reinforcement Project (May 2017) Appendix A. Affected Properties - List of Properties within 300 feet of project work areas sorted by Assessor's Parcel Number (APN) *available at:* https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/docs/Revised_PEAAppendicesOnly_May2017.pdf.

[275] *Id.*

[276] *Id.*

[277] *Id.*

measures shall not be deferred until some future time.[278] "Impermissible deferral of mitigation measures occur when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR."[279] Here, the DEIR states that a Construction Activity Management Plan ("CAMP") will be prepared, for review and approval by the Air Pollution Control District ("APCD") prior to the start of construction.[280]

"An EIR is inadequate if '[t]he success or failure of mitigation efforts ... may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR.' "[281] Here, the CAMP would require additional analysis and provide mitigation measures that should have been included for public review in the DEIR. The DEIR fails as an informational document for impermissibly deferred analysis and mitigation.

The CEQA Guidelines provide that "[t]he specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project's environmental review…"[282] The DEIR does not state why specifying these CAMP performance standards was impractical or infeasible at the time the DEIR was drafted. In *Preserve Wild Santee v. City of Santee,* the city impermissibly deferred mitigation where the EIR did not state why specifying performance standards for mitigation measures "was impractical or infeasible at the time the EIR was certified."[283] The court determined that although the City must ultimately approve the mitigation standards, this does not cure these informational defects in the EIR.[284] Further, the court in *Endangered Habitats League, Inc. v. County of Orange*, held that mitigation that does no more than require a report to be prepared and followed, or allow approval by a county department without setting any standards is inadequate.[285] Here, the fact that the CAMP will be approved later by the APCD does not cure the informational defects in this DEIR.[286]

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[278] 14 CCR 15126.4(a)(1)(B).
[279] *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 915-916.
[280] DEIR, p. 4.3-17.
[281] *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, quoting *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 92, quoting *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645 670.
[282] 14 CCR § 15126.4(a)(1)(B).
[283] *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 281.
[284] *Id.*
[285] *Endangered Habitats League, Inc. v. County of Orange,* (2005) 131 Cal.App.4th 777, 794.
[286] *See Cal. Clean Energy Comm. v. City of Woodland* (2014) 225 Cal.App.4th 173, 194.

5. *Diesel Particulate Matter*

Diesel particulate matter ("DPM") will be emitted from on-road and off-road equipment during Project construction and decommissioning. DPM is a potent human carcinogen.[287] It is also chronically[288] and acutely[289] toxic. OEHHA concluded that "[e]xposure to diesel exhaust can have immediate health effects," which include "inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks."[290]

"The [statewide] risk from diesel PM is by far the largest, representing about 70 percent of the known statewide cancer risk from outdoor air toxics. The exhaust from diesel-fueled engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens.[291]

Emissions of DPM from construction equipment could impact construction workers and nearby sensitive receptors. Dr. Fox determined that acute health impacts, which occur over a 1-hour exposure time, are the most likely health risk for this Project.[292] Further, the DEIR is deficient for failing to evaluate cancer and chronic impacts of DPM construction emissions. Short-term emissions of DPM during construction could result in significant cancer and chronic impacts to infants and young children in nearby homes.

The DEIR is deficient for failing to evaluate the acute health impacts of DPM during construction, given the proximity of sensitive receptors to numerous Project components. This impact could be mitigated by requiring the use of all Tier 4 Final

[287] OEHHA, Health Effects of Diesel Exhaust; https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf. See also: OEHHA, Diesel Exhaust Particulate; https://oehha.ca.gov/chemicals/diesel-exhaust-particulate#:~:text=Cancer%20Potency%20Information&text=Listed%20as%20Particulate%20Emissions%20from,(ug%2Fm3)%2D1.
[288] OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary, June 28, 2016; https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary.
[289] Government of Canada, Human Health Risk Assessment for Diesel Exhaust, March 4, 2016; http://publications.gc.ca/collections/collection_2016/sc-hc/H129-60-2016-eng.pdf.
[290] OEHHA and the American Lung Association of California, Health Effects of Diesel Exhaust; https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf.
[291] California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective (April 2005), Appendix A, p. A-5.
[292] Fox Comments, p. 31.

construction equipment equipped with diesel particulate traps. The DEIR should be revised and recirculated to require the use of Tier 4 Final construction equipment as binding mitigation.

B. The DEIR's Construction Mitigation is Inadequate

The DEIR provides that construction air quality impacts remain significant and unavoidable after implementation of the Construction Mitigation Plan in Appendix F.[293] The EIR must accurately reflect the net health effect of proposed air quality mitigation measures.[294]

Agencies are required to implement all feasible mitigation measures unless those measures are truly infeasible.[295] The DEIR failed to require all feasible mitigation. The DEIR failed to impose the mitigation measures required by SLOAPCD CEQA Guidelines.

1. The DEIR Does Not Comply with SLOAPCD Standard Mitigation Measures for Construction Equipment

SLOACD CEQA guidance requires the implementation of "standard mitigation measures for construction equipment" when construction emissions exceed significance thresholds,[296] as identified in Dr. Fox's Comment.[297] Mitigation Measure APM AIR-1 in the Mitigation Monitoring and Reporting Plan[298] includes some, but not all, of the standard mitigation measures for construction equipment required to comply with the SLOAPCD CEQA Guidance. The following required mitigation measures were omitted from DEIR Appendix F:

- Diesel idling within 1,000 feet of sensitive receptors is not permitted;
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors[299]

[293] DEIR, Appendix F.
[294] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 526.
[295] *City of San Diego v. Board of Trustees of California State University* (2015) 61 Cal.4th 945, 967.
[296] SLOAPCD, CEQA Air Quality Handbook, pp. 2-6 to 2-7.
[297] Fox Comment p. 6.
[298] DEIR, Appendix F, p. F-14 to F-16.
[299] SLOAPCD, CEQA Air Quality Handbook, p. 2-3.

These omissions from the DEIR are highly concerning because a substantial portion of Project construction will occur within 1,000 feet of sensitive receptors. DEIR APM AIR-1 requires "All on and off -road diesel equipment shall not idle for more than 5 minutes."[300] This mitigation is insufficient because it will allow up to 5 minutes of idling, where the SLOAPCD CEQA guidelines prohibit any diesel idling with 1,000 feet of sensitive receptors.[301] DPM from idling construction equipment and construction equipment staging and queuing in these areas could result in significant acute health impacts.[302] These omitted SLOAPCD measures must be included as Project mitigation.

Further, the SLOAPCD CEQA guidance requires the following additional diesel idling restrictions to protect public health and air quality that are omitted from the DEIR's Mitigation Monitoring and Reporting Plan in Appendix F:[303]

- Signs that specify the no idling requirements must be posted and enforced at the construction site
- Idling restrictions for on-road vehicles
- Signs must be posted in the designated queuing areas and job sites to remind drivers of the 5 minute idling limits.
- Off-road diesel equipment shall comply with the 5 minute idling restriction
- Signs shall be posted in the designated queuing areas and job sites to remind off-road equipment operators of the 5 minute idling limit.

The DEIR also excludes several required SLOAPCD standard mitigation measures for fugitive dust.[304] The SLOAPCD CEQA Guidance requires "standard mitigation measures for construction equipment" and may require the implementation of a Construction Activity Management Plan (CAMP)[305] when fugitive dust PM10 emissions exceed maximum daily fugitive dust PM10 emissions of 3.04 tons/quarter, as here. For projects with grading areas greater than 4-acres or that are within 1,000 feet of any sensitive receptor, both of which occur for the

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[300] DEIR, p. 2-92.
[301] SLOAPCD, CEQA Air Quality Handbook, p. 2-3.
[302] Fox Comments, p. 15.
[303] SLOAPCD, CEQA Air Quality Handbook, p. 2-3.
[304] SJVAPCD, Summary of Comments and Responses to Proposed Revisions to the GAMAQI-2012, May 31, 2012, p. 3; https://www.valleyair.org/transportation/GAMAQIDRAFT-2012/GAMAQIResponsetoComments5-10-12%20.pdf.
[305] *Id.*, p. 2-6, Section 2.3.

Project, the SLOAPCD CEQA Guidance identifies 14 required fugitive dust mitigation measures.[306]

2. *The DEIR Does not Require with Best Available Control Technology for Construction Equipment*

The SLOAPCD CEQA guidance requires best available control technology ("BACT") for ROG and NO_x when construction emissions exceed significance thresholds, as identified in Phyllis Fox's Comment. The SLOAPCD CEQA guidance for BACT specifies:

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
- Repowering equipment with the cleanest engines available; and
- Installing California Verified Diesel Emissions Control Strategies.[307]

The DEIR relies on the use on the use of Tier 4 construction equipment to reduce the Project significant health risks to less than significant levels, without requiring Tier 4 equipment as binding mitigation. In particular, the DEIR fails to disclose that its construction emission calculations assumed the use of 100% Tier 4 *final* engines in its CalEEMod emissions modeling, which have much lower NOx and ROG emissions than Tier 2, Tier3, or even Tier 4 Interim engines.[308] Thus, "expanding the use of Tier 3 engines" is not mitigation and is not BACT. Rather, it allows higher construction emissions than the already significant construction emissions estimated in the DEIR and does not mitigate significant impacts.[309] The DEIR's conclusion that this significant construction health risk impact will be less than significant with mitigation is therefore unsupported and based on the use of equipment that is not mandated for the Project.

Dr. Fox concludes that APM AIR-2 should be modified to state: "All diesel-powered construction equipment shall use Tier 4 Final construction equipment, to be confirmed on site by the on-site construction supervisor during each day of use."[310] If a Tier 4 final engine is not available for select construction equipment,

[306] *Id.*, p. 2-9, pdf 21, "Fugitive Dust Mitigation Measures: Expanded List".
[307] *Id.* at p. 2-7; Best Available Control Technology (BACT) for Construction Equipment http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm
[308] Fox Comments, p. 12.
[309] *Id.* at 13.
[310] *Id.*

controls shall be installed on the highest tier equipment available to achieve Tier 4 Final standards. Effective controls include diesel particulate filters for PM2.5 ("DPM")[25] and selective catalytic reduction ("SCR") for NOx.[311] As Dr. Fox notes, Tier 4 Final (2015) construction equipment has significantly lower NOx and ROG emissions than either Tier 3 or "transitional Tier 4" (2011) equipment.[312]

Finally, the DEIR does not disclose the NOx emission factor that was used in the CalEEMod analysis for construction equipment.[313] However, Appendix C, which contains the CalEEMod output, does disclose that Tier 4 Final engines were assumed for all construction equipment.[314] Thus, NOx emissions would be 5 to 8 times higher than reported in Table 4.3-5, requiring substantially more mitigation for NOx than disclosed in the DEIR.[315] Thus, APM AIR-2 does not reduce NOx and ROG emissions, but rather allows a significant increase in NOx and ROG emissions, compared to emissions reported in DEIR Table 4.3-5.[316]

C. The DEIR Fails to Adequately Analyze and Mitigate Fugitive Dust Which Poses a Potentially Significant Risk to Human Health through Valley Fever

Valley Fever is caused by microscopic fungus known as Coccidioides immitis ("CI"), which lives in the top 2 to 12 inches of soil in many parts of the state of California.[317] When soil is disturbed by activities such as digging, grading, or driving, or is disturbed by environmental conditions such as high winds, fungal spores can become airborne and can potentially be inhaled. The infectious dose is very low, typically less than 10 spores.[318] The Centers for Disease Control determined that "as little as one spore may transmit disease."[319]

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[311] *Id.*
[312] *Id.*
[313] *Id.*
[314] DEIR, Appendix C, pdf 3: "Construction Off-road Equipment Mitigation—Change to assume all equipment Tier 4 Final." See also Appendix C, pdf 420, 560, 561.
[315] Fox Comments, p. 14.
[316] *Id.*
[317] Cal. Lab. Code § 6709(a).
[318] Jennifer McNary and Mary Deems, Preventing Valley Fever in Construction Workers, March 4, 2020, pdf 10; https://www.safetybayarea.com/media/2020-3A.pdf.
[319] Centers for Disease Control and Prevention

California Labor Code section 6709 recognized that San Luis Obispo County contains work areas where Valley Fever is highly endemic.[320] Highly endemic means that the annual incidence rate of Valley Fever is greater than 20 cases per 100,000 persons per year.[321] The incidence rate for Valley Fever for San Luis Obispo County are among one of the highest rates in the state.[322] Substantial evidence supports the DEIR's conclusion that "the potential for…Valley Fever infections is high."[323] But, the DEIR fails to adequately analyze impacts to construction workers and nearby sensitive receptors from exposure to Valley Fever. Further, the DEIR erroneously concludes that "[m]itigation measures that reduce fugitive dust will also reduce the chances of dispersing CI spores."[324]

1. The DEIR Fails to Adequately Analyze the Risk from Valley Fever.

Dr. Fox explains that construction workers are at significant risk of developing Valley Fever. However, the potentially exposed population is much larger than construction workers because the non-selective raising of dust during Project construction will carry the very small spores, 0.002-0.005 millimeters ("mm"), into off-site areas, potentially exposing large non-construction worker populations.[325]

Many of the Project components, for example, are adjacent to sensitive receptors, including residential areas, schools, and parks, resulting in significant public health impacts. Valley fever spores can be carried on the winds into surrounding areas, exposing farm and vineyard workers, students at nearby schools, and residents adjacent to many of the construction sites. Valley Fever spores, for example, have been documented to travel as much as 500 miles[326] and, thus, dust raised during construction could potentially expose a large number of

[320] *Id.* at (b).
[321] *Id.*
[322] DEIR, p. 4.3-9.
[323] *Id.*
[324] *Id.*

[325] Comment by Dr. Phyllis Fox; Schmelzer and Tabershaw, 1968, p. 110; Pappagianis and Einstein, 1978, p. 527 ("The northern areas were not directly affected by the ground level windstorm that had struck Kern County but the dust was lifted to several thousand feet elevation and, borne on high currents, the soil and arthrospores along with some moisture were gently deposited on sidewalks and automobiles as "a mud storm" that vexed the residents of much of California." The storm originating in Kern County, for example, had major impacts in the San Francisco Bay Area and Sacramento).

[326] David Filip and Sharon Filip, Valley Fever Epidemic, Golden Phoenix Books, 2008, p. 24.

people hundreds of miles away. The DEIR failed to identify this significant risk to sensitive receptors.

2. The Mitigation Measures Proposed for Valley Fever Impacts are Inadequate

The DEIR erroneously concludes, with no support, that "[m]itigation measures that reduce fugitive dust will also reduce the chances of dispersing CI spores."[327] Dr. Fox determined that conventional dust control measures such as those included in DEIR Appendix F and in APM AIR-3 are not effective at controlling Valley Fever as they largely focus on visible dust or larger dust particles, the PM10 fraction, not the very fine particles where the Valley Fever spores are found.[328] Thus, Dr. Fox determined implementation of conventional dust control measures will not provide sufficient protection for both on-site workers and the general public.

In order to reduce the Project's potentially significant Valley Fever impacts to the greatest extent feasible, Dr. Fox recommends that the Project include the following measures from the South Coast Air Quality Management District to mitigate fugitive dust:

1) Apply water every 4 hours to the area within 100 feet of a structure being demolished, to reduce vehicle track out.
2) Use a gravel apron, 25 feet long by road width, to reduce mud/dirt track out from unpaved truck exit routes.
3) Apply dust suppressants (e.g., polymer emulsion) to disturbed areas upon completion of demolition.
4) Apply water to disturbed soils after demolition is completed or at the end of each day of cleanup.
5) Prohibit demolition activities when wind speeds exceed 25 mph.
6) Apply water every 3 hours to disturbed areas within a construction site.

[327] DEIR, p. 4.3-9.

[328] *See, e.g.*, Cummings and others, 2010, p. 509; Schneider et al., 1997, p. 908 ("Primary prevention strategies (*e.g.*, dust-control measures) for coccidioidomycosis in endemic areas have limited effectiveness.").

7) Require minimum soil moisture of 12% for earthmoving by use of a moveable sprinkler system or a water truck. Moisture content can be verified by lab sample or moisture probe.
8) Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.
9) Replace ground cover in disturbed areas as quickly as possible.
10) All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches.[329]

3. Proposed Mitigation Measures Do Not Comport with San Luis Obispo County, California, or Federal Labor Regulations.

In response to Valley Fever outbreaks within San Luis Obispo County, its Public Health Department, in conjunction with the California Department of Public Health, developed recommendations to limit exposure to Valley Fever based on scientific information from the published literature.[330,331] The recommended measures, which failed to control Valley Fever, go far beyond the conventional dust control measures included in the DEIR.[332] Controls recommended to minimize workers' dust exposure and risk of Valley Fever in endemic areas are not required by the DEIR's construction mitigation measures:[333,334]

The California Department of Public Health provides that "Employers can reduce worker exposure by incorporating the following elements into the company's Injury and Illness Prevention Program and project-specific health and safety plans:

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[329] SCAQMD, Fugitive Dust Mitigation Measure Table XI-A, http://www.aqmd.gov/docs/default-source/ceqa/handbook/mitigation-measures-and-control-efficiencies/fugitive-dust/fugitive-dust-table-xi-a.doc?sfvrsn=2.

[330] McNary and Deems, 2020, pdf 16 *et seq*.

[331] California Department of Public Health, Preventing Valley Fever Exposure and Preventing Work-Related Coccidioidomycosis (Valley Fever), June 2012, pp. 4-7; http://elcosh.org/record/document/3684/d001224.pdf. See also Wilken et al., 2015, and Sondermeyer Cooksey et al. (Exhibit --).

[332] DEIR, Appendix F.

[333] CDPH Preventing Work-Related Coccidioidomycosis (Valley Fever) Preventing Valley Fever Exposure, *available at:* http://elcosh.org/document/3684/d001224/preventing+work-related+coccidioidomycosis+(valley+fever).html.

[334] McNary and Deems, 2020, pdf 30-45.

1. Determine if the worksite is in an area where Valley Fever is endemic…
2. Train workers and supervisors on the location of Valley Fever endemic areas, how to recognize symptoms of illness, and ways to minimize exposure. Encourage workers to report respiratory symptoms that last more than a week to a crew leader, foreman, or supervisor.
3. Limit workers' exposure to outdoor dust in disease-endemic areas. For example, suspend work during heavy wind or dust storms and minimize amount of soil disturbed.
4. When soil will be disturbed by heavy equipment or vehicles, wet the soil before disturbing it and continuously wet it while digging to keep dust levels down.
5. Heavy equipment, trucks, and other vehicles generate heavy dust. Provide vehicles with enclosed, air-conditioned cabs and make sure workers keep the windows closed. Heavy equipment cabs should be equipped with high efficiency particulate air (HEPA) filters. Two-way radios can be used for communication so that the windows can remain closed but allow communication with other workers.
6. Consult the local Air Pollution Control District regarding effective measures to control dust during construction. Measures may include seeding and using soil binders or paving and laying building pads as soon as possible after grading.
7. When digging a trench or fire line or performing other soil-disturbing tasks, position workers upwind when possible.
8. Place overnight camps, especially sleeping quarters and dining halls, away from sources of dust such as roadways.
9. When exposure to dust is unavoidable, provide NIOSH-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or HEPA. Household materials such as washcloths, bandanas, and handkerchiefs do not protect workers from breathing in dust and spores."[335]

Dr. Fox recommends that the CPUC implement each of these measures as additional mitigation measures in a revised DEIR.

Labor Code section 6709 requires employers in counties in which Valley Fever is highly endemic to provide training on Valley Fever "before an employee

[335] CDPH Preventing Work-Related Coccidioidomycosis (Valley Fever) Preventing Valley Fever Exposure, *available at:* http://elcosh.org/document/3684/d001224/preventing+work-related+coccidioidomycosis+(valley+fever).html.

begins work that is reasonably anticipated to cause exposures to substantial dust disturbance." The training required by Labor Code section 6709 includes "[p]ersonal and environmental exposure prevention methods that may include, but are not limited to, water-based dust suppression, good hygiene when skin and clothing is soiled by dust, limiting contamination of drinks and food, working upwind from dusty areas when feasible, wet cleaning dusty equipment when feasible, and *wearing a respirator when exposure to dust cannot be avoided*."[336] The DEIR fails to mention wearing a respirator, or any type of respiratory protection while on the construction site, a condition required by other laws applicable to the Project.[337]

The United States Department of Labor Occupational Safety and Health Administration ("OSHA") requires that a respirator "shall be provided to each employee when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined in paragraph (c) of this section. The program shall cover each employee required by this section to use a respirator."[338]

Dr. Fox recommends that the Project implement a mandatory respiratory protection program that requires National Institute for Occupational Safety and Health ("NIOSH")-approved respirators be worn while performing or in the near vicinity of job activities that create airborne dust.[339] NIOSH approved respirators are necessary because "Household materials such as washcloths, bandanas, and handkerchiefs do not protect workers from breathing in dust and spores."[340] The DEIR, APM AIR-3, and MM AQ-1 should be revised and recirculated to include these feasible mitigation measures.

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336 *Id.*
337 See PRC § 21002.1(c) (project with significant and unavoidable impacts may not be approved unless otherwise permissible under applicable laws and regulations).
338 29 C.F.R. § 1910.134(a)(2) (2006).
339 Phyllis Fox Comment Letter
340 CDPH Preventing Work-Related Coccidioidomycosis (Valley Fever) Preventing Valley Fever Exposure, *available at:* http://elcosh.org/document/3684/d001224/preventing+work-related+coccidioidomycosis+(valley+fever).html.

4. *DEIR Dust Control Mitigation Measures (APM AIR-3) Are Inadequate to Control Valley Fever*

Commenters' expert analysis determined that none of the mitigation measures in APM AIR-3 will significantly control Valley Fever spores, as discussed below and in Dr. Phyllis Fox's comments. [341,342]

a. *APM AIR-3: Reduce the Amount of the Disturbed Area Where Possible*

The DEIR requires that the amount of disturbed area should be reduced "where possible."[343] Valley Fever can only be controlled by eliminating disturbed areas. This is clearly not feasible at an active construction site. Instead, dust suppressants, such as polymer emulsions, should be applied to disturbed areas upon completion of disturbance, e.g., demolition.[344] Further, ground cover should be replaced "as quickly as possible" in disturbed areas.[345]

This mitigation measure violates CEQA. CEQA requires mitigation measures be enforceable through binding conditions. Without determining which disturbed areas can be reduced "where possible", it is impossible to verify that the mitigation is achievable.

CEQA prohibits deferring identification of mitigation measures when there is uncertainty about the efficacy of those measures.[346] An agency may only defer formulation of mitigation measures when there is a clear commitment to mitigation that will be measured against specific performance criteria.[347] Since the proposed

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[341] South Coast Air Quality Management District (SCAQMD), Fugitive Dust, Fugitive Dust Table XI-A; http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.
[342] Western Governors" Association, WRAP Fugitive Dust Handbook, September 7, 2006 (WRAP Handbook); https://www.wrapair.org/forums/dejf/fdh/.
[343] DEIR, p. 2-93.
[344] SCAQMD, Table XI-A.
[345] SCAQMD, Table XI-A.
[346] 14 C.C.R. § 15126.4(a)(1)(B); *City of Marina v. Board of Trustees of the California State University* (2006) 39 Cal.4th 341, 366; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308–309.
[347] 14 C.C.R. § 15126.4(a)(1)(B); *City of Marina v. Board of Trustees of the California State University* (2006) 39 Cal.4th 341, 366; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308–309. 56 *POET, LLC v. California Air Res. Bd.* (2013) 218 Cal.App.4th 681, 736, 739–740, as modified on denial of reh'g (Aug. 8, 2013), review denied (Nov. 20, 2013); see also *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 281 (EIR deficient for failure to specify performance standards in

measure is not enforceable and lacks specific performance criteria that defines "where possible", or that reduction of disturbed areas is even feasible, this measure violates CEQA and the DEIR fails to support with evidence that impacts will be mitigated below the threshold of significance.

b. *APM AIR-3: Use Water Trucks or Sprinkler Systems to Prevent Airborne Dust from Leaving the Site.*

This measure requires the "use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site." This is too general to be implemented and enforced. CEQA requires an EIR identify mitigation measures which are both effective and enforceable. "Effective" means the measures can reasonably be expected to avoid or reduce a potential significant impact.[348] "Enforceable" means the measures are stated as conditions of approval in a permit, agreement or other legally binding document or incorporated into a plan, policy, regulation, or project design.[349]

APM AIR-3 would allow water trucks to drive along roads once a day or less frequently without accessing off-road areas where soil is being disturbed. Dr. Fox explains that this is inadequate to reduce impacts, and recommends that, at a minimum, water should be applied every 4 hours within 100 feet of a structure being demolished, every 3 hours to disturbed areas and to disturbed soils after demolition is completed, and at the end of each day of cleanup.[350] Soil should be wet both before and while digging and workers should stay upwind of digging, when feasible.[351] Sprinkler systems should be specified for areas inaccessible by water trucks. Further, Dr. Fox recommends that watering frequency should be increased when wind speeds exceed levels known to raise dust in the local area, typically around 15 mph at the Project site. An on-site wind measuring station should be required to monitor wind speed.[352]

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plan for active habitat management of open space preserve).
[348] 14 CCR § 15126.4(a)(1)(A).
[349] 14 CCR § 15126.4(a)(1)(A).
[350] Fox Comments, p. 62; SCAQMD, Table XI-A and WRAP Handbook, Table 3-7.
[351] Fox Comments, p. 62; CDPH, Preventing Valley Fever in Construction Workers, pdf 44; https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/CDPH%20Document%20Library/CDPH-VF-Webinar-Slides.pdf.
[352] Fox Comments, p. 62. SCAQMD, Table XI-A.

This measure does not specify a method to verify that the use of water trucks prevents airborne dust from leaving the site. Dr. Fox recommends that real time monitoring for tiny Valley Fever spores should be required at all construction site boundaries.[353]

This measure also fails to address ground areas that are planned to be reworked at dates more than one month after initial grading. These areas should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods.

X. THE DEIR FAILS TO ACCURATELY ANALYZE, QUANTIFY, AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS FROM GREENHOUSE GAS EMISSIONS

CEQA requires the lead agency to use scientific data to evaluate GHG impacts directly and indirectly associated with a project.[354] The analysis must "reasonably reflect evolving scientific knowledge and state regulatory schemes."[355] In determining the significance of GHG emission impacts, the agency must consider the extent to which the project may increase GHG emissions compared to the existing environmental setting and the "extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions."[356]

[353] Fox Comments, p. 62.

[354] See 14 C.C.R. § 15064.4(a) (lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project); 14 C.C.R. § 15064(d) (evaluating significance of the environmental effect of a project requires consideration of reasonably foreseeable indirect physical changes caused by the project); 14 C.C.R. § 15358(a)(2) (defining "effects" or "impacts" to include indirect or secondary effects caused by the project and are "later in time or farther removed in distance, but are still reasonably foreseeable" including "effects on air"); CEQA Guidelines, Appendix G, § VIII: Greenhouse Gas Emissions (stating agencies should consider whether the project would "generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.").

[355] 14 C.C.R. § 15064.4(b); see also *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 504 (holding that lead agencies have an obligation to track shifting regulations and to prepare EIRs in a fashion that keeps "in step with evolving scientific knowledge and state regulatory schemes").

[356] 14 C.C.R. § 15064.4(b)(1); (3).

A. The DEIR Fails to Adequately Analyze GHG Impacts

The DEIR concludes that the Project's GHG impacts would be less than significant without mitigation.[357] The DEIR further states the impacts are negligible and substantially lower than the SLOCAPCD's operational significance thresholds.[358] DEIR Table 4.8-1 indicates that the major source of GHG emissions is construction, primarily "ground-based construction" (2,025 MT CO_2e) and helicopter emissions (699 MT CO_2e).[359] A secondary source of operational emissions is sulfur hexafluoride (SF_6) from Project equipment (96 MT CO_2e).[360] Dr. Fox concludes that these emissions are underestimated and exclude the major source of Project GHG emissions, operation of the BESS facilities. The DEIR fails as an informational document by failing to provide accurate modeling of the GHG impacts.

1. *Operational GHG Emissions*

The Project will emit three sources of GHG emissions: (1) sulfur hexafluoride (SF6) used in Project equipment; (2) helicopters used in construction of power lines; (3) charging of BESSs.[361] The DEIR fails to support its analysis of the SF6 emissions and omits the latter two sources of emissions from its analysis. These informational deficiencies violate CEQA.

Dr. Fox and Mr. Marcus determined that the net operational emission increases from the Project are: 60.93 tons of CO2e per year; 0.48 pounds of SO2 per year; and 4.30 pounds of NOx per year.[362] The proposed Project as submitted to the CPUC included provisions for three new distribution circuits with a total load-serving capacity of approximately 28 MW. While the DEIR admits that there will be no need for these circuits through at least 2029, based on the current Paso Robles DPA load forecast,[363] it also says that PG&E anticipates needing new distribution capacity within 15 years. Assuming that there would eventually be 28 MW of new storage built in lieu of the proposed new distribution circuits from the Estrella substation, and assuming that storage would operate comparably to

[357] DEIR, pp. 4.8-6.
[358] DEIR, p. 4.3-18.
[359] DEIR, p. 4.8-4.
[360] DEIR, Table 4.8-1, pdf 407.
[361] Fox Comments, p. 81.
[362] Fox Comments, p 73.
[363] DEIR, p. 2-12, Table 2-5.

existing storage during the great majority of hours when it was not being dispatched to meet local reliability needs, Dr. Fox and Mr. Marcus conclude that the total incremental GHG emissions attributable to the Project would be 28 times the annual emissions of 60.93 tons of CO_2e per MW calculated above, or **1,552 MT CO_2e/yr**.[364] Similarly, they conclude that the NOx emissions attributable to the Project would be 28 times the annual emissions of 4.30 lb/yr calculated above, or **120.4 lb/yr**.[365] These emissions are significant and unmitigated. A revised DEIR must be circulated to disclose these significant GHG emissions and mitigate the impacts from increased emissions.

B. The DEIR Fails to Include Adequate GHG Mitigation Measures

The DEIR fails to adopt all feasible mitigation measures to reduce the Project's significant greenhouse gas ("GHG") impacts to less than significant levels before declaring the impacts "significant and unavoidable." This violates CEQA's requirement that "lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring and reporting, of mitigating the significant effects of greenhouse gas emissions."[366] In *Russel Covington*, the court determined the EIR was deficient due to its conclusory responses to comments proposing specific mitigation measures to address fugitive emissions of Reactive Organic Gas ("ROG") that exceeded the threshold of significance, and because its rejection of those proposed measures was not supported by substantial evidence or reasoned explanation showing they were infeasible.[367]

Before it can approve the Project, the CPUC must certify the Project's Final EIR and make mandatory CEQA findings. Those findings must include (1) that the Final EIR complies with CEQA, (2) that the City has mitigated all significant environmental impacts to the greatest extent feasible, and (3) that any remaining significant environmental impacts are acceptable due to overriding considerations.[368] Where, as here, the Project will have a significant effect on the environment, the CPUC may not approve the Project unless it finds that it has "eliminated or substantially lessened all significant effects on the environment

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[364] Total GHG emissions from operating the BESSs = (60.93 ton/yr/MW)*28 MW*(0.91 MT/ton) = **1,552 MT/yr.**
[365] Fox Comments, p. 86.
[366] 14 CCR § 15126.4(c).
[367] Covington, 43 Cal.App.5th at 867.
[368] 14 CCR sections 15090, 15091.

where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns."[369]

The DEIR estimates that the Project's operational GHG emissions would be negligible and substantially lower than the SLOCAPCD's operational significance thresholds. The DEIR deemed these impacts less than significant.

The DEIR states that like the Project, GHG emissions from Alternatives would be largely one-time, construction-related emissions. The DEIR determined that total construction emissions would be 2,6724 metric tons of carbon dioxide equivalents ("MT CO_2e"). The total annualized emissions would be 187 MT CO_2e. ROG and NO_x emissions would exceed significance thresholds, even with implementation of Mitigation measure AIR-1, and the impact remains significant and unavoidable.

Commenters reviewed the Project's proposed GHG mitigation measures, and concluded that the DEIR fails to require all feasible mitigation available to reduce the Project's GHG impacts.[370]

The DEIR must be revised and recirculated to consider alternative mitigation measures and incorporate all feasible measures identified as binding mitigation for the Project. Only if the Project's GHG impacts remain significant after requiring all such feasible mitigation can the CPUC consider declaring the Project's GHG impacts to be significant and unavoidable.

XI. THE DEIR FAILS TO ADEQUATELY ANALYZE, QUANTIFY AND MITIGATE SIGNIFICANT IMPACTS FROM NOISE

The DEIR deemed impacts from helicopter noise significant and unavoidable. Mitigation measures are insufficient to reduce noise levels to those allowed under the San Luis Obispo County General Plan Noise Element.[371] Unlike construction noise, helicopters noise is not exempt from the County of San Luis Obispo noise regulations.[372]

[369] PRC § 21081; 14 CCR § 15092(b)(2)(A) & (B).
[370] Fox Comments, p. 87-88.
[371] County of San Luis Obispo General Plan, Noise Element, May 1992, Resolution 92-227.
[372] San Luis Obispo County, CA Noise Ordinance § 23.06.042.

Noise sensitive receptors in proximity to the Project site and distribution line segment include numerous residences and a recreation area, the Hunter Ranch Golf Course.[373] Sensitive receptors within 1,427 feet of helicopter landing zones or pole installation sites would be subjected to noise levels exceeding the FTA's recommended significance threshold.[374] Likewise, all sensitive receptors along or within 1,304 feet of the flight path would be subject to level flight noise in excess of 90 dBA.[375] The most severe impacts associated with helicopter activities would be those along the reconductoring segment, where there are numerous residences in close proximity to the existing 70 kV power line and construction work areas.[376]

There are numerous residences within 50 feet of the potential work areas for the reconductoring segment. There are residences as close as 100 feet to planned helicopter landing zones and helicopters operating above pole installation locations could be as close as about 250 feet to residences.[377] At this distance, helicopter noise levels could be in range of about 83 to 87 dBA.[378] Ground level idling is below 90 dBA at all distances.[379] Helicopter activities may occur approximately 132 days during the 18-month construction period for the substation and the 70 kV power line.[380]

As stated previously, before it can approve the Project, the CPUC must certify the Project's Final EIR and make mandatory CEQA findings. Those findings must include (1) that the Final EIR complies with CEQA, (2) that the City has mitigated all significant environmental impacts to the greatest extent feasible, and (3) that any remaining significant environmental impacts are acceptable due to overriding considerations.[381] Where, as here, the Project will have a significant effect on the environment, the CPUC may not approve the Project unless it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns."[382]

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[373] DEIR, p. 4.13-25.
[374] DEIR, p. 4.13-17.
[375] DEIR, p. 4.13-17.
[376] DEIR, p. 4.13-17.
[377] PEA, 3.12-20.
[378] *Id.*
[379] DEIR, p. 4.13-17.
[380] DEIR, p. 2-78.
[381] 14 CCR sections 15090, 15091.
[382] PRC § 21081; 14 CCR § 15092(b)(2)(A) & (B).

The DEIR did not detail why operating helicopters in close proximity to noise-sensitive receptors is unavoidable. The DEIR merely states that "[n]o other feasible mitigation is available to reduce these impacts" to a less-than-significant level.[383] This statement is conclusory and lacks substantial evidence to support it. The DEIR fails as an informational document because it does not sufficiently analyze, mitigate, or consider alternatives to helicopter use during construction.

XII. THE DEIR FAILS TO ADEQUATELY ANALYZE CUMULATIVE IMPACTS

CEQA requires an EIR's cumulative impacts analysis evaluate the incremental impact of the project in conjunction with, or collectively with, other closely related past, present, and reasonably foreseeable probable future projects.[384] "Cumulative impacts" are defined as "two or more individual effects, which, when considered together, are considerable or which compound or increase other environmental impacts."[385] The purpose of this requirement is to avoid "piecemeal" approval of projects without consideration of the total environmental effects the project would have when taken together.[386] The adequacy of an EIR's discussion of cumulative impacts is determined by standard of practicality and reasonableness.[387]

A. The DEIR Fails to Adequately Analyze Cumulative Agricultural Impacts

The DEIR correctly determines that the Project would have significant cumulative impacts on the loss of important farmland in San Luis Obispo County.[388] However, the cumulative impacts analysis is inadequate because it is too general. "The analysis should not be so general that the potential combined impacts of the project and a key nearby project are not disclosed."[389] In *City of Long Beach v. City of Los Angeles,* the court held that the fact that "CEQA does not require quantified

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[383] DEIR, p. 4.13-18.
[384] 14 CCR § 15355(b); *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 905.
[385] 14 CCR § 15355.
[386] Cecily Talbert Barclay and Matthew S. Gray, California Land Use and Planning Law (Solano Press, 37th ed. 2020) p. 180.
[387] *Environmental Protection & Information Center v. California Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 525; 14 CCR § 15130(b).
[388] DEIR, p. 6-21.
[389] *City of Long Beach v. City of Los Angeles* (2018) 19 Cal.App.5th 465, 490.

analysis does not mean that all meaningful information on a subject can be omitted from an EIR's cumulative impacts analysis."[390] Here, the DEIR is inadequate because it omits meaningful information to determine the cumulative impact on agricultural resources.

The DEIR only includes the Paso Robles Gateway Project. The DEIR fails to list any other projects that might have a cumulative impact on conversion of important farmland. CEQA Guidelines section 15130 require that an adequate cumulative impact analysis include a list of the projects producing related or cumulative impacts, a summary of the expected environmental impacts from those projects and a reasonable analysis of the cumulative impacts of the relevant projects.[391] When using a list approach, the EIR should define the relevant area affected and provide a reasonable explanation for the geographic limitation used.[392] The DEIR does not clarify why projects farther than 0.8 miles away were not included in cumulative impacts, where the loss of agricultural resources in San Luis Obispo County cumulatively impacts the whole County. The DEIR's explanation that only projects within the "Activity Area" were considered is insufficient. "Activity Area" includes the immediate areas in which physical actions that are part of the Proposed Project, reasonably foreseeable distribution components and alternatives would take place. The geographic limitation is not sufficient to explain why the loss of important farmland was not determined to be the entire County of San Luis Obispo. The DEIR should be revised and recirculated to address cumulative impacts with a larger geographic limitation or provide a reasonable explanation for the geographic limitation chosen. The DEIR should be revised in accordance with the California Supreme Court's holding in *Laurel Heights Improvement Association v. Regents of University of California*, that an EIR must be recirculated when the draft EIR was so fundamentally inadequate and conclusory that meaningful public review and comment were precluded.[393]

Further, the DEIR states that the impact from "other changes in the existing environment that, because of their location or nature, could result in conversion of Farmland to nonagricultural use" is less than significant.[394] This statement is not

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[390] *City of Long Beach v. City of Los Angeles* (2018) 19 Cal.App.5th 465, 490.
[391] *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 729.
[392] *Cecily Talbert Barclay and Matthew S. Gray, California Land Use and Planning Law (Solano Press, 37th ed. 2020) p. 181.*
[393] *Id.* at 190; *Laurel Heights Improvement Association v. Regents of University of California* (1992) 6 Cal. 4th 1112, 1114.
[394] DEIR, p. 4.2-15.

supported by substantial evidence. The DEIR further states that "with increasing urbanization and development, there is potential for loss of Farmland to non-agricultural uses."[395] This impact should not be deemed less than significant.

B. The DEIR Fails to Adequately Analyze Cumulative Biological Impacts

The DEIR concludes that "[t]he Proposed Project, reasonably foreseeable distribution components, and alternatives would not make a cumulatively considerable contribution to this significant cumulative impact. The contribution of the Proposed Project, reasonably foreseeable distribution components, and alternatives cumulative impact would be less than significant with mitigation."[396] This statement does not comport with the substantial evidence in the DEIR that provides: 1) the Project would result in significant impacts on a suite of sensitive biological resources;[397] 2) impacts from the Proposed Project (and all alternatives), in combination with impacts from other projects, would result in a significant cumulative impact on biological resources;[398] 3) there is potential for the Project to have a cumulatively considerable incremental contribution to the significant cumulative impact.[399]

The DEIR provides that the Project's significant impacts would be reduced to a less-than-significant level with implementation of the APMs and mitigation measures identified in Section 4.4 of the DEIR and these measures would ensure that impacts on protected species, communities, and habitats are reduced to a level that would protect their continued existence.[400] The APMs and mitigation measures are designed to reduce significant impacts not eliminate the impacts entirely.[401]

Mr. Cashen determined that there would be residual impacts after implementation of all APMs and mitigation measures.[402] For example, because the DEIR's compensatory habitat requirement is limited to impacts to blue oak

[395] DEIR, p. 4.2-15.
[396] DEIR, p. 6-22.
[397] DEIR, p. 6-22.
[398] DEIR, p. 6-22.
[399] DEIR, Table 6-3.
[400] DEIR, p. 6-22.
[401] Cashen Comments, p. 14.
[402] Cashen Comments, p. 14.

woodland, there would be residual impacts to special-status species associated with grasslands and agricultural lands.[403] Similarly, there may be residual impacts on the golden eagle and other special-status birds because the DEIR does not require compensatory mitigation for fatalities caused by electrocutions and collisions with the new power line facilities.[404] Whereas these residual impacts may not rise to the level of significance at the Project-level, they may be significant at the cumulative level when combined with the residual impacts of other projects.[405] For example, the DEIR notes that the impact on avian fatalities would not be limited to the Project, but rather, that the Project would incrementally increase a fatality risk that already exists in the area.[406] The Project's contribution to this potentially significant cumulative impact is cumulatively considerable because it would place seven miles of new power lines in an area that supports foraging raptors, and that has multiple golden eagle nests.[407]

Mr. Cashen determined that none of the DEIR's biological resource mitigation measures are designed to alleviate the cumulative impact. The APMs and mitigation measures to not address potentially significant cumulative impacts, and CPUC's conclusion that the Project's contribution to those cumulative impacts would be less than cumulatively considerable is not supported by substantial evidence.

XIII. THE DEIR FAILS TO ADEQUATELY ANALYZE SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

A. The DEIR Fails to Adequately Analyze Significant Irreversible Agricultural Impacts

The Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use is a significant irreversible environmental change. The loss of agricultural land beneath the substation is an irreversible environmental change under Section 15126.2(d) of the CEQA Guidelines. This change "generally commits future generations to similar uses."[408] The Project also involves uses that may cause "irreversible damage…from

[403] *See* DEIR, Table 4.4-1.
[404] Cashen Comments, p. 14.
[405] Cashen Comments, p. 14.
[406] DEIR, p. 4.4-50.
[407] DEIR, Table 4.4-1.
[408] 14 CCR § 15126.2(d).

environmental accidents associated with the project."[409] Significant irreversible changes were not considered in the DEIR with respect to agricultural impacts. The DEIR should be revised and recirculated to include impacts to agricultural resources as a significant irreversible agricultural impact from the Proposed Project, Alternatives PLR-1A, PLR-1C, and SE-PLR-2.

B. The DEIR Fails to Adequately Analyze Significant Irreversible Impact from Hazards

The DEIR fails to adequately analyze impacts from battery handling and transportation accidents and battery disposal. Dr. Fox determined that transportation of batteries could result in crush or puncture damage, possibly leading to the release of electrolyte material along transport routes or in storage.[410] Dr. Fox further determined that such releases would result in significant irreversible changes because irreversible damage could result from a potential environmental accident associated with the Project.[411] The DEIR provides that "significant irreversible changes from accidents are not expected."[412] This statement is not supported by substantial evidence.

CEQA Guidelines Section 15126.2(d) requires discussion of "significant irreversible environmental changes which would be caused by the proposed project should it be implemented."[413] The CEQA Guidelines provide further that "irreversible damage can result from environmental accidents associated with the project."[414]

Lithium-ion batteries are sensitive to damage, especially during handling and transport.[415] They are also sensitive to high ambient temperatures,[416] which will be experienced by the Project's batteries as they will likely have to pass through sensitive biological habitat. Battery accidents frequently occur during handling,

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[409] *Id.*
[410] Fox Comments, p. 60.
[411] 14 CCR § 15126.2(d); DEIR, p. 6-2.
[412] DEIR, p. 6-3.
[413] 14 CCR § 15126.2(d).
[414] 14 CCR § 15126.2(d).
[415] Kjell-Arne Jonsson, The Dangerous Consequences of Taking Shortcuts When Shipping Lithium-Ion Batteries, March 9, 2018; http://info.nefab.com/lib-blog/lithium-ion-batteries-shipping-shortcuts.
[416] Allianz Risk Consulting, Lithium-Ion Batteries, Risk Bulletin, 2017; https://www.agcs.allianz.com/content/dam/onemarketing/agcs/agcs/pdfs-risk-advisory/risk-bulletins/ARC-Lithium-Ion-Batteries.pdf.

loading, and unloading in warehouses and during transportation.[417] The DEIR fails to discuss the risk of accidents during battery storage, handling, and transportation to the site and thus fails as an informational document under CEQA. A revised EIR is necessary to adequately analyze all impacts from battery storage and transportation.

XIV. CONCLUSION

For the reasons discussed above, the DEIR for the Project remains wholly inadequate under CEQA. It must be thoroughly revised to provide legally adequate analysis of, and mitigation for, all of the Project's potentially significant impacts. These revisions will necessarily require that the DEIR be recirculated for public review. Until the DEIR has been revised and recirculated, as described herein, the CPUC may not lawfully approve the Project.

Thank you for your attention to these comments. Please include them in the record of proceedings for the Project.

Sincerely,

Kelilah D. Federman
Associate Attorney

KDF:acp
Attachments

[417] FAA Office of Security and Hazardous Materials Safety, Lithium Batteries & Lithium Battery-Powered Devices, August 1, 2019; https://www.faa.gov/hazmat/resources/lithium_batteries/media/Battery_incident_chart.pdf.

EXHIBIT A

Comments

on the

Draft Environmental Impact Report
for the

Estrella Substation and Paso Robles Area Reinforcement Project

San Luis Obispo County, California

February 22, 2021

Phyllis Fox, PhD, PE

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1. INTRODUCTION

The Estrella Substation and Paso Robles Area Reinforcement Project (Project) is proposed by Horizon West Transmission, LLC (HWT), formerly NextEra Energy Transmission West, LLC, and Pacific Gas and Electric Company (PG&E), together referred to as the Applicants. The purpose of the Project is to mitigate thermal overloads and voltage issues in the Los Padres 70 kV system (specifically in the San Miguel, Paso Robles, Templeton, Atascadero, Cayucos, and San Luis Obispo areas).

The Project involves: (1) the construction and operation of a new 230 kilovolt (kV)/70 kV substation to be operated by HWT; (2) a new 70 kV substation to be operated by PG&E; (3) a new approximately 7-mile-long 230 kV transmission line interconnection and replacement/reconductoring of approximately 3 miles of an existing 70 kV power line to be operated by PG&E; (4) reconductoring and pole replacement of a portion of the existing 70 kV power line to be operated by PG&E; (5) various distribution system components, including three new 21 kV distribution feeders; and (6) battery energy storage systems (BESSs).

I reviewed the Draft Environmental Impact Report (DEIR),[1] the Proponent's Environmental Assessment (PEA),[2] and supporting documents obtained from the Public Utilities Commission (PUC) via Public Record Act (PRA) requests. In my opinion, the DEIR has failed to identify and mitigate all significant environmental impacts, requiring recirculation of the DEIR. Further, because it failed to evaluate an important component of the Project—the BESS—arguing such analysis would be "speculative at this time," a future EIR is required to evaluate the impacts of this critical Project component. My review of the DEIR indicates the following errors, omissions, and unidentified significant impacts:

- The DEIR failed to impose all construction mitigation required by SLOCAPCD CEQA guidelines, including prohibitions on diesel idling and locating staging and queuing areas within 1,000 feet of sensitive receptors;
- The DEIR failed to require Tier 4 Final construction equipment, which was assumed in its estimate of construction emissions. Instead, the

[1] Horizon, Draft Environmental Impact Report, Estrella Substation and Paso Robles Area Reinforcement Project, Prepared for California Public Utilities Commission (CPUC), December 2020; https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/DEIR.html.

[2] SWCA, Proponent's Environmental Assessment Estrella Substation and Paso Robles Area Reinforcement Project, Prepared for NextEra Energy Transmission West, LLC and Pacific Gas and Electric Company (PEA), January 2017; https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/docs/PEA_January2017.pdf.

DEIR allows Tier 2 and 3 construction equipment, which have much higher emissions than included in the construction emission calculations;

- The DEIR failed to require BACT, required by SLOCAPCD CEQA guidance, for construction equipment, including SCR, lean NOx catalysts, and exhaust gas recirculation;
- The DEIR failed to require off-site mitigation for significant ROG+NOx construction emissions, required by SLOCAPCD CEQA guidance;
- The DEIR failed to require all SLOCAPCD fugitive dust mitigation measures;
- Construction emissions were underestimated for failing to address unique job site conditions;
- Emissions of fugitive dust were omitted from construction emissions, which are not estimated in the CalEEMod model used to estimate construction emissions, thus significantly underestimating construction PM10 and PM2.5 emissions;
- Construction health risks from diesel particulate matter (PM2.5) were not estimated, even though sensitive receptors are adjacent to construction sites;
- Cancer and acute health risks during construction over a very wide area including hundreds of homes are significant and unmitigated;
- Construction NOx emissions exceed the California 1-hour NOx ambient air quality standard of 339 $\mu g/m^3$, which is both a significant public health impact and a significant ambient air quality impact;
- Valley Fever impacts were not evaluated, are significant, and unmitigated;
- Risk of upset, including fire and explosion, of the battery energy storage facility (BESS) were not evaluated and are significant;
- Impacts from battery handling and transportation accidents and battery disposal were not evaluated and are potentially significant;
- Greenhouse gas emissions from battery charging are significant and unmitigated; and
- Significant aesthetic, biological, and public health impacts of the transmission line can be mitigated by undergrounding the entire length of the transmission line.

The DEIR failed to select the environmentally superior alternative, which should include undergrounding of the transmission line. In sum, the DEIR fails as an informational document under CEQA for omitting critical information, for failing to identify and evaluate all impacts, for failing to mitigate significant impacts, and for failing to select the environmentally superior alternative. A revised DEIR should be prepared and recirculated for public review. Further, a future EIR should be prepared to evaluate impacts of the battery storage option when it has been selected.

My resume is included in Exhibit 1 to these Comments. I have over 40 years of experience in the field of environmental engineering, including air emissions and air pollution control; greenhouse gas (GHG) emission inventory and control; water quality and water supply investigations; hazardous waste investigations; hazard investigations; risk of upset modeling; environmental permitting; nuisance investigations (odor, noise); health risk assessments; EIRs; and litigation support. I have reviewed and commented on hundreds of CEQA documents and air permit applications, including for tank farms, refineries, solar and wind facilities, geothermal facilities, ethanol plants, oil and gas production, quarries, terminals, ports, battery energy storage systems, and many other industrial facilities. I have MS and PhD degrees in environmental engineering from the University of California at Berkeley. I am a licensed professional engineer (chemical) in California. My work has been cited in two published CEQA opinions: (1) *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (2001) 111 Cal. Rptr. 2d 598 and *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal. 4th 310 and has supported the record in many other CEQA cases.

2. CONSTRUCTION EMISSIONS ARE UNDERESTIMATED, SIGNIFICANT, AND UNMITIGATED

The Project's construction emissions are generated from two sources: operation of construction equipment and helicopters.[3] The DEIR concluded that some of these emissions were significant but failed to identify all construction emissions and failed to adequately mitigate them.

The DEIR concluded that maximum daily ROG+NOx construction emissions of 275.46 lb/day were significant, exceeding the daily significance threshold of 137 lb/day. Under SLOCAPCD guidance,[4] this requires "Standard Mitigation Measures."[5]

The DEIR also concluded that maximum quarterly construction emissions of ROG+NOx of 9.25 ton/quarter were significant, exceeding the Tier 1 significance

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[3] DEIR, pdf 433.

[4] SLOCAPCD, CEQA Air Quality Handbook, April 2012, Table 2-1 and Attachment 1, Clarifications; https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Map2019%29_LinkedwithMemo.pdf.

[5] Ibid., Attachment 1, Clarifications, pdf 67.

threshold of 2.5 ton/quarter.[6,7] Under SLOCAPCD guidance, this requires "Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment. Off-site mitigation may be required if feasible mitigation measures are not implemented, or if no mitigation measures are feasible for the project."[8]

The DEIR also concluded that maximum quarterly construction emissions of ROG+NOx of 9.25 ton/quarter were significant, exceeding the Tier 2 significance threshold of 6.3 ton/quarter.[9] Under SLOCAPCD guidance this requires "Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP) and off-site mitigation…."[10]

Finally, the DEIR concluded that maximum fugitive dust PM10 emissions of 3.04 ton/quarter were significant, exceeding the Tier 1 significance threshold of 2.5 ton/quarter. Under SLOCAPCD guidance, this requires "Fugitive PM10 Mitigation Measures and may require the implementation of a CAMP."[11] With respect to PM10, the DEIR clarifies that the significant fugitive dust emissions are "mainly related to the helicopter fugitive dust emissions which will primarily occur at the Paso Robles airport."[12] As discussed in Comment 2.7, this is misleading because the DEIR failed to estimate fugitive dust emissions from on-site construction. These emissions are not calculated by the CalEEMod model used to estimate construction emissions and must be separately calculated. The DEIR did not estimate these emissions.

2.1. Construction Mitigation Is Inadequate and Inconsistent with SLOCAPCD Guidance

The DEIR asserts that these significant emissions will be mitigated using Applicant Proposed Measures (APMs) and mitigation measure (MM) AQ-1 as follows:[13]

- AIR-1: Minimize ROG, NOx, and PM Combustion
- AIR-2: Air Quality Best Available Control Technology for Construction Equipment

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6 DEIR, pdf 433-434, Table 4.3-5.

7 SLOCAPCD, CEQA Air Quality Handbook, Attachment 1, pdf 67.

8 Ibid.

9 The DEIR incorrectly reports the quarterly Tier 2 significance threshold for ROG + NOx as 26.3 ton/quarter. The correct quarterly Tier 2 significance threshold is 6.3 ton/quarter.

10 Ibid., Attachment 1, pdf 67.

11 Ibid, p. 2-2.

12 DEIR, pdf 434.

13 DEIR, Table ES-1, pdf 46, p. ES-22.

- AIR-3: Minimize Fugitive Dust
- MM AQ-1: Prepare a Construction Activity Management Plan (CAMP) for approval by SLOCAPCD

The construction mitigation plan is included in Appendix F to the DEIR. The DEIR concludes that construction air quality impacts remain significant and unavoidable (SU) after the implementation of these mitigation measures.[14] This conclusion is unsupported because the DEIR has failed to impose the mitigation required by the SLOCAPCD CEQA guidelines, as outlined above. It further has failed to impose all feasible mitigation, which includes measures not addressed in the SLOCAPCD CEQA Guidelines. These issues are discussed below.

2.2. SLOCAPCD Standard Mitigation Measures for Construction Equipment

The SLOCAPCD CEQA guidance requires the implementation of "standard mitigation measures for construction equipment" when construction emissions exceed significance thresholds,[15] as identified in Comment 2.7. Mitigation Measure (MM) APM AIR-1 in the Mitigation Monitoring and Reporting Plan[16] includes some, but not all, of the standard mitigation measures for construction equipment required to comply with the SLOCAPCD CEQA guidelines. The following required mitigation measures were omitted from DEIR Appendix F:

- Diesel idling within 1,000 feet of sensitive receptors is not permitted.
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors.

These omissions are of great concern because a significant portion of Project construction will occur within 1,000 feet of sensitive receptors.[17] Diesel particulate matter (DPM) from idling construction equipment and construction equipment staging and queuing in these areas result in significant cancer and acute health impacts and violate the California 1-hour NOx ambient air quality standard. See Comment 2.8. These omitted SLOCAPCD measures must be included as Project mitigation.

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[14] Ibid.

[15] SLOCAPCD, CEQA Air Quality Handbook, pp. 2-6 to 2-7.

[16] DEIR, Appendix F, p. F-14 to F-16.

[17] See, for example, DEIR, Figures 2-8, sheets 3-8 (70 kV power line adjacent to residential neighborhoods); PEA, p. 3.3-19 ("Sensitive receptors have been identified within a 1-mile radius of the site, with the nearest residence located within 265 feet of the substation site.").

Further, the SLOCAPCD CEQA guidance requires the following additional diesel idling restrictions to protect public health and air quality that are omitted from the DEIR's Mitigation Monitoring and Reporting Plan in Appendix F:[18]

- Signs that specify the no-idling requirements must be posted and enforced at the construction site;
- Idling restrictions for on-road vehicles;
- Signs must be posted in the designated queuing areas and job sites to remind drivers of the 5-minute idling limits;
- Off-road diesel equipment shall comply with the 5-minute idling restriction;
- Signs shall be posted in the designated queuing areas and job sites to remind off-road equipment operators of the 5-minute idling limit.

None of these measures is required in the Mitigation Monitoring and Reporting Plan in Appendix F.

2.3. Best Available Control Technology (BACT) for Construction Equipment

The DEIR concluded that construction ROG+NOx emissions are significant.[19] SLOCAPCD CEQA guidance requires BACT for ROG and NOx when construction emissions exceed significance thresholds.[20] The SLOCAPCD CEQA Guidance for BACT specifies:[21]

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
- Repowering equipment with the cleanest engines available; and
- Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

In contrast, the DEIR in APM AIR-2 only requires:[22]

- Reducing emissions by expanding use of Tier 3 off-road and 2010 on-road compliant engines; and
- Installing California Verified Diesel Emission Control Strategies.

[18] SLOCAPCD, CEQA Air Quality Handbook, p. 2-3.

[19] DEIR, Table 4.3-5.

[20] SLOCAPCD, CEQA Air Quality Handbook, pp. 2-6 to 2-7.

[21] SLOCAPCD CEQA Guidance, p. 2-7; see also pp. 4-14 to 4-15.

[22] DEIR, Appendix F, p. F-16, APM AIR-2.

However, the DEIR fails to disclose that the construction emission calculations assumed the use of 100% Tier 4 final engines in its CalEEMod emissions modeling,[23] which have much lower NOx and ROG emissions than Tier 2 or 3 engines. Thus, "expanding the use of Tier 3 engines"[24] is not mitigation and is not BACT. Rather, it allows higher construction emissions than the significant construction emissions estimated in the DEIR and does not mitigate significant impacts.

APM AIR-2 should be modified to state: "All diesel-powered construction equipment shall use Tier 4 Final construction equipment, to be confirmed on site by the on-site construction supervisor during each day of use." If a Tier 4 final engine is not available for select construction equipment, controls shall be installed on the highest tier equipment available to achieve Tier 4 Final standards. Effective controls include diesel particulate filters for PM2.5 (DPM)[25] and selective catalytic reduction (SCR) for NOx.

Tier 4 Final (2015) construction equipment has significantly lower NOx and ROG emissions than either Tier 3 or "transitional Tier 4" (2011) equipment. The Tier 4 Final NOx emission factor, for example, is 0.30 g/bhp-hr while the transitional Tier 4 NOx emission factors for engines of 56 to 130 kW are 1.7 to 2.5 g/bhp-hr and for engines of 130 to 560 kW, the Tier 4 Final NOx emission factor is 1.5 g/bhp-hr.[26] The text of the DEIR does not disclose the NOx emission factor that was used in the CalEEMod analysis for construction equipment. However, Appendix C, which contains the CalEEMod output, does disclose that Tier 4 Final engines were assumed for all construction equipment.[27] Thus, NOx emissions would be 5 to 8 times higher[28] than reported in Table 4.3-5, requiring substantially more mitigation for NOx than disclosed in the DEIR. Thus, APM AIR-2 does not reduce NOx and ROG emissions, but rather allows a significant increase in NOx and ROG emissions, compared to emissions reported in DEIR Table 4.3-5.

There are other recognized and feasible methods to reduce NOx and ROG from construction equipment that satisfy BACT, which should be required if Tier 4 Final

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[23] DEIR, Appendix C, pdf 3: "Construction Off-road Equipment Mitigation—Change to assume all equipment Tier 4 Final." See also Appendix C, pdf 420, 560, 561.

[24] DEIR, Table 2-12, p. 2-93, pdf 173.

[25] See Comment 2.8.1.2.

[26] DieselNet, United States: Nonroad Diesel Engines, "alternative NOx limits" during "phase-in period"; https://dieselnet.com/standards/us/nonroad.php.

[27] DEIR, Appendix C, pdf 3: "Construction Off-road Equipment Mitigation—Change to assume all equipment Tier 4 Final." See also Appendix C, pdf 420, 560, 561.

[28] Increase in NOx emission factor if Tier 4 rather than Tier 4 Final engines are used: for 56-130 kW engines: 2.5/0.3 = **8.3**. For engines 130-560 kW: 1.5/0.3 = **5.0**.

construction equipment is not available for all equipment required to construct the Project. These are discussed in Sections 2.3.1 to 2.3.4.

2.3.1. Selective Catalytic Reduction

NOx emissions from lower-tier construction equipment (i.e., Tiers 1, 2, 3) can be reduced by installing selective catalytic reduction (SCR). An SCR can reduce NOx emissions by 75% to 90%, while simultaneously reducing VOC emissions by up to 80% and PM emissions by 20% to 30%. SCR systems have been successfully demonstrated on off-road vehicles.[29] For example, the City of Houston Diesel Field Demonstration Project has demonstrated an 84% reduction in NOx emissions by using a diesel particulate filter (DPF)/SCR combination on a 1992 MY Cummins Gradall G3WD (5.9L 190 hp). As a result of this field demonstration program, the City of Houston retrofitted 33 rubber tire excavators and a dump truck with SCR systems.[30]

2.3.2. Lean NOx Catalysts

Lean NOx catalyst (LNC) technology can achieve a 10% to 40% reduction in NOx emissions. LNC technology does not require any core engine modifications and can be used to retrofit older engines. This retrofit technology can be combined with DPFs or diesel oxidation catalysts (DOCs) to provide both NOx and PM10 reductions. An LNC added to an exhaust system using a DPF can reduce NOx emissions by 10% to 25%.[31] Lean NOx catalyst technology has been demonstrated and commercialized for a variety of off-road retrofit applications, including heavy-duty earthmoving equipment.[32]

2.3.3. Exhaust Gas Recirculation

Exhaust gas recirculation (EGR) reduces NOx by reducing the temperature at which fuel burns in the combustion chamber. Engines employing EGR recycle a portion of engine exhaust back to the engine air intake. The oxygen-depleted exhaust gas is mixed into the fresh air that enters the combustion chamber, which dilutes the oxygen content of the air in the combustion chamber. This reduction in oxygen reduces the engine burn temperature, and hence reduces NOx emissions.[33] Engine retrofits

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[29] Manufacturers of Emission Controls Association (MECA), Retrofitting Emission Controls on Diesel-Powered Vehicles, pp. 2-3, April 2006; http://www.meca.org. See also MECA 3/6, p. 17.

[30] MECA 03/06, p. 12.

[31] MECA 03/06, p. 14.

[32] MECA 03/06, p. 19.

[33] Diesel Technology Forum, Retrofitting America's Diesel Engines: A Guide to Cleaner Air Through Cleaner Diesel; https://www.dieselforum.org/files/dmfile/Retrofitting-America-s-Diesel-Engines-11-2006.pdf.

with low-pressure EGR in conjunction with a diesel particulate filter can achieve NOx reductions of over 40% and PM reductions of more than 90% and have been successfully demonstrated on off-road equipment.[34]

2.3.4. Other NOx Mitigation Measures

Other mitigation measures that are feasible and have been required elsewhere to reduce NOx from construction equipment include:

- Use alternative fueled equipment (e.g., propane), where available;
- Limit engine idling to 2 minutes for all construction equipment;[35]
- Purchase offsets;
- Employ a construction site manager to verify that engines are properly maintained and to maintain a log.

Further, the SLOCAPCD CEQA Guidance allows the use of off-site mitigation if feasible on-site mitigation measures are not available for the Project.[36] Off-site mitigation is available and feasible. Voluntary Emission Reduction Agreements or VERAs have been used as CEQA mitigation. A VERA would require the Applicant to make a one-time payment for its significant unmitigated emissions in excess of significance thresholds to the SLOCAPCD, which would then use the payment to develop off-site mitigation.

VERAs have been identified as mitigation measures within other CEQA documents.[37] Types of projects that have been funded include electrification of stationary internal combustion engines and replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has repeatedly concluded that a VERA "is a feasible mitigation measure under CEQA, effectively achieving emission reductions necessary to reduce impacts to a less than significant level."[38]

This approach has been found legally sufficient by court rulings in the following cases: *California Building Industry Assn. v. San Joaquin Valley APCD*, Fresno County Case No. 06 CECG 02100 DS13*; National Association of Home Builders v. San Joaquin Valley*

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[34] MECA 04/06, p. 14.

[35] See, for example, SCAQMD, CEQA Air Quality Handbook, April, 1993, Tables 11-2 and 11-3. Further, many states limit idling time to 2 minutes.

[36] SLOCAPCD CEQA Guidance, Attach 1, Clarifications, p. 2, pdf 67 and pp. 17-18.

[37] SJVAPCD, Summary of Comments and Responses to Proposed Revisions to the GAMAQI-2012, May 31, 2012, p. 3; https://www.valleyair.org/transportation/GAMAQIDRAFT-2012/GAMAQIResponsetoComments5-10-12%20.pdf.

[38] SJVAPCD 2017, pp. 5, 9.

Unified Air Pollution Control District; Federal District Court, Eastern District of California, Case No. 1:07-CV-00820-LJO-DLB; and *Center for Biological Diversity et al. v. Kern County*, Fifth Appellate District, Case No. F061908.

2.4. Standard Mitigation Measures for PM10 Emissions from Construction Equipment

The SLOCAPCD CEQA Guidance requires "standard mitigation measures for construction equipment" and may require the implementation of a Construction Activity Management Plan (CAMP)[39] when fugitive dust PM10 emissions exceed 3.04 ton/quarter, as here. For projects with grading areas greater than 4 acres or that are within 1,000 feet of any sensitive receptor, both of which occur for the Project, the SLOCAPCD CEQA Guidance identifies 14 required fugitive dust mitigation measures.[40]

Project fugitive dust mitigation is addressed in APM AIR-3, Minimize Fugitive Dust.[41] The DEIR excludes several required SLOCAPCD standard mitigation measures for fugitive dust, the omission of which would increase fugitive dust. No justification is provided for the omissions, which include:

- SLOCAPCD measure b: "Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible").[42] As discussed in Comment 2.7, wind gusts in excess of 15 mph, up to 25 mph, occur frequently at the site. Figure 1. Thus, the omission of increased watering frequency during high wind events will result in substantially higher PM10 emissions than disclosed in the DEIR.
- SLOCAPCD measure b: The SLOCAPCD expanded this measure in a November 2017 Clarification Memo.[43] It now additionally requires the following, omitted from the DEIR:

> Use of water trucks or sprinkler systems, in sufficient quantities to prevent airborne dust from leaving the site and from exceeding the APCD's limit of 20% opacity for greater than 3 minutes in any 60-minute period. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible. Please note that during drought conditions, water use may be a concern and the contractor or builder shall consider the use of an APCD-approved dust suppressant where feasible to reduce the amount of water used for dust control.

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[39] Ibid., p. 2-6, Section 2.3.

[40] Ibid., p. 2-9, pdf 21, "Fugitive Dust Mitigation Measures: Expanded List."

[41] DEIR, Appendix F, p. F-16.

[42] SLOCAPCD CEQA Guidance, p. 2-8, 2-9, 4-12, and pdf 68.

[43] SLOCAPCD CEQA Guidance, pdf 66: Memo from SLOCAPCD to All Interested Parties, Re: Clarification Memorandum for the SLOCAPCD's 2012 CEQA Air Quality Handbook.

- SLOCAPCD measure d: "Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities";
- SLOCAPCD measure e: "Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established";
- SLOCAPCD measure g: "All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used";
- SLOCAPCD measure j: "Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site";
- SLOCAPCD measure j: The SLOCAPCD expanded this measure in the November 2017 Clarification Memo.[44] It now additionally requires the following, omitted from the DEIR:

  "Track-Out" is defined as sand or soil that adheres to and/or agglomerates on the exterior surfaces of motor vehicles and/or equipment (including tires) that may then fall onto any highway or street as described in California Vehicle Code Section 23113 and California Water Code 13304. To prevent Track Out, designate access points and require all employees, subcontractors, and others to use them. Install and operate a "track-out prevention device" where vehicles enter and exit unpaved roads onto paved streets. The track-out prevention device can be any device or combination of devices that are effective at preventing track out, located at the point of intersection of an unpaved area and a paved road. Rumble strips or steel plate devices require periodic cleaning to be effective. If paved roadways accumulate tracked out soils, the track-out prevention device may need to be modified.

- SLOCAPCD measure k: "Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads…." The DEIR modified this measure to limit street sweeping to "soil material extending over 50 feet," thus limiting the amount of street sweeping required.

All of these omissions and modifications of required SLOCAPCD fugitive dust mitigation measures will result in higher fugitive PM10 emissions than allowed by the SLOCAPCD guidance or disclosed in the DEIR.

[44] SLOCAPCD CEQA Guidance, pdf 68.

In sum, construction emissions are significantly underestimated, and the proposed mitigation measures do not mitigate the significant construction impacts to the maximum extent feasible.

2.5. Impact of Job Site Conditions on Emissions

The DEIR used the CalEEMod model to estimate construction emissions. This model uses a lot of default emission assumptions that do not apply to the Project site. It is well known that there are large discrepancies between measured emissions data and theoretical emission models such as CalEEMod. The emissions from construction equipment depend upon the load under which each piece of equipment operates.[45] The equipment load, in turn, depends on soil conditions. The DEIR used default load factors as provided in CalEEMod. However, default load factors are not appropriate for this Project due to the nature of the terrain.

Job site conditions affect the emissions from construction equipment. A recent study reported that:[46]

> The fuel consumption and emissions of equipment inevitably increase in tough working conditions involving hills and slopes on jobsites, or medium to hard underground or ground soil conditions. The amounts of fuel consumptions or emissions can increase up to 2-4 times for heavy duty works, as compared with light duty applications for the same equipment, according to Caterpillar Performance Handbook.

The Project site involves difficult working conditions, including steep hills and slopes and areas subject to subsidence, erosion, and liquefaction.[47] The CalEEMod inputs, on the other hand, are based on default conditions—namely, flat land without the potential for subsidence, erosion, and liquefaction. Thus, actual emissions of GHGs and criteria pollutants from Project construction are higher than disclosed in the DEIR.

2.6. Construction Equipment Emission Factors Underestimated

Emission models, such as the CalEEMod model, use fleet average emission factors that are mostly obtained from steady-state engine dynamometer results, adjusted for various factors. They do not represent real-world duty cycles, a serious issue for this site due to its hilly nature. Dynamometer tests do not capture the episodic

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[45] See, for example, K. Barati and X. Shen, Operational Level Emissions Modelling of On-Road Construction Equipment through Field Data Analysis, *Automation in Construction*, v. 72, pp. 338-346, 2016 ("Emission rates of CO2, CO, HC and NOx were also found to be directly related to changes in engine load. For example, for one specific type of vehicle, CO_2 was around 2 g/s at 20% engine load, which increased almost linearly to 8 g/s at an engine load of 90%."). Exhibit 4.

[46] H. Fan, A Critical Review and Analysis of Construction Equipment Emission Factors, *Procedia Engineering*, v. 196, pp. 351–358, 2017; https://www.sciencedirect.com/science/article/pii/S1877705817330801. Exhibit 19.

[47] DEIR, Section 4.7. See for example, p. 4.7-11 and Figures 4.7-1/3.

nature of fuel use and emissions during real-world duty cycles, such as idling, use of an attachment, movement of a load, and so on. These emission factors should be confirmed for the specific equipment and work conditions in the field by connecting a particulate emissions monitoring system (PEMS) to the vehicle's engine and to its exhaust system to monitor the emissions while the vehicle is in use.[48]

2.7. Fugitive Dust PM10 Emissions Are Omitted

The DEIR concluded that fugitive dust PM10 emissions of 3.04 ton/quarter exceed the significance threshold of 2.5 ton/quarter.[49] The DEIR asserts that these fugitive dust PM10 emissions are "mainly related to the helicopter fugitive dust emissions which will primarily occur at the Paso Robles airport."[50] Table 4.3-5 shows 2.98 ton/quarter for helicopter operations and 0.05 ton/quarter for on-site construction. However, none of the mitigation measures in the Mitigation Monitoring and Reporting Plan in Appendix F addresses fugitive dust emissions at the airport. Thus, these emissions are significant and unmitigated.

Further, the PM10 fugitive dust emissions from Project construction are significantly underestimated because the CalEEMod model used to estimate construction emissions does not include all sources of PM10 and PM2.5 construction emissions, let alone from the unique aspects of this Project. It omits the major source of fugitive PM10 emissions at construction sites—windblown dust from graded areas and storage piles and fugitive dust from off-road travel:[51]

> Fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads. (Fugitive dust from wind blown sources such as storage piles and inactive disturbed areas, as well as fugitive dust from off-road vehicle travel, are not quantified in CalEEMod, which is consistent with approaches taken in other comprehensive models.)

These emissions must be separately calculated using methods in AP-42[52] and added to the CalEEMod PM10 and PM2.5 emissions. Fugitive dust emissions arise from storage piles, grading, truck loading, and inactive disturbed areas. Based on calculations I have made in other cases, these are the major sources of PM10 and PM2.5

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[48] P. Lewis and others, Requirements and Incentives for Reducing Construction Vehicle Emissions and Comparison of Nonroad Diesel Engine Emissions Data Sources, *Journal of Construction Engineering and Management*, v. 135, no. 5, pp. 341-351, 2009. Exhibit 5.

[49] DEIR, Table 4.3-5, pdf 433/444, pp. 4.3-15/16.

[50] DEIR, pdf 434, p. 4.3-16.

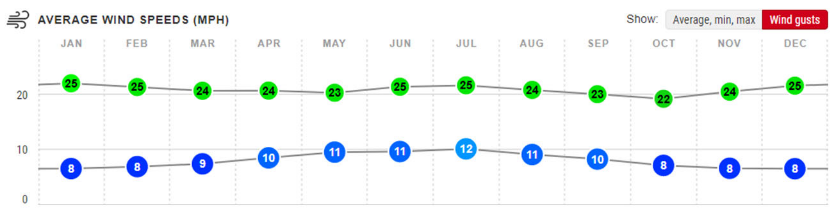
[51] CAPCOA 2016, pdf 8. This same language appears in CAPCOA 2017, pdf 7.

[52] U.S. EPA, Compilation of Air Pollutant Emission Factors, Report AP-42; https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors#Proposed.

emissions from construction projects. Fugitive dust emissions taken alone frequently exceed the PM10 and PM2.5 significance thresholds. Thus, the DEIR, which relied on the CalEEMod emission calculations, fails as an informational document under CEQA.

Windblown dust from Project disturbed soils is a particular concern at this site because high winds occur regularly during spring.[53] The DEIR fails as an informational document under CEQA for failing to include a wind rose for the Project area, which is known for high winds called the Santa Lucia winds.[54] Wind speed data for the Paso Robles Airport for the period September 2012 to December 2020 report an average wind speed of 9 mph.[55] Gusts up to 25 mph occur throughout the year. Figure 1.

Figure 1: Average Wind Speeds for Paso Robles Airport[56]



In comparison, the DEIR's construction emissions assumed an average wind speed of 3.2 m/s (7.2 mph).[57] The higher winds that occur at the Project site can raise significant amounts of dust, even when conventional dust control methods are used. If these winds occurred during grading, cut and fill, or soil movement, from bare graded soil surfaces (even if periodically wetted), significant amounts of PM10 and PM2.5 as well as silica dust would be released. As dust control is not required during nighttime hours when no active construction activity occurs, PM10 and PM2.5 emissions could be even higher than during active construction work. These emissions could result in public health impacts from Valley Fever spores (Comment 3), silica, and/or violations of PM10 and PM2.5 California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The DEIR did not evaluate these potential impacts, thus failing as an informational document under CEQA.

53 DEIR, pdf 496, p. 4.4-50; pdf 891, p. 4.2-9.

54 DEIR, p. 4.20-9, pdf 891.

55 Windfinder, Paso Robles Airport; https://www.windfinder.com/windstatistics/paso_robles_municipal_airport.

56 Ibid.

57 DEIR, Appendix C, pdf 27, 160, 288, 417, 558.

Wind erosion emissions are typically calculated using methods in AP-42,[58] which require detailed information on site topography, wind profiles, and dispersion modeling. This information is not cited or included in the DEIR. Generally, wind erosion ambient air quality impacts are estimated using the AERMOD model. The DEIR does not include any calculations of wind erosion emissions, any of the information required to calculate them, or any estimation of ambient PM10 impacts from wind erosion. Rather, the DEIR tacitly assumes that compliance with conventional construction mitigation measures and regulations constitutes adequate wind erosion control, without any analysis at all or without acknowledging the added risk of high-velocity winds that occur in the area.

Wind erosion emissions depend on the disturbed area. The CalEEMod runs in Appendix C assumed a disturbed area of 119.4 acres.[59] The basis for this disturbed area is not disclosed. The DEIR text reported disturbed areas ranging from 122.7 acres[60] to 163.5 acres (Alternative PLR-1A)[61] to 181.24 acres (Alternative PLR-1C).[62]

The DEIR does not include a construction schedule, required to determine the maximum amount of acreage disturbed during the maximum quarter, thus failing as an informational document under CEQA. I assume the maximum graded area based on the CalEEMod output in Appendix C of 27 acres[63] in my calculations of wind erosion emissions below.

Particulate matter emissions can be estimated from the EPA emission factor for construction activity of 1.2 tons per acre per month of activity.[64] Studies indicate that on average, PM10 accounts for 34% to 52% of the total suspended particulates (TSP) when watering is used for dust control.[65] Thus, earthmoving activities could generate up to

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[58] U.S. EPA, AP-42, Section 13.2.5 Industrial Wind Erosion; https://www3.epa.gov/ttnchie1/ap42/ch13/final/c13s0205.pdf.

[59] DEIR, Appendix C, pdf 27, 160, 288, 417, 558.

[60] DEIR, Table 2-3, pdf 153-154.

[61] DEIR, Table 3-4, pdf 238.

[62] DEIR, Table 3-8, pdf 268.

[63] DEIR, Appendix C, pdf 33, 166, 294, 424.

[64] AP-42, Section 13.2.3 Heavy Construction Operations, pdf 1; https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s02-3.pdf.

[65] Ingrid P. S. Araujo, Dayana B. Costa, and Rita J. B. de Moraes, Identification and Characterization of Particulate Matter Concentrations at Construction Job Sites, *Sustainability*, v. 6, pp. 7666-7688, 2014, Table 5, https://ideas.repec.org/a/gam/jsusta/v6y2014i11p7666-7688d41878.html.

31.2 ton/qtr of PM10,[66] exceeding the significance threshold of 2.5 ton/quarter. These significant PM10 emissions must be mitigated.

There are numerous feasible PM10 control methods that were not required in the Mitigation Monitoring and Reporting Plan that have been required in other CEQA documents and recommended by various air pollution control districts, including the Bay Area Air Quality Management District (BAAQMD)[67] and the South Coast Air Quality Management District (SCAQMD).[68] The following should be required for the Project:

1) Apply water every 4 hours to the area within 100 feet of a structure being demolished, to reduce vehicle trackout.

2) Use a gravel apron, 25 feet long by road width, to reduce mud/dirt trackout from unpaved truck exit routes.

3) Apply dust suppressants (e.g., polymer emulsion) to disturbed areas upon completion of demolition.

4) Apply water to disturbed soils after demolition is completed or at the end of each day of cleanup.

5) Prohibit demolition activities when wind speeds exceed 25 mph.

6) Apply water every 3 hours to disturbed areas within a construction site.

7) Require minimum soil moisture of 12% for earthmoving by use of a moveable sprinkler system or a water truck. Moisture content can be verified by lab sample or moisture probe.

8) Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.

9) Replace ground cover in disturbed areas as quickly as possible.

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[66] Earthmoving TSP emissions = (1.2 ton TSP/acre-mo)(27 acres) = **32.4 ton TSP/mo.** Assuming 32% of the TSP is PM10, PM10 emissions = (32.4 ton TSP/mo)(0.32) = 10.4 ton PM10/mo = **31.2 ton/qtr.**

[67] BAAQMD, CEQA Air Quality Guidelines, May 2017, Tables 8-2 and 8-2; https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

[68] SCAQMD, Fugitive Dust Mitigation Measure Tables; http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

10) All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches.[69]

2.8. Construction Health Risks Were Not Evaluated and Are Significant

The DEIR is silent on construction health risks. CEQA requires lead agencies to disclose the health risks posed by toxic air contaminants released during construction and operation. The Office of Environmental Health Hazard Assessment's (OEHHA's) risk assessment guidelines recommend a formal health risk assessment for short-term construction exposures lasting longer than 2 months, and exposures from projects lasting more than 6 months should be evaluated for the duration of the project.[70] The construction of this Project will last for 7 to 34 months, depending upon the alternative.[71] The OEHHA risk assessment guidelines, which are used throughout California for assessing health risks under CEQA, state:

[69] SCAQMD, Fugitive Dust Mitigation Measure Table XI-A, http://www.aqmd.gov/docs/default-source/ceqa/handbook/mitigation-measures-and-control-efficiencies/fugitive-dust/fugitive-dust-table-xi-a.doc?sfvrsn=2.

[70] Office of Environmental Health Hazard Assessment (OEHHA), Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015 (OEHHA 2015), Section 8.2.10: Cancer Risk Evaluation of Short Term Projects, pp. 8-17/18; https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

[71] DEIR, Table 3-21, pdf 335.

> Due to the uncertainty in assessing cancer risk from very short-term exposures, we do not recommend assessing cancer risk for projects lasting less than two months at the MEIR. We recommend that exposure from projects longer than 2 months but less than 6 months be assumed to last 6 months (e.g., a 2-month project would be evaluated as if it lasted 6 months). Exposure from projects lasting more than 6 months should be evaluated for the duration of the project. In all cases, for assessing risk to residential receptors, the exposure should be assumed to start in the third trimester to allow for the use of the ASFs (OEHHA, 2009). Thus, for example, if the District is evaluating a proposed 5-year mitigation project at a hazardous waste site, the cancer risks for the residents would be calculated based on exposures starting in the third trimester through the first five years of life.
>
> For the MEIW, we recommend using the same minimum exposure requirements used for the residential receptor (i.e., no evaluation for projects less than 2 months; projects longer than 2 months but less than 6 months are assumed to last 6 months; projects longer than 6 months would be evaluated for the duration of the project). Although the off-site worker scenario assumes that the workers are 16 years of age or older with an Age-Sensitivity Factor of 1, another risk management consideration for short-term project cancer assessment is whether there are women of child bearing age at the worksite and whether the MEIW receptor has a daycare center. In this case, the Districts may wish to treat the off-site MEIW in the same way as the residential scenario to account for the higher susceptibility during the third trimester of pregnancy, and for higher susceptibility of infants and children.
>
> Finally, the risk manager may want to consider a lower cancer risk threshold for risk management for very short-term projects. Typical District guidelines for evaluating risk management of Hot Spots facilities range around a cancer risk of 1 per 100,000 exposed persons as a trigger for risk management. Permitting thresholds also vary for each District. There is valid scientific concern that the rate of exposure may influence the risk – in other words, a higher exposure to a carcinogen over a short period of time may be a greater risk than the same total exposure spread over a much longer time period. In addition, it is inappropriate from a public health perspective to allow a lifetime acceptable risk to accrue in a short period of time (e.g., a very high exposure to a carcinogen over a short period of time resulting in a 1×10^{-5} cancer risk). Thus, consideration should be given for very short term projects to using a lower cancer risk trigger for permitting decisions.

Health risk assessments are routinely performed for construction projects when there are nearby sensitive receptors, as here. Numerous sensitive receptors are close to Project components. Thus, construction could result in significant public health and other impacts. Nearby sensitive receptors include residences near the substation site and along the reconductoring and new 70 kV powerline segments.

The PEA, for example, contains a list of 575 parcels within 300 feet of the Estrella Substation and the transmission line route.[72] Elsewhere, the PEA contains a list of sensitive receptors in the vicinity of the Project, summarized here as Table 1. See also Figure 2. Of greatest concern is the entry of "numerous residences" closer than 50 feet. The occupants of these residences are at great risk of adverse health impacts from construction emissions.

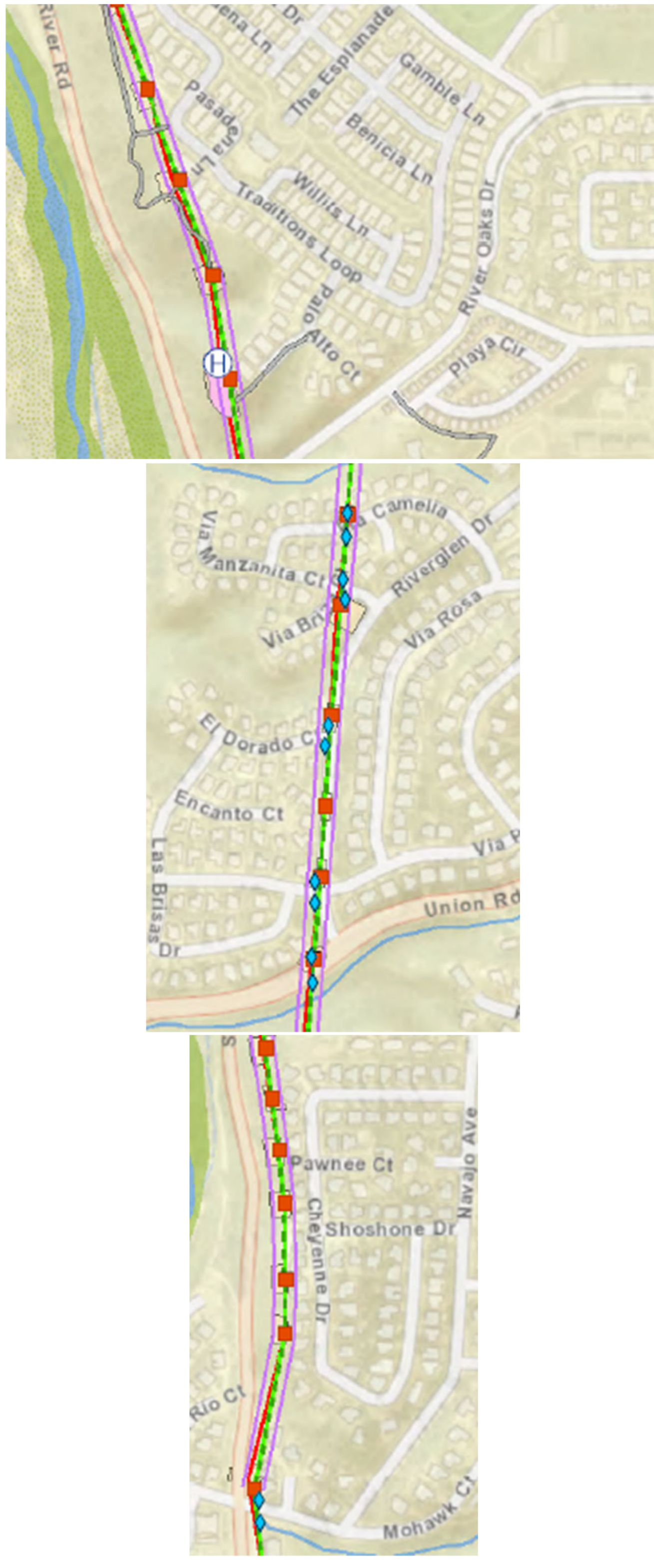
[72] PEA, Appendix A, Affected Properties, p. A-1 to A-19, May 2017.

Table 1: Sensitive Receptors in Vicinity of Project[73]

Type	Distance from Project Area	Direction from Project Area
Residence	Within 265 feet	Southwest of Estrella Substation
Residence	Within 1,320 feet	Southeast of Estrella Substation
2 Residences	Within 2,300 feet	Northwest of Estrella Substation
Residence	1,100 feet	East of Estrella Substation
2 Residences	20 feet	North of the new 70 kV power line segment
2 Residences	100 feet	North of the new 70 kV power line segment
10+ Residences	Within 200 feet	Along the new 70 kV power line segment
10+ Residences	Within 500 feet	Along the new 70 kV power line segment
15+ Residences	Within 1,000 feet	Along the new 70 kV power line segment
10+ Residences	Within 1,500 feet	Along the new 70 kV power line segment
1 Residence	1,600 feet	Along the new 70 kV power line segment
Jehovah's Witnesses Golden Hill	165 feet	South of new 70 kV power line segment in Paso Robles
Paso Robles Swim and Tennis Club	50 feet	North of the new 70 kV power line segment
Barney Schwartz Park	80 feet	Southwest of the new 70 kV power line segment
River Oaks Golf Course	1,320 feet	East of the reconductoring segment
Tots Landing Daycare	265 feet	East of the reconductoring segment
Grace Baptist Church	790 feet	East of the reconductoring segment
Numerous Residences	<50 feet	Along the reconductoring segment (too numerous to pinpoint)

73 PEA, Table 3.12-6.

Figure 2: Proximity of Homes to Reconductoring[74]



74 DEIR, Figure 2-7, pdf 113.

Residences, public open space, and recreation areas (e.g., Barney Schwartz Park, Cava Robles RV Resort) are present along the proposed 70 kV power line route. FTM Site 7 is located close to an existing church.[75] FTM Site 4 is near the Paso Robles High School. FTM Site 2 is adjacent to the Woodland Shopping Center II. FTM Site 3 is surrounded by residences.[76]

Diesel particulate matter (DPM) will be emitted from on-road and off-road equipment during Project construction and decommissioning. DPM is a potent human carcinogen.[77] It is also chronically[78] and acutely[79] toxic. California's Office of Environmental Health Hazard Assessment (OEHHA) concluded that "[e]xposure to diesel exhaust can have immediate health effects," which include "inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks."[80] This is particularly critical given the current Covid epidemic.

Thus, a health risk assessment was prepared for Project construction for two cases: (1) DPM emissions as assumed in the DEIR based on the use of all Tier 4 Final construction equipment as assumed in the CalEEMod analysis and (2) DPM emissions assuming the use of Tier 2 construction equipment.

2.8.1. Construction Cancer Risks Are Significant

The following sections present the results of the health risk assessment prepared by Ray Kapahi[81] at Environmental Permitting Specialists, which is included in Exhibit 20 to these comments. This HRA indicates that cancer health risks of Project construction are highly significant, requiring additional construction mitigation. These significant impacts can be mitigated by requiring the use of all Tier 4 final construction

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[75] DEIR, p. 4.3-10, pdf 428. See also Figures 3-15, 3-16, 3-24.

[76] DEIR, Figure 3-16.

[77] OEHHA and the American Lung Association of California, Health Effects of Diesel Exhaust; https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf. See also: OEHHA, Diesel Exhaust Particulate; https://oehha.ca.gov/chemicals/diesel-exhaust-particulate#:~:text=Cancer%20Potency%20Information&text=Listed%20as%20Particulate%20Emissions%20from,(ug%2Fm3)%2D1.

[78] OEHHA Acute, 8-hour and Chronic Reference Exposure Level (REL) Summary, June 28, 2016; https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary.

[79] Government of Canada, Human Health Risk Assessment for Diesel Exhaust, March 4, 2016; http://publications.gc.ca/collections/collection_2016/sc-hc/H129-60-2016-eng.pdf.

[80] OEHHA and the American Lung Association of California, Health Effects of Diesel Exhaust; https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf.

[81] Exhibit 21.

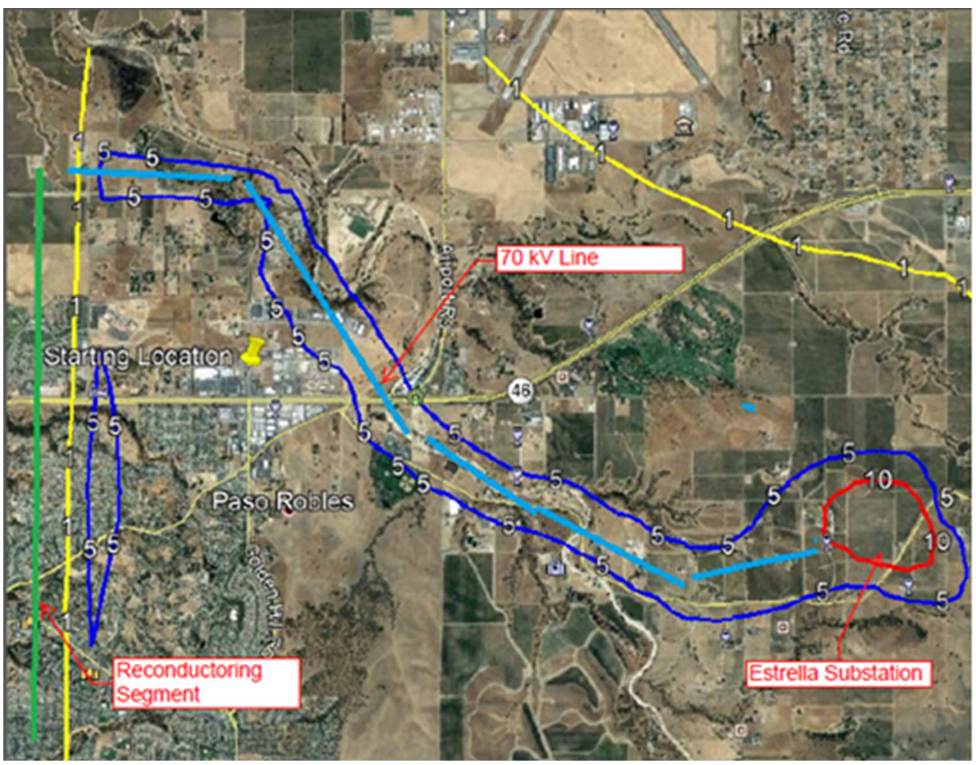
equipment, as assumed in the DEIR's construction emission calculations, but not required in the DEIR's mitigation measures.

2.8.1.1. Scenario 1 Cancer Risks

The cancer risk results for Scenario 1, which used the DEIR's DPM construction emissions based on 100% Tier 4 Final engines, are summarized in Figure 3.[82] The cancer significance threshold is 10 cancer cases in one million exposed, or 10 in one million. The dark blue isopleth line corresponds to a cancer risk of 5 in one million, which is less than the cancer significance threshold.

Cancer risks only equal or exceed the significance threshold (red isopleth in lower right-hand corner of Figure 3 in the vicinity of the Estrella Substation). The PEA reports several residences within this isopleth. Table 1. Thus, if all Tier 4 Final engines are used for construction, cancer risks would only be significant in the vicinity of the Estrella Substation, requiring additional mitigation during construction of the Substation, such as mandating the use of biodiesel fuel in all construction equipment. However, the DEIR does not require all Tier 4 final engines or the use of biodiesel fuel.

Figure 3: Cancer Risk Isopleth Map, Scenario 1 (Tier 4 Final Engines)[83]



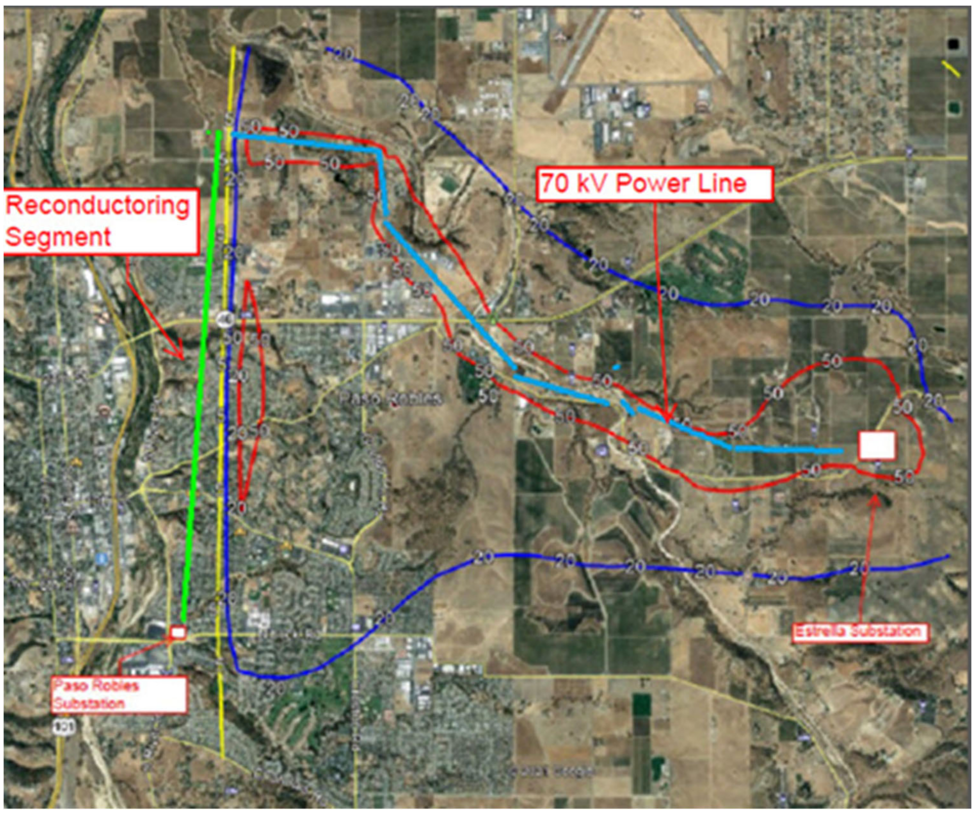
[82] Exhibit --, Figure --.

[83] Exhibit 20, Figure 4-1.

2.8.1.2. Scenario 2 Cancer Risks

The cancer risk results for Scenario 2, which is based on the use of all Tier 2 construction equipment, as allowed by the DEIR (which only encourages an increase in Tier 3 engines, but does not require them), is summarized in Figure 4. The red isopleth line corresponds to a cancer risk of 50 in one million. The dark blue isopleth line corresponds to a cancer risk of 10 in one million. All sensitive receptors within these isopleths will experience significant cancer risks during construction.

Figure 4: Cancer Risk Isopleth Map, Scenario 2 (Tier 2 Engines)[84]



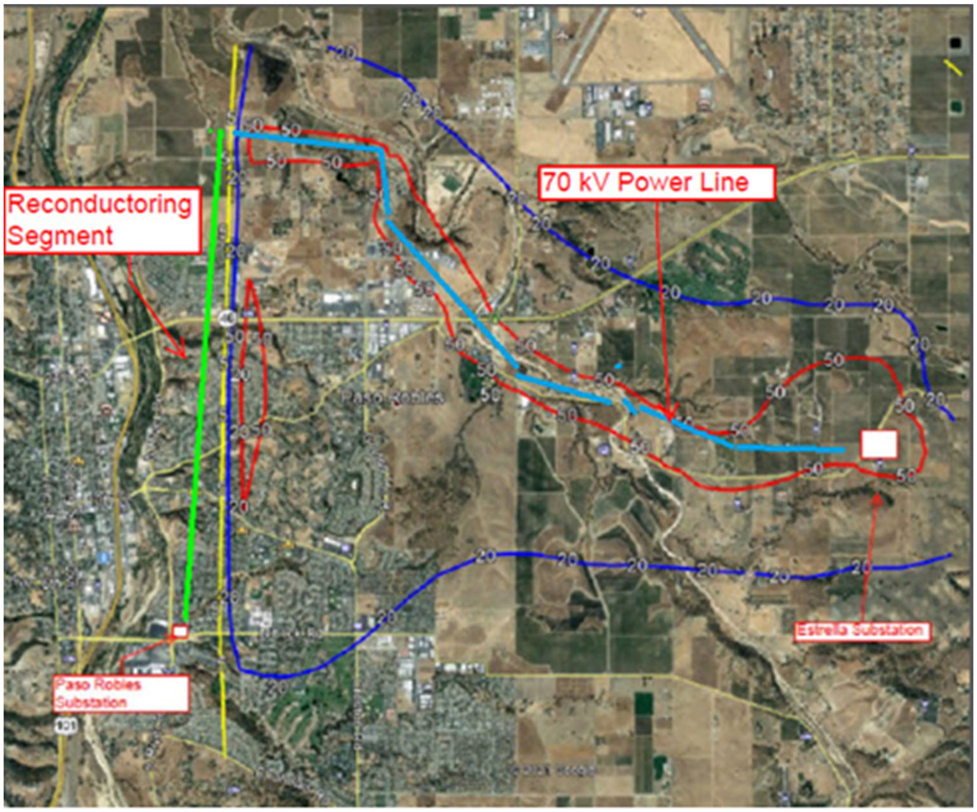
The PEA identifies numerous sensitive receptors in the areas encompassed by these isopleths. Notably, it identifies residences "too numerous to pinpoint" within 50 feet of the reconductoring segment as well as a church, daycare center, golf course, park, and swim and tennis club, among others. Table 1.

Figure 5 shows a close-up view of the area east of the reconductoring segment. This figure shows hundreds of homes within the 20 to 50 cancer cases per million isopleths. These are highly significant cancer risks, two to five times higher than the significance threshold of 10 in one million, requiring mitigation. These risks can be

[84] Exhibit 20, Figure 4-2.

mitigated by requiring the use of all Tier 4 construction equipment and diesel particulate traps (soot filters)[85].

Figure 5: Cancer Risk Isopleths for Scenario 2, Showing Homes East of the Reconductoring Segment[86]



2.8.2. Construction Acute Health Impacts Are Significant

Acute health impacts occur over a 1-hour exposure time. OEHHA has not established an acute reference exposure level (REL) for DPM but other agencies have. The absence of an OEHHA acute risk exposure level does not excuse the Applicant from evaluating acute health risks. In the absence of an OEHHA significance threshold, it is standard practice to conduct a literature search to determine if other authorities have established a threshold. Since OEHHA last evaluated health impacts of DPM in

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[85] See, e.g., CARB, A Guide to California's Clean Air Regulations for Heavy-Duty Diesel Vehicles, February 2020, pdf 12; https://ww3.arb.ca.gov/msprog/truckstop/pdfs/truck_bus_booklet.pdf and CARB, Heavy-Duty Diesel Emission Control Strategy Installation and Maintenance, June 28, 2019; https://ww2.arb.ca.gov/resources/fact-sheets/heavy-duty-diesel-emission-control-strategy-installation-and-maintenance.

[86] Exhibit 20, Figure 4-3.

1998,[87] substantial additional research has been conducted on acute health impacts of DPM.[88] Based on this more current research, Canada recently established an acute REL for DPM of 10 μg/m^3 to protect against adverse effects on the respiratory system.[89] There is no regulation or guidance requiring that only OEHHA RELs be used in California health risk assessments.

Figures 6 and 7 show isopleths for acute health impacts of DPM emissions during construction for Scenario 1, which assumed all Tier 4 final construction equipment and Scenario 2, which assumed all Tier 2 construction equipment. An acute hazard index greater than 1 is significant. Thus, the isopleths that show acute hazard indices greater than 1, such as those around the Estrella Substation, the 70 kV line, and the reconductoring segment are highly significant in both scenarios. Sensitive receptors in these locations will experience significant respiratory impacts.

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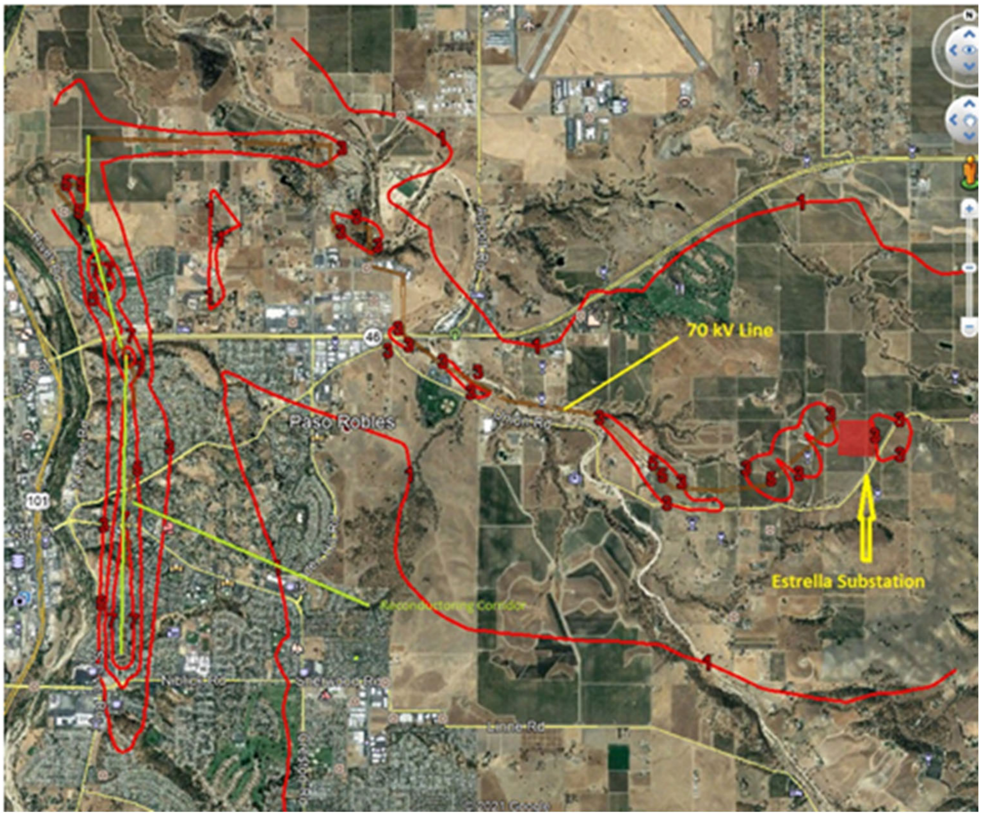
[87] Findings of the Scientific Review Panel on the Report on Diesel Exhaust, 1998; https://www.arb.ca.gov/toxics/dieseltac/de-fnds.pdf.

[88] See, e.g., A. A. Mehus and others, Comparison of Acute Health Effects from Exposures to Diesel and Biodiesel Fuel Emissions and references cited therein, *Journal of Occupational and Environmental Medicine*, v. 57, no. 7, pp. 705-712, July 2015; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4479787/.

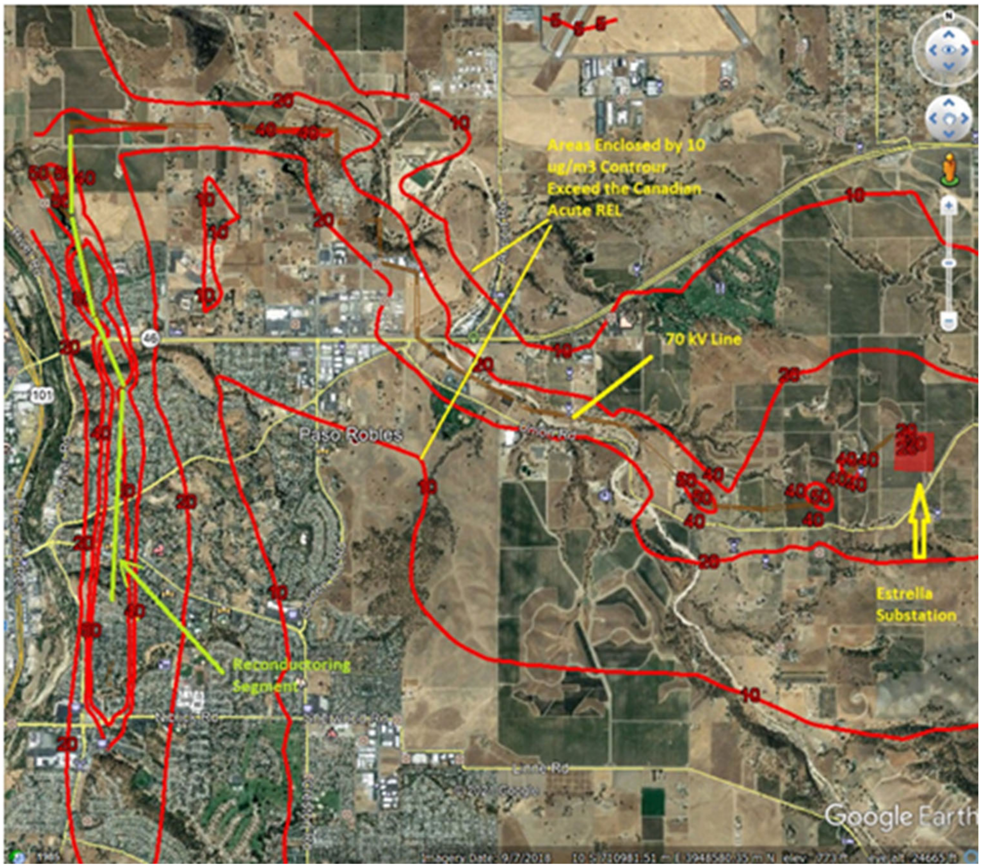
[89] Government of Canada, Human Health Risk Assessment for Diesel Exhaust, March 4, 2016; http://publications.gc.ca/collections/collection_2016/sc-hc/H129-60-2016-eng.pdf.

Figure 6: Acute Health Isopleths for Scenario 1[90]



90 Exhibit 20, Figure 4-4.

Figure 7: Acute Health Isopleths for Scenario 2[91]



2.9. Construction Ambient NOx Impacts Are Significant

California has established a short-term ambient air quality standard for NOx of 339 μg/m^3. Construction NOx emissions were modeled for two scenarios: (1) NOx emissions estimated in the DEIR, based on 100% Tier 4 final construction equipment and (2) NOx emissions five times higher than estimated in the DEIR, assuming 100% Tier 3 equipment.

The CalEEMod analysis assumed the use of 100% Tier 4 Final engines. As noted in Comment 2.3, the DEIR's mitigation in APM AIR-2 only requires "expanding use of Tier 3 off-road and 2010 on-road compliant engines."[92] Based on my calculations, if all Tier 3 engines were used, NOx emissions would be 5 to 8[93] times higher than estimated

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[91] Exhibit 20, Figure 4-5.

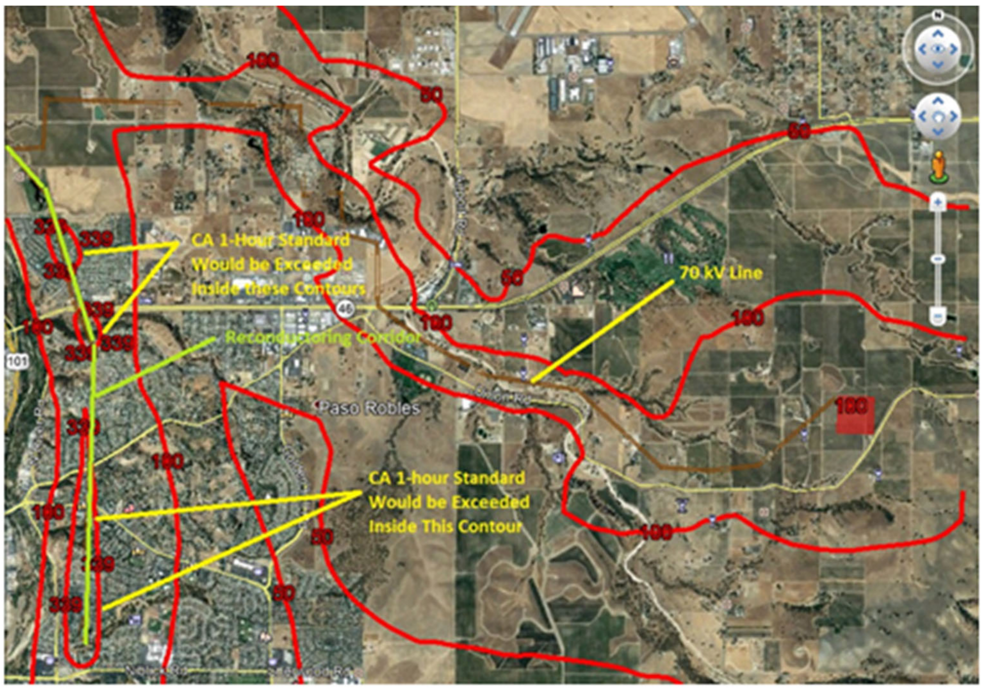
[92] DEIR, Appendix F, p. F-16, APM AIR-2.

[93] Increase in NOx emissions if all Tier 3 engines were used for equipment of 56 to 130 kW: 2.5/0.3 =8.3. Increase in NOx if all Tier 3 engines were used for equipment of 130-560 kW = 1.5/0.3 = 5.0.

in the DEIR, depending upon the kW rating of the engines. We conservatively selected the lower end of this range to model ambient construction NOx concentrations.

The results of modeling the DEIR's construction NOx emissions are shown in Figure 8. This figure indicates that the California 1-hour NOx standard would be exceeded along the reconductoring line. This is both a significant air quality impact (violation of a state ambient air quality standard) and a significant health impact, as the state NOx standard was set to protect public health.

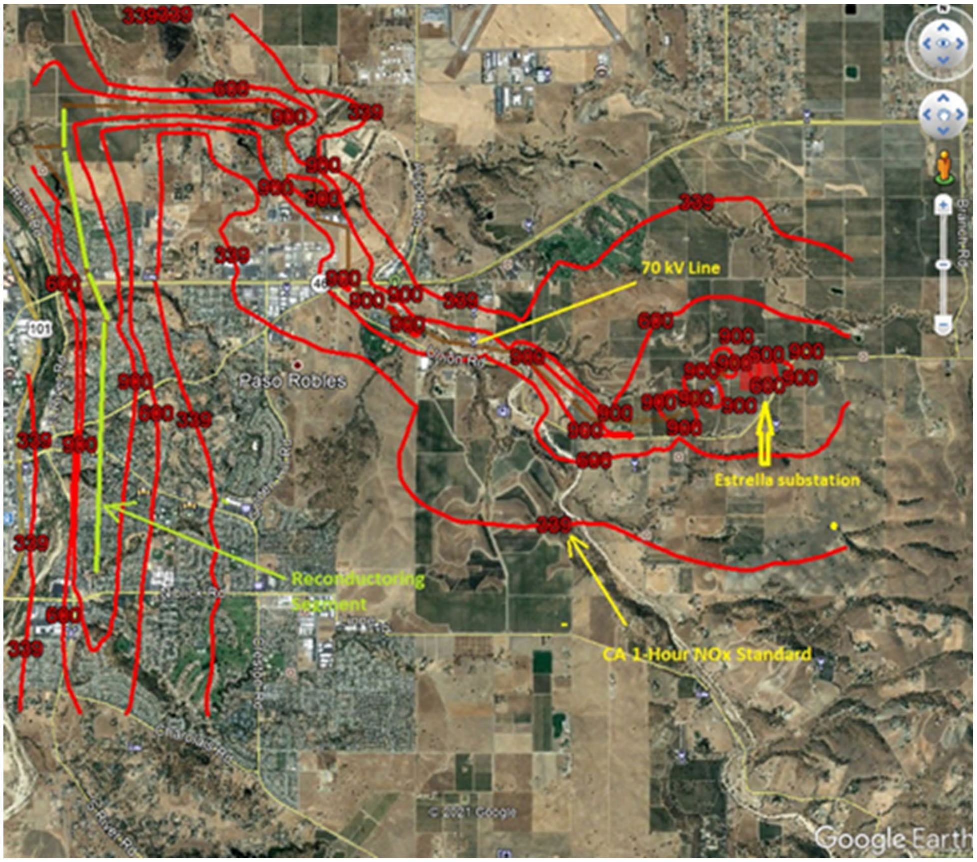
Figure 8: Ambient Construction NOx Concentrations (ug/m³), Scenario 1[94]



The result of modeling construction NOx emissions assuming the use of all Tier 3 construction equipment are shown in Figure 9. This figure shows that the California 1-hour NOx ambient air quality standard would be reach 900 ug/m³, nearly a factor 3 higher than the California 1-hour ambient air quality standard, in the vicinity of all Project components in locations with numerous sensitive receptors. This is both a significant air quality impact (violation of a state ambient air quality standard) and a significant health impact, as the state NOx standard was set to protect public health.

[94] Exhibit 20, Figure 4-6.

Figure 9: Ambient Construction NOx Concentrations, Scenario 2[95]



2.10. Significant Construction Health and Ambient NOx Impacts Must Be Mitigated

In sum, our analyses demonstrate significant health and air quality impacts that were not disclosed in the DEIR, as follows:[96]

[95] Exhibit 20, Figure 4-7.

[96] Exhibit 20, Table 5-1.

Summary of Maximum Project Level Health Risks				
Risk Metric	Scenario 1	Scenario 2	Significance Threshold	Significant?
Maximum Residential Cancer Risk	0.5 to 40 cancers per million	5 to 75 cancers/million	10 (per million)	Scenario 1 – Yes Scenario 2 - Yes
Maximum Acute Hazard Index from 1-Hour Exposure to DPM	0.1 to less than 0.5	1 to < 4	1.0	Scenario 1 – No Scenario 2 - Yes
Maximum Acute Impact from Exposure to 1-Hour NOx	100 to 500 ug/m^3	00 to 760 ug/m^3	339 ug/m^3	Scenario 1 – Yes Scenario 2 - Yes

The significant cancer and acute health impacts and wide-spread violations of the California 1-hour NOx ambient air quality standards can and must be mitigated by requiring the following measures: [97,98,99,100]

- Require the use of biodiesel in all construction equipment;
- Require the use of Tier 4 final engines in all construction equipment;
- Install engine particulate filters;[101]
- Install diesel oxidation catalysts;
- Prohibit and/or restrict unnecessary idling or lugging of engines;
- Limit idling to no more than 2 minutes, enforced by an on-site construction monitor;
- Restrict the amount of diesel-powered equipment and total engine horsepower operating in a given area;
- Modify and/or extend the construction schedule to minimize the amount of diesel-powered equipment operating in a given area at the same time;
- Relocate significantly impacted sensitive receptors;

[97] See, e.g., Michael C. Block, Application of Diesel Emissions Reduction Controls for Nonroad Construction Equipment, June 5, 2007 (e.g., CAT/Johnson Matthey (JMI) passive diesel particulate filter, p. 15-17); https://www.cdc.gov/niosh/mining%5C/UserFiles/workshops/dieselelko2007/2c-Block.pdf.

[98] See, e.g., U.S. Department of Labor, Hazard Alert: Diesel Exhaust/Diesel Particulate Matter; https://www.osha.gov/dts/hazardalerts/diesel_exhaust_hazard_alert.html; U.S. EPA, Reducing Emissions from Construction Equipment, January 2006; https://nepis.epa.gov/Exe/tiff2png.exe/P10039SN.PNG?-r+75+-g+7+D%3A%5CZYFILES%5CINDEX%20DATA%5C06THRU10%5CTIFF%5C00000342%5CP10039SN.TIF.

[99] MECA, What Is Retrofit?; http://www.meca.org/diesel-retrofit/what-is-retrofit.

[100] H. Fan, 2017; Exhibit 19.

[101] CARB 2020 in footnote 83.

- Require routine maintenance of construction equipment;
- Hire only highly skilled equipment operators; and
- Retain an on-site construction manager to assure all mitigation is achieved in practice.

3. VALLEY FEVER IMPACTS ARE SIGNIFICANT AND UNMITIGATED

The DEIR discloses that the Project is located in an area designated as "suspected endemic" for Valley Fever and that incidence rates for San Luis Obispo County per year per 100,000 population are among the highest rates in the state during 2011 to 2018. The DEIR also discloses that construction fugitive dust-causing activities have the potential to disperse Valley Fever spores, concluding "the potential for additional Valley Fever infections is high." However, the DEIR erroneously concludes, with no support, that "[m]itigation measures that reduce fugitive dust will also reduce the chances of dispersing CI spores."[102] This unsupported assertion is misleading and wrong.

Valley Fever, "coccidioidomycosis" or "cocci," is an infectious disease caused by inhaling the spores of *Coccidioides ssp*.[103,104] The Project area is not just "suspected endemic" but is endemic for Valley Fever,[105] confirmed with the highest infection rate in the County and one of the highest in California. The San Luis Obispo County Public Health Department reports that "people can get Valley Fever anywhere in San Luis Obispo County. More cases occur in the north and east parts of the county, where conditions are often more dusty and windy."[106] Figure 10A. The Project is located in these highly endemic areas. In fact, the most highly endemic area is zip code 93446, Atascadero (Figure 10B), where most of the sensitive receptors adjacent to construction work are located.[107] Thus, not only construction workers, but also residents near construction work in zip code 93446 are at risk of Valley Fever.

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102 DEIR, p. 4.3-9, pdf 427.

103 Two species of *Coccidioides* are known to cause Valley Fever: *C. immitis*, which is typically found in California, and *C. posadasii*, which is typically found outside California. See Centers for Disease Control, Coccidioidomycosis (Valley Fever), Information for Health Professionals; https://www.cdc.gov/fungal/diseases/coccidioidomycosis/health-professionals.html.

104 D. R. Hospenthal, Coccidioidomycosis and Valley Fever, Medscape, updated August 27, 2019; https://emedicine.medscape.com/article/215978-overview.

105 California Department of Public Health, Valley Fever Fact Sheet; https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf.

106 SLO Public Health Department, Valley Fever; https://www.slocleanair.org/air-quality/valleyfever.php.

107 Sensitive receptors listed in PEA, Appendix A, all with addresses in zip code 93446.

Figure 10A: San Luis Obispo County Valley Fever Rates per 100,000, 2005–2015[108]

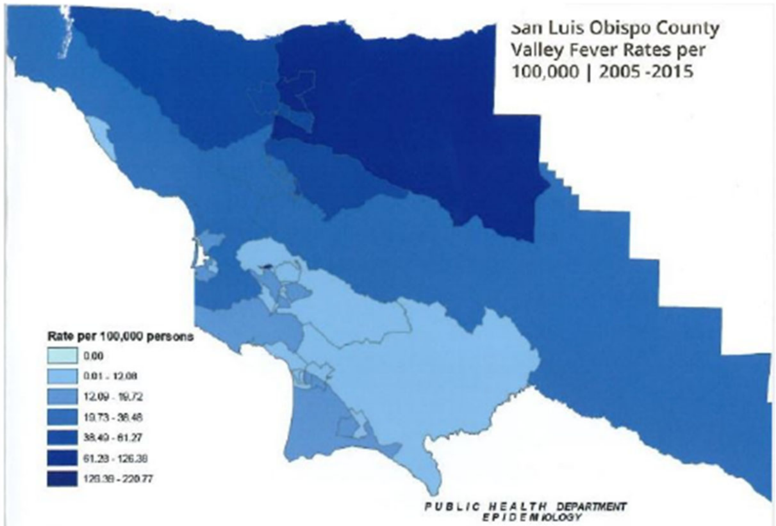
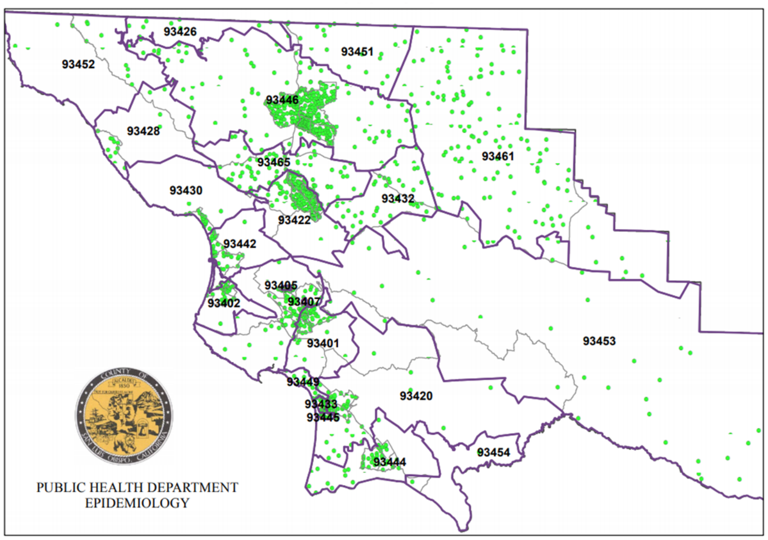


Figure 10B: San Luis Obispo County Valley Fever Cases 2005-2015[109]



San Luis Obispo County had more occupational Valley Fever outbreaks in 2011-2014 than any other county in California. Table 2.[110]

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108 Ibid.

109 Valley Fever Incidence Map; https://www.slocounty.ca.gov/Departments/Health-Agency/Public-Health/Forms-Documents/Epidemiology-and-Disease-Surveillance/Valley-Fever-Incidence_MAP_2005-2015.pdf.

110 Marie A. de Perio et al., Occupational Coccidioidomycosis Surveillance and Recent Outbreaks in California, *Medical Mycology*, v. 57, issue Supplement 1, February 2019, pp. S41-S45; https://academic.oup.com/mmy/article/57/Supplement_1/S41/5300137.

Table 2: Summary of Work-Associated Outbreaks of Coccidioidomycosis—California, 2007–2014

Outbreak	Persons with clinically compatible illness	Laboratory confirmed cases	Hospitalizations	Disseminated disease
San Luis Obispo County, 2007[3,7]	10	8	0	1
Kern County, 2008	9	8	2	2
Ventura County, 2012[10]	10	5	2	1
San Luis Obispo County, 2011–2014[11,12]	133	44	9	2

Clinical manifestations of Valley Fever range from influenza-like illness to progressive pulmonary disease and, in 1% of infections, potentially fatal disseminated disease.[111] When soil containing this fungus is disturbed by activities such as digging, vehicle use, construction, dust storms, or during earthquakes, the fungal spores become airborne.[112,113] Valley Fever outbreaks during construction in California have been widely reported.[114,115,116,117,118,119,120] Spores raised during construction and/or wind

[111] Cummings et al., Point-Source Outbreak of Coccidioidomycosis in Construction Workers, *Epidemiology and Infection*, v. 138, no. 4, 2010, pp. 507-511, 2010 (Exhibit 6).

[112] California Department of Public Health, Valley Fever Fact Sheet, January 2016; https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf. *See also* G. Sondermeyer Cooksey et al., Update on Coccidioidomycosis in California, pp. 20-21, *Medical Board of California Newsletter*, v. 141, Winter 2017; https://www.mbc.ca.gov/Download/Newsletters/newsletter-2017-01.pdf.

[113] Cummings et al. 2010 (Exhibit 6).

[114] Jason A. Wilken et al., Coccidioidomycosis among Workers Constructing Solar Power Farms, California, USA, 2011–2014, *Emerging Infectious Diseases*, v. 21, no. 11, November 2015; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4622237/.

[115] The Associated Press, Valley Fever Hits 28 at Calif. Solar Plant Sites, *The San Diego Union-Tribune*, May 1, 2013; http://www.sandiegouniontribune.com/sdut-valley-fever-hits-28-at-calif-solar-plant-sites-2013may01-story.html.

[116] G. L. Sondermeyer Cooksey et al., Dust Exposure and Coccidioidomycosis Prevention Among Solar Power Farm Construction Workers in California, *American Journal of Public Health*, August 2017 (Exhibit 7).

[117] Rupal Das et al., Occupational Coccidioidomycosis in California, Outbreak Investigation, Respirator Recommendations, and Surveillance Findings, *Journal of Occupational and Environmental Medicine*, May 2012, vol. 54, no. 5, pp. 564-571 (Exhibit 8).

[118] D. Pappagianis and the Coccidioidomycosis Serology Laboratory, Coccidioidomycosis in California State Correctional Institutions, *Annals of the New York Academy of Sciences*, v. 1111, pp. 103-111, 2007 (Exhibit 9).

[119] Cummings et al. 2010 (Exhibit 6).

[120] CDPH, Preventing Work-Related Coccidioidomycosis (Valley Fever), June 2013; https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf.

storms,[121] which are common in the Project area (Figure 11), can result in significant worker and public health impacts. The spores are usually found 2 to 12 inches below the surface. The infectious dose is very low, typically less than 10 spores.[122]

Figure 11: Typical Dust Storm in Project Area[123]

"Workers disturbing soil in areas where Valley Fever is common are at highest risk," with construction workers topping the list.[124] Figure 12 shows an example from the California Department of Public Health (CDPH) website.[125]

Figure 12: Construction Crew Valley Fever

In October 2007, a construction crew excavated a trench for a new water pipe. Within three weeks, 10 of 12 crew members developed coccidioidomycosis (Valley Fever), an illness with pneumonia and flu-like symptoms. Seven of the 10 had abnormal chest x-rays, four had rashes, and one had an infection that had spread beyond his lungs and affected his skin. Over the next few months, the 10 ill crew members missed at least 1660 hours of work and two workers were on disability for at least five months.

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[121] P. L. Williams, D. L. Sable, P. Mendez, and L. T. Smyth, Symptomatic Coccidioidomycosis Following a Severe Natural Dust Storm: An Outbreak at the Naval Air Station, Lemoore, Calif, *Chest*, pp. 566-70, 1979; https://pubmed.ncbi.nlm.nih.gov/498830/.

[122] Jennifer McNary and Mary Deems, Preventing Valley Fever in Construction Workers, March 4, 2020, pdf 10; https://www.safetybayarea.com/media/2020-3A.pdf.

[123] McNary and Deems, 2020, pdf 50.

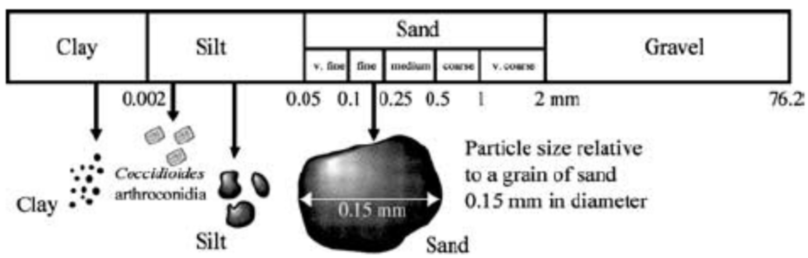
[124] Wilken et al. 2015, pdf 19.

[125] CDPH; http://elcosh.org/document/3684/d001224/preventing+work-related+coccidioidomycosis+(valley+fever).html.

However, the potentially exposed population is much larger than construction workers because the non-selective raising of dust during Project construction will carry the very small spores, 0.002–0.005 millimeters ("mm") (Figure 13), into off-site areas, potentially exposing large non-construction worker populations.[126,127] Many of the Project components, for example, are adjacent to sensitive receptors, including residential areas, schools, and parks. Fugitive dust containing Valley Fever spores from Project construction could result in significant public health impacts due to the proximity of numerous sensitive receptors.[128] Figure 10B. The DEIR failed to identify this significant risk.

Valley Fever spores are 1,250 to 5,000 times smaller than fugitive dust raised during construction.[129] Figure 13. Thus, standard construction dust mitigation measures specified in DEIR Appendix F are not effective at controlling them.

Figure 13: Size of Cocci Spores Compared to Soil Particles (in mm)[130]



Valley Fever spores can be carried on the winds into surrounding areas, exposing farm and vineyard workers, students at nearby schools, and residents adjacent to many of the construction sites. Valley Fever spores, for example, have been documented to travel as far as 500 miles,[131] and thus dust raised during construction could potentially expose a large number of people hundreds of miles away.

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126 Schmelzer and Tabershaw, 1968, p. 110; Pappagianis and Einstein, 1978 (Exhibit 17).

127 Pappagianis and Einstein, 1978, p. 527 ("The northern areas were not directly affected by the ground level windstorm that had struck Kern County but the dust was lifted to several thousand feet elevation and, borne on high currents, the soil and arthrospores along with some moisture were gently deposited on sidewalks and automobiles as "a mud storm" that vexed the residents of much of California." The storm originating in Kern County, for example, had major impacts in the San Francisco Bay Area and Sacramento) Exhibit 17.

128 PEA, Appendix A.

129 Relative to PM2.5: 2.5 mm/0.002 mm = **1,250**; Relative to PM10 = 10 mm/0.002 mm = **5,000.**

130 Frederick S. Fisher, Mark W. Bultman, and Demosthenes Pappagianis, Operational Guidelines (version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever), U.S. Geological Survey Open-File Report 00-348, 2000, Figure 3; https://pubs.usgs.gov/of/2000/0348/.

131 David Filip and Sharon Filip, Valley Fever Epidemic, Golden Phoenix Books, 2008, p. 24 (Exhibit 15).

3.1. A Conventional Dust Control Plan Is Inadequate to Address Potential Health Risks Posed by Exposure to Valley Fever

Conventional dust control measures, such as those included in DEIR Appendix F, are not effective at controlling Valley Fever[132] because they largely focus on visible dust or larger dust particles—the PM10 fraction—not the very fine particles where the Valley Fever spores are found. While dust exposure is one of the primary risk factors for contracting Valley Fever and dust-control measures are an important defense against infection, it is important to note that PM10 and visible dust, the targets of conventional dust control mitigation, are only indicators that *Coccidioides ssp.* spores may be airborne in a given area. Freshly generated dust clouds usually contain a larger proportion of the more visible coarse particles, PM10 (</=0.01 mm), compared to cocci spores (0.002 mm). However, these larger particles settle more rapidly and the remaining fine respirable particles may be difficult to see and are not controlled by conventional dust control measures.

Spores of *Coccidioides ssp.* have slow settling rates in air due to their small size (0.002 mm), low terminal velocity, and possibly also due to their buoyancy, barrel shape, and commonly attached empty hyphae cell fragments.[133] Thus spores, whose size is well below the limits of human vision, may be present in air that appears relatively clear and dust free. Such ambient, airborne spores with their low settling rates can remain aloft for long periods and be carried hundreds of miles from their point of origin. Thus, implementation of conventional dust control measures will not provide sufficient protection for both on-site workers and the general public.

Further, infections by *Coccidioides ssp.* frequently have a seasonal pattern with infection rates that generally spike in the first few weeks of hot dry weather that follow extended milder rainy periods. In California, infection rates are generally higher during the hot summer months, especially if weather patterns bring the usual winter rains between November and April.[134] The majority of cases of Valley Fever accordingly occur during the months of June through December, which are typically periods of peak construction activity.

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132 *See, e.g.*, Cummings and others, 2010, p. 509 (Exhibit 6); Schneider et al., 1997, p. 908 ("Primary prevention strategies (*e.g.*, dust-control measures) for coccidioidomycosis in endemic areas have limited effectiveness.") Exhibit 16.

133 Fisher et al. 2007.

134 Ibid.

3.2. The DEIR Fails to Require Adequate Mitigation for Valley Fever

The risk of Valley Fever at construction sites in California has been known for decades, and is particularly significant in San Luis Obispo County where the Project will be located. Adjacent Ventura County published Valley Fever construction mitigation measures in 2003, to be implemented in addition to conventional construction mitigation, as follows:[135]

1. Restrict employment to persons with positive coccidioidin skin tests (since those with positive tests can be considered immune to reinfection).
2. Hire crews from local populations where possible, since it is more likely that they have been previously exposed to the fungus and are therefore immune.
3. Require crews to use respirators during project clearing, grading, and excavation operations in accordance with California Division of Occupational Safety and Health regulations.
4. Require that the cabs of grading and construction equipment be air-conditioned.
5. Require crews to work upwind from excavation sites.
6. Pave construction roads.
7. Where acceptable to the fire department, control weed growth by mowing instead of discing, thereby leaving the ground undisturbed and with a mulch covering.
8. During rough grading and construction, the access way into the project site from adjoining paved roadways should be paved or treated with environmentally-safe dust control agents.

At two photovoltaic solar energy projects in San Luis Obispo County, Topaz Solar Farm[136] and California Valley Solar Ranch,[137] 44 construction workers contracted Valley Fever, including 13 electricians/linemen/wiremen; 11 equipment operators; 6 laborers; 5 carpenters/ironworkers/millwrights/mechanics; 4 managers/superintendents, and 3 others. Of these, 39% visited an emergency room, 20% were hospitalized, and 77% missed work.[138,139] Exposures included "performing soil-disruptive work, such as digging trenches, and working in a trench. In addition, workers reported working in a dust cloud or dust storm, and operating heavy

[135] Ventura County Air Quality Assessment Guidelines, October 2003, pp. 7-7 to 7-8; http://www.vcapcd.org/pubs/Planning/VCAQGuidelines.pdf.

[136] U.S. Department of Energy, Final Environmental Impact Statement, Volume 1, Loan Guarantee to Royal Bank of Scotland for Construction and Startup of the Topaz Solar Farm, San Luis Obispo County, California, August 2011; https://www.energy.gov/sites/prod/files/Topaz-FEIS-Volume-I-PDF-Version.pdf.

[137] U.S. Department of Energy, Final Environmental Assessment, Volume 1, Loan Guarantee to High Plains II, LLC for the California Valley Solar Ranch Project in San Luis Obispo County and Kern County, California, August 2011; California Valley Solar Ranch; https://www.energy.gov/sites/prod/files/EA-1840-FEA-vol1-2011.pdf.

[138] McNary and Deems, 2020, pdf 22.

[139] Julie Cart, Officials Study Valley Fever Outbreak at Solar Power Projects, Los Angeles Times, April 30, 2013; https://www.latimes.com/local/la-xpm-2013-apr-30-la-me-solar-fever-20130501-story.html.

equipment without enclosed cabs, closed windows, and air-conditioned with high-efficiency particle (HEPA) filtration."[140]

Both of the EISs for these projects recognized Valley Fever impacts and included mitigation[141] that was much more comprehensive than the short list of conventional PM10 dust mitigation in the DEIR. The EISs for these projects contained no Valley Fever construction mitigation, recommending only conventional fugitive dust control measures. The Topaz Farm EIS, for example, recommended only to "reduce fugitive dust,"[142] concluding (as for the Project) with no analysis at all, that implementation of conventional dust control measures would reduce Valley Fever impacts to less than significant.[143] The California Valley Solar Ranch EIS only required "dust control measures" and provided no information on Valley Fever to workers and nearby residents.[144]

The Topaz Solar Farm EIS recommended the following dust control measures that are much more extensive than the short list in the Project EIR:

[140] de Perio et al., 2019, p. S-43.

[141] Topaz EIS, pp. 2-65/66, MM AQ-1.3 and California Valley Solar Ranch FEIR,, p. 3-126, 3-128 ("Dust control measures and the integration of San Luis Obispo Health Agency Interim Valley Fever Recommendations for Workers into construction operations would reduce exposure to Valley Fever. Therefore, effects on public or occupational health related to disease vectors would be negligible and not significant.").

[142]Topaz EIS, Volume I, March 2011, Table ES-4, AQ-1.3.

[143] Ibid., p. ES-16.

[144] Table 2-1, pdf 34 and 217.

MM AQ-1.3 **Reduce Fugitive Dust. Prior to issuance of construction permits and during construction/ground disturbing activities and decommissioning**, the Proposed Project shall implement the following measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

a. The amount of disturbed area shall be reduced where possible;

b. Water trucks or sprinkler systems shall be used in quantities sufficient to prevent airborne dust from leaving the site. Watering frequency shall be increased whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible;

c. All dirt stockpile areas shall be sprayed daily for dust suppression as needed;

d. Permanent dust control measures identified in the approved project revegetation and landscape plans shall be implemented as soon as possible following completion of any soil disturbing activities;

e. Exposed ground areas that are planned to be reworked at dates more than one month after initial grading shall be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;

f. All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders (identified in Section 4.3 of the APCD's CEQA Air Quality Handbook), jute netting, or other methods approved in advance by the APCD;

g. Paving for those roadways, driveways, sidewalks, etc., planned to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used;

~~a.~~h. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved (i.e., without asphalt) surface at the construction site;

i. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;

j. Wheel washers shall be installed where vehicles enter or exit unpaved roads from or onto streets, or trucks and equipment leaving the site shall be washed;

k. Streets shall be swept at the end of each day if visible soil material is carried onto adjacent public paved roads. Water sweepers with reclaimed water shall be used where feasible;

l. All of these fugitive dust mitigation measures shall be shown on grading and building plans; and

m. The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20 percent opacity, and prevent transport of dust offsite. Their duty hours shall include holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons shall be provided to the APCD Compliance Division **prior to the start of any grading, earthwork or demolition.**

In addition, the Applicant shall consult with the County Health Department to develop a Dust Management Plan that addresses management of dust to reduce the potential for exposure to Valley Fever. **Prior to issuance of permits**, the Applicant shall submit the Plan to the County Health Department for review and approval. The Plan shall include a program to evaluate the potential for exposure to Valley Fever from construction activities, and to identify appropriate dust management and safety procedures that shall be implemented, as needed, to minimize personnel and public exposure to potential Valley Fever–containing dust. Measures in the Plan, which shall be implemented as applicable, may include the following:

n. Provide HEP-filtered air-conditioned enclosed cabs on heavy equipment. Train workers on proper use of cabs, such as turning on air conditioning prior to using the equipment.

o. Provide communication methods, such as two-way radios, for use in enclosed cabs.

p. Provide National Institute for Occupational Safety and Health (NIOSH)-approved respirators for workers.

q. Require half-face respirators equipped with N-100 or P-100 filters to be used during digging. Require employees to wear respirators when working near earth-moving machinery.

r. Cause employees to be medically evaluated, fit-tested, and properly trained on the use of the respirators, and implement a full respiratory protection program in accordance with the applicable Cal/OSHA Respiratory Protection Standard (8 CCR 5144).

s. Provide separate, clean eating areas with hand-washing facilities.

t. Thoroughly clean equipment, vehicles, and other items before they are moved offsite to other work locations.

u. Train workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor.

v. Work with a medical professional to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever.

w. Work with a medical professional, in consultation with the County Health Department, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for exposure is available. **Prior to construction permit issuance**, this handout shall have been created by the Applicant and reviewed by the County. **No less than 30 days prior to any work commencing**, this handout shall be mailed to all existing residences within three miles of the project boundaries.

Reduce Fugitive Dust. Prior to issuance of construction permits and during construction/ground disturbing activities and decommissioning, the Proposed Project shall implement the following measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

a. The amount of disturbed area shall be reduced where possible;

b. Water trucks or sprinkler systems shall be used in quantities sufficient to prevent airborne dust from leaving the site. Watering frequency shall be increased whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible;

c. All dirt stockpile areas shall be sprayed daily for dust suppression as needed;

d. Permanent dust control measures identified in the approved project revegetation and landscape plans shall be implemented as soon as possible following completion of any soil

Presumably, these measures, which are far more extensive than the few air quality mitigation measures included in DEIR APM AIR-3, were inadequate and/or not followed.

3.3. Recommended Mitigation to Control Valley Fever

In response to these outbreaks within San Luis Obispo County,[145] its Public Health Department, in conjunction with the California Department of Public Health,[146] developed recommendations to limit exposure to Valley Fever based on scientific information from the published literature. The recommended measures, which failed to control Valley Fever, go far beyond the conventional dust control measures included in the DEIR.[147] Controls recommended to minimize workers' dust exposure and risk of Valley Fever in endemic areas based on the experience at these two solar sites included

[145] McNary and Deems, 2020, pdf 16 *et seq.*

[146] California Department of Public Health, Preventing Work-Related Coccidioidomycosis (Valley Fever), June 2013, pp. 4-7; https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf. See also Wilken et al., 2015, and Sondermeyer Cooksey et al. (Exhibit 7).

[147] DEIR, Appendix F.

the following measures, none of which is required by the DEIR's construction mitigation measures:[148,149]

Preventing Valley Fever exposure

There is no vaccine to prevent Valley Fever. Employers can reduce worker exposure by incorporating the following elements into the company's Injury and Illness Prevention Program and project-specific health and safety plans:

1. Determine if the worksite is in an area where Valley Fever is endemic (consistently present). Check with your local health department to determine whether cases have been known to occur in the proximity of your work area. See the map on page 2 to determine whether your company will be working in an endemic county.
2. Train workers and supervisors on the location of Valley Fever endemic areas, how to recognize symptoms of illness (see page 3), and ways to minimize exposure. Encourage workers to report respiratory symptoms that last more than a week to a crew leader, foreman, or supervisor.
3. Limit workers' exposure to outdoor dust in disease-endemic areas. For example, suspend work during heavy wind or dust storms and minimize amount of soil disturbed.
4. When soil will be disturbed by heavy equipment or vehicles, wet the soil before disturbing it and continuously wet it while digging to keep dust levels down.
5. Heavy equipment, trucks, and other vehicles generate heavy dust. Provide vehicles with enclosed, air-conditioned cabs and make sure workers keep the windows closed. Heavy equipment cabs should be equipped with high efficiency particulate air (HEPA) filters. Two-way radios can be used for communication so that the windows can remain closed but allow communication with other workers.
6. Consult the local Air Pollution Control District regarding effective measures to control dust during construction. Measures may include seeding and using soil binders or paving and laying building pads as soon as possible after grading.
7. When digging a trench or fire line or performing other soil-disturbing tasks, position workers upwind when possible.
8. Place overnight camps, especially sleeping quarters and dining halls, away from sources of dust such as roadways.
9. When exposure to dust is unavoidable, provide NIOSH-approved ***respiratory protection*** with particulate filters rated as N95, N99, N100, P100, or HEPA. Household materials such as washcloths, bandanas, and handkerchiefs do not protect workers from breathing in dust and spores.

Type of Control: Engineering and Work Practice Controls (to control dust at the source or isolate worker from exposure.)

Actions: Minimize exposure to outdoor dust:

- Suspend (stop) work in dust storms or high winds.
- Minimize the amount of digging by hand. Instead, use heavy equipment with operator in an enclosed, airconditioned, HEPA-filtered cab.

Continuously wet the soil before and while digging or moving the earth. Landing zones for helicopters and areas where bulldozers, graders, or skid steers operate are examples where wetting the soil is necessary.

When digging in soil is required, train workers to reduce the amount of dust inhaled by staying upwind when possible.

Type of Control: Administrative Controls (to increase hazard awareness and knowledge of safe work practices and select safer work practices.)

Actions: Train workers and supervisors on:

- Distribution of endemic areas
- Symptoms and signs, and need to report to supervisor to obtain medical evaluation
- People at highest risk of serious disease
- Effective controls, including proper use of equipment.

Type of Control: Personal Protective Equipment (to decrease quantity of fungal spores inhaled.)

Actions: Provide respirators when digging or working near earthmoving trucks or equipment:

- Powered air-purifying respirator (PAPR) with high efficiency particulate air (HEPA) filter or
- Full-face respirator with particulate filter or
- Half-mask respirator with particulate filter and
- Implement a comprehensive respirator program including medical clearance, training, fit testing, and procedures for cleaning and maintaining respirators.

Provide coveralls to prevent street clothes from being contaminated with fungal spores and then taken home.

Type of Control: Clean up (to decrease quantity of fungal spores inhaled.)

Actions: Provide lockers and require change of clothing and shoes at worksite so workers don't take dust and spores home.

Wash equipment before moving offsite.

Type of Control: Medical care for disease recognition and prompt, appropriate treatment.

Actions: Contract with local medical clinics

- Provide prompt evaluation and care
- Make sure clinic has a protocol for evaluation, follow-up, and treatment of Valley Fever

Make sure in-house physician is aware of work in Valley Fever endemic areas.

Preventing transport of spores

- **Clean tools, equipment, and vehicles with water to remove soil before transporting offsite** so that any spores present won't be re-suspended in air and inhaled at a later time.
- **Provide workers with coveralls or disposable Tyvek™ daily**. At the end of the work day, require workers to remove their work clothes at the worksite.
- **Keep street clothes and work clothes separate by providing separate lockers or other storage areas.** If possible, store work boots at the worksite; otherwise, have workers use a boot wash before getting into their vehicles.
- **Encourage workers to shower and wash their hair at the workplace** (if at a fixed location) or as soon as they get home.

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148 CDPH, Preventing Work-Related Coccidioidomycosis (Valley Fever); https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf.

149 McNary and Deems, 2020, pdf 30-45.

In a more recent Valley Fever outbreak among solar plant construction workers in Monterey County, public health officials conducted a site visit to the solar farm to observe and interview workers and employers about work practices, dust control, and use of protective equipment; review training materials; and discuss prevention strategies. The visit confirmed dust control issues, serious lapses in use of respiratory protection, insufficient Coccidioidomycosis employee training, and no system for tracking or reporting illness. Thus, in November 2017, the CDPH issued prevention recommendations before the start of the second construction phase, which was scheduled to continue through the end of 2018. Recommendations for employers included:[150]

(1) reducing dust exposure by ensuring ample and efficient water truck capacity to wet soil;

(2) using only heavy equipment with enclosed cabs and temperature-controlled, high efficiency particulate air–filtered air;[151]

(3) providing clean coveralls daily to employees who disturb soil;

(4) implementing a mandatory respiratory protection program (8 CCR §5144, Respiratory Protection: https://www.dir.ca.gov/title8/5144.html) that specifically requires National Institute for Occupational Safety and Health–approved respirators be worn while performing or in the near vicinity of job activities that create airborne dust;

(5) developing effective Valley Fever training for all employees, including ways to reduce exposure, how to recognize symptoms, and where to seek care; and

(6) tracking and reporting of all suspected Valley Fever illnesses that occur at the worksite to the Imperial County Public Health Department.

The study concluded that prevention methods need to be better incorporated into the planning and monitoring of construction projects in areas with endemic *Coccidioides* (e.g., by involving public health practitioners in pre-project reviews). Specifically, the following was recommended: "Outdoor workers in these areas should

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[150] R. L. Laws, G. S. Cooksey, S. Jain and others, Coccidioidomycosis Outbreak Among Workers Constructing a Solar Power Farm—Monterey County, California, 2016–2017, *Morbidity and Mortality Weekly Report*, August 24, 2018, v. 67, no. 33, pp. 931-934; https://www.cdc.gov/mmwr/volumes/67/wr/pdfs/mm6733a4-H.pdf.

[151] De Perio et al.'s (p. S43) analysis of outbreaks at solar farms in San Luis Obispo County concluded that "frequently performing soil-disruptive activities was a risk factor only for employees who did not frequently use respiratory protection."

be trained by employers about the potential for infection, how to limit dust exposure, how to recognize symptoms, where to seek care, and how to ask a health care provider to assess them for coccidioidomycosis. Clinicians should inquire about occupational history and should suspect coccidioidomycosis in patients who are outdoor workers in areas with endemic *Coccidioides* and who have a clinically compatible illness."[152]

Similarly, the California Department of Public Health (CDPH) has summarized recommendations to control Valley Fever on its website.[153] The recommended measures are summarized in Table 3.

Table 3: CDPH Controls to Minimize Worker Dust Exposure

Summary of Controls to Minimize Workers' Dust Exposure and Risk of Valley Fever in Endemic Areas	
Type of Control	**Actions**
Engineering and Work Practice Controls ➤ *to control dust at the source or isolate worker from exposure.*	Minimize exposure to outdoor dust: • Suspend (stop) work in dust storms or high winds. • Minimize the amount of digging by hand. Instead, use heavy equipment with operator in an enclosed, air-conditioned, HEPA-filtered cab. Continuously wet the soil before and while digging or moving the earth. Landing zones for helicopters and areas where bulldozers, graders, or skid steers operate are examples where wetting the soil is necessary. When digging in soil is required, train workers to reduce the amount of dust inhaled by staying upwind when possible.
Administrative Controls ➤ *to increase hazard awareness and knowledge of safe work practices and select safer work practices.*	Train workers and supervisors on: • Distribution of endemic areas • Symptoms and signs, and need to report to supervisor to obtain medical evaluation • People at highest risk of serious disease • Effective controls, including proper use of equipment.
Personal Protective Equipment ➤ *to decrease quantity of fungal spores inhaled.*	Provide respirators when digging or working near earth-moving trucks or equipment: • Powered air-purifying respirator (PAPR) with high efficiency particulate air (HEPA) filter or • Full-face respirator with particulate filter or • Half-mask respirator with particulate filter and • Implement a comprehensive respirator program including medical clearance, training, fit testing, and procedures for cleaning and maintaining respirators. Provide coveralls to prevent street clothes from being contaminated with fungal spores and then taken home.
Clean up ➤ *to decrease quantity of fungal spores inhaled.*	Provide lockers and require change of clothing and shoes at worksite so workers don't take dust and spores home. Wash equipment before moving offsite.
Medical care for disease recognition and prompt, appropriate treatment.	Contract with local medical clinics • Provide prompt evaluation and care • Make sure clinic has a protocol for evaluation, follow-up, and treatment of Valley Fever Make sure in-house physician is aware of work in Valley Fever endemic areas.

More recently, the California legislature has passed Assembly Bill No. 203 (AB 203),[154] which requires construction employers in counties where Valley Fever is highly

[152] Laws et al., p. 934.

[153] CDPH, Preventing Work-Related Coccidioidomycosis (Valley Fever); https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf.

endemic to provide effective awareness training on Valley Fever to all employees annually and before an employee begins work that is reasonably anticipated to cause substantial dust disturbance. Section 6709(a) of this Act applies to construction employers with employees working at worksites in counties where Valley Fever is "highly endemic," which include San Luis Obispo County. The DEIR is silent on this rule. It should be recognized and included as a Project mitigation measure. AB 203 is a step in the right direction but is not adequate mitigation for the Project's Valley Fever construction impacts, which are highly significant as awareness training does not mitigate the impact.

3.4. The DEIR's Fugitive Dust Mitigation Program Will Not Control Valley Fever Spores

The DEIR's fugitive dust control measures proposed in APM AIR-3[155] do not include any of the mitigation measures identified in Comment 3.3 designed to control worker exposure to tiny Valley Fever spores. The only fugitive dust control measures required in the DEIR are:[156]

> **APM AIR-3. Minimize Fugitive Dust.**
>
> Reduce the amount of the disturbed area where possible.
>
> - Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site.
> - All dirt stockpile areas should be sprayed daily as needed.
> - All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by San Luis Obispo Air Pollution Control District (SLOCAPCD).
> - Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface.

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[154] Assembly Bill No. 203, Chapter 712, Occupational Safety and Health: Valley Fever: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB203.

[155] DEIR, Appendix F, pp. F-16/17.

[156] DEIR, Appendix F, p. F-17/18.

- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114.
- Sweep streets at the end of each day if visible soil material extending over 50 feet is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where possible.

These are all standard construction fugitive dust (PM10) mitigation measures, required when Valley Fever is not anticipated. They include some of the mitigation measures in the EIS for the Topaz Solar Farm, where a major Valley Fever outbreak occurred.[157] However, the Topaz EIS contained even more conventional fugitive dust measures plus some mitigation measures directed specially at Valley Fever.[158] In spite of the Topaz measures, a major outbreak still occurred, indicating the requirement for more aggressive measures and on-site oversight to assure that they are implemented. As discussed below, none of the dust control mitigation measures in the DEIR are adequate to control fugitive dust or to address tiny Valley Fever spores as discussed below.

None of the mitigation measures in APM AIR-3 will significantly control Valley Fever spores, [159,160] which are orders of magnitude smaller than conventional construction dust. Thus, conventional dust control measures are not effective. Compliance with fugitive dust regulations developed by air districts where Valley Fever is an acknowledged issue is a far more effective method to control Valley Fever spores than the control measures in the DEIR. These regulations include Maricopa County Rule 310,[161] SCAQMD Rule 403,[162,163] and SJVAPCD Rule 8021.[164] However,

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[157] Department of Energy, Final Environmental Impact Statement, DOE Loan Guarantee for the Topaz Solar Farm, August 2011, Table 2-10, Conditions of Approval, MM AQ-1.3, pp. 2-64-65; https://www.energy.gov/sites/prod/files/Topaz-FEIS-Volume-I-PDF-Version.pdf.

[158] Table 2-10, MM AQ-1.3; https://www.energy.gov/sites/prod/files/Topaz-FEIS-Volume-I-PDF-Version.pdf.

[159] South Coast Air Quality Management District (SCAQMD), Fugitive Dust, Fugitive Dust Table XI-A; http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

[160] Western Governors' Association, WRAP Fugitive Dust Handbook, September 7, 2006 (WRAP Handbook); https://www.wrapair.org/forums/dejf/fdh/. Exhibit 10.

[161] Maricopa County Rule 310, Fugitive Dust from Dust-Generating Operations; https://www.maricopa.gov/DocumentCenter/View/5354/Rule-310---Fugitive-Dust-from-Dust-Generating-Operations-PDF?bidId=.

[162] SCAQMD Rule 403; http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf.

even these rules do not go far enough. I recommend the following additional measures, discussed below.

3.4.1. Reduce Disturbed Area

The DEIR requires that the amount of disturbed area should be reduced "where possible." Valley Fever can only be controlled by eliminating disturbed areas. This is clearly not feasible at an active construction site. Instead, dust suppressants, such as polymer emulsions, should be applied to disturbed areas upon completion of disturbance (e.g., demolition).[165] Further, groundcover should be replaced "as quickly as possible" in disturbed areas.[166]

3.4.2. Water Trucks/Sprinkler Systems

This measure requires the use of "water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site." This is too general to be implemented and enforced. It would allow water trucks to drive along roads once a day or less frequently without accessing off-road areas where soil is being disturbed. At a minimum, water should be applied every 4 hours within 100 feet of a structure being demolished, every 3 hours to disturbed areas and to disturbed soils after demolition is completed, and at the end of each day of cleanup.[167] Soil should be wet both before and while digging and workers should stay upwind of digging, when feasible.[168] Sprinkler systems should be specified for areas inaccessible by water trucks. Further, watering frequency should be increased when wind speeds exceed levels known to raise dust in the local area,[169] typically around 15 mph at the Project site. An on-site wind measuring station should be required to monitor wind speed.

This measure fails to specify the minimum soil moisture that will be maintained by water trucks. The SCAQMD and WRAP Handbooks recommend a minimum soil

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[163] SCAQMD Rule 403 Implementation Handbook; http://www.aqmd.gov/docs/default-source/compliance/rule-403-dust-control-forms/rule-403-fugitive-dust-implementation-handbook-0120km-arc.pdf?sfvrsn=6.

[164] SJVAPCD Rule 8031, Bulk Materials; https://www.valleyair.org/rules/currntrules/r8031.pdf.

[165] SCAQMD, Table XI-A.

[166] SCAQMD, Table XI-A.

[167] SCAQMD, Table XI-A and WRAP Handbook, Table 3-7.

[168] CDPH, Preventing Valley Fever in Construction Workers, March 2020, pdf 44; https://www.safetybayarea.com/media/2020-3A.pdf.

[169] SCAQMD, Table XI-A.

moisture of 12% for earthmoving, achieved using a movable sprinkler system or a water truck and verification of moisture content by lab sample or a moisture probe.[170]

This measure does not specify a method to verify that the use of water trucks prevents airborne dust from leaving the site. Real time monitoring for tiny Valley Fever spores should be required at all construction site boundaries.

This measure also fails to address ground areas that are planned to be reworked at dates more than one month after initial grading. These areas should be sown with a fast-germinating, noninvasive grass seed and watered until vegetation is established. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods.

3.4.3. Stockpile Areas (AIR-3)

This measure requires daily spraying of stockpile areas "as needed." The measure does not identify the spraying agent—for example, water is not efficient for tiny Valley Fever spores. The measure also does not require increased spraying frequency or covering during high wind events. Finally, no guidance is provided for when increased spraying is needed. This is not adequate.

Maricopa Rule 305.5, for example, requires open storage piles to be covered with a tarp, plastic, or other material, or to maintain a soil moisture content of at least 12% or to maintain a visible crust. The SCAQMD recommends five mitigation measures for storage piles, as follows:[171]

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[170] SCAQMD, Table XI-A and WRAP Handbook, Table 3-7.

[171] SCAQMD, Table XI-E. Mitigation Measure Examples: Fugitive Dust from Storage Piles; http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

Table 4: Storage Pile Fugitive Dust Mitigation Measures

Source Activity	Mitigation Measure[1]
Storage pile wind erosion	Require construction of 3-sided enclosures with 50% porosity.
Storage pile wind erosion	Water the storage pile by hand or apply cover when wind events are declared.
Windblown dust from inactive areas[3]	Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
Windblown dust from disturbed areas[4]	Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
Windblown dust from disturbed areas[4]	Plant vegetative ground cover in disturbed areas as soon as possible.

In addition, the SCAQMD recommends requiring 3-sided enclosures with 50% porosity for storage piles and watering by hand at a rate of 1.4 gallons/hour-yard or covering when wind events occur.[172] All of these measures are feasible and should be required for the Project.

3.4.4. Vehicle Speed (AIR-3)

This measure limits construction vehicle speed to 15 miles per hour but fails to include off-site trucks delivering materials to the site. It also fails to include enforcement of the speed limit. The SCAQMD recommends enforcement of this limit by radar,[173] which should be required for the Project.

3.4.5. Cover Trucks (AIR-3)

This measure requires that trucks hauling dirt, sand, soil, or other loose material be covered **or** maintain at least 2 feet of freeboard. This is not adequate. Trucks should be tarped with a fabric cover **and** maintain a freeboard height of 12 inches to prevent Valley Fever spore blowoff.[174] Freeboard does not prevent blowoff of tiny Valley Fever spores, especially on windy days that are common in the area. Valley Fever spores can also be present on truck wheels and bodies, which are commonly required to be

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172 SCAQMD, Table XI-B, Mitigation Measure Examples: Fugitive Dust from Materials Handling; http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

173 SCAQMD, Table XI-A.

174 SCAQMD, Table XI-A.

thoroughly cleaned before leaving the worksite. Further, open-bodied haul trucks should be kept in good repair to prevent spillage from beds, sidewalls, and tailgates.[175] The DEIR does not require vehicle cleaning and/or washing before leaving the site. AIR-3 should be expanded to include this measure.

3.4.6. Sweep Streets (AIR-3)

Sweeping generates fugitive dust that may contain Valley Fever spores that are not visible, so trackout should be limited to the maximum extent feasible. This measure fails to require methods to minimize trackout. The DEIR only requires water street sweeping at the end of each day only if visible soil material extending over 50 feet is carried onto adjacent paved roads. Valley Fever spores are not "visible," so this measure is worthless for controlling Valley Fever.

Trackout should be removed "immediately" out to 50 feet and nightly cleanup of the rest, not controlled after the fact. Access to unprotected routes should be limited and construction roadways should be paved.[176] Grizzly[177]/wheel wash systems should be installed adjacent to entrances to control carryout and trackout. Gravel pads,[178] 30 ft x 50 ft, 6 inches deep should be installed at access points and traffic routed over track-out control devices. Track-out control devices should be installed at all access points to public roads and mud/dirt should be removed from interior paved roads with sufficient frequency. Access must be limited to unprotected areas.[179] The SCAQMD recommends installing pipe-grid trackout-control devices to reduce mud/dirt trackout from unpaved truck exit routes.[180] These measures should be required for the Project.

Any trackout that remains after installing control devices should be immediately cleaned up on deposit to 50 feet and nightly cleanup of the rest. The SCAQMD

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[175] Maricopa Rule 205.12.

[176] WRAP Handbook, Table 3-8.

[177] A grizzly is a device (i.e., rails, pipes, or grates) used to dislodge mud, dirt, and/or debris from the tires and undercarriage of motor vehicles and/or haul trucks prior to leaving the worksite. See Maricopa Rule 310, Section 218, https://www.maricopa.gov/DocumentCenter/View/5354/Rule-310---Fugitive-Dust-from-Dust-Generating-Operations-PDF?bidId.

[178] A gravel pad is a layer of washed gravel, rock, or crushed rock that is at least one inch or larger in diameter that is located at the point of intersection of an area accessible to the public and a work site exit to dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to leaving the work site. These should conform to Maricopa Rule 310, Section 217.

[179] Maricopa County Rule 310.

[180] SCAQMD, Table XI-C, Mitigation Measure Examples: Fugitive Dust from Paved Roads; http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

recommends the following trackout measures, which are all feasible and should be required for the Project:[181]

Table 5: SCAQMD Mud/Dirt Trackout Control Measures

Mud/dirt trackout	Install pipe-grid trackout-control device to reduce mud/dirt trackout from unpaved truck exit routes.
Mud/dirt trackout	Install gravel bed trackout apron (3 inches deep, 25 feet long, 12 feet wide per lane and edged by rock berm or row of stakes) to reduce mud/dirt trackout from unpaved truck exit routes.
Mud/dirt trackout	Require paved interior roads to be 100 feet long, 12 feet wide per lane and edged by rock berm or row of stakes, or add 4 foot shoulder for paved roads.

3.5. Omitted Fugitive Dust Mitigation Measures

Many mitigation measures essential to control Valley Fever spores are omitted from the DEIR mitigation plan in APM AIR-3. The engineering firm of Bechtel was retained to develop methods to control Valley Fever at the San Luis Obispo County Solar Ranch Project.[182,183] Bechtel's recommendations and those of other agencies include the following additional mitigation measures that should be required for the Project. All of the measures discussed below shall be shown on grading and building plans. Further, the dust control plan should be available on site in an easily accessible location.

First, APM AIR-3 does not address active disturbance of soils when heavy equipment or vehicles are working an area. The CDPH recommends that "[w]hen soil will be disturbed by heavy equipment or vehicles, wet the soil before disturbing it and continuously wet it while digging to keep dust levels down."[184]

Second, the DEIR's mitigation measures fail to define "airborne dust." Valley Fever spores are orders of magnitude smaller than conventional construction "airborne dust," which is PM2.5 and PM10. Due to their size, Valley Fever spores cannot be effectively controlled using watering trucks. Further, watering trucks themselves generate fugitive dust, which in an endemic area may contain Valley Fever spores. Thus, wetting methods must be used that do not themselves raise dust. Analysis of the

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[181] Ibid.

[182] Bechtel, California Valley Solar Ranch Project, Valley Fever in San Luis Obispo County, 2011; https://slideplayer.com/slide/4441907/#.YATgxeOJBDE.gmail.

[183] Bechtel, Bechtel Environmental, Safety, and Health (BESH), VALLEY FEVER in San Luis Obispo County California Valley Solar Ranch Project 2011, Slide 13; https://slideplayer.com/slide/4441907/.

[184] CDPH, Preventing Work-Related Coccidioidomycosis (Valley Fever), pdf 4.

outbreaks at the San Luis Obispo solar farms concluded, for example, that "frequent wetting of soil before soil-disruptive activities was protective…"[185] The control of "airborne dust" does not assure that Valley Fever spores would be controlled.

Third, planned paving for roadway, driveway, sidewalks, and so forth, shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

Fourth, trucks and equipment leaving the site shall be washed and wheel washers shall be installed where vehicles enter or exit unpaved roads from or onto a street. Bechtel, for example, recommends "[e]quipment, vehicles and other items will be thoroughly cleaned to remove soil particles before they are moved offsite."[186]

Fifth, wherever possible, grading and trenching work should be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.[187]

Sixth, half-faced respirators equipped with N-100 or P-100 filters should be worn by those digging, grading, trenching, or performing other work involving soil disturbance.[188] Analysis of the outbreaks at the San Luis Obispo solar farms concluded, for example, that "frequently performing soil-disruptive work was a risk factor only for employees who did not frequently use respiratory protection…"[189] The DEIR does not require any respiratory protection.

Seventh, MM AQ-1 should clearly state that all of the fugitive dust mitigation measures apply to the helicopter landing/unloading areas.

Eighth, the contractor shall designate a person or persons to monitor the fugitive dust emissions to assure compliance and to enhance them as necessary to minimize dust and prevent transport of dust offsite. The names and telephone numbers of such persons shall be provided to the SLOCAPCD prior to the start of any grading, earthwork or demolition.

This dust control coordinator shall be present on site during all dust-generating operations, with the authority to stop any operations that create excessive dust. A dust

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185 De Perio et al, p. S43.

186 Bechtel, Fugitive Dust Reduction Measures, Slide 13; https://images.slideplayer.com/14/4441907/slides/slide_13.jpg.

187 Ibid.

188 Bechtel, Fugitive Dust Reduction Measures, Slide 14; https://images.slideplayer.com/14/4441907/slides/slide_14.jpg.

189 De Perio et al, p. S43.

control coordinator must always be on site during dust-generating operations for any site that disturbs 5 acres or more.[190]

Ninth, in addition, the following standard measures recommended by public agencies must be added to the DEIR specifically to control Valley Fever spores:

- Suspend work during heavy wind or dust storms.[191] San Luis Obispo Health Agency specifically recommends: [192]
    - skip windy days,
    - postpone activities until wind calms down,
    - do activity in early morning hours when there is less wind,
        - wet down roadways and dampen soil to reduce blowing dust, especially when other workers are present,
        - if other workers are nearby or downwind, delay the activity until they move,
        - use equipment with an enclosed cab and air filtration system,
        - remove and bag coveralls and other dusty clothing when you leave the work site, so you don't bring dust into your car or home.
- Minimize the amount of soil disturbed.
- Require that water trucks and construction equipment have enclosed, air-conditioned cabs equipped with high-efficiency particulate air filters and two-way radios to facilitate communication when windows are closed.[193]
- Position workers upwind when digging trenches or fire lines or performing other soil-disturbing tasks.
- Locate overnight camps away from sources of dust.

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[190] Maricopa County Rule 310; Maricopa County Air Quality Department, Rule 310 Dust Permit, Dust Control Permit Help Sheet; https://www.maricopa.gov/DocumentCenter/View/41942/Rule-310-Dust-Control-Permit-Help-Sheet-PDF.

[191] De Perio et al., p. S43, for example, found that for San Luis Obispo County solar farm workers, "frequently being in a dust storm or dust cloud was associated with increased risk of having clinically compatible coccidioidomycosis, while frequent wetting of soil before soil-disruptive activities was protective…"

[192] County of San Luis Obispo Health Agency, Public Health Department, "For Activities That Stir Up Dirt or Dust"; https://www.slocounty.ca.gov/getattachment/f25735bf-7bcd-42d7-8fcd-de843ce071cc/Brochure-English-Valley-Fever-Building.aspx.

[193] Bechtel, Fugitive Dust Reduction Measure, Slide 14; https://images.slideplayer.com/14/4441907/slides/slide_14.jpg.

- When dust exposure is unavoidable, provide NIOSH-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or HEPA.[194]
- The WRAP Handbook similarly recommends a gravel apron, 30 ft x 50 ft by 6 inches deep to reduce mud/dirt trackout from unpaved truck exit routes.
- Minimize digging by hand, instead use heavy equipment with enclosed, air-conditioned, HEPA-filtered cabs.
- Use a dust control method that does not raise dust. Calcium chloride or the salt crust process, for example, achieve better control than water alone. Further, fine atomized sprays or mist sprays with droplet diameters of 60 µg, produced by swirl-type pressure nozzles or pneumatic atomizers, should be used on the watering trucks.[195]
- When digging in soil is required, train workers to reduce the amount of dust by staying upwind.

Tenth, basic dust control training should be required for all water truck drivers, all water pull drivers, and superintendents on sites larger than 1 acre.

In addition, the CDPH specifically recommends the following measures to prevent the transport of Valley Fever spores off-site:[196]

- Clean tools, equipment, and vehicles with water to remove soil before transporting offsite.
- Provide workers with coveralls or disposable Tyvek daily.
- Keep street clothes and work clothes separate by providing separate lockers or other storage areas.
- Encourage workers to shower and wash their hair at the workplace or as soon as they get home.
- Provide boot cleaning stations.
- Wet-clean tools and equipment.

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194 Preventing Work-Related Coccidioidomycosis (Valley Fever), p. 5, item 9: "When exposure to dust is unavoidable, provide NIOSH-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or HEPA"; https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf.

195 Amar Solanki, Dust Suppression System, p. 15-19, 25; https://www.slideshare.net/abhi24mining/prevention-suppression-of-dust.

196 CDPH, Preventing Valley Fever in Construction Workers, pdf 53 and CDPH, Preventing Work-Related Coccidioidomycosis (Valley Fever), June 2013, p. 6; https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/CocciFact.pdf.

Finally, a review of outbreaks in San Luis Obispo County, including interviews with affected workers, concluded that the following administrative controls should be required:[197]

> Administrative controls that promote safer work practice standards might include (1) ensuring that the worksite injury and illness prevention plan recognizes the risk of coccidioidomycosis and has criteria for temporarily suspending work when there is excessive dust or wind; (2) having onsite monitoring personnel who, when inadequate dust control is identified, have the ability to implement additional control measures or stop work; (3) training workers and supervisors about the risks and symptoms of coccidioidomycosis; and (4) encouraging ill workers to report their symptoms to supervisors (examples

In sum, construction mitigation measures in the DEIR are not adequate to control Valley Fever spores raised during Project construction and conventional fugitive PM10 dust. Projects that have implemented similar conventional PM10 dust control measures have experienced fugitive dust issues and reported cases of Valley Fever.[198,199,200] The above-discussed mitigation measures should be required for the Project.

3.6. Monitoring Should Be Required for Valley Fever Spores

Finally, as the proposed Project construction sites have the potential to contain Coccidioidomycosis spores and it is well known that they can easily become airborne when soil is disturbed,[201] the Project construction sites should be tested well in advance of construction to determine if spores are present. Accurate test methods have been developed and used in similar applications.[202,203] A study conducted in the Antelope

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[197] De Perio et al. 2019, p. S43.

[198] Herman K. Trabish, Green Tech Media, Construction Halted at First Solar's 230 MW Antelope Valley Site, April 22, 2013; http://www.greentechmedia.com/articles/read/Construction-Halted-At-First-Solars-230-MW-Antelope-Valley-Site.

[199] Julie Cart, 28 Solar Workers Sickened by Valley Fever in San Luis Obispo County, *Los Angeles Times*, May 1, 2013; http://articles.latimes.com/2013/may/01/local/la-me-ln-valley-fever-solar-sites-20130501.

[200] Topaz EIS, August 2011, Table 2-10, Conditions of Approval.

[201] Colson et al. 2017, p. 451, Exhibit 10 ("A correlation between soil disturbances due to large-scale renewable energy construction projects, agricultural management practices and PM10 fugitive dust emission with increased incidence of coccidioidomycosis was clearly indicated by results of this study."), p. 456 ("One such danger is *Coccidioides spp.* arthroconidia becoming airborne when soil is disturbed and dust mitigation measures are inefficient or absent.").

[202] J. R. Bowers et al., Direct Detection of Coccidioides from Arizona Soils Using CocciENV, a Highly Sensitive and Specific Real-time PCR Assay, *Medical Mycology*, 2018 (Exhibit 11); and Proceedings of the

Valley, slated for six solar ranches of varying sizes, concluded that soil analyses should be conducted before soil disturbance in endemic areas, noting: "Based on the findings of this study, we recommend that EIRs include soil analyses for *Coccidioides spp.* on land destined for construction of any type in endemic areas of the pathogen."[204] An Environmental Assessment for a solar project has required soil testing.[205]

In sum, all of the above health-protective measures recommended by the San Luis Obispo County Public Health Department, Monterey County Health Department, the California Department of Public Health, and others are feasible for the Project and must be required in a dust control plan included in the EIR that evaluates and mitigates the risk to construction workers, off-site workers at nearby vineyards and farms, nearby residents, school children, and passengers in vehicles on public roads from contacting Valley Fever. Many of these measures have been required by the County of Monterey in other EIRs.[206] They are also required in the EIR for the California High-Speed Train.[207] Even if all of the above measures are adopted, the DEIR must analyze whether these measures are adequate to reduce this significant impact to a level below significance. Further, soils at all of the sites proposed to be disturbed should be tested in advance of construction.

4. BATTERY ENERGY STORAGE SYSTEM (BESS) IMPACTS

The DEIR superficially evaluated two BESS alternatives, BS-2 and BS-3, to reduce peak loads during periods when energy use is higher during the summer to relieve pressure on substations and feeders.[208] Alternative BS-2 is a front-of-the-meter (FTM) site and alternative BS-3 is a third party, behind-the-meter solar and battery storage

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60th Annual Coccidioidomycosis Study Group Meeting, April 8–9, 2016, Fresno, CA; http://coccistudygroup.com/wp-content/uploads/2016/10/CSG-60th-Annual.pdf.

203 Colson et al. 2017, pp. 439–458.

204 Colson et al. 2017, p. 456.

205 Final Environmental Assessment for Construction, Operation, and Decommissioning of a Solar Photovoltaic System at Marine Air Ground Task Force Training Command Marine Corps Air Ground Combat Center, Twentynine Palms, California, November 2015, Table ES-1, AQ-17; https://www.29palms.marines.mil/Portals/56/Docs/G4/NREA/Environmental%20Assessment%20Construction%20and%20Operation%20of%20Solar%20Photovoltaic%20System%20at%20MAGTFTC,%20MCAGCC%20(Final)%20November%202015.pdf.

206 County of Monterey, California Flats Solar Project Final Environmental Impact Report, December 2014; https://www.co.monterey.ca.us/home/showdocument?id=48244.

207 California High-Speed Rail Authority and U.S. Department of Transportation, California High-Speed Train Project Environmental Impact Report/Environmental Impact Statement, Fresno to Bakersfield, Mitigation Monitoring and Enforcement Program Amendments, September 2015.

208 DEIR, p. ES-13, pdf 37. See Also Appendix B.

facility.[209] Both of these alternatives assume the BESSs would use lithium-ion batteries because they are the most space-efficient and cost-effective technology currently available.[210] The DEIR is full of unsupported excuses for failing to analyze the most significant impacts of these two alternatives—risk of upset, worker and public health impacts, and increases in emissions due to battery charging. Instead, it analyzes impacts that are not significant—aesthetic impacts and external fires.

These two alternatives have two significant environmental impacts that were not analyzed or even acknowledged in the DEIR: (1) accidents leading to significant on-site (to third party in-home hosts in BS-3) and off-site public health and off-site property damage (Comment 5) and (2) increases in criteria pollutant and greenhouse gas (GHG) emissions (Comment 6).

Rather than disclose the significant risk of upset and resulting significant off-site public health impacts of an accident involving lithium-ion batteries, which are proposed for the BESS alternatives (Comment 5), the DEIR makes the following excuses for declining to analyze these impacts:

- BESS sites "were selected as illustrative examples for the purposes of this CEQA analysis. Need for the reasonably foreseeable distribution components may not occur for up to 15 years… It is not possible to identify with certainty FTM BESS sites that could be selected by PG&E in the future. In addition, energy storage and other distributed alternatives are 15 years out and BESS technology is expected to advance within this timeframe."[211]
- "Because the specific characteristics of Alternatives BS-2 and BS-3 are unknown, these alternatives are evaluated for illustrative purposes in the DEIR. Consistent with CEQA Guidelines section 15145, no significance conclusions are provided for Alternative BS-2 and BS-3 impact discussions."[212] The DEIR also incorrectly asserts that "A full analysis of hypothetical DIDF (Distribution Infrastructure Deferral Framework) outcomes and types of DER (Distributed Energy Resources) solutions would be speculative and outside of the scope of this CEQA analysis."[213]

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[209] DEIR, Figure ES-3, pdf 43.

[210] See, e.g., DEIR, Table 3-18, pdf 321; p. 3-126, pdf 322; p. 3-112, pdf 308.

[211] DEIR, pdf 308.

[212] DEIR, p. 4-3, pdf 339.

[213] DEIR, p. 3-131, pdf 327.

- "Because FTM BESS sites were selected for illustrative purposes only, BESS installations have not been designed and technologies have not been selected, and the specifics of Alternative BS-2 are unknown, project-level determinations cannot be made as impacts are speculative. Therefore, consistent with CEQA Guidelines section 15145, no significance conclusion is provided for any of the significance criteria." [214]
- It is not possible to identify with certainty FTM BESS sites that could be selected by PG&E in the future. In addition, energy storage and other distributed energy resources (DER) technologies (e.g., demand response and energy efficiency) are expected to advance within this timeframe. These technological changes are likely to alter siting requirements. Because site-specific analyses are speculative at this time, this DEIR uses the illustrative sites to demonstrate the feasibility of this alternative, and the relatively small footprint these facilities would occupy throughout the project area."[215]

These excuses for failing to analyze the significant impacts of BESS alternatives are speculative and wrong. The analyses in the DEIR for "illustrative purposes" fail to identify the well-known significant environmental impacts of BESS facilities: accidents causing off-site public health and property damage impacts and increases in criteria pollutant and GHG emissions from BESS charging. Instead, the DEIR only discusses impacts of the BESS alternatives that are not significant—aesthetic impacts[216] and external wildfire impacts,[217] ignoring highly significant on-site and resulting off-site impacts caused by accidents involving the batteries themselves.

The DEIR, for example, only discloses the "potentially elevated fire hazard risk [of lithium-ion batteries] in comparison to other technologies."[218] However, it fails to extend its discussion of fires to on-site and off-site impacts, such as property damage and worker and public health impacts due to the release of hazardous air pollutants (HAPs).

The impacts of the proposed BESS facilities, based on experience with operating BESS facilities, are well known and should have been disclosed. The DEIR itself

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[214] DEIR, p. 4.1-53, pdf 393.

[215] DEIR, 3-112, pdf 308.

[216] DEIR, pdf 392 (Alternative BS-2) to 394 (Alternative BS-3).

[217] DEIR, Section 4.20 Wildfire.

[218] DEIR, 3-126, pdf 322.

proposes lithium-ion batteries at all FTM sites and additionally flow batteries at site #6.[219]

Finally, if it is not possible to analyze the impacts of BESS alternatives, a future EIR is required to analyze these impacts, if and when advances have been made in battery technology.

4.1. Impacts of Operating BESS Facilities Using Lithium-Ion Batteries

The starting point for any analysis is a review of the current state of knowledge regarding BESS impacts. The DEIR is silent on the history of BESS accidents, besides a brief mention of accidents involving batteries in electric vehicles and a fire at a 2 MW BESS in Arizona in 2019.[220] Instead, the DEIR asserts with no support that flow battery technology, which could be used at FTM Site 6, "would have reduced fire risk because the electrolyte material is not flammable."[221] However, reduced risk does not mean the risk is not significant.

Further, the use of flow batteries is severely limited at the available sites due to the large size of these batteries and the limited available space. Thus, the DEIR assumes the use of lithium-ion batteries at all of the potential BESS sites. Regardless, the electrolytes used in any storage battery may have impacts that were not disclosed. Finally, "reduced fire risk" does not mean the impact would not be significant.

The National Fire Protection Association (NFPA) recently published a brochure with the following title:[222]

ENERGY STORAGE SYSTEMS: IS YOUR COMMUNITY READY?

The answer for the communities and/or homes that will host a BESS under this Project is a resounding **NO**, because the DEIR has failed to disclose the risks or mitigate them.

The NFPA identified the follow impacts of energy storage systems, none of which are disclosed in the DEIR:[223]

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[219] DEIR, Table 3-18, pdf 321.

[220] DEIR, p. 4.9-39.

[221] DEIR, pdf 655.

[222] NFPA, Fire & Life Safety Policy Institute, Safety Through Better Public Policy, August 2019; https://www.nfpa.org/News-and-Research/Resources/Emergency-Responders/High-risk-hazards/Energy-Storage-Systems.

[223] NFPA, Energy Storage Systems Safety Fact Sheet, June 2020. Exhibit 18.

- Thermal runaway (rapid uncontrolled release of heat energy, resulting in fire or explosion);
- Shock hazard from stranded energy;
- Release of toxic and flammable gases;
- Deep-seated fires within metal or plastic casing, blocking firefighting agents;
- Mechanical abuse;
- Thermal abuse from exposure to external heat source;
- Electrical abuse from overcharging; and
- Environmental impacts including rodent damage to wiring, extreme heat, and floods.

4.2. Fires at Existing Battery Storage Facilities Demonstrate That Lithium-Ion Battery Fires Pose a Serious Risk to Human Health and the Environment

The NFPA brochure starts with this warning:[224]

> An explosion at a 4 megawatt battery energy storage systems (BESS) facility in April of 2019 is a reminder that this rapidly proliferating technology introduces new hazards into the community. The serious injury of several Arizona firefighters in that explosion highlights the pressing need to educate local officials and first responders on BESS.

The DEIR is silent on the serious risks of the proposed BESS facilities. Instead, it argues battery technologies will improve in the future and declines to evaluate the risks. Thus, a future EIR is required, as discussed below.

Fires at existing battery storage facilities demonstrate the severe risk that lithium-ion battery fires pose to human health and the environment. Fires have occurred at many battery storage facilities around the world, including in the European Union (e.g., Belgium).[225,226] Fires have also occurred at 23 battery storage facilities in South Korea, caused by faulty temperature control, negligence during construction, operational negligence, failure to separate the PCS system and batteries, faulty battery

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[224] Ibid.

[225] Jason Deign, Engie Investigates Source of Belgian Battery Blaze, December 18, 2017; https://www.greentechmedia.com/articles/read/engie-investigates-source-of-belgian-battery-blaze#gs.y25569.

[226] Patrice Nigon and others, Battery Storage, IMIA Working Group Paper 112 (19), pdf 55, 58; https://www.imia.com/wp-content/uploads/2020/01/IMIA-WGP-112-19-Battery-Storage.pdf.

management, system control, or battery protection systems.[227] The largest fire loss in Korea was reported at a 47 MW BESS facility, estimated at US $18 million.[228] Figure 14.

Figure 14: Fire Damage at Korean BESS Facilities[229]

Several battery fires have occurred in Hawaii and Arizona. These fires resulted in significant impacts that are not addressed in the DEIR, including significant worker and public health impacts from hazardous air pollutants (HAPs) and damage to the adjacent facilities.

Two fires occurred at First Wind's 30 MW Kahuku project in Hawaii in 2012. The first fire broke out in March 2011. The second fire, on August 3, 2012, was so fierce that firefighters could not enter the building for several hours. They used dry chemicals, which failed. This fire resulted in a $30 million battery loss that closed the wind farm.[230]

In describing firefighting challenges at the Hawaiian 10-MW battery storage system, the Honolulu Fire Department reported: [231,232]

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227 Andy Colthorpe, Korea's ESS Fires: Batteries Not to Blame But Industry Takes Hit Anyway, *PVTech*, June 19, 2019; https://www.energy-storage.news/news/koreas-ess-fires-batteries-not-to-blame-but-industry-takes-hit-anyway.

228 Nigon and others, pdf 60.

229 Ibid.

230 Nigon and others, pdf 55.

231 Fire at Kahuku Wind Farm Destroys Crucial Building, *Hawaii News Now*, August 1, 2012; https://www.hawaiinewsnow.com/story/19173811/hfd-battling-kahuku-wind-farm-blaze/.

232 Michael A. Stosser, What Are the Risks and What Regulations Should We Consider, DOE Energy Storage Safety Meeting, 2014. See also https://www.energy.gov/sites/prod/files/2014/12/f19/OE%20Safety%20Strategic%20Plan%20December%202014.pdf; http://www.hawaiinewsnow.com/story/19173811/hfd-battling-kahuku-wind-farm-blaze/; https://www.scientificamerican.com/article/battery-fires-pose-new-risks-to-firefighters/.

"The risks from scalding heat, poisonous fumes, a collapsing structure and the potential for battery explosions kept firefighters outside the warehouse."[233] Firefighters at this site faced thick smoke, toxic fumes, and other hazards.[234,235] "The August … fire, the third since opening in March 2011, was so fierce that firefighters could not enter the building for seven hours."[236] Other fire departments have reported: "Basically you need to overwhelm it with more water than you think you need."[237]

The typical layout of battery storage facilities consists of rows of batteries with narrow separating aisles. The DEIR contains no information on the layout of batteries in any of the alternatives and thus fails as an informational document under CEQA. The DEIR should have included a diagram showing facility layout, including number of battery storage buildings (one or two?), battery spacing, design of sprinkler system, and location of ancillary facilities.

The fire stations that would respond to the fires are not nearby.[238] In the case of the Hawaii fires discussed above, a recent article in Scientific American reported: "By the time you get enough firefighting forces and the right extinguishing sources, the fire is going to progress quite a bit."[239] It also explained: "One important lesson is to have fire response resources on-site, like dry chemicals and deployment systems." Further,

[233] Umair Irfan, Battery Fires Pose New Risks to Firefighters, Scientific American, February 27, 2015; available at: https://www.scientificamerican.com/article/battery-fires-pose-new-risks-to-firefighters/.

[234] Ibid.

[235] Ibid.

[236] Ros Davidson, Analysis: First Wind Project Avoids Storage After $30m Fire, *Wind Power*, March 6, 2014; https://www.windpowermonthly.com/article/1284038/analysis-first-wind-project-avoids-storage-30m-fire. See also Eric Wesoff, Battery Room Fire at Kahuku Wind-Energy Storage Farm, Energy Storage, August 3, 2012; https://www.greentechmedia.com/articles/read/battery-room-fire-at-kahuku-wind-energy-storage-farm#gs.xdxv6h and Nigon and others, 2019, pdf 55.

[237] Cameron Polom, Solar Storage Facilities Present Unique Hazard for Firefighters, *West Valley News*, April 21, 2019; https://www.abc15.com/news/region-west-valley/surprise/solar-storage-facilities-present-unique-hazard-for-firefighters.

[238] DEIR, Figure 4.15-1, pdf 785.

[239] Irfan 2015.

in the case of the Project, the facility would be unmanned in a rural location. This means firefighters from a distant location may have to extinguish a blaze without knowing what chemicals to use, where the electrical shutoffs are, or what kind of fire retardant to use.

Firefighters did not enter the building until 7 hours after the flames started due to questions about the toxicity of the 12,000 batteries. Two other fires occurred in the battery storage building, attributed to ECI capacitors in inverters from Dynapower.[240,241]

A fire broke out at a BESS in Wisconsin in 2016. The fire began in a utility-scale energy storage system that was in a partially assembled state that was not in operation and not connected to a power source or load. The fire occurred when a technician from the battery manufacturer was working on the energy storage system and was started in one of the DC power and control compartments adjacent to a battery rack. Once started, it spread to other batteries.[242]

Another major fire in the United States recently occurred on April 19, 2019, in Surprise, Arizona at the APS McMicken Energy Storage Facility, equipped with two 2-MW AES Advancion battery arrays.[243,244] An explosion in the McMicken battery system led to a fire.[245,246] This event injured eight firefighters, one critically.[247] Four firefighters

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240 Eric Wesoff, Battery Room Fire at Kahuku Wind-Energy Storage Farm, GTM, August 3, 2012; https://www.greentechmedia.com/articles/read/battery-room-fire-at-kahuku-wind-energy-storage-farm#gs.9exghx.

241 *Hawaii News Now*, August 1, 2012.

242 Nigon and others, pdf 58.

243 Ibid.

244 Jennifer Runyon, APD Battery Energy Storage Facility Explosion Injures Four Firefighters; Industry Investigates, *Renewable Energy World*, April 23, 2019; https://www.renewableenergyworld.com/2019/04/23/aps-battery-energy-storage-facility-explosion-injures-four-firefighters-industry-investigates/.

245 Arizona Public Service, Equipment Failure at McMicken Battery Facility, April 26, 2019; https://www.aps.com/en/About/Our-Company/Newsroom/Articles/Equipment-failure-at-McMicken-Battery-Facility.

246 Julian Spector, What We Know and Don't Know About the Fire at an APS Battery Facility, April 23, 2019; https://www.greentechmedia.com/articles/read/what-we-know-and-dont-know-about-the-fire-at-an-aps-battery-facility#gs.9czowd.

247 Eight AZ Firefighters Hurt, One Critically, in Explosion, Firehouse.Com News, April 20, 2019; https://www.firehouse.com/safety-health/news/21077221/eight-az-firefighters-injured-one-critically-in-a-large-utility-battery-explosion.

were hospitalized for chemical inhalation burns.[248] Of the firefighters injured, three required an extended hospital stay. The most serious injuries included a firefighter who had a "nose fracture, skull fracture, collapsed lung, rib fractures, broken tibia and fibula and an artery cut in his left leg." Others sustained multiple fractures, burns, and concussions.[249]

Firefighters are a significant at-risk population because batteries may rupture when exposed to extreme heat/fire, leaking corrosive materials, and/or emit toxic fumes, regardless of the specific battery technology. Burning batteries may emit acrid smoke, irritating fumes, and toxic fumes of fluoride, resulting in acute and chronic health effects in responding firefighters (and any nearby workers and residents). Acute health hazards include chemical inhalation burns and damage to lungs, eyes, and skin. Cobalt, present in lithium-ion batteries, is a suspected human carcinogen.[250]

The McMicken Facility fire was not the first APS battery fire. Another smaller fire has been reported at another APS system.[251] In November 2012, a 1.5-MW system at the APS Elden Substation near Flagstaff, Arizona, also caught fire.[252] The root cause analysis for this fire identified a near-miss in May 2012 when a battery cell was severely discharged and the cell was continuously charged against its intended design.[253] Arizona Public Service recently shut down two other battery systems following the explosion.[254]

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[248] Julian Spector, What We Know and Don't Know About the Fire at an APS Battery Facility, GTM, April 23, 2019; https://www.greentechmedia.com/articles/read/what-we-know-and-dont-know-about-the-fire-at-an-aps-battery-facility#gs.w82d63.

[249] Chris Dubay, Vice President/Chief Engineer, National Fire Protection Association, ENR Letters, August 21, 2019; https://www.enr.com/articles/47377-letter-battery-storage-fire-risks-need-greater-attention.

[250] Honeywell, Material Safety Data Sheet, Lithium-Ion Battery; https://honeywellaidc.force.com/supportppr/s/article/Lithium-ION-battery-specifications-MSDS-shipping-LI-ION-batteries.

[251] Karl-Erik Stromsta, APS and Fluence Investigating Explosion at Arizona Energy Storage Facility, *GTM*, April 22, 2019; https://www.greentechmedia.com/articles/read/aps-and-fluence-investigating-explosion-at-arizona-energy-storage-facility#gs.9cnh9x.

[252] H. J. Mai, APS Storage Facility Explosion Raises Questions about Battery Safety, *Utility Dive*, April 30, 2019; https://www.utilitydive.com/news/aps-storage-facility-explosion-raises-questions-about-battery-safety/553540/. See also Eckhouse and Chediak, April 24, 2019; Nigon and others 2019, pdf 57; and Colthorpe, June 2019.

[253] Sandra D. Kennedy, Commissioner, Re: In the Matter of the Commission's Inquiry of Arizona Public Service Battery Incident at the McMicken Energy Storage Facility Pursuant to Arizona Administrative Code R14-2-101, Docket No. E-01345A-19-076, August 2, 2019, p. 2; https://docket.images.azcc.gov/E000002248.pdf.

[254] Mai, April 30, 2019.

The Arizona Corporation Commission (ACC) recently reviewed the 2019 APS McMicken Energy Storage Facility and 2012 APS Elden Substation near-miss and concluded that "utility scale lithium-ion batteries using the chemistries in those types of lithium-ion batteries are not prudent and create unacceptable risks, particularly those with chemistries that include compounds that can release hydrogen fluoride in the event of a fire and/or explosion."[255]

Other battery fires have occurred on airplanes, including in a Dreamliner 787 at Heathrow Airport,[256] in-flight on an All Nippon Airways 787 over Japan, forcing an emergency landing, and aboard a Japan Airlines 787 at Boston's Logan International Airport, resulting from the release of flammable electrolytes, heat damage, and smoke on the aircraft.[257]

My review of the limited available information in the DEIR indicates that the proposed BESS options will use batteries with similar chemistries, mostly notably chemicals that include compounds that can release hydrogen fluoride and other toxic chemicals. Tests on a range of battery compositions revealed that they all release toxic chemicals.[258] If other batteries are used, or there are advances in lithium-ion technologies, as suggested in the DEIR, a subsequent DEIR should be prepared to evaluate any new impacts.

The chemical composition of the lithium-ion batteries based on current lithium-ion technology includes cobalt oxide; manganese dioxide; nickel oxide; carbon; unidentified electrolyte; polyvinylidene fluoride; aluminum foil; copper foil; aluminum; and inert materials.[259] However, the DEIR failed to support battery composition with MSDSs from potential battery suppliers, to indicate the relative amounts of each compound present in the battery, or to confirm that no other chemicals were present. A recent letter from Tesla to the Arizona Corporation Commission explained that the term "lithium-ion batteries":[260]

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255 8/2/19 APS Report.

256 AIG, Lithium-ion Battery Energy Storage Systems: The Risks and How to Manage Them; https://www.aig.co.uk/content/dam/aig/emea/united-kingdom/documents/Insights/battery-storage-systems-energy.pdf.

257 Nigon and others, pdf 55.

258 Consolidated Edison and NYSERDA, Considerations for ESS Fire Safety, February 9, 2017.

259 Imperial County Planning and Development Services, Draft Supplemental Environmental Impact Report. Prepared by Burns McDonnell, July 15, 2019, pdf 78, Sec. 2.6.3.9; http://www.icpds.com/?pid=6973.

260 Letter from Sarah Van Cleve, Manager, US Energy Policy, Tesla, Inc., to Arizona Corporation Commission, Re: Tesla Response to Commissioner Kennedy's August 2nd Letter Regarding Lithium-Ion

> actually encompasses a broad set of storage technologies – there are many different sub-chemistries of lithium-ion batteries, each with their own unique characteristics. Common lithium-ion sub-chemistries for stationary storage include nickel manganese cobalt oxide (NMC) and lithium iron phosphate (LFP) but there are many other sub-chemistries such as lithium manganese oxide (LMO) and nickel cobalt aluminum oxide (NCA). Different types of lithium-ion battery systems have different properties and associated risks.

Polyvinylidene fluoride decomposes into hydrogen fluoride gas in fires.[261] Hydrogen fluoride is an extremely poisonous gas.[262] As there are residences within 500 feet of the facility, a fire in the BESS would likely result in significant health impacts to nearby residents, as well as workers at the adjacent shopping mall in Alternative BS-3. Thus, the DEIR fails as an informational document under CEQA for failing to include an MSDS and other characterization data on the batteries that would be used and for failing to evaluate the health and other impacts of a BESS fire.

Further, the cobalt, nickel, copper, aluminum, and manganese in these batteries could be volatilized at the very high temperatures encountered in battery fires and result in significant environmental impacts, including adverse health impacts to firefighters, workers, and residents; and toxicity to vegetation, including farm crops in surrounding fields. These potential impacts are not disclosed or analyzed in the DEIR.

The 2019 Kennedy analysis of the Arizona fires discloses fires with flame lengths of 10 to 15 feet that grew into flame lengths of 50 to 75 feet. The Flagstaff Fire Department Report for the 2012 incident expressed concerns about "a serious risk of a large-scale explosion." The ACC concluded that "a similar fire event at a very large lithium-ion battery facility (250 MW+) would have very severe and potentially catastrophic consequences, and that responders would have a very difficult time trying to handle such an incident." The 2019 Kennedy report goes on to conclude:

Battery Safety/Docket No. E-01345A-19-0076, August 19, 2019; https://docket.images.azcc.gov/E000002454.pdf.

[261] Craig L. Beyler and Marcelo M. Hirschler, Thermal Decomposition of Polymers, Chapter 7, Table 1-7.1; https://pdfs.semanticscholar.org/d3fa/4a1616fd1457c02d4f477dcbdae706c9667f.pdf; Material Safety Data Sheet, Poly(vinylidene fluoride), ("Combustion products include carbon monoxide (CO), carbon dioxide (CO_2), **hydrogen fluoride**, and other pyrolysis products typical of burning organic material" (emphasis added)), pdf 3; http://datasheets.scbt.com/sc-264080.pdf.

[262] CDC, Facts About Hydrogen Fluoride (Hydrofluoric Acid): "Breathing in hydrogen fluoride at high levels or in combination with skin contact can cause death from an irregular heartbeat or from fluid buildup in the lungs"; https://emergency.cdc.gov/agent/hydrofluoricacid/basics/facts.asp. See also ATSDR, Medical Guidelines for Hydrogen Fluoride; https://www.atsdr.cdc.gov/MMG/MMG.asp?id=1142&tid=250.

To appropriately plan for such a catastrophic event, the large-scale lithium ion battery facility using the same chemistries as the APS Elden Substation (Flagstaff) facility fire and the McMicken facility would need to be built in isolation far from everything else, because an explosion could potentially level buildings at some distance from the battery facility site. The energy stored at a 2 MW battery facility is equivalent to 1.72 tons of TNT. The energy stored at a 250 MW battery facility is equivalent to 215 tons of TNT. Also, large amounts of hydrogen fluoride could be released and dispersed that would affect and harm the public at a substantial distance downwind. There would be concerns also about lingering hydrogen fluoride contamination in the affected areas.

Based on this analysis, an explosion at the proposed BESS alternatives BS-2 and BS-3 would be equivalent to 47 and 103 tons of TNT, respectively.[263] This is sufficient to seriously damage adjacent residential neighborhoods, vineyards, shopping malls, commercial properties, schools, and parks, resulting in significant property damage, mortality, and health impacts to residents, agricultural, vineyard and other workers. The DEIR fails as an informational document under CEQA for failing to disclose and evaluate the risk and consequences of explosions and fires at the proposed BESS alternatives. If these impacts are not analyzed in the FEIR for this Project, a future EIR will be required to analyze them. The NFPA concluded as follows based on the experience in Arizona:[264]

However, as the Arizona fire illustrates, this technology is not risk free. BESS technologies, which are typically large configurations of chemical batteries, can explode, catch fire, and release toxic gases under certain conditions. They are also subject to the phenomena of thermal runaway, which means they can burn intensely for significant periods of time.

These hazards are dangerous for firefighters and for anyone else nearby an emergency incident. Policymakers must make sure first responders and other officials have the tools necessary to deploy BESS safely.

In contrast to lithium-ion battery hazards, reviewed above, there is no published operating history on flow batteries. These batteries contain electrolytes, including vanadium and zinc, which can be toxic to the environment or to people.[265] Further, their size limits their application to large stationary industrial applications, and their complex system of pumps, sensors, vessels, and so on, provide ample opportunity for upsets with the potential to release electrolytes into the environment.

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[263] The 2 MW battery at the Arizona McMicken facility is equivalent to 1.72 tons of TNT. Thus, Project alternative BS-2 (55 MW) is equivalent to (1.72)(55/2) = **47 tons TNT** and BS-2 (120 MW) is equivalent to (1.72)(120/2) = **103 tons TNT**.

[264] NPFA, August 2019, p. 1.

[265] David Rosewater, First Responder Safety for Grid Energy Storage, Sandia National Laboratories, 2015, pdf 14, 21; https://www.osti.gov/servlets/purl/1334066.

In sum, there is no BESS technology that will not have significant impacts, given the proximity of sensitive receptors to all proposed BESS sites. The EIR must be revised to disclose their impacts, or a future EIR must be prepared to evaluate these impacts when the battery technology is selected.

4.3. Impacts of Flow Batteries

The DEIR suggests that flow batteries would solve the significant impacts of lithium-ion batteries discussed in Comments 4.2 and 5, stating "Flow battery technology, which could be deployed at FTM Site 6, would have reduced fire risk because the electrolyte material is not flammable."[266] However, flow batteries have potentially significant impacts that were not disclosed in the DEIR. A recent report explains:[267]

> Flow batteries have two electrolytes- catholyte for the positive electrode (cathode) and anolyte (anode) for the negative electrode. The terms cathode and anode correspond to reduction and oxidation occurring at positive and negative terminals during discharge. Flow battery electrolytes can be hazardous in several ways including acidity and toxicity. Acidity is measured on the ph scale. Flow battery electrolyte is not especially acidic when compared to lead-acid battery electrolyte (close to ph = 0). If human skin is exposed to electrolyte, it may cause rashes or chemical burns if not treated quickly. Similarly, eye contact may result in irritation, lacrimation, pain, redness, corneal burns, and possible permanent, partial, or complete blindness if not treated quickly. The toxicity of the electrolyte has additional effects if ingested, inhaled, or released to the environment. Large pools from electrolyte spills can generate localized gas clouds that can be hazardous to human health. In an analysis of a hypothetical 500-gallon spill from a specific vanadium redox flow battery, with reasonable assumptions about hydrochloric acid (HCl) concentration in solution, spill volume, ground absorption, and local weather conditions, HCl concentrations in the air could reach potentially lethal exposure levels, after 60 minutes, at a range of 28m from the edge of the spill (using acute exposure guideline levels (AEGL)). Note that vanadium redox electrolyte can also contain sulfuric acid. As high temperatures can reduce vapor pressures significantly, a coincident fire can exasperate the toxicity hazard, however flow battery electrolytes are generally not flammable. While these specific figures do not apply across all technologies, the hazard from chemical off-gassing of large spills should be considered in the design, siting, installation, and emergency response procedures.

Further:[268]

> When the positive and negative charged electrolytes mix at a high state-of-charge, significant heat is generated, with violent release of toxic and/or flammable gases. For a vanadium flow battery, hydrogen and oxygen may be released, for a mixed acid vanadium flow battery, chlorine may also be released. Hence it is critical that the electrolytes that are stored in separate tanks, do not mix. This requires secondary containment for each tank. The secondary containment volume must be sufficiently large to accommodate the electrolyte volume contained in the tank. The electrolyte captured in the secondary containment may not be reused before treatment. Proper procedure for treating this spilled electrolyte before reuse has yet to be standardized and may lead to a delay in restoring system functionality.
>
> The ecological impact of a large spill should also be considered. The material safety data sheet (MSDS) from a large zinc bromide flow battery manufacturer describes that major components of their electrolyte "are considered to be very harmful to aquatic life" [51]. So, proximity to nearby water sources or aquifers should be taken into consideration in siting.

The DEIR fails as an informational document under CEQA for failing to disclose these significant impacts of flow batteries.

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[266] DEIR, pdf 655.

[267] David Rosewater and others, Grid-scale Energy Storage Hazard Analysis & Design Objectives for System Safety, Sandia Report SAND2020-9360, August 2020, p. 31; https://www.sandia.gov/ess-ssl/wp-content/uploads/2020/09/Rosewater-APS.pdf.

[268] Ibid.

4.4. Battery Handling and Transportation Accidents

CEQA Guidelines Section 15126.2(c) requires a discussion of any significant irreversible environmental change that would be caused by a project. A project would result in significant irreversible changes if it involves uses in which irreversible damage could result from any potential environmental accidents associated with the project.[269] The batteries will likely be shipped from warehouses in unknown location(s) and transported to the site from these undisclosed locations by undisclosed means (rail, truck, ship?), over undisclosed routes and roadways. Transportation could result in crush or puncture damage, possibly leading to the release of electrolyte material along transport routes or in storage. These routes could include sensitive habitat that would be irreversibly damaged in the event of a transportation accident. Further, an explosion triggered by a fire during handling and transportation could result in injuries and deaths of workers and motorists.

Lithium-ion batteries are sensitive to damage, especially during handling and transport.[270] They are also sensitive to high ambient temperatures,[271] which will be experienced by the Project's batteries as they will likely have to pass through sensitive biological habitat in desert areas. It is well known that battery accidents occur during handling, loading, and unloading in warehouses and during transportation.[272] The DEIR fails to discuss the risk of accidents during battery storage, handling, and transportation to the site and thus fails as an informational document under CEQA.

5. IMPACTS OF PROPOSED BESS FACILITIES

The DEIR's screening process identified two BESS alternatives that were carried forward for analysis in the DEIR: BS-2, battery storage to address the distribution need; and BS-3, third-party, behind-the-meter solar and battery storage.[273]

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[269] 14 CCR § 15126.2; DSEIR, p. ES-8.

[270] Kjell-Arne Jonsson, The Dangerous Consequences of Taking Shortcuts When Shipping Lithium-Ion Batteries, March 9, 2018; http://info.nefab.com/lib-blog/lithium-ion-batteries-shipping-shortcuts.

[271] Allianz Risk Consulting, Lithium-Ion Batteries, Risk Bulletin, 2017; https://www.agcs.allianz.com/content/dam/onemarketing/agcs/agcs/pdfs-risk-advisory/risk-bulletins/ARC-Lithium-Ion-Batteries.pdf.

[272] FAA Office of Security and Hazardous Materials Safety, Lithium Batteries & Lithium Battery-Powered Devices, August 1, 2019; https://www.faa.gov/hazmat/resources/lithium_batteries/media/Battery_incident_chart.pdf.

[273] DEIR, Sections 3.3.7 and 3.3.8.

5.1. The DEIR Omits Risk of Upset Analyses

The proposed BESS alternatives are very close to many sensitive receptors, requiring a formal risk of upset analysis to estimate potential public health and property damage risks. The Alternative Screening Report admits that "fire risk is a concern with BESS installations (particularly lithium-ion BESSs)…" and further asserts that "should BESS facilities catch fire, they could potentially pose a hazard to fire fighters and other first responders due to their chemical components. These issues will need to be fully evaluated in the EIR..."[274] This is confirmed by the review in Comment 4.2.

However, the DEIR contains no analysis of these issues for any alternative, which typically requires a formal risk of upset analysis. Thus, the DEIR fails as an informational document under CEQA. Instead, the Alternative Screening Report asserts similar facilities "in other parts of the world ( ) suggest that any fire risk of BESS facilities can be adequately mitigated."[275] However, the Screening Report and DEIR fail to disclose the history of accidents at BESS facilities, therefore failing as an informational document under CEQA. The proximity of sensitive receptors to the proposed BESS alternatives and the history of accidents at these facilities (Comment 4.2) require the preparation of formal risk of upset analyses, which likely will eliminate many potential BESS sites from consideration.

5.1.1. Alternative BS-2

This alternative would reduce peak loads during the summer to relieve pressure on the area substations and feeders. The batteries would discharge stored energy to the grid during peak demand and charge from the grid during hours of low demand (e.g., nighttime).[276]

The potential locations of BS-2 battery sites are shown in DEIR Figures ES-3 and 3-16. Land use designations for these sites are summarized in DEIR Table 3-17. This summary shows that some of these alternatives are located near sensitive receptors. Four potential sites are located within residential land uses (FTM Sites 2, 3, 4, 8); one is located in a "regional commercial" land use, the Woodland Shopping Center (FTM Site 2) and is likewise near residential areas;[277] and one is located adjacent to the CAL FIRE Attack Base, next to the Paso Robles Municipal Airport (FTM Site 5). The other two (FTM Sites 6 and 7) are designated as located within "county other" and unidentified

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[274] DEIR, Appendix A, p. 3-73, pdf 109.

[275] Ibid.

[276] DEIR, p. 3-112, pdf 308.

[277] DEIR, Appendix A, pdf 93, Figure 3-13.

"public facilities." The locations of alternatives close to areas where sensitive receptors would be located—in residential and commercial areas—are summarized in Figure 15. In addition, FTM Site 7, not shown on Figure 17, is located close to a church.[278]

Figure 15: BESS Alternatives Located Near Sensitive Receptors[279]

FTM Site 1:

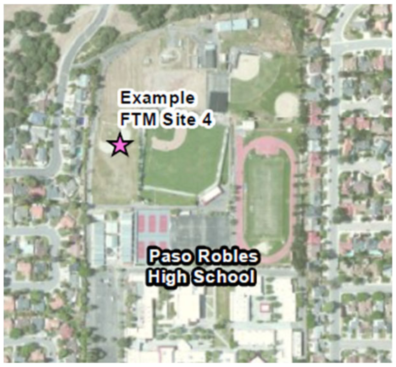
FTM Site 2:

FTM Site 3:

[278] DEIR, p. 4.3-10, pdf 428.

[279] DEIR, Figure 3-16, pdf 309.

FTM Site 4:



FTM Site 5:

Despite the numerous nearby sensitive receptors, the DEIR failed to analyze impacts of accidents. The DEIR indicates that the BESS technology that would be used at these eight sites is lithium ion, with the exception of Site #6, where both lithium-ion and flow batteries[280] are proposed.[281] Lithium-ion batteries were ultimately selected for evaluation due to space requirements of the redox flow batteries[282] and lack of experience with this technology.[283,284]

The DEIR explains that lithium-ion batteries are the most space-efficient and cost-effective technology currently available, particularly at sites such as those with

280 DEIR, p. 3-126, pdf 322.

281 DEIR, Table 3-18, pdf 321.

282 DEIR, Appendix B, p. 3-65, pdf 101 and Table 3-8, p. 3-70, pdf 106.

283 SDGE, Innovative Battery Storage Technology Connected to the California Grid, April 30, 2019; https://sdgenews.com/article/innovative-battery-storage-technology-connected-california-grid.

284 Jens Noak and others, Redox Flow Batteries for Renewable Energy Storage, Energy Storage Summit 2021; https://www.energy-storage.news/blogs/redox-flow-batteries-for-renewable-energy-storage.

limited available space (e.g., sites 1-4).[285] The DEIR states that the analysis of these alternatives was based on 2019 Tesla Megapack specifications and redox flow batteries, enclosed in buildings.[286]

The DEIR mentions that lithium-ion BESSs have downsides, "such as potentially elevated fire hazard risk in comparison to other technologies."[287] The DEIR also explains that the alternative to lithium-ion batteries, redox flow batteries, offers "potential advantages, such as long lifecycles, low temperature ranges for operation, and easy scalability…" and "may have reduced fire risk compared to lithium-ion batteries, but they require the use of liquid electrolyte with high concentrations of acid."[288] However, due to the significantly larger footprint of redox flow batteries, they would be best suited to FTM Site #6, where there is ample space.[289] Further, redox flow batteries are not yet commercially available. The DEIR fails to mention the hazards associated with flow batteries, which include large tanks of electrolytes, including vanadium, zinc-bromine, and organic compounds[290]—toxic compounds that would be released into the environment in an accident. Comment 5.1.

The DEIR repeatedly points to the fire risk of the BESS alternatives. The Hazards and Hazardous Material section, for example, explains with respect to Alternative BS-2:[291]

> and 8 would both be within the SRA HFHSZ, and thus would have elevated fire risk. Fire risk is a concern with BESS installations (particularly lithium-ion BESSs) and could pose a hazard to fire fighters and other first responders due to their chemical components. Fires associated with electric vehicles and various consumer electronics have shown that lithium-ion batteries have the potential to catch fire (Business Insider 2019; CNET 2016). Lithium-ion batteries contain a flammable electrolyte and have the potential for "thermal runaway," which is a self-perpetuating cascade process where one compromised battery cell ignites adjacent cells, potentially resulting in a large-scale fire (SP Global 2019). Fires have occurred at utility-scale lithium-ion BESS installations, including one at the 2 MW BESS in Surprise, Arizona in April of 2019; however, utility-scale lithium-ion BESSs have been widely deployed in the U.S. (SP Global 2019; U.S. Energy Information Administration 2019). Improved safety standards are in development and safety certifications have been developed to reduce fire safety risk from lithium-ion BESSs as much as possible (SP Global 2019). Flow battery technology, which could be deployed at FTM Site 6, would have reduced fire risk because the electrolyte material is not flammable.

It also explains with respect to Alternative BS-3:[292]

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[285] DEIR, p. 3-126, pdf 322.

[286] DEIR, Alternative B, p. 3-60, pdf 96.

[287] Ibid.

[288] Ibid.

[289] DEIR, p. 3-127, pdf 323.

[290] Robert F. Service, New Generation of "Flow Batteries" Could Eventually Sustain a Grid Powered by the Sun and Wind, *Science*; https://www.sciencemag.org/news/2018/10/new-generation-flow-batteries-could-eventually-sustain-grid-powered-sun-and-wind.

[291] DEIR, p. 4.9-39, pdf 655.

> Lithium-ion BTM storage facilities could pose a fire safety hazard (see discussion under Alternative BS-2 above), but, when installed properly, this risk can be greatly mitigated. It is assumed that all applicable local codes and requirements would be followed for the permitting, siting, and installation of third-party BTM facilities that may result from procurement via the DIDF.

The Wildfire section of the DEIR similarly recognizes the fire hazards of BESS alternatives BS-2 and BS-3. As to alternative BS-2:[293]

> serve to minimize ignition potential and related wildfire risks. Once constructed, BESSs (in particular, lithium-ion BESSs) may present a fire risk, particularly for FTM sites located within the SRA, such as the illustrative FTM Sites 6 or 8. UL 9540 is a safety standard specifically designed for electrochemical BESSs and includes, among other things, size and separation requirements to prevent a fire originating in one BESS unit from propagating to adjacent units (i.e., thermal runaway) (UL LLC 2020). Implementation of this standard, along with compliance with local laws and regulations for fire safety, would reduce potential impacts from BESSs related to fire risk. Further, FTM BESSs under Alternative BS-2 would be operated remotely and, therefore, these facilities would not expose structures or people to pollutant concentrations from a wildfire, uncontrolled spread of wildfire, and/or expose people or structures to significant downslope or downstream flooding, landslide affects, and post-wildfire-related hazards.

As to Alternative BS-3:[294]

> ignition. As discussed in Section 4.9, "Hazards and Hazardous Materials," BTM solar systems and BESSs do have some potential to increase fire hazard during operation. It is assumed that all applicable local codes and requirements would be followed for the permitting, siting, and installation of third-party BTM installations that may result from procurement via the DIDF. No new or additional infrastructure (e.g., roads, fuel breaks, or emergency water sources) would likely need to be installed or maintained as a result of Alternative BS-3.

The PEA acknowledges these impacts and states that "[t]hese issues will need to be fully evaluated in the EIR…"[295] However, the EIR fails to evaluate these issues, instead just repeating the unsupported assertions in the PEA.

Thus, mitigation relies on "local codes and requirements" to prevent BESS accidents, without ever disclosing what those codes and requirements are or evaluating their potential effectiveness.

First, it is well known that "local codes and requirements" do not prevent accidents, which are often triggered by external events or defective battery cells.[296] A helicopter accident, a traffic accident, a terrorist attack, or an external fire could cause an accident.

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[292] DEIR, p. 4.9-41, pdf 657.

[293] DEIR, p. 4.20-21, pdf 903.

[294] DEIR, p. 4.20-22, pdf 904.

[295] DEIR, Appendix A, pdf 109, p. 3-73.

[296] See, for example, Andy Colthorpe, Arizona Battery Fire's Lessons Can be Learned by Industry to Prevent Further Incidents, DNV GL Says, *Energy Storage*, Summer 2021, July 29, 2020; https://www.energy-storage.news/news/arizona-battery-fires-lessons-can-be-learned-by-industry-to-prevent-further.

However, despite recognizing some of the hazards of the BESSs, the DEIR fails to actually analyze them, which is typically done in a "risk of upset analysis." A risk of upset analysis should have been prepared for favored BESS alternatives BS-2 and BS-3. As shown in Figures 2 and 5, these alternatives are very close to sensitive receptors. Alternative BS-2 is adjacent to a shopping mall and BS-3 is surrounded by dense residential neighborhoods. Thus, an accident at these facilities would result in significant impacts, including potentially property damage, health impacts from toxic chemicals, and even mortality. Thus, the DEIR fails as an informational document under CEQA for failing to disclose and mitigate these risks.

5.2. The DEIR Omits Hazards Associated with the Transportation and Disposal of Batteries

The PEA states that "[o]ther potential impacts of BESSs include hazards associated with recycling and disposal of batteries and materials at the end of their usable life. BESSs contain hazardous materials, which could expose workers, the public, or the environment to risks if not disposed of properly. This is another area that will be evaluated in the EIR…"[297]

The DEIR contains a section on "hazards and hazardous materials"[298] under Impact HAZ-1, "create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials." However, the DEIR fails to address the impacts associated with the transportation of the batteries to the site and their disposal.

The DEIR does not disclose how the batteries will be transported to the site (ship, rail, flatbed truck), the transportation routes, details of on-site storage during construction, where the batteries will be manufactured and recycled, or the routes and means of transport to the recycling center. Accidents can occur during transport, storage, and recycling. Lithium-ion batteries are sensitive to damage, especially during handling and transport.[299] It is well known that battery accidents occur during handling, loading, and unloading in warehouses and during transportation.[300] The DEIR is also silent on the disposal of the batteries at the end of their useful life.

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297 DEIR, Appendix A, p. 3-73, pdf 109.

298 DEIR, Section 4.9, pdf 617.

299 Kjell-Arne Jonsson, The Dangerous Consequences of Taking Shortcuts When Shipping Lithium-Ion Batteries, March 9, 2018; http://info.nefab.com/lib-blog/lithium-ion-batteries-shipping-shortcuts.

300 FAA Office of Security and Hazardous Materials Safety, Lithium Batteries & Lithium Battery-Powered Devices, August 1, 2019; https://www.faa.gov/hazmat/resources/lithium_batteries/media/Battery_incident_chart.pdf.

CEQA Guidelines Section 15126.2(c) requires a discussion of any significant irreversible environmental change that would be caused by a project. A project would result in significant irreversible changes if it involves uses in which irreversible damage could result from any potential environmental accidents associated with the project.[301] The batteries will likely be shipped from a factory or warehouses in unknown location(s) and transported to the site from these undisclosed locations by undisclosed means (rail, truck, ship?), over undisclosed routes and roadways. These routes could include sensitive desert habitat that would be irreversibly damaged in the event of a transportation accident. Further, an explosion triggered by a fire during handling and transportation could result in injuries and deaths of workers and motorists and could irreversibly damage the immediately adjacent CSE facility, as well as other nearby solar facilities.

6. OPERATIONAL GREENHOUSE GAS EMISSIONS ARE UNSUPPORTED, UNDERESTIMATED, AND SIGNIFICANT

The DEIR estimated criteria pollutants and greenhouse gas (GHG) emissions from Project operation and concluded they were not significant.[302] However, as discussed below, the DEIR omitted the major sources of these emissions, which when included result in significant GHG impacts.

DEIR Table 4.8-1 indicates that the major source of GHG emissions is construction, primarily "ground-based construction" (2,025 MT CO_2e) and helicopter emissions (699 MT CO_2e). A secondary source of operational emissions is sulfur hexafluoride (SF_6) from Project equipment (96 MT CO_2e/yr).[303] These emissions are underestimated and exclude the major source of Project GHG emissions, operation of the BESS facilities.

6.1. Operational GHG Emissions

The Project is a major source of operational GHG emissions, which arise from three sources: (1) sulfur hexafluoride (SF_6) used in Project equipment; (2) helicopters patrolling power lines;[304] and (3) charging of the BESSs. The DEIR fails to support the SF_6 emissions and omits the latter two sources of emissions.

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[301] 14 CCR § 15126.2; DSEIR, p. ES-8.

[302] DEIR, Section 4.8.

[303] DEIR, Table 4.8-1, pdf 407.

[304] DEIR, p. 2-87, pdf 167.

6.1.1. Sulfur Hexafluoride (SF_6)

The DEIR reports 96 MT CO_2e/yr from sulfur hexafluoride (SF_6) leakage from "gas insulated switches and equipment"[305] and asserts that emission support is in Appendix C.[306] Appendix C to the DEIR does not contain any support for the SF_6 emissions. Instead, the support for these emissions is in Appendix C of the PEA.

6.1.2. CO_2e Emissions from the Use of Helicopters for Facility Inspection

The DEIR indicates that annual inspections of the 70 kV power line segment will be conducted either "from the ground or by helicopter… The inspection process involves routine patrols from existing local staff either on the ground or by helicopter tasked with patrolling the power lines."[307] Elsewhere, "[r]outine maintenance of the power line structures and conductors would require travel overland on access roads or off-road and may require the use of helicopters to access the site."[308] In the discussion of noise: "[t]he use of a helicopter… for routine maintenance inspection was evaluated separately."[309] Further, nesting bird survey will be accomplished by ground surveys and/or by helicopter…"[310] The DEIR does not include any GHG emissions from the use of helicopters for these inspection activities.

6.2. Emissions from Charging the BESSs

The batteries in BESS facilities must be charged with energy from the grid. The generation of this energy emits GHGs and criteria pollutants. Further, a BESS requires electricity to operate its ancillary cooling and control systems, including inverters, transformers, and HVAC units. The DEIR did not include emissions from any of these sources. As demonstrated below, GHG emissions from the Project are significant and unmitigated when battery charging emissions are included.

The emissions from Project operation depend on how many megawatt hours (MWh) of generation are required to charge the Project batteries, which grid sources are

[305] DEIR, Table 4.8-1.

[306] DEIR, p. 4.8-6, pdf 606.

[307] DEIR, pdf 167, 767, 812.

[308] DEIR, pdf 682.

[309] DEIR, pdf 747.

[310] DEIR, pdf 174.

the marginal sources[311] of supply during the hours when Project charging or discharging is occurring, and the emission rates of those grid sources. The number of MWh of charging energy required will in turn depend on the expected Project generation and the Project efficiency (the percentage of charging energy which can be recovered as generation during discharge).

The DEIR contains no information on the net generation of electricity needed to operate the proposed BESS(s). Absent regulatory requirements or mitigation measures to the contrary, battery storage facilities store whatever energy is the cheapest and displace whatever is the most expensive, with no concern for emissions that would result from this exchange.

If the charging energy is from conventional sources, such as gas or coal-fired generation, charging will generate emissions as those sources would not otherwise operate because there would be no market for them. That fraction is likely quite low because only a small fraction of solar generation (and virtually no non-solar renewable generation) is curtailed[312] generation that could be used for battery charging. Thus, if charging occurs in hours when the marginal fuel in the CAISO-controlled grid is a fossil fuel, the facility would increase GHG and criteria pollutant emissions that were not included in the DEIR's analyses.

The DEIR makes no commitment that the batteries will be charged with renewable energy. The DEIR states that the BESSs will "defer the need for additional distribution capacity… to 'shave' peak loads during periods when energy use along these feeders is high (i.e., reduce peak loads during summer) to relieve pressure on the area substations and feeders. BESSs would likely operate on a daily cycle where they would discharge during hours of peak demand and charge during hours of lower demand (e.g., nighttime)."[313]

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[311] The marginal source of supply in a given hour is the source whose output would be increased if demand increases in that hour from the previous hour, or whose output would be decreased in that hour if demand decreases in that hour from the previous hour.

[312] Renewable energy is "curtailed" when it could have been physically produced (e.g., the sun is shining or the wind is blowing), but it was not produced due to economic (e.g., prices too low to be worth generating) or electrical system factors (e.g., the renewable generation would cause a nonrenewable generator to be turned off that is expected to be needed in the near future, without adequate time to restart it if it is turned off, and thus the CAISO orders renewable curtailment to avoid nonrenewable curtailment). The great majority of curtailment in California to date has been economic (over 99% in 2017, in 2018, and in 2019). Comparable data are not currently available for 2020. See http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportDec31_2017.pdf; http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportDec31_2018.pdf; and http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReport Dec31_2019.pdf.

[313] DEIR, pdf 37, 308.

The DEIR is silent on the source(s) of the charging energy, a phrase that is absent from the DEIR and how often or how much renewable energy, if any, will be used for charging, let alone renewable energy generated on site. As the facility is a net consumer of electricity (to operate support equipment), operation of the Project will increase GHG and criteria pollutant emissions to operate the BESS and when the batteries are charged with nonrenewable energy sources, which will occur whenever incremental[314] wind and solar are not available to meet incremental charging loads because they are already being fully used.

The DEIR fails to provide the key information required to estimate charging emissions, including the battery storage efficiency and expected energy output of the batteries. The storage capacity of the various BESS options, the amount of energy the batteries can store, is included in Table 3-18 of the DEIR. However, the expected energy output was not provided. This is the number of MWh of generation expected over the course of a typical year, which will be less than the storage capacity x 8,760 hours[315] due to hours when the Project will be either charging or not operating or generating at less than full capacity.

The storage efficiency (sometimes also called "round-trip efficiency") depends on the battery technology used and is relevant to the environmental impacts of the Project because lower efficiency means more grid generation required for each MWh of expected energy output. It is the ratio of energy output per MWh of charging energy (i.e., MWh of battery generation divided by MWh of battery charging energy).

All of this information is required to estimate emissions from Project operation. The DEIR fails as an informational document under CEQA for failing to calculate emissions from BESS battery charging and for failing to include the information required to calculate these emissions.

Because the DEIR does not provide any data on the expected efficiency, capacity factor, or its expected charging energy requirements or energy generation, we used CAISO data for existing energy storage projects. Specifically, we looked at four 2-week periods in each of the four annual seasons (fall 2020, winter 2020–21, spring 2020, and summer 2020).[316] Our analysis is summarized in Exhibits 2A and 2B.[317]

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[314] "Incremental" is analogous to marginal. Incremental wind and solar means solar and wind in addition to what is already generating; incremental charging loads means charging loads in addition to whatever charging loads, if any, are already happening. Marginal can refer to small changes either up or down from the status quo ante, while incremental refers to upward changes only ("decremental" refers to small downward changes).

[315] 8,760 is the number of hours in a year.

[316] See the attached spreadsheet of CAISO storage data, Exhibit 2B.

The CAISO provides data at 5-minute intervals for the net MW of storage generation (positive numbers) or charging (negative numbers). We downloaded the 5-minute data for 56 days over the last year, selected to represent two weeks in each of the four seasons of the year.[318] The use of two full weeks of data for each season accounts for day-of-the-week variation and also for multi-day responses to weather, where generation on one day may reflect charging on the previous day.[319] The use of data from each of the seasons of the year accounts for seasonal variation in insolation and loads.

We aggregated the CAISO 5-minute data by day, by season, and for the full year represented by the data.[320] From the aggregated data, we calculated an overall annual capacity (220 MW), generation capacity factor (4.1%), efficiency (71.2%), and charging energy (131,424 MWh, or 131.4 gigawatt hours (GWh)).[321] Assuming the proposed Project storage components will have the same efficiency and capacity factor as the CAISO storage in operation in 2020–2021, the corresponding expected charging energy requirements for the Project will be 0.5048 GWh per year per project MW.[322] The net increase in energy generation, after taking account of hours when the Project would be discharging, will be 0.1454 GWh per year per Project MW.[323]

The CAISO does not provide any data on the marginal sources of supply for storage charging on its system. Nor does it provide any data on marginal sources of supply for individual time periods, which could be cross-matched with the 5-minute storage charging data to calculate the marginal sources of charging energy. The DEIR also provides no information on the sources of charging energy, other than to suggest that some unspecified fraction will come from renewable energy resources.[324] That fraction is likely quite low because only a small fraction of solar generation (and virtually no non-solar renewable generation) is curtailed generation that could have

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[317] Emission calculations by David Marcus. Calculations based on Otay Mesa Emissions in Exhibit 2A and CAISO storage data in Exhibits 2B; Marcus resume in Exhibit 3.

[318] See Exhibit 2A, Storage Data Spreadsheet, Columns I to KJ. The two-week periods were the most recent available data for the winter season (January 13-26, 2021) and the periods exactly 3 months earlier for each preceding season.

[319] See, e.g., Exhibit 2A, Storage Data Spreadsheet, lines 12, 14, 26, 27, 33, 35, 42, 49 and 65-66), where daily generation exceeded charging. This is only possible if some of the generation relied upon charging in the prior day(s).

[320] See Exhibit 2A, Storage Data Spreadsheet, columns C–G.

[321] See Exhibit 2A, Storage Data Spreadsheet, lines 80-81.

[322] See Exhibit 2A, Storage Data Spreadsheet, line 83, column D.

[323] See Exhibit 2A, Storage Data Spreadsheet, line 86, column D.

[324] DEIR, p. 4.3-28, pdf 446.

been used for battery charging.[325] Thus, the DEIR fails as an informational document under CEQA.

The CAISO grid covers most of California, and because of the Western Energy Imbalance Market,[326] marginal sources of generation outside the CAISO are also available from a wide swath of the Western U.S. grid. Thus, the CAISO's marginal source of generation is likely to be gas-fired generation in the great majority of hours. Therefore, we assumed that the most reasonable approximation to the expected emissions associated with battery charging is the emissions from a modern natural gas-fired combined cycle plant. Such plants are the most efficient gas-fired plants, and gas is the cleanest fossil fuel with the lowest emissions.

Thus, for any hour in which gas (or coal) is the marginal fuel, the emissions from a gas-fired combined cycle plant are a lower-bound emissions estimate. There will be a small number of hours in which solar or wind are the marginal resources, as shown by their being curtailed in the absence of battery charging to absorb their generation. In those hours, assuming a combined cycle plant as the marginal resource will overstate the emissions associated with battery charging. That overstatement is offset by the hours in which the marginal source is a combustion turbine or steam plant, whose emissions are greater than those of a combined cycle plant.

The Project would interconnect to the CAISO-controlled grid. A typical modern combined cycle gas plant connected to CAISO-controlled transmission lines is the Otay Mesa project, which began operation in October 2009. California Energy Commission (CEC) data for five recent years show that the average Otay Mesa heat rate over the 2014–2018 period was 7,183 Btu/kWh.[327] Based on that heat rate, and EIA data on emissions from Otay Mesa for the years 2013–2017,[328] we have calculated emission factors for Otay Mesa of 420 tons of CO_2 per GWh, 3.33 pounds of SO_2 per GWh, and just under 30 pounds of NOx per GWh.[329]

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[325] In 2018, only 1.4% of solar generation and 0.2% of wind generation were curtailed, and no other renewable generation. The corresponding figures for 2019 are 3.1% for solar and 0.3% for wind. The 2020 figures are 4.9% for solar and 0.5% for wind. Source: David Marcus, personal communication, based on tracking of CAISO data for hourly curtailments and daily wind and solar generation. Exhibit 2C.

[326] The Western Energy Imbalance Market is a real-time, wholesale energy trading market that enables participants anywhere in the West to buy and sell energy when needed. See https://www.westerneim.com/pages/default.aspx.

[327] See Exhibit 2B, Otay Mesa Data Spreadsheet, bottom left.

[328] The 5 years of available data (2013–2017) are from https://www.eia.gov/electricity/data/emissions/. Otay Mesa is plant #55345 in the EIA database.

[329] Exhibit 2B, Otay Mesa Data Spreadsheet, bottom left, Excel cells C33-C35.

Assuming 0.145 GWh per year per MW of net charging energy for the Project, as discussed above, and further assuming emission rates for that energy equivalent to those for the Otay Mesa combined cycle project, the net emission increases that would occur to operate the Project are, for each MW of installed capacity:[330]

- 60.93 tons of CO2e per year
- 0.48 pounds of SO2 per year
- 4.30 pounds of NOx per year

The proposed Project as submitted to the CPUC included provisions for three new distribution circuits with a total load-serving capacity of approximately 28 MW. While the DEIR admits that there will be no need for these circuits through at least 2029, based on the current Paso Robles DPA load forecast,[331] it also says that PG&E anticipates needing new distribution capacity within 15 years. Assuming that there would eventually be 28 MW of new storage built in lieu of the proposed new distribution circuits from the Estrella substation, and assuming that storage would operate comparably to existing storage during the great majority of hours when it was not being dispatched to meet local reliability needs, the total incremental GHG emissions attributable to the Project would be 28 times the annual emissions of 60.93 tons of CO_2e per MW calculated above, or **1,552 MT CO_2e/yr**.[332]

Similarly, the NOx emissions attributable to the Project would be 28 times the annual emissions of 4.30 lb/yr calculated above, or **120.4 lb/yr**. The NOx emissions are not significant, based on charging energy from a new natural gas plant. However, if other sources of charging energy, such as an older natural gas plant or a coal plant provided the charging energy, NOx emissions also would be significant.

6.3. GHG Emissions from BESS Charging Are Significant

The DEIR estimated total annualized GHG emissions of 187 MT CO_2e/yr[333] compared to a significance threshold of 10,000 MT/yr[334] and concluded Project GHG

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330 Exhibit 2B, Otay Mesa Data Spreadsheet, bottom left, Excel cells C40-C42. Note that these emissions are based on net emissions of 0.145 GWh per year per MW, which is the net of the increased generation to provide charging energy and the reduced generation that would be displaced by battery generation. See Exhibit 2A. Storage Data Spreadsheet, lines 83 and 86.

331 DEIR, p. 2-12, Table 2-5.

332 Total GHG emissions from operating the BESSs = (60.93 ton/yr/MW)*28 MW*(0.91 MT/ton) = **1,552 MT CO_2e/yr.**

333 DEIR, Table 4.8-1, pdf 607.

334 DEIR, p. 607.

emissions are not significant.[335] However, this threshold is for "stationary-source projects" that "would require an APCD permit to operate."[336] This project will not require an APCD permit to operate. Thus, this threshold does not apply. The GHG threshold for "land use development projects" is 1,150 $MTCO_2e$/yr.[337] Similarly, the BAAQMD's CEQA guidelines establish a GHG significance threshold for projects other than stationary sources that do not require a district permit of 1,100 MT $MTCO_2e$/yr.[338] The Sacramento Metropolitan Air Quality Management District (SMAQMD) likewise has established a threshold of 1,100 MT CO_2e/yr threshold for "land development and construction projects (all projects)."[339] These GHG significance thresholds are more appropriate for this Project than the 10,000 ton/yr thresholds for stationary sources used in the DEIR.

The total GHG emissions, based on the DEIR's estimate of other sources of GHG in Table 4.8-1 (187 MT CO_2e/yr) is 1,739 MT CO_2e/yr.[340] Actual GHG emissions could be significantly higher as this estimate is based on a new natural gas plant that has much lower emissions than many other sources on the grid that could charge the batteries. Thus, Project GHG emissions are significant (1,739 MT CO_2e/yr > 1,100 MT CO_2e/yr). This is a new significant impact not disclosed in the DEIR. The DEIR must be modified to include GHG mitigation and recirculated for public review.

This significant impact can be mitigated by requiring that the Project's batteries be charged only with renewable sources, including solar and wind. If it is anticipated that adequate solar and wind are not available from the grid, the Project should be required to install solar and/or wind facilities as part of this Project, sufficient to assure adequate charging energy.

6.4. Mitigation for Operational Emissions

The Project should be modified to require no net increase in GHG emissions over the baseline by implementing projects to reduce GHG emissions as follows:

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335 DEIR, Table 4.8-1 and p. 4.8-7, pdf 607.

336 SLOCAPCD CEQA Guidelines, p. 3-6.

337 Ibid.

338 BAAQMD, California Environmental Quality Act Air Quality Guidelines, Table 2-1, pdf 20; https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

339 SMAQMD, Thresholds of Significance Table; https://files.ceqanet.opr.ca.gov/123569-2/attachment/UL9obk_yjl5aUBxUrjyQ9P3HVyfSLoCEnhvRpgSHGIQmRUgvfjw0ZXCcdqPM73lOOUtFc8Rl7yI_48800.

340 Total GHG emissions = 187 + 1,552 **= 1,739 CO_2e/yr.**

(1) Project design features/on-site reduction measures;
(2) GHG offsets off-site within San Luis Obispo County;
(3) GHG offsets off-site within the State of California;
(4) GHG offsets off-site within the United States;
(5) GHG offsets off-site internationally;
(6) Charging restrictions that constrain battery charging to hours when CAISO renewable resources would otherwise be curtailed, but the curtailment would be demonstrably avoided by using otherwise curtailed generation as battery-charging energy, or if such demonstrations are not feasible; and
(7) Charging restrictions that constrain battery charging to hours when solar generation is potentially being curtailed, which would at a minimum mean no charging during nighttime hours.

7. THE DEIR FAILS TO MITIGATE THE IMPACTS OF THE TRANSMISSION LINE

The Project includes a new 230 kilovolt (kV)/70 kV substation, a new 70 kV power line, variously reported as 7 to 16.5 miles in length[341] and replacement/ reconductoring of about 3 miles of an existing 70 kV power line.[342] The purpose of the Project is to mitigate thermal overloads and voltage concerns in the Los Padres 70 kV system. The DEIR states that the Project is needed to provide transmission system redundancy and power support in the event of outages, as well as increased distribution capacity to accommodate forecasted electrical load growth in the Paso Robles area.[343] These new facilities, especially the transmission line, will result in several significant impacts, including increased fire risk, public health impacts, aesthetic impacts, and biological impacts that are either not disclosed and/or not adequately mitigated in the DEIR.

The most common scoping comments were on aesthetic impacts, electromagnetic field hazards, fire hazards, noise impacts, and decreased property values due to the overhead transmission line.[344] In fact, the screening report admits that "[o]ne of the

[341] DEIR, Table 5-3, pdf 921.

[342] DEIR, p. ES-1, pdf 25.

[343] DEIR, p. ES-1, pdf 25.

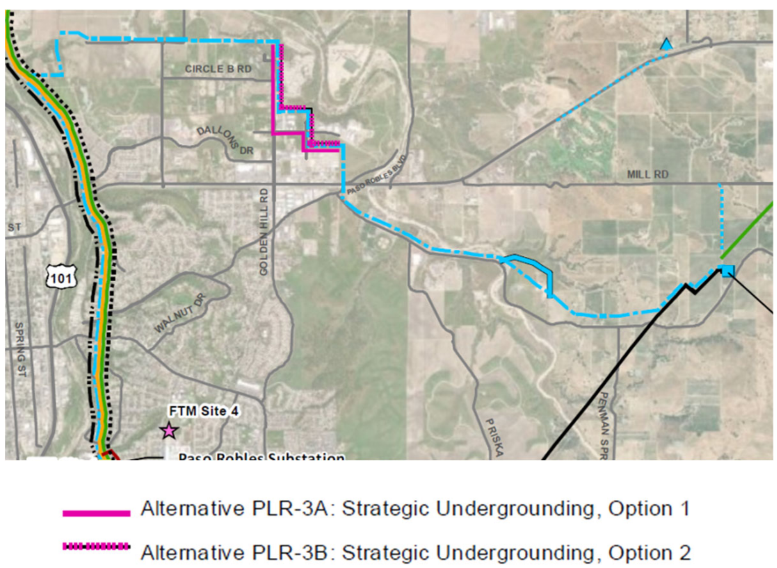
[344] DEIR, Appendix A, Table 2-2, p. 2-4, pdf 30.

most common generalized comments received was that the proposed overhead power lines should be placed underground."[345]

In spite of these comments, the DEIR failed to adopt undergrounding of any portion of the transmission line. While the DEIR developed two undergrounding alternatives, the DEIR failed to evaluate or adopt them, thus failing as an informational document under CEQA.

The DEIR included two alternatives to the aboveground transmission line, Alternative PLR-3A and PLR-3B to underground small portions of it, as shown in Figure 16. However, the DEIR failed to adopt either or explain why they were not adopted as they reduce otherwise highly significant aesthetic, public health, and biological impacts in the area as well as the risk of fire.

Figure 16: Segments of Transmission Line (in blue)
Proposed for Undergrounding (in pink)



The alternative screening analysis in Appendix A to DEIR indicates that both alternatives PLR-3A and PLR-3B meet all project objectives, are feasible, and reduce significant environmental impacts:[346]

Alternative PLR-3: Strategic Undergrounding (*Variations: Alternative PLR-3A and PLR-3B*)	Meets both objectives.	Potentially feasible. Could increase some environmental effects associated with trenching for installation of underground line, but these are unlikely to be significant.	Would reduce aesthetic impacts and could reduce potential impacts to special-status birds.

However, the alternative analysis in the DEIR, Table 5-1, concluded that Alternative Combination #2 "is considered the most advantageous option and is

345 DEIR, Appendix A, p. 2-5, pdf 31.

346 DEIR, Appendix A, Table 3-1, p. 3-2, pdf 38 and pp. 3-28/29.

identified as the Environmentally Superior Alternative for this DEIR."[347] This alternative (the Estrella Route) includes Alternative PLR-1A, Alternative BS-2, and Alternative BS-3.[348] It does not include any undergrounding, thus leaving unmitigated significant aesthetic, biology, and public health impacts from above-ground transmission line electromagnetic fields. While this alternative reduces significant aesthetic and biology impacts, it does not eliminate them. Further, it does not mitigate the significant EMF health impacts along the length of the transmission line.

The DEIR further failed to disclose many of the impacts of the aboveground transmission line and failed to adequately mitigate the impacts that it did disclose, fire, aesthetic, and biological impacts. As discussed in Comment 7.2, the entire transmission line should be undergrounded.

7.1. Impacts of the Transmission Line

There are numerous hazards associated with the proposed aboveground transmission line. The DEIR recognized some of them: aesthetic, biological, and fire impacts. These were superficially analyzed and not adequately mitigated. Further, there are other impacts that were not disclosed, including worker accidents,[349] health impacts from electromagnetic radiation, and power outages from high winds, which are common in areas such as the Project and that affect critical services such as hospitals. Thus, the DEIR fails as an informational document under CEQA.

7.1.1. Fire Risks of the Transmission Line

The DEIR admits that the "[o]peration of an electrified substation and new overhead 70 kV power lines in the Paso Robles area would inherently exacerbate the potential for wildfire risk above baseline conditions…"[350] Further, a significant portion of the transmission line is adjacent to a high fire hazard zone.[351] Wildfires are common

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[347] DEIR, Section 5.3.2, pdf 917- 918.

[348] DEIR, Table 5-2, pdf 918.

[349] Exhibit 14.

[350] DEIR, pdf 893.

[351] DEIR, Figure 4.9-2; PEA, pdf 435, Figure 3.8-1.

in San Luis Obispo County.[352] In 2020 alone, 16 major fires burned 14,008 acres of land.[353]

Portions of the power line route and reconductoring segment will traverse areas of oak woodlands, grassland, and other flammable habitat types.[354] The DEIR further admits that "[o]peration of an electrified substation and new overhead 70 kV power lines in the Paso Robles area would inherently exacerbate the potential for wildfire risk above baseline conditions."[355] Recently, the U.S. Forest Service completely closed several California national forests due to extreme heat and threat of wildfires, including Los Padres National Forest,[356] close to the Project.

However, despite these conditions, the DEIR asserts that the maintenance of acceptable clearances between the power lines and nearby vegetation would minimize the risk of energized lines igniting wildfires and concludes the impact is less than significant.[357] This is inconsistent with fire history and presents a significant risk of fire in the area serviced by the Project.

The DEIR fails to disclose that recent history shows wildfires triggered by electrical infrastructure have the potential to cause horrible catastrophes and are frequently caused by transmission lines, such as the proposed transmission line.[358] Further, the DEIR fails to disclose that Pacific Gas and Electric (PG&E), one of the applicants of this Project, has experienced significantly more fire incidents than other large utilities in California.[359]

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[352] CAL FIRE/San Luis Obispo County Fire, July 2013; https://www.slocounty.ca.gov/Departments/Public-Works/Forms-Documents/Projects/SLO-Watershed-Project/Resources/CAL-FIRE-Unit-Strategic-Fire-Plan.pdf.

[353] Cal Fire, 2020 Incident Archive. The fires were: Wale (312 acres), Placer (53 acres), 3-2 (20 acres), Carriza (183 acres), Pass (280 acres) 166 Fire; Pond (1,962 acres), Branch (3,022), Lake (588 acres), Soda (157 acres), Gage (33 acres), Bend (263 acres), Riata (18 acres), Avila (445 acres), Soda (1,672 acres), Range (5,000 acres). https://www.fire.ca.gov/incidents/2020/.

[354] DEIR, p. 4.20-10, pdf 892.

[355] DEIR, p. 4.20-11, pdf 893.

[356] Lindsey Holden, "Unprecedented and Dangerous" Fire Conditions Close Los Padres National Forest in SLO County, September 7, 2020; https://www.sanluisobispo.com/news/local/article245548775.html.

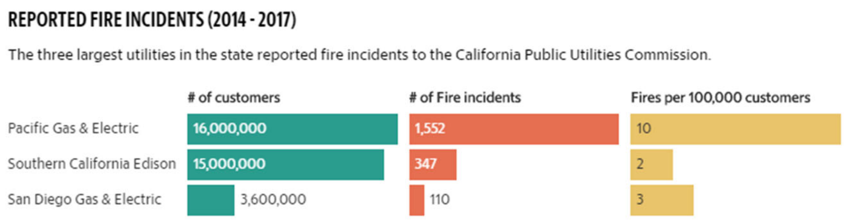
[357] Ibid.

[358] See, e.g., William Atkinson, The Link Between Power Lines and Wildfires, *Electrical Contractor*, November 2018; https://www.ecmag.com/section/systems/link-between-power-lines-and-wildfires.

[359] Michael Finch II, CA Utilities Cause Hundreds of Fires Every Year: Here's Where They Were and How Many, *The Sacramento Bee*, January 15, 2019; https://www.sacbee.com/news/state/california/fires/article221924560.html.

Most power outages are triggered by fires. Strong winds can topple trees or blow branches onto power lines, pulling them down and causing them to arc, sending sparks into dry vegetation. A voltage surge in a line can cause it to arc to a nearby tree, causing a fire. PG&E, for example, reported 1,554 fires caused by its equipment between June 10, 2014, and December 29, 2017, mostly from overhead conductors. Southern California Edison reported 347 fires in that same time. Electrical line malfunctions sparked most of the PG&E fires.[360] Figure 17.

Figure 17: Reported Fire Incidents Triggered by Electrical Line Malfunctions, 2014–2017



The PG&E Fire Incident Data Collection Plan indicates that between June 2014 and December 2017, 1,552 fires were caused by PG&E's electrical infrastructure, affecting 16 million customers.[361] PG&E reported in 2021 that over the last four years, "approximately 35 percent of reportable ignitions in PG&E's HFTD areas have been caused by vegetation contact with electrical equipment and another 33 percent were caused by utility equipment failures; the remaining ignitions were caused by third-party actions, animals, and other causes."[362] The wildfires caused by PG&E's infrastructure have the potential to cause horrible catastrophes and are frequently caused by transmission lines, such as the transmission line proposed for the Project.[363] PG&E will operate the transmission line and other Project components.[364]

A report by the California Department of Forestry and Fire Protection (CalFire), for example, concluded that numerous PG&E-caused fires started when trees and branches came into contact with power lines. One such fire, the Redwood Fire, burned

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360 Taryn Luna, California Utility Equipment Sparked More Than 2,000 Fires in Over Three Years, *Los Angeles Times*, January 28, 2019; https://www.latimes.com/politics/la-pol-ca-california-utilities-wildfires-regulators-20190128-story.html.

361 Finch, January 15, 2019.

362 PG&E, 2021 Wildfire Mitigation Plan Report, Rulemaking 18-10-007, February 5, 2021, p. 11, pdf 34; https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/2021-Wildfire-Safety-Plan.pdf.

363 See, e.g., William Atkinson, The Link Between Power Lines and Wildfires, *Electrical Contractor*, November 2018; https://www.ecmag.com/section/systems/link-between-power-lines-and-wildfires.

364 DEIR, Section 2.3, pdf 98.

over 36,000 acres, destroyed 543 structures, and resulted in 9 civilian deaths. Another, the Atlas Fire, burned 52,000 acres, destroyed 781 structures, and resulted in 6 civilian deaths.[365] During the summer of 2018, the Department reported at least 17 more major wildfires that were triggered by power lines. One of these, the Thomas Fire, burned 281,893 acres, destroyed 1,063 buildings[366] and caused a mudslide that killed 22 people.

Five of the 10 most destructive fires in California since 2015 have been linked to PG&E's electrical network.[367] One of the biggest fires started near Sacramento in 2015, when a tree that PG&E failed to maintain hit one of its power lines. The fire covered more than 70,000 acres and two people died. In 2017, four fires erupted in the Napa area when trees hit PG&E power lines in several locations. In total, more than 100,000 acres and 1,475 structures burned.[368] A PG&E transmission line has recently been implicated in the Camp Fire as the "deadliest and most destructive fire in California history." This fire killed 85 people, destroyed 18,804 structures and burned 153,336 acres.[369] CalFire has determined that the Camp Fire was caused by electrical transmission lines owned and operated by PG&E, located in the Pulga area.[370] In response to this tragedy, PG&E has announced that it will rebuild the transmission lines underground.[371]

Many other fires have been caused by PG&E transmission lines and other facilities. The Pythian/Oakmont Fire destroyed 56,556 acres of mixed wildland and 1,272 structures were damaged. "The fire ignited after PG&E re-energized downed powerlines causing the lines to arc in a receptive fuel bed."[372] The Atlas fire burned 51,624 acres, damaged 783 structures, destroyed 120 structures, and caused 6 fatalities.

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365 CalFire, Top 20 Deadliest California Wildfires; http://calfire.ca.gov/communications/downloads/fact_sheets/Top20_Deadliest.pdf.

366 CalFire, Top 20 Deadliest California Wildfires.

367 CalFire, Top 20 Deadliest California Wildfires.

368 https://www.nytimes.com/interactive/2019/03/18/business/pge-california-wildfires.html?te=1&nl=california-today&emc=edit_ca_20190516.

369 CalFire, Top 20 Deadliest California Wildfires.

370 CalFire News Release, CAL FIRE Investigators Determine Cause of the Camp Fire, May 15, 2019; http://calfire.ca.gov/communications/downloads/newsreleases/2019/CampFire_Cause.pdf. See also: Butte County District Attorney, Press Release, CAL Fire Press Release on Camp Fire, May 15, 2019. Exhibit 12.

371 Dale Kasler, PG&E Says It Will Build Paradise Power Lines Underground, *The Sacramento Bee*, May 22, 2019; https://amp.sacbee.com/latest-news/article230732884.html.

372 Cal Fire, Investigation Report, Pythian/Oakmont, October 13, 2017; http://s1.q4cdn.com/880135780/files/doc_downloads/2019/06/17CALNU010348-Pythian-Oakmont_Redacted_Redacted.pdf.

It was caused when trees fell, breaking conductors.[373] Other fires caused by PG&E transmission lines are documented in CAL Fire Reports.[374]

PG&E, the largest investor-owned utility in the state, supplying power for 40% of Californians, filed for bankruptcy protection due to these fires.[375] As PG&E is currently burdened with responding to this fire history and will likely be responsible for maintaining the new transmission line and other Project facilities, enforceable mitigation for the Project is required to assure proper maintenance of an aboveground transmission line. A bankrupt utility, such as PG&E, already burdened with correcting historic maintenance failures may be unable to adequately carry out its obligations to mitigate its historic misconduct and adequately maintain the proposed aboveground transmission line and other Project facilities.

In response to this history of fire, the California Legislature passed SB 901 in 2018 to hold utilities responsible for wildfires. SB901 requires utilities to consider several safety measures, including moving power lines underground, insulating wires, and replacing poles. The CPUC recently concluded that the 2019 Wildfire Mitigation Plan filed by Pacific Gas and Electric Company and other utilities contain the elements required under Senate Bill 901.[376] To ensure that the Wildfire Mitigation Plans actually reduce the risk and occurrence of catastrophic wildfires, the CPUC directed electrical corporations to track data and assess outcomes so that future plans reflect experience. However, in spite of these measures, the fires continue.

PG&E's Wildfire Mitigation Plans for 2020,[377] 2021,[378] and future Plans have been developed to comply with California SB 901, AB 1054, and direction from the CPUC outline programs to prevent catastrophic wildfires. The 2020 and 2021 Plans, which

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373 Cal Fire, Investigation Report, Atlas, October 8, 2017; http://s1.q4cdn.com/880135780/files/doc_downloads/2019/05/Atlas-Fire-LE-80_Redacted.pdf

374 PG&E Corporation, CAL FIRE Reports, http://investor.pgecorp.com/wildfire-updates/CAL-FIRE-Reports/.

375 Wildfires and Climate Change: California's Energy Future: A Report from Governor Newsom's Strike Force, April 12, 2019, p. 1, 45-46; https://www.gov.ca.gov/wp-content/uploads/2019/04/Wildfires-and-Climate-Change-California%E2%80%99s-Energy-Future.pdf.

376 California Public Utilities Commission, CPUC Acts Quickly to Implement Key Wildfire Mitigation Measures, Press Release, https://electricenergyonline.com/article/energy/category/general/90/771184/cpuc-acts-quickly-to-implement-key-wildfire-mitigation-measures.html.

377 PG&E, 2020 Wildfire Mitigation Plan Report Updated, Rulemaking 18-10-007, February 28, 2020; https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/2020-Wildfire-Safety-Plan.pdf.

378 PG&E, 2021 Wildfire Mitigation Plan Report, Rulemaking 18-10-007, February 5, 2021; https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan.page?WT.mc_id=Vanity_wildfiremitigationplan.

may reduce the number of wildfires triggered by PG&E facilities, will not eliminate them.[379] The most current Plan should be required as mitigation for this Project and updated as new Plans are published reflecting experience controlling wildfires caused by PG&E's facilities. Undergrounding is one of the mitigations included in these plans.[380]

7.1.2. Worker Impacts

The DEIR fails to recognize worker health impacts of the transmission line. Working with aboveground electrical power lines can be dangerous or even fatal. Aboveground transmission lines are prone to outages, physical deterioration, lack of critical maintenance, and dangers from storms and trees, which result in electrocution and mortality to transmission line workers and others:[381]

> The National Institute for Occupational Safety and Health's (NIOSH) National Traumatic Occupational Fatalities (NTOF) surveillance system identified power line workers as a high-risk occupation group for work-related deaths. According to NTOF data, the average annual fatality rate for power line workers is 56.3 deaths per 100,000 employees.(2) The Bureau of Labor Statistics' (BLS) Census of Fatal Occupational Injuries (CFOI) identified 42 fatalities among electric power installers and repairers in 1993 (38 deaths per 100,000 workers). (3) These rates correspond to a risk of between 17 and 23 deaths per thousand workers over a working lifetime of 45 years. The risk may actually be higher, however, because available data do not provide specific numbers for construction workers.

Electrical powerline installers and repairers are among the top 10 most dangerous jobs in America,[382,383] with a 19.2 fatality rate per 100,000 workers.[384] The leading cause of death among power line tree trimmers, for example, is electrocution.[385] NIOSH reports 160 electrocution cases involving workers in the vicinity of or working on transmission lines.[386] The U.S. Bureau of Labor Statistics reports: "Line installers and

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379 Ibid., Table 31-2.

380 PG&E, 2021, pdf 130.

381 NIOSH, Fatality Assessment and Control Evaluation (FACE) Program; https://wwwn.cdc.gov/NIOSH-FACE/Default.cshtml?Category=0006&Category2=ALL&Submit=Submit.

382 David Shadle, Electrical Workers Still on Top 10 Most Dangerous Jobs List, T&D World eNewsletters, April 11, 2016; https://www.tdworld.com/grid-innovations/article/20966311/electrical-workers-still-on-top-10-most-dangerous-jobs-list.

383 Bailey, Javins, and Carter, LC, What is the Death Rate for Power Linemen?, Bailey Javins & Carter, July 22, 2019; https://www.baileyjavinscarter.com/what-is-the-death-rate-for-power-linemen/.

384 Krysti Shallenberger, Electric Line Workers Listed Among Top 10 Most Dangerous Jobs.

385 Jeffrey Feldman, Why Aren't Power Lines Buried in the U.S. Like They are in Europe?, August 25, 2016; https://www.electrocuted.com/2016/08/25/bury-power-lines-underground-to-prevent-electrocution-deaths/.

386 NIOSH, Fatality Assessment and Control Evaluation (FACE) Program; https://www.cdc.gov/niosh/face/default.html.

repairers face dangerous working conditions. In severe cases, these conditions could lead to fatal injuries."[387] Table 6.

Table 6: Number of Fatal Work Injuries and Nonfatal Occupational Injuries and Illnesses Involving Days Away from Work, 2011–2015[388]

Occupation	Fatal injuries					Nonfatal injuries and illnesses				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Line installers and repairers	38	37	42	44	40	5,540	5,000	6,640	6,260	6,250
Electrical power-line installers and repairers	26	27	27	25	26	2,500	2,090	2,310	2,510	2,240

Electrocutions accounted for 3% of fatal occupational injuries overall but caused nearly one-half of the fatal injuries to electrical power-line installers and repairers. The Bureau of Labor Statistics concluded that "[t]he increasing use of underground utility lines and the waning popularity of landlines may ultimately reduce the number of falls."[389] The DEIR fails to disclose the impact of repairing the aboveground transmission line on worker health.

7.1.3. Electric and Magnetic Field Impacts

Overhead transmission lines are a source of two fields: the electric field produced by the voltage and the magnetic field produced by the current. CPUC guidance specifically requires that "[t]he construction of a new transmission line will incorporate no-cost and low-cost magnetic field reduction measures. Magnetic field modeling is required."[390] The DEIR failed to discuss these fields and their impacts on sensitive receptors even though the proposed transmission line is within 50 feet of many homes.[391] It also fails to comply with the CPUC design guidelines.

Contrary to allegations in the PEA,[392] significant public health impacts have been consistently documented from exposure to electromagnetic fields, both extremely low-

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[387] BLS, Monthly Labor Review, Workplace Hazards Facing Line Installers and Repairers, February 2018; https://www.bls.gov/opub/mlr/2018/article/pdf/workplace-hazards-facing-line-installers-and-repairers.pdf.

[388] Id., Table 1.

[389] Id., p. 11.

[390] California Public Utility Commission, EMF Design Guidelines for Electrical Facilities, Table 3-1, pdf 9, July 21, 2006; https://www.cpuc.ca.gov/General.aspx?id=4879.

[391] PEA, Appendix A.

[392] PEA, Appendix B. Electric and Magnetic Fields, pdf 23.

frequency ELF-EMF from sources like power lines and radiofrequency radiation (RFR) in refereed journal articles. These include short- and long-term health impacts:[393,394]

Short Term Health Impacts:

- Headaches
- Fatigue
- Anxiety
- Insomnia
- Prickling and/or burning skin
- Rashes
- Muscle Pain

Long Term Health Impacts:

- Impacts on gene and protein expression
- Genotoxic effects, including RFR[395] and ELF DNA damage
- Adverse impacts on stress proteins
- Adverse impacts on immune function
- Adverse impacts on neurology and behavior
- Brain tumors and acoustic neuromas
- Childhood cancers (leukemia)
- Adult cancers (breast cancer promotion)
- Adverse impacts on melatonin leading to Alzheimer's disease and breast cancer
- Changes in nervous system and brain function
- Impacts on DNA
- Impacts on stress proteins
- Impacts on the immune system
- Risk of leukemia
- Risk of neurodegenerative disease
- Risk of miscarriage

These significant public health impacts can be mitigated by undergrounding the transmission line and by adopting the recommendations in CPUC Design Guidelines.[396]

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[393] Cindy Sage and David O. Carpenter (Editors), BioInitiative Report: A Rationale for Biologically Based Exposure Standards for Low-Intensity Electromagnetic Radiation, BioInitiative Working Group, December 31, 2012, Exhibit13.

[394] Jiguparmar, How HV Transmission Lines Affects Humans and Plants; https://electrical-engineering-portal.com/how-hv-transmission-lines-affects-humans-plants.

[395] RFR = radiofrequency radiation; ELF = (extremely low frequency).

At a minimum, Alternative PLR-3, strategic undergrounding, should be adopted, as this segment of the transmission line passes through the Golden Hill Road area north of SR 46, which has the greatest potential for public health, aesthetic, biological, and other environmental impacts. Figure 16.

Undergrounding will not eliminate electric and magnetic fields, but will minimize their impacts.[397] The California PUC, for example, has concluded that "Because underground conductors are insulated, they may be placed within inches of each other. This means that there generally can be greater magnetic field cancellation in an underground circuit than an overhead circuit."[398]

7.2. The Transmission Line Should Be Undergrounded

The adverse impacts of the transmission line can be completely eliminated (fire, aesthetic, biology) or minimized (public health) by undergrounding it. PG&E, for example, recently announced that it will underground 200 miles of the power lines that caused the Camp Fire.[399] Undergrounding is in progress.[400] PG&E is also currently undergrounding power lines through the CPUC's Rule 20A[401] program.[402] Further, there are many other benefits to undergrounding the transmission line.[403,404,405]

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396 California Public Utility Commission, EMF Design Guidelines for Electrical Facilities, July 21, 2006; https://www.cpuc.ca.gov/General.aspx?id=4879.

397 See discussion of the impact of undergrounding transmission lines on electric and magnetic fields in: Undergrounding High Voltage Electricity Transmission Lines, Section 9: Electric and Magnetic Fields (EMFs) from Underground Cables, p. 18; https://www.nationalgrid.com/sites/default/files/documents/45349-Undergrounding_high_voltage_electricity_transmission_lines_The_technical_issues_INT.pdf.

398 California Public Utility Commission, EMF Design Guidelines for Electrical Facilities, July 21, 2006, p. 5, pdf 7, Section 2.2

399 Dale Kasler, PG&E Say It Will Build Paradise Power Lines Underground, *The Sacramento Bee*, May 22, 2019; https://amp.sacbee.com/latest-news/article230732884.html#referrer=https%3A%2F%2Fwww.google.com&amp_tf=From%20%251%24s.

400 Kristian Lopez, PG&E Continues Moving Power Lines Underground in Paradise, *Action News Now*, November 5, 2020; https://www.actionnewsnow.com/content/news/PGE-continues-moving-powerlines-underground-in-Paradise-572976261.html.

401 CPUC Underground Programs: Conversion of Overhead Electric Lines to Underground Facilities and Construction of New Underground Electric Lines; https://www.cpuc.ca.gov/General.aspx?id=4403.

402 Deanna Contreras, PG&E Undergrounding Power Lines in Santa Rosa, PG&E Currents, July 27, 2020; http://www.pgecurrents.com/2020/07/27/pge-undergrounding-power-lines-in-santa-rosa/.

403 Vince Curci, Underground Transmission Technical Lead, Blog, Top 5 Reasons to Use Underground Transmission Lines, February 19, 2018; https://www.hdrinc.com/insights/top-5-reasons-use-underground-transmission-lines.

404 RETA, Burying High Voltage Lines; https://retasite.wordpress.com/burying-high-voltage-lines/.

As noted in a recent article, “Why aren’t power lines in the U.S. buried underground like they are in some places in Europe?”:[406]

> When utility power lines are above ground, they’re prone to outages, physical deterioration and lack of critical maintenance, and dangers from storms and trees. These are what kill most people in electrocution lawsuits. These are the reasons that most power lines fall and kill an unsuspecting homeowner, child or utility worker.
>
> Although we regularly see outages and dangerous power lines that can kill innocent people here in America, we don’t see anyone being electrocuted and killed in European countries such as Germany. Why? In Germany, the risk of outages or power-line dangers is greatly reduced, because the power lines are underground, according to an article on Outside the Beltway, “Why can’t we just bury all the power lines?”

Most European countries[407] (e.g., UK, Belgium, Germany, Italy, Netherlands,[408] Finland[409]) routinely bury low-voltage transmission lines, such as the Project’s 70-kV line, except for those near massive power plants and isolated homes in far-off places. Even in the United States, aboveground power lines are often absent in affluent neighborhoods and major cities, such as Manhattan, Washington DC, San Diego, and Tarzana, a suburb south of Los Angeles. PG&E’s most recent Wildfire Mitigation Plan Report notes as follows:[410]

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405 Leonardo Energy, What are the Main Benefits of Underground Cables, March 28, 2019; https://help.leonardo-energy.org/hc/en-us/articles/202706932-What-are-the-main-benefits-of-underground-cables-.

406 Jeffrey Feldman, Why Aren’t Power Lines Buried in the U.S. Like They Are in Europe?, August 25, 2016; https://www.electrocuted.com/2016/08/25/bury-power-lines-underground-to-prevent-electrocution-deaths/.

407 Commission of the European Communities, Undergrounding of Electricity Lines in Europe, Background Paper, Tables 1-3, December 10, 2003; https://www.stjornarradid.is/library/01--Frettatengt---myndir-og-skrar/ANR/ANR---Raflinur-i-jord/1-Commission.pdf.

408 Robert Tarimo, Going Underground: European Transmission Practices, PowerGrid International, October 1, 2011; https://www.power-grid.com/td/going-underground-european-transmission-practices/#gref.

409 Replacing Overhead Lines with Underground Cables in Finland; https://climate-adapt.eea.europa.eu/metadata/case-studies/replacing-overhead-lines-with-underground-cables-in-finland.

410 PG&E, 2021, pdf 568, Section 7.3.3.16 Undergrounding of Electric Lines and/or Equipment.

> Undergrounding electric lines and facilities can significantly reduce wildfire risk by eliminating overhead lines which may be prone to wires down events or otherwise prone to potential wildfire ignitions. The installation of underground facilities is considered among a suite of alternatives to mitigate wildfire risk in areas prone to tree failures. PG&E also considers secondary risks such as PSPS impacts, egress/ingress routes to support fire department response times and public safety, past fire history and effects on available fuels, current system condition, environmental risks to reconstruction activities, and general accessibility considerations to enhance employee safety when determining whether specific facilities should be undergrounded.

PG&E has concluded that: "underground construction presents the most reliable method for mitigating the need for PSPS [public safety power shutoff] operations. There will be occasions that undergrounding is chosen even when it does not present the best Risk Spend Efficiency (RSE) of the hardening options because it is the most reasonable alternative to mitigate all risks considered."[411] A 1967 PUC case concluded as to undergrounding:[412]

> The record shows that California electric and communications utilities began installing their facilities underground during the latter part of the 19th century. Undergrounding proceeded at a leisurely pace until about five years ago. Since then, due to a combination of accelerated public interest and technical developments which substantially reduced the cost of undergrounding, a large percentage of new residential developments have been supplied from underground distribution systems. The record indicates that respondent utilities have followed acceptable standards of care based upon past experience and are continuing to improve methods of construction, including joint construction with other utilities, to better serve the public and reduce costs. The evidence further discloses that the present underground electrical and communications systems cannot be considered hazardous and the safety record is good.

The usual argument for declining to bury power lines is cost. However, when assessing the cost of burying power lines, cost must be weighed against the clear benefits. There will be far fewer electrical injuries and electrocution deaths, fewer bird deaths, fewer power outages, and fewer obstructed views from below-grade transmission lines. A price cannot be put on worker injuries and death, bird deaths,

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411 PG&E, 2021, pdf 574.

412 CPUC, Rules for Construction of Underground Electric Supply and Communication Systems, General Order Number 128, Rules for Construction of Underground Electric Supply and Communication Systems, Decision No. 73195 and 73462, Case No. 8208, Adopted October 17, 1967; https://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/52591.htm.

and obstructed views. There are many compelling reasons to underground the transmission line.

First, visual impacts typically top the list of long-term impacts that cannot be mitigated.[413] The DEIR evaluated 23 key visual observation points (KOPs) and concluded that the observation points where the transmission line was visible had moderate to high visual impacts.[414] The DEIR proposed an alternative to undergrounding the portion of the transmission line where visual impacts were most significant, PLR-3, but declined to adopt it.[415]

PUC Section 320, established in 1972, requires both electric and telecommunications utilities to construct all new distribution facilities underground that are proposed to be erected within 1,000 feet from each edge of the right-of-way of designated State Scenic Highways pursuant to Article 2.5 of Chapter 2 of Division 1 of the Streets and Highways Code and which would be visible from such scenic highways if erected above ground.[416,417] Segments of the proposed transmission line are within 1,000 feet of SR 46, which meets these criteria. However, this highway section has not been formally listed, so the DEIR ignored this requirement and erroneously concluded aesthetic impacts in this area were not significant.[418]

Second, undergrounding eliminates electrocution and collision hazards for people, rodents, squirrels, and birds, and eliminates fire risk from arcing lines during windy conditions.[419] High winds, locally known as Santa Lucia winds, are common at the Project site.

Third, underground transmission lines are more reliable as they are not impacted by atmospheric conditions (e.g., high winds, ice storms, and lightning) that may result

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413 Curci, February 19, 2018: "While aesthetic impact isn't the only transmission line concern, it tops the list of long-term impacts that can't be mitigated."

414 DEIR, Table 4.1-1, pdf 367-374. (KOP-1 to KOP-6, KOP-10, KOP-16 to KOP-19).

415 DEIR, Chapter 5.

416 PUC Code, Division 1, Chapter 2, Section 320; https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=320.&lawCode=PUC.

417 CPUC, Electric Tariff Rules 15 and 16 – Electric Distribution Line Extensions and Service Line Extensions; https://www.cpuc.ca.gov/General.aspx?id=6442465113. See also Section IX; https://www.cpuc.ca.gov/General.aspx?id=4403.

418 DEIR, Figure 4.1-1, pdf 349 and pdf 384.

419 See, e.g., Vince Curci, Top 5 Reasons to Use Underground Transmission Lines, February 19, 2018; https://www.hdrinc.com/insights/top-5-reasons-use-underground-transmission-lines; and Peter H. Larsen, A Method to Estimate the Costs and Benefits of Undergrounding Electricity Transmission and Distribution Lines, *Energy Economics*, vol. 60, November 2016, p. 47–61, https://www.sciencedirect.com/science/article/pii/S0140988316302493.

in outages or cause wildfires. High winds are common in the Project area. Underground lines are also more reliable due to reduced exposure to outages caused by trees during adverse weather and other conditions. The average outage duration on an underground line is typically more than 90% lower than on overhead lines.

Fourth, underground transmission lines provide better voltage support, have lower transmission losses, and can absorb emergency power loads.

Fifth, undergrounding reduces operating costs by: (1) reducing tree trimming costs; (2) reducing the number of maintenance repairs; (3) reducing maintenance time, by maintaining the system at ground level, rather than from poles and bucket trucks; (4) reducing maintenance cost because underground lines are not subject to tornadoes and other high wind storms, ice storms, general weather deterioration, birds colliding with lines and knocking out the power, and so forth; (5) reducing costs of transmission loss and feeder energy losses; (6) avoiding power outage costs due to less frequent outages; (7) reducing the thousands of outages of aboveground facilities caused every year by animals (mainly squirrels); (8) avoiding ecosystem-related restoration costs; and (9) reducing transmission loss (electricity to heat) costs by 50% to 67%. Recent experience indicates that transmission lines can be buried for almost the same capital cost as overhead lines.[420] In addition, exposure of overhead lines to weather conditions causes them to corrode and age faster than underground lines.[421]

Sixth, undergrounding eliminates the risk from human activities, such as vandalism and terrorism, and minimizes the risk from natural disasters, including earthquakes, landslides, and floods, thus improving system reliability.[422]

Seventh, underground transmission lines are inherently safe because cables are insulated, electrically shielded, and out of the way. Underground lines are not affected by fires and do not cause fires. They also decrease the need to shut down the line during a wildfire.

Eighth, underground lines do not lower adjacent property values.

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[420] RETA, Burying High Voltage Lines: Benefits of Underground Lines; https://retasite.wordpress.com/burying-high-voltage-lines/

[421] Victor Glass, PG&E Case Study: Burying Lines to Prevent Wildfires is Cost Effective, T&D World, April 1, 2020; https://www.tdworld.com/wildfire/article/21127664/pge-case-study-burying-lines-to-prevent-wildfires-is-cost-effective.

[422] Kenneth L. Hall, Out of Sight, Out of Mind 2012: An Updated Study on the Undergrounding of Overhead Power Lines, Prepared for: Edison Electric Institute, January 2013; https://www.eei.org/issuesandpolicy/electricreliability/undergrounding/Documents/UndergroundReport.pdf.

Ninth, undergrounding reduces the area required around the line by about a factor of three, reducing construction impacts, biological impacts, and GHG emissions by reducing permanently disturbed surface vegetation.[423]

Tenth, undergrounding reduces concerns regarding the use of fire retardants on overhead transmission lines.

Undergrounding is clearly feasible and cost effective because California currently has 72,000 miles of underground distribution lines as well as a program to encourage undergrounding[424] (e.g., PUC Rule 20[425]). San Diego Gas & Electric reports that 60% of its distribution lines are now underground, including rural lines running through areas that are prone to wildfires, like the Project location.[426] Plans are underway to convert 20 miles of overhead wires to underground in a high fire-risk area around Cuyamaca Rancho State Park and the town of Campo and SDG&E is exploring dozens of other areas for potential future undergrounding for fire safety reasons.[427] PG&E is evaluating undergrounding its line along the Bohemian Highway in Sonoma County, where thousands live among densely wooded hillsides. Utilities now often underground power lines in newer urban developments[428] and elsewhere to avoid permitting delays and environmental impacts. Direct Connect Development Company (DC DevCo) has proposed a 349-mile, 2.1 GH, high-voltage direct current transmission line to bring renewable energy from the wind-rich West (starting in Mason City, Iowa) into wholesale power markets of the Upper Midwest to avoid permitting delays.[429]

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423 Siemens, Power Transmission Lines: Forward-looking Solutions for Electricity Transmission; https://new.siemens.com/global/en/products/energy/high-voltage/power-transmission-lines.html.

424 CPUC, Overhead to Underground Conversion Programs, p. 9; https://www.cpuc.ca.gov/General.aspx?id=4403.

425 See, e.g., PG&E, Electric Undergrounding Program; https://www.pge.com/mybusiness/customerservice/energystatus/streetconstruction/rule20/index.shtml.

426 Atkinson, The Link Between Power Lines and Wildfires, November 2018. See also PUC, Rulemaking 17-05-010, February 13, 2020, Figure 1, pdf 16; https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M327/K199/327199859.PDF.

427 J. Harry Jones, Power Lines and Poles to be Replaced in National Forest, *The San Diego Union-Tribune*, September 28, 2016; https://www.sandiegouniontribune.com/communities/north-county/sd-no-forest-power-20160927-story.html.

428 Tony Bizjak, Sophia Bollag, and Dale Kasler, Power Lines Keep Sparking Wildfires: Why Don't California Utility Companies Bury Them, November 29, 2018, *The Sacramento Bee*; https://www.sacbee.com/news/business/article221707650.html.

429 Michelle Froese, Proposed New Transmission Project Would Deliver Renewables Between PJM & MISO, WindPower, March 11, 2019; https://www.windpowerengineering.com/business-news-projects/uncategorized/proposed-new-transmission-project-would-deliver-renewables-between-pjm-miso/; Julia Gheorghiu, Independent Developer Proposes $2.5B Underground Transmission Line, to Bring Iowa Wind to PJM, MISO, *Utility Dive*, March 13, 2019; https://www.utilitydive.com/news/

In sum, undergrounding the entire transmission line is feasible and should be required. The DEIR lacks any substantial evidence that undergrounding of the transmission line is not feasible. Rather, as discussed above, undergrounding mitigates significant Project impacts including public health, biological, and aesthetic.

However, undergrounding in the selected location would increase significant public health impacts identified in Comment 2.8. These significant impacts can be mitigated by relocating the transmission line and/or implementing mitigation identified in Comment 2.8. If the transmission line is not relocated, it should be undergrounded to mitigate significant electromagnetic public health, biology, and aesthetic impacts. The significant public health and air quality impacts identified in Comment 2.8.1 to 2.8.3 during construction can be mitigated by using the mitigation measures in Comment 2.8.3 and extending construction duration to minimize the amount of equipment operating in a given area simultaneously.

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independent-developer-proposes-25b-underground-transmission-line-adding/550399/. See also: https://www.desmoinesregister.com/story/money/business/2019/03/11/underground-transmission-line-would-take-wind-power-iowa-chicago/3128357002/ and https://www.chicagotribune.com/business/ct-biz-iowa-wind-power-to-chicago-20190312-story.html.

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Dr. Fox has over 40 years of experience in the field of environmental engineering, including air pollution control (BACT, BART, MACT, LAER, RACT), greenhouse gas emissions and control, cost effectiveness analyses, water quality and water supply investigations, hydrology, hazardous waste investigations, environmental permitting, nuisance investigations (odor, noise), environmental impact reports, CEQA/NEPA documentation, risk assessments, and litigation support.

EDUCATION

Ph.D. Environmental/Civil Engineering, University of California, Berkeley, 1980.
M.S. Environmental/Civil Engineering, University of California, Berkeley, 1975.
B.S. Physics (with high honors), University of Florida, Gainesville, 1971.

REGISTRATION

Registered Professional Engineer: Arizona (2001-2014: #36701; retired), California (2002-present; CH 6058), Florida (2001-2016; #57886; retired), Georgia (2002-2014; #PE027643; retired), Washington (2002-2014; #38692; retired), Wisconsin (2005-2014; #37595-006; retired)
Board Certified Environmental Engineer, American Academy of Environmental Engineers, Certified in Air Pollution Control (DEE #01-20014), 2002-2014; retired)
Qualified Environmental Professional (QEP), Institute of Professional Environmental Practice (QEP #02-010007, 2001-2015: retired).

PROFESSIONAL HISTORY

Environmental Management, Principal, 1981-present
Lawrence Berkeley National Laboratory, Principal Investigator, 1977-1981
University of California, Berkeley, Program Manager, 1976-1977
Bechtel, Inc., Engineer, 1971-1976, 1964-1966

PROFESSIONAL AFFILIATIONS

American Chemical Society (1981-2010)
Phi Beta Kappa (1970-present)
Sigma Pi Sigma (1970-present)
Who's Who Environmental Registry, PH Publishing, Fort Collins, CO, 1992.
Who's Who in the World, Marquis Who's Who, Inc., Chicago, IL, 11th Ed., p. 371, 1993-present.

Who's Who of American Women, Marquis Who's Who, Inc., Chicago, IL, 13th Ed., p. 264, 1984-present.
Who's Who in Science and Engineering, Marquis Who's Who, Inc., New Providence, NJ, 5th Ed., p. 414, 1999-present.
Who's Who in America, Marquis Who's Who, Inc., 59th Ed., 2005.
Guide to Specialists on Toxic Substances, World Environment Center, New York, NY, p. 80, 1980.
National Research Council Committee on Irrigation-Induced Water Quality Problems (Selenium), Subcommittee on Quality Control/Quality Assurance (1985-1990).
National Research Council Committee on Surface Mining and Reclamation, Subcommittee on Oil Shale (1978-80)

REPRESENTATIVE EXPERIENCE

Performed environmental and engineering investigations, as outlined below, for a wide range of industrial and commercial facilities including: petroleum refineries and upgrades thereto; reformulated fuels projects; refinery upgrades to process heavy sour crudes, including tar sands and light sweet crudes from the Eagle Ford and Bakken Formations; petroleum, gasoline and ethanol distribution terminals; coal, coke, and ore/mineral export terminals; LNG export, import, and storage terminals; crude-by-rail projects; shale oil plants; crude oil/condensate marine and rail terminals; coal gasification and liquefaction plants; oil and gas production, including conventional, thermally enhanced, hydraulic fracking, and acid stimulation techniques; underground storage tanks; pipelines; compressor stations; gasoline stations; landfills; railyards; hazardous waste treatment facilities; nuclear, hydroelectric, geothermal, wood, biomass, waste, tire-derived fuel, gas, oil, coke and coal-fired power plants; wind farms; solar energy facilities; battery storage facilities; transmission lines; airports; hydrogen plants; petroleum coke calcining plants; coke plants; activated carbon manufacturing facilities; asphalt plants; cement plants; incinerators; flares; manufacturing facilities (e.g., semiconductors, electronic assembly, aerospace components, printed circuit boards, amusement park rides); lanthanide processing plants; ammonia plants; nitric acid plants; urea plants; food processing plants; wineries; almond hulling facilities; composting facilities; grain processing facilities; grain elevators; ethanol production facilities; soy bean oil extraction plants; biodiesel plants; paint formulation plants; wastewater treatment plants; marine terminals and ports; gas processing plants; steel mills; iron nugget production facilities; pig iron plant, based on blast furnace technology; direct reduced iron plant; acid regeneration facilities; railcar refinishing facility; battery manufacturing plants; pesticide manufacturing and repackaging facilities; pulp and paper mills; olefin plants; methanol plants; ethylene crackers; alumina plants, desalination plants; battery storage facilities; data centers; covered lagoon anaerobic digesters with biogas generators and upgrading equipment to produce renewable natural gas and electricity; selective catalytic reduction (SCR) systems; selective noncatalytic reduction (SNCR) systems; halogen acid furnaces; contaminated property redevelopment projects (e.g., Mission Bay, Southern Pacific Railyards, Moscone Center expansion, San Diego Padres Ballpark); residential developments; commercial office parks, campuses, and shopping centers; server farms; transportation plans; and a wide range of mines including sand and gravel, hard rock, limestone, nacholite, coal, molybdenum, gold, zinc, and oil shale.

EXPERT WITNESS/LITIGATION SUPPORT

- For plaintiffs-intervenors (Sierra Club), in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications at Rush Island Units 1 and 2 and Labadie Energy Center, assist counsel in evaluating best available control technology (BACT) to reduce SO2 emissions, including wet and dry scrubbing, sorbent injection, and offsets. Case settled. *U.S. and Sierra Club vs. Ameren Missouri*, Case No. 4-11 CV 77 RWS, U.S. District Court, Eastern District of Missouri, Eastern Division, September 30, 2019.
- For the California Attorney General, assist in determining compliance with probation terms in the matter of People v. Chevron USA.
- For plaintiffs, assist in developing Petitioners' proof brief for National Parks Conservation Association et al v. U.S. EPA, Petition for Review of Final Administrative Action of the U.S. EPA, In the U.S. Court of Appeals for the Third Circuit, Docket No. 14-3147.
- For plaintiffs, expert witness in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1997-2000) at the Cemex cement plant in Lyons, Colorado. Reviewed produced documents, prepared expert and rebuttal reports on PSD applicability based on NOx emission calculations for a collection of changes considered both individually and collectively. Deposed August 2011. *United States v. Cemex, Inc.*, In U.S. District Court for the District of Colorado (Civil Action No. 09-cv-00019-MSK-MEH). Case settled June 13, 2013.
- For plaintiffs, in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1988 – 2000) at James De Young Units 3, 4, and 5. Reviewed produced documents, analyzed CEMS and EIA data, and prepared netting and BACT analyses for NOx, SO2, and PM10 (PSD case). Expert report February 24, 2010 and affidavit February 20, 2010. *Sierra Club v. City of Holland, et al.*, U.S. District Court, Western District of Michigan (Civil Action 1:08-cv-1183). Case settled. Consent Decree 1/19/14.
- For plaintiffs, in civil action alleging failure to obtain MACT permit, expert on potential to emit hydrogen chloride (HCl) from a new coal-fired boiler. Reviewed record, estimated HCl emissions, wrote expert report June 2010 and March 2013 (Cost to Install a Scrubber at the Lamar Repowering Project Pursuant to Case-by-Case MACT), deposed August 2010 and

March 2013. *Wildearth Guardian et al. v. Lamar Utilities Board*, Civil Action No. 09-cv-02974, U.S. District Court, District of Colorado. Case settled August 2013.

- For plaintiffs, expert witness on permitting, emission calculations, and wastewater treatment for coal-to-gasoline plant. Reviewed produced documents. Assisted in preparation of comments on draft minor source permit. Wrote two affidavits on key issues in case. Presented direct and rebuttal testimony 10/27 - 10/28/10 on permit enforceability and failure to properly calculate potential to emit, including underestimate of flaring emissions and omission of VOC and CO emissions from wastewater treatment, cooling tower, tank roof landings, and malfunctions. *Sierra Club, Ohio Valley Environmental Coalition, Coal River Mountain Watch, West Virginia Highlands Conservancy v. John Benedict, Director, Division of Air Quality, West Virginia Department of Environmental Protection and TransGas Development System, LLC*, Appeal No. 10-01-AQB. Virginia Air Quality Board remanded the permit on March 28, 2011 ordering reconsideration of potential to emit calculations, including: (1) support for assumed flare efficiency; (2) inclusion of startup, shutdown and malfunction emissions; and (3) inclusion of wastewater treatment emissions in potential to emit calculations.
- For plaintiffs, expert on BACT emission limits for gas-fired combined cycle power plant. Prepared declaration in support of CBE's Opposition to the United States' Motion for Entry of Proposed Amended Consent Decree. Assisted in settlement discussions. *U.S. EPA, Plaintiff, Communities for a Better Environment, Intervenor Plaintiff, v. Pacific Gas & Electric Company, et al.*, U.S. District Court, Northern District of California, San Francisco Division, Case No. C-09-4503 SI.
- Technical expert in confidential settlement discussions with large coal-fired utility on BACT control technology and emission limits for NOx, SO2, PM, PM2.5, and CO for new natural gas fired combined cycle and simple cycle turbines with oil backup. (July 2010). Case settled.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1998-99) at Gallagher Units 1 and 3. Reviewed produced documents, prepared expert and rebuttal reports on historic and current-day BACT for SO2, control costs, and excess emissions of SO2. Deposed 11/18/09. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Settled 12/22/09.
- For plaintiffs, expert witness on MACT, BACT for NOx, and enforceability in an administrative appeal of draft state air permit issued for four 300-MW pet-coke-fired CFBs. Reviewed produced documents and prepared prefiled testimony. Deposed 10/8/09 and 11/9/09. Testified 11/10/09. *Application of Las Brisas Energy Center, LLC for State Air Quality Permit*; before the State Office of Administrative Hearings, Texas. Permit remanded 3/29/10 as LBEC failed to meet burden of proof on a number of issues including MACT.

Texas Court of Appeals dismissed an appeal to reinstate the permit. The Texas Commission on Environmental Quality and Las Brisas Energy Center, LLC sought to overturn the Court of Appeals decision but moved to have their appeal dismissed in August 2013.

- For defense, expert witness in unlawful detainer case involving a gasoline station, minimart, and residential property with contamination from leaking underground storage tanks. Reviewed agency files and inspected site. Presented expert testimony on July 6, 2009, on causes of, nature and extent of subsurface contamination. *A. Singh v. S. Assaedi,* in Contra Costa County Superior Court, CA. Settled August 2009.
- For plaintiffs, expert witness on netting and enforceability for refinery being upgraded to process tar sands crude. Reviewed produced documents. Prepared expert and rebuttal reports addressing use of emission factors for baseline, omitted sources including coker, flares, tank landings and cleaning, and enforceability. Deposed. *In the Matter of Objection to the Issuance of Significant Source Modification Permit No. 089-25484-00453 to BP Products North America Inc., Whiting Business Unit, Save the Dunes Council, Inc., Sierra Club., Inc., Hoosier Environmental Council et al., Petitioners, B. P. Products North American, Respondents/Permittee,* before the Indiana Office of Environmental Adjudication. Case settled.
- For plaintiffs, expert witness on BACT, MACT, and enforceability in appeal of Title V permit issued to 600 MW coal-fired power plant burning Powder River Basin coal. Prepared technical comments on draft air permit. Reviewed record on appeal, drafted BACT, MACT, and enforceability pre-filed testimony. Drafted MACT and enforceability pre-filed rebuttal testimony. Deposed March 24, 2009. Testified June 10, 2009. *In Re: Southwestern Electric Power Company*, Arkansas Pollution Control and Ecology Commission, Consolidated Docket No. 08-006-P. Recommended Decision issued December 9, 2009 upholding issued permit. Commission adopted Recommended Decision January 22, 2010.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1989-1992) at Wabash Units 2, 3 and 5. Reviewed produced documents, prepared expert and rebuttal report on historic and current-day BACT for NOx and SO2, control costs, and excess emissions of NOx, SO2, and mercury. Deposed 10/21/08. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Testified 2/3/09. Memorandum Opinion & Order 5-29-09 requiring shutdown of Wabash River Units 2, 3, 5 by September 30, 2009, run at baseline until shutdown, and permanently surrender SO2 emission allowances.
- For plaintiffs, expert witness in liability phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for three historic modifications (1997-2001) at two portland cement plants involving three cement kilns. Reviewed produced documents, analyzed CEMS data covering subject period, prepared netting analysis for NOx, SO_2 and CO, and prepared expert and rebuttal reports. *United States v. Cemex California*

Cement, In U.S. District Court for the Central District of California, Eastern Division, Case No. ED CV 07-00223-GW (JCRx). Settled 1/15/09.

- For intervenors Clean Wisconsin and Citizens Utility Board, prepared data requests, reviewed discovery and expert report. Prepared prefiled direct, rebuttal and surrebuttal testimony on cost to extend life of existing Oak Creek Units 5-8 and cost to address future regulatory requirements to determine whether to control or shutdown one or more of the units. Oral testimony 2/5/08. Application for a Certificate of Authority to Install Wet Flue Gas Desulfurization and Selective Catalytic Reduction Facilities and Associated Equipment for Control of Sulfur Dioxide and Nitrogen Oxide Emissions at Oak Creek Power Plant Units 5, 6, 7 and 8, WPSC Docket No. 6630-CE-299.
- For plaintiffs, expert witness on alternatives analysis and BACT for NOx, SO2, total PM10, and sulfuric acid mist in appeal of PSD permit issued to 1200 MW coal fired power plant burning Powder River Basin and/or Central Appalachian coal (Longleaf). Assisted in drafting technical comments on NOx on draft permit. Prepared expert disclosure. Presented 8+ days of direct and rebuttal expert testimony. Attended all 21 days of evidentiary hearing from 9/5/07 – 10/30/07 assisting in all aspects of hearing. *Friends of the Chatahooche and Sierra Club v. Dr. Carol Couch, Director, Environmental Protection Division of Natural Resources Department, Respondent, and Longleaf Energy Associates, Intervener*. ALJ Final Decision 1/11/08 denying petition. ALJ Order vacated & remanded for further proceedings, Fulton County Superior Court, 6/30/08. Court of Appeals of GA remanded the case with directions that the ALJ's final decision be vacated to consider the evidence under the correct standard of review, July 9, 2009. The ALJ issued an opinion April 2, 2010 in favor of the applicant. Final permit issued April 2010.
- For plaintiffs, expert witness on diesel exhaust in inverse condemnation case in which Port expanded maritime operations into residential neighborhoods, subjecting plaintiffs to noise, light, and diesel fumes. Measured real-time diesel particulate concentrations from marine vessels and tug boats on plaintiffs' property. Reviewed documents, depositions, DVDs, and photographs provided by counsel. Deposed. Testified October 24, 2006. *Ann Chargin, Richard Hackett, Carolyn Hackett, et al. v. Stockton Port District*, Superior Court of California, County of San Joaquin, Stockton Branch, No. CV021015. Judge ruled for plaintiffs.
- For plaintiffs, expert witness on NOx emissions and BACT in case alleging failure to obtain necessary permits and install controls on gas-fired combined-cycle turbines. Prepared and reviewed (applicant analyses) of NOx emissions, BACT analyses (water injection, SCR, ultra low NOx burners), and cost-effectiveness analyses based on site visit, plant operating records, stack tests, CEMS data, and turbine and catalyst vendor design information. Participated in negotiations to scope out consent order. *United States v. Nevada Power.* Case settled June 2007, resulting in installation of dry low NOx burners (5 ppm NOx averaged over 1 hr) on four units and a separate solar array at a local business.

- For plaintiffs, expert witness in appeal of PSD permit issued to 850 MW coal fired boiler burning Powder River Basin coal (Iatan Unit 2) on BACT for particulate matter, sulfuric acid mist and opacity and emission calculations for alleged historic violations of PSD. Assisted in drafting technical comments, petition for review, discovery requests, and responses to discovery requests. Reviewed produced documents. Prepared expert report on BACT for particulate matter. Assisted with expert depositions. Deposed February 7, 8, 27, and 28, 2007. *In Re PSD Construction Permit Issued to Great Plains Energy, Kansas City Power & Light – Iatan Generating Station, Sierra Club v. Missouri Department of Natural Resources, Great Plains Energy, and Kansas City Power & Light.* Case settled March 27, 2007, providing offsets for over 6 million ton/yr of CO2 and lower NOx and SO_2 emission limits.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications of coal-fired boilers and associated equipment. Reviewed produced documents, prepared expert report on cost to retrofit 24 coal-fired power plants with scrubbers designed to remove 99% of the sulfur dioxide from flue gases. Prepared supplemental and expert report on cost estimates and BACT for SO2 for these 24 complaint units. Deposed 1/30/07 and 3/14/07. *United States and State of New York et al. v. American Electric Power*, In U.S. District Court for the Southern District of Ohio, Eastern Division, Consolidated Civil Action Nos. C2-99-1182 and C2-99-1250. Settlement announced 10/9/07.
- For plaintiffs, expert witness on BACT, enforceability, and alternatives analysis in appeal of PSD permit issued for a 270-MW pulverized coal fired boiler burning Powder River Basin coal (City Utilities Springfield Unit 2). Reviewed permitting file and assisted counsel draft petition and prepare and respond to interrogatories and document requests. Reviewed interrogatory responses and produced documents. Assisted with expert depositions. Deposed August 2005. Evidentiary hearings October 2005. *In the Matter of Linda Chipperfield and Sierra Club v. Missouri Department of Natural Resources.* Missouri Supreme Court denied review of adverse lower court rulings August 2007.
- For plaintiffs, expert witness in civil action relating to plume touchdowns at AEP's Gavin coal-fired power plant. Assisted counsel draft interrogatories and document requests. Reviewed responses to interrogatories and produced documents. Prepared expert report "Releases of Sulfuric Acid Mist from the Gavin Power Station." The report evaluates sulfuric acid mist releases to determine if AEP complied with the requirements of CERCLA Section 103(a) and EPCRA Section 304. This report also discusses the formation, chemistry, release characteristics, and abatement of sulfuric acid mist in support of the claim that these releases present an imminent and substantial endangerment to public health under Section 7002(a)(1)(B) of the Resource Conservation and Recovery Act ("RCRA"). *Citizens Against Pollution v. Ohio Power Company*, In the U.S. District Court for the Southern District of Ohio, Eastern Division, Civil Action No. 2-04-cv-371. Case settled 12-8-06.

- For petitioners, expert witness in contested case hearing on BACT, enforceability, and emission estimates for an air permit issued to a 500-MW supercritical Power River Basin coal-fired boiler (Weston Unit 4). Assisted counsel prepare comments on draft air permit and respond to and draft discovery. Reviewed produced file, deposed (7/05), and prepared expert report on BACT and enforceability. Evidentiary hearings September 2005. *In the Matter of an Air Pollution Control Construction Permit Issued to Wisconsin Public Service Corporation for the Construction and Operation of a 500 MW Pulverized Coal-fired Power Plant Known as Weston Unit 4 in Marathon County, Wisconsin*, Case No. IH-04-21. The Final Order, issued 2/10/06, lowered the NOx BACT limit from 0.07 lb/MMBtu to 0.06 lb/MMBtu based on a 30-day average, added a BACT SO2 control efficiency, and required a 0.0005% high efficiency drift eliminator as BACT for the cooling tower. The modified permit, including these provisions, was issued 3/28/07. Additional appeals in progress.
- For plaintiffs, adviser on technical issues related to Citizen Suit against U.S. EPA regarding failure to update New Source Performance Standards for petroleum refineries, 40 CFR 60, Subparts J, VV, and GGG. *Our Children's Earth Foundation and Sierra Club v. U.S. EPA et al.* Case settled July 2005. CD No. C 05-00094 CW, U.S. District Court, Northern District of California – Oakland Division. Proposed revisions to standards of performance for petroleum refineries published 72 FR 27178 (5/14/07).
- For interveners, reviewed proposed Consent Decree settling Clean Air Act violations due to historic modifications of boilers and associated equipment at two coal-fired power plants. In response to stay order, reviewed the record, selected one representative activity at each of seven generating units, and analyzed to identify CAA violations. Identified NSPS and NSR violations for NOx, SO_2, PM/PM10, and sulfuric acid mist. Summarized results in an expert report. *United States of America, and Michael A. Cox, Attorney General of the State of Michigan, ex rel. Michigan Department of Environmental Quality, Plaintiffs, and Clean Wisconsin, Sierra Club, and Citizens' Utility Board, Intervenors, v. Wisconsin Electric Power Company, Defendant*, U.S. District Court for the Eastern District of Wisconsin, Civil Action No. 2:03-CV-00371-CNC. Order issued 10-1-07 denying petition.
- For a coalition of Nevada labor organizations (ACE), reviewed preliminary determination to issue a Class I Air Quality Operating Permit to Construct and supporting files for a 250-MW pulverized coal-fired boiler (Newmont). Prepared about 100 pages of technical analyses and comments on BACT, MACT, emission calculations, and enforceability. Assisted counsel draft petition and reply brief appealing PSD permit to U.S. EPA Environmental Appeals Board (EAB). Order denying review issued 12/21/05. *In re Newmont Nevada Energy Investment, LLC, TS Power Plant*, PSD Appeal No. 05-04 (EAB 2005).
- For petitioners and plaintiffs, reviewed and prepared comments on air quality and hazardous waste based on negative declaration for refinery ultra low sulfur diesel project located in SCAQMD. Reviewed responses to comments and prepared responses. Prepared declaration and presented oral testimony before SCAQMD Hearing Board on exempt sources (cooling towers) and calculation of potential to emit under NSR. Petition for writ of mandate filed

March 2005. Case remanded by Court of Appeals to trial court to direct SCAQMD to re-evaluate the potential environmental significance of NOx emissions resulting from the project in accordance with court's opinion. California Court of Appeals, Second Appellate Division, on December 18, 2007, affirmed in part (as to baseline) and denied in part. *Communities for a Better Environment v. South Coast Air Quality Management District and ConocoPhillips and Carlos Valdez et al v. South Coast Air Quality Management District and ConocoPhillips.* Certified for partial publication 1/16/08. Appellate Court opinion upheld by CA Supreme Court 3/15/10. *(2010) 48 Cal.4th 310.*

- For amici seeking to amend a proposed Consent Decree to settle alleged NSR violations at Chevron refineries, reviewed proposed settlement, related files, subject modifications, and emission calculations. Prepared declaration on emission reductions, identification of NSR and NSPS violations, and BACT/LAER for FCCUs, heaters and boilers, flares, and sulfur recovery plants. *U.S. et al. v. Chevron U.S.A.*, Northern District of California, Case No. C 03-04650. Memorandum and Order Entering Consent Decree issued June 2005. Case No. C 03-4650 CRB.
- For petitioners, prepared declaration on enforceability of periodic monitoring requirements, in response to EPA's revised interpretation of 40 CFR 70.6(c)(1). This revision limited additional monitoring required in Title V permits. 69 FR 3203 (Jan. 22, 2004). *Environmental Integrity Project et al. v. EPA* (U.S. Court of Appeals for the District of Columbia). Court ruled the Act requires all Title V permits to contain monitoring requirements to assure compliance. *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008).
- For interveners in application for authority to construct a 500 MW supercritical coal-fired generating unit before the Wisconsin Public Service Commission, prepared pre-filed written direct and rebuttal testimony with oral cross examination and rebuttal on BACT and MACT (Weston 4). Prepared written comments on BACT, MACT, and enforceability on draft air permit for same facility.
- For property owners in Nevada, evaluated the environmental impacts of a 1,450-MW coal-fired power plant proposed in a rural area adjacent to the Black Rock Desert and Granite Range, including emission calculations, air quality modeling, comments on proposed use permit to collect preconstruction monitoring data, and coordination with agencies and other interested parties. Project cancelled.
- For environmental organizations, reviewed draft PSD permit for a 600-MW coal-fired power plant in West Virginia (Longview). Prepared comments on permit enforceability; coal washing; BACT for SO_2 and PM10; Hg MACT; and MACT for HCl, HF, non-Hg metallic HAPs, and enforceability. Assist plaintiffs draft petition appealing air permit. Retained as expert to develop testimony on MACT, BACT, offsets, enforceability. Participate in settlement discussions. Case settled July 2004.
- For petitioners, reviewed record produced in discovery and prepared affidavit on emissions of carbon monoxide and volatile organic compounds during startup of GE 7FA combustion

turbines to successfully establish plaintiff standing. *Sierra Club et al. v. Georgia Power Company* (Northern District of Georgia).

- For building trades, reviewed air quality permitting action for 1500-MW coal-fired power plant before the Kentucky Department for Environmental Protection (Thoroughbred).
- For petitioners, expert witness in administrative appeal of the PSD/Title V permit issued to a 1500-MW coal-fired power plant. Reviewed over 60,000 pages of produced documents, prepared discovery index, identified and assembled plaintiff exhibits. Deposed. Assisted counsel in drafting discovery requests, with over 30 depositions, witness cross examination, and brief drafting. Presented over 20 days of direct testimony, rebuttal and sur-rebuttal, with cross examination on BACT for NOx, SO_2, and PM/PM10; MACT for Hg and non-Hg metallic HAPs; emission estimates for purposes of Class I and II air modeling; risk assessment; and enforceability of permit limits. Evidentiary hearings from November 2003 to June 2004. *Sierra Club et al. v. Natural Resources & Environmental Protection Cabinet, Division of Air Quality and Thoroughbred Generating Company et al.* Hearing Officer Decision issued August 9, 2005 finding in favor of plaintiffs on counts as to risk, BACT (IGCC/CFB, NOx, SO_2, Hg, Be), single source, enforceability, and errors and omissions. Assist counsel draft exceptions. Cabinet Secretary issued Order April 11, 2006 denying Hearing Offer's report, except as to NOx BACT, Hg, 99% SO2 control and certain errors and omissions.
- For citizens group in Massachusetts, reviewed, commented on, and participated in permitting of pollution control retrofits of coal-fired power plant (Salem Harbor).
- Assisted citizens group and labor union challenge issuance of conditional use permit for a 317,000 ft^2 discount store in Honolulu without any environmental review. In support of a motion for preliminary injunction, prepared 7-page declaration addressing public health impacts of diesel exhaust from vehicles serving the Project. In preparation for trial, prepared 20-page preliminary expert report summarizing results of diesel exhaust and noise measurements at two big box retail stores in Honolulu, estimated diesel PM10 concentrations for Project using ISCST, prepared a cancer health risk assessment based on these analyses, and evaluated noise impacts.
- Assisted environmental organizations to challenge the DOE Finding of No Significant Impact (FONSI) for the Baja California Power and Sempra Energy Resources Cross-Border Transmissions Lines in the U.S. and four associated power plants located in Mexico (DOE EA-1391). Prepared 20-page declaration in support of motion for summary judgment addressing emissions, including CO_2 and NH_3, offsets, BACT, cumulative air quality impacts, alternative cooling systems, and water use and water quality impacts. Plaintiff's motion for summary judgment granted in part. U.S. District Court, Southern District decision concluded that the Environmental Assessment and FONSI violated NEPA and the APA due to their inadequate analysis of the potential controversy surrounding the project, water impacts, impacts from NH_3 and CO_2, alternatives, and cumulative impacts. *Border Power Plant Working Group v. Department of Energy and Bureau of Land Management*, Case No. 02-CV-513-IEG (POR) (May 2, 2003).

- For Sacramento school, reviewed draft air permit issued for diesel generator located across from playfield. Prepared comments on emission estimates, enforceability, BACT, and health impacts of diesel exhaust. Case settled. BUG trap installed on the diesel generator.
- Assisted unions in appeal of Title V permit issued by BAAQMD to carbon plant that manufactured coke. Reviewed District files, identified historic modifications that should have triggered PSD review, and prepared technical comments on Title V permit. Reviewed responses to comments and assisted counsel draft appeal to BAAQMD hearing board, opening brief, motion to strike, and rebuttal brief. Case settled.
- Assisted California Central Coast city obtain controls on a proposed new city that would straddle the Ventura-Los Angeles County boundary. Reviewed several environmental impact reports, prepared an air quality analysis, a diesel exhaust health risk assessment, and detailed review comments. Governor intervened and State dedicated the land for conservation purposes April 2004.
- Assisted Central California city to obtain controls on large alluvial sand quarry and asphalt plant proposing a modernization. Prepared comments on Negative Declaration on air quality, public health, noise, and traffic. Evaluated process flow diagrams and engineering reports to determine whether proposed changes increased plant capacity or substantially modified plant operations. Prepared comments on application for categorical exemption from CEQA. Presented testimony to County Board of Supervisors. Developed controls to mitigate impacts. Assisted counsel draft Petition for Writ. Case settled June 2002. Substantial improvements in plant operations were obtained including cap on throughput, dust control measures, asphalt plant loadout enclosure, and restrictions on truck routes.
- Assisted oil companies on the California Central Coast in defending class action citizen's lawsuit alleging health effects due to emissions from gas processing plant and leaking underground storage tanks. Reviewed regulatory and other files and advised counsel on merits of case. Case settled November 2001.
- Assisted oil company on the California Central Coast in defending property damage claims arising out of a historic oil spill. Reviewed site investigation reports, pump tests, leachability studies, and health risk assessments, participated in design of additional site characterization studies to assess health impacts, and advised counsel on merits of case. Prepare health risk assessment.
- Assisted unions in appeal of Initial Study/Negative Declaration ("IS/ND") for an MTBE phaseout project at a Bay Area refinery. Reviewed IS/ND and supporting agency permitting files and prepared technical comments on air quality, groundwater, and public health impacts. Reviewed responses to comments and final IS/ND and ATC permits and assisted counsel to draft petitions and briefs appealing decision to Air District Hearing Board. Presented sworn direct and rebuttal testimony with cross examination on groundwater impacts of ethanol spills on hydrocarbon contamination at refinery. Hearing Board ruled 5 to 0 in favor of appellants, remanding ATC to district to prepare an EIR.

- Assisted Florida cities in challenging the use of diesel and proposed BACT determinations in prevention of significant deterioration (PSD) permits issued to two 510-MW simple cycle peaking electric generating facilities and one 1,080-MW simple cycle/combined cycle facility. Reviewed permit applications, draft permits, and FDEP engineering evaluations, assisted counsel in drafting petitions and responding to discovery. Participated in settlement discussions. Cases settled or applications withdrawn.
- Assisted large California city in federal lawsuit alleging peaker power plant was violating its federal permit. Reviewed permit file and applicant's engineering and cost feasibility study to reduce emissions through retrofit controls. Advised counsel on feasible and cost-effective NOx, SOx, and PM10 controls for several 1960s diesel-fired Pratt and Whitney peaker turbines. Case settled.
- Assisted coalition of Georgia environmental groups in evaluating BACT determinations and permit conditions in PSD permits issued to several large natural gas-fired simple cycle and combined-cycle power plants. Prepared technical comments on draft PSD permits on BACT, enforceability of limits, and toxic emissions. Reviewed responses to comments, advised counsel on merits of cases, participated in settlement discussions, presented oral and written testimony in adjudicatory hearings, and provided technical assistance as required. Cases settled or won at trial.
- Assisted construction unions in review of air quality permitting actions before the Indiana Department of Environmental Management ("IDEM") for several natural gas-fired simple cycle peaker and combined cycle power plants.
- Assisted coalition of towns and environmental groups in challenging air permits issued to 523 MW dual fuel (natural gas and distillate) combined-cycle power plant in Connecticut. Prepared technical comments on draft permits and 60 pages of written testimony addressing emission estimates, startup/shutdown issues, BACT/LAER analyses, and toxic air emissions. Presented testimony in adjudicatory administrative hearings before the Connecticut Department of Environmental Protection in June 2001 and December 2001.
- Assisted various coalitions of unions, citizens groups, cities, public agencies, and developers in licensing and permitting of over 110 coal, gas, oil, biomass, and pet coke-fired power plants generating over 75,000 MW of electricity. These included base-load, combined cycle, simple cycle, and peaker power plants in Alaska, Arizona, Arkansas, California, Colorado, Georgia, Florida, Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, Oklahoma, Oregon, Texas, West Virginia, Wisconsin, and elsewhere. Prepared analyses of and comments on applications for certification, preliminary and final staff assessments, and various air, water, wastewater, and solid waste permits issued by local agencies. Presented written and oral testimony before various administrative bodies on hazards of ammonia use and transportation, health effects of air emissions, contaminated property issues, BACT/LAER issues related to SCR and SCONOx, criteria and toxic pollutant emission estimates, MACT analyses, air quality modeling, water supply and water quality issues, and methods to reduce

water use, including dry cooling, parallel dry-wet cooling, hybrid cooling, and zero liquid discharge systems.

- Assisted unions, cities, and neighborhood associations in challenging an EIR issued for the proposed expansion of the Oakland Airport. Reviewed two draft EIRs and prepared a health risk assessment and extensive technical comments on air quality and public health impacts. The California Court of Appeals, First Appellate District, ruled in favor of appellants and plaintiffs, concluding that the EIR "2) erred in using outdated information in assessing the emission of toxic air contaminants (TACs) from jet aircraft; 3) failed to support its decision not to evaluate the health risks associated with the emission of TACs with meaningful analysis," thus accepting my technical arguments and requiring the Port to prepare a new EIR. See *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (August 30, 2001) 111 Cal.Rptr.2d 598.
- Assisted lessor of former gas station with leaking underground storage tanks and TCE contamination from adjacent property. Lessor held option to purchase, which was forfeited based on misrepresentation by remediation contractor as to nature and extent of contamination. Remediation contractor purchased property. Reviewed regulatory agency files and advised counsel on merits of case. Case not filed.
- Advised counsel on merits of several pending actions, including a Proposition 65 case involving groundwater contamination at an explosives manufacturing firm and two former gas stations with leaking underground storage tanks.
- Assisted defendant foundry in Oakland in a lawsuit brought by neighbors alleging property contamination, nuisance, trespass, smoke, and health effects from foundry operation. Inspected and sampled plaintiff's property. Advised counsel on merits of case. Case settled.
- Assisted business owner facing eminent domain eviction. Prepared technical comments on a negative declaration for soil contamination and public health risks from air emissions from a proposed redevelopment project in San Francisco in support of a CEQA lawsuit. Case settled.
- Assisted neighborhood association representing residents living downwind of a Berkeley asphalt plant in separate nuisance and CEQA lawsuits. Prepared technical comments on air quality, odor, and noise impacts, presented testimony at commission and council meetings, participated in community workshops, and participated in settlement discussions. Cases settled. Asphalt plant was upgraded to include air emission and noise controls, including vapor collection system at truck loading station, enclosures for noisy equipment, and improved housekeeping.
- Assisted a Fortune 500 residential home builder in claims alleging health effects from faulty installation of gas appliances. Conducted indoor air quality study, advised counsel on merits of case, and participated in discussions with plaintiffs. Case settled.

- Assisted property owners in Silicon Valley in lawsuit to recover remediation costs from insurer for large TCE plume originating from a manufacturing facility. Conducted investigations to demonstrate sudden and accidental release of TCE, including groundwater modeling, development of method to date spill, preparation of chemical inventory, investigation of historical waste disposal practices and standards, and on-site sewer and storm drainage inspections and sampling. Prepared declaration in opposition to motion for summary judgment. Case settled.
- Assisted residents in east Oakland downwind of a former battery plant in class action lawsuit alleging property contamination from lead emissions. Conducted historical research and dry deposition modeling that substantiated claim. Participated in mediation at JAMS. Case settled.
- Assisted property owners in West Oakland who purchased a former gas station that had leaking underground storage tanks and groundwater contamination. Reviewed agency files and advised counsel on merits of case. Prepared declaration in opposition to summary judgment. Prepared cost estimate to remediate site. Participated in settlement discussions. Case settled.
- Consultant to counsel representing plaintiffs in two Clean Water Act lawsuits involving selenium discharges into San Francisco Bay from refineries. Reviewed files and advised counsel on merits of case. Prepared interrogatory and discovery questions, assisted in deposing opposing experts, and reviewed and interpreted treatability and other technical studies. Judge ruled in favor of plaintiffs.
- Assisted oil company in a complaint filed by a resident of a small California beach community alleging that discharges of tank farm rinse water into the sanitary sewer system caused hydrogen sulfide gas to infiltrate residence, sending occupants to hospital. Inspected accident site, interviewed parties to the event, and reviewed extensive agency files related to incident. Used chemical analysis, field simulations, mass balance calculations, sewer hydraulic simulations with SWMM44, atmospheric dispersion modeling with SCREEN3, odor analyses, and risk assessment calculations to demonstrate that the incident was caused by a faulty drain trap and inadequate slope of sewer lateral on resident's property. Prepared a detailed technical report summarizing these studies. Case settled.
- Assisted large West Coast city in suit alleging that leaking underground storage tanks on city property had damaged the waterproofing on downgradient building, causing leaks in an underground parking structure. Reviewed subsurface hydrogeologic investigations and evaluated studies conducted by others documenting leakage from underground diesel and gasoline tanks. Inspected, tested, and evaluated waterproofing on subsurface parking structure. Waterproofing was substandard. Case settled.
- Assisted residents downwind of gravel mine and asphalt plant in Siskiyou County, California, in suit to obtain CEQA review of air permitting action. Prepared two declarations analyzing

air quality and public health impacts. Judge ruled in favor of plaintiffs, closing mine and asphalt plant.

- Assisted defendant oil company on the California Central Coast in class action lawsuit alleging property damage and health effects from subsurface petroleum contamination. Reviewed documents, prepared risk calculations, and advised counsel on merits of case. Participated in settlement discussions. Case settled.
- Assisted defendant oil company in class action lawsuit alleging health impacts from remediation of petroleum contaminated site on California Central Coast. Reviewed documents, designed and conducted monitoring program, and participated in settlement discussions. Case settled.
- Consultant to attorneys representing irrigation districts and municipal water districts to evaluate a potential challenge of USFWS actions under CVPIA section 3406(b)(2). Reviewed agency files and collected and analyzed hydrology, water quality, and fishery data. Advised counsel on merits of case. Case not filed.
- Assisted residents downwind of a Carson refinery in class action lawsuit involving soil and groundwater contamination, nuisance, property damage, and health effects from air emissions. Reviewed files and provided advice on contaminated soil and groundwater, toxic emissions, and health risks. Prepared declaration on refinery fugitive emissions. Prepared deposition questions and reviewed deposition transcripts on air quality, soil contamination, odors, and health impacts. Case settled.
- Assisted residents downwind of a Contra Costa refinery who were affected by an accidental release of naphtha. Characterized spilled naphtha, estimated emissions, and modeled ambient concentrations of hydrocarbons and sulfur compounds. Deposed. Presented testimony in binding arbitration at JAMS. Judge found in favor of plaintiffs.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects from several large accidents as well as routine operations. Reviewed files and prepared analyses of environmental impacts. Prepared declarations, deposed, and presented testimony before jury in one trial and judge in second. Case settled.
- Assisted business owner claiming damages from dust, noise, and vibration during a sewer construction project in San Francisco. Reviewed agency files and PM10 monitoring data and advised counsel on merits of case. Case settled.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects. Prepared declaration in opposition to summary judgment, deposed, and presented expert testimony on accidental releases, odor, and nuisance before jury. Case thrown out by judge, but reversed on appeal and not retried.

- Presented testimony in small claims court on behalf of residents claiming health effects from hydrogen sulfide from flaring emissions triggered by a power outage at a Contra Costa County refinery. Analyzed meteorological and air quality data and evaluated potential health risks of exposure to low concentrations of hydrogen sulfide. Judge awarded damages to plaintiffs.
- Assisted construction unions in challenging PSD permit for an Indiana steel mill. Prepared technical comments on draft PSD permit, drafted 70-page appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analysis for electric arc furnace and reheat furnace and faulty permit conditions, among others, and drafted briefs responding to four parties. EPA Region V and the EPA General Counsel intervened as amici, supporting petitioners. EAB ruled in favor of petitioners, remanding permit to IDEM on three key issues, including BACT for the reheat furnace and lead emissions from the EAF. Drafted motion to reconsider three issues. Prepared 69 pages of technical comments on revised draft PSD permit. Drafted second EAB appeal addressing lead emissions from the EAF and BACT for reheat furnace based on European experience with SCR/SNCR. Case settled. Permit was substantially improved. See *In re: Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB June 22, 2000).
- Assisted defendant urea manufacturer in Alaska in negotiations with USEPA to seek relief from penalties for alleged violations of the Clean Air Act. Reviewed and evaluated regulatory files and monitoring data, prepared technical analysis demonstrating that permit limits were not violated, and participated in negotiations with EPA to dismiss action. Fines were substantially reduced and case closed.
- Assisted construction unions in challenging PSD permitting action for an Indiana grain mill. Prepared technical comments on draft PSD permit and assisted counsel draft appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analyses for heaters and boilers and faulty permit conditions, among others. Case settled.
- As part of a consent decree settling a CEQA lawsuit, assisted neighbors of a large west coast port in negotiations with port authority to secure mitigation for air quality impacts. Prepared technical comments on mobile source air quality impacts and mitigation and negotiated a $9 million CEQA mitigation package. Represented neighbors on technical advisory committee established by port to implement the air quality mitigation program. Program successfully implemented.
- Assisted construction unions in challenging permitting action for a California hazardous waste incinerator. Prepared technical comments on draft permit, assisted counsel prepare appeal of EPA permit to the Environmental Appeals Board. Participated in settlement discussions on technical issues with applicant and EPA Region 9. Case settled.

- Assisted environmental group in challenging DTSC Negative Declaration on a hazardous waste treatment facility. Prepared technical comments on risk of upset, water, and health risks. Writ of mandamus issued.
- Assisted several neighborhood associations and cities impacted by quarries, asphalt plants, and cement plants in Alameda, Shasta, Sonoma, and Mendocino counties in obtaining mitigations for dust, air quality, public health, traffic, and noise impacts from facility operations and proposed expansions.
- For over 100 industrial facilities, commercial/campus, and redevelopment projects, developed the record in preparation for CEQA and NEPA lawsuits. Prepared technical comments on hazardous materials, solid wastes, public utilities, noise, worker safety, air quality, public health, water resources, water quality, traffic, and risk of upset sections of EIRs, EISs, FONSIs, initial studies, and negative declarations. Assisted counsel in drafting petitions and briefs and prepared declarations.
- For several large commercial development projects and airports, assisted applicant and counsel prepare defensible CEQA documents, respond to comments, and identify and evaluate "all feasible" mitigation to avoid CEQA challenges. This work included developing mitigation programs to reduce traffic-related air quality impacts based on energy conservation programs, solar, low-emission vehicles, alternative fuels, exhaust treatments, and transportation management associations.

SITE INVESTIGATION/REMEDIATION/CLOSURE

- Technical manager and principal engineer for characterization, remediation, and closure of waste management units at former Colorado oil shale plant. Constituents of concern included BTEX, As, 1,1,1-TCA, and TPH. Completed groundwater monitoring programs, site assessments, work plans, and closure plans for seven process water holding ponds, a refinery sewer system, and processed shale disposal area. Managed design and construction of groundwater treatment system and removal actions and obtained clean closure.
- Principal engineer for characterization, remediation, and closure of process water ponds at a former lanthanide processing plant in Colorado. Designed and implemented groundwater monitoring program and site assessments and prepared closure plan.
- Advised the city of Sacramento on redevelopment of two former railyards. Reviewed work plans, site investigations, risk assessment, RAPS, RI/FSs, and CEQA documents. Participated in the development of mitigation strategies to protect construction and utility workers and the public during remediation, redevelopment, and use of the site, including buffer zones, subslab venting, rail berm containment structure, and an environmental oversight plan.

- Provided technical support for the investigation of a former sanitary landfill that was redeveloped as single family homes. Reviewed and/or prepared portions of numerous documents, including health risk assessments, preliminary endangerment assessments, site investigation reports, work plans, and RI/FSs. Historical research to identify historic waste disposal practices to prepare a preliminary endangerment assessment. Acquired, reviewed, and analyzed the files of 18 federal, state, and local agencies, three sets of construction field notes, analyzed 21 aerial photographs and interviewed 14 individuals associated with operation of former landfill. Assisted counsel in defending lawsuit brought by residents alleging health impacts and diminution of property value due to residual contamination. Prepared summary reports.
- Technical oversight of characterization and remediation of a nitrate plume at an explosives manufacturing facility in Lincoln, CA. Provided interface between owners and consultants. Reviewed site assessments, work plans, closure plans, and RI/FSs.
- Consultant to owner of large western molybdenum mine proposed for NPL listing. Participated in negotiations to scope out consent order and develop scope of work. Participated in studies to determine premining groundwater background to evaluate applicability of water quality standards. Served on technical committees to develop alternatives to mitigate impacts and close the facility, including resloping and grading, various thickness and types of covers, and reclamation. This work included developing and evaluating methods to control surface runoff and erosion, mitigate impacts of acid rock drainage on surface and ground waters, and stabilize nine waste rock piles containing 328 million tons of pyrite-rich, mixed volcanic waste rock (andesites, rhyolite, tuff). Evaluated stability of waste rock piles. Represented client in hearings and meetings with state and federal oversight agencies.

REGULATORY (PARTIAL LIST)

- In December 2020, researched and wrote 23 pages of comments on the Draft Supplemental Recirculated Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2020 A, Focused on Oil and Gas Local Permitting on: (a) significant and unmitigated construction emissions; (b) significant and unmitigated operational emissions; (c) public health and biological impacts of criteria pollutants emissions and ozone; (d) offsets not valid CEQA mitigation.
- In October and December 2020, researched and wrote 46 pages of comments on underestimated and unsupported construction emissions, omitted construction emission sources, failure to consider unique site geotechnical conditions; revised construction emissions; significant construction and operational GHG emissions; GHG mitigation; construction and operational health risks; risk of upset; and cumulative impacts for a facility proposed to upgrade landfill gas to pipeline quality natural gas.

- In October and November 2020, researched and wrote 37 pages of comments on significant construction impacts, significant operational VOC emissions, and significant public health impacts of new internal floating roof storage tanks at a marine terminal at the Port of Long Beach.
- In September to November 2020, review proposed permit amendment to add HCN emissions from the FCCU to Title V permit for a Houston Refinery and research and write report on methods to measure HCN from FCCUs in situ and remotely.
- In September and October 2020, researched and wrote 14 pages of comments on proposed Leak Detection and Repair (LDAR) program for controlling VOC emissions from a geothermal power plant.
- In August to October 2020, researched and wrote comments on grid-based impacts of San Francisco's proposed building code mandating that new construction be all electric.
- In July and August 2020, researched and wrote comments on groundwater impacts of sea level rise for Final SEIR on crude oil trucking proposal.
- In June to August 2020, researched and wrote 69 pages of comments on inadequate project description, construction impacts, operational air quality impacts, cumulative air quality impacts, public health impacts, valley fever, hazards, geologic impacts, water use, CEC licensing, and extended lifetime impacts for the repower of a geothermal power plant in Imperial County.
- In June 2020, review revised quarry reclamation plan and draft 27 pages of comments on proposed modification.
- In June and July 2020, researched and wrote 23 pages of comments on cement terminal at Port of Stockton on construction impacts, emission baseline, operational emissions, and greenhouse gas mitigation.
- In May to June 2020, review reclamation plan amendment for quarry and research and write 17 page report on hydrology and water quality impacts of proposed amendment.
- In May 2020, researched and wrote 10 pages of comments on FEIR for a new apartment project in Contra Costa County on GHG emissions from vegetation removal, mobile sources, and water use and mitigation for same.
- In March/April 2020, researched and wrote 50 pages of comments on IS/MND for battery energy storage project in San Jose (Hummingbird) on inadequate project description, criteria pollutant and GHG emissions, significant and unmitigated energy impacts, cumulative impacts, construction impacts, public health impacts from BESS accidents, and battery handling and transportation accidents. Wrote 15 pages of responses to comments on vendor specifications, battery composition, cumulative impacts, construction impacts, fire control methods, and battery accidents.

- In April 2020, researched and wrote 47 pages of comments on IS/MND for data center in Santa Clara (SV1) on operational NOx emissions; out-of-district emissions; interbasin pollutant transport; omitted emission sources; GHG compliance with plans, policies and regulations; indirect GHG emissions; air quality impacts; construction emissions; cumulative impacts; and risk of upset from battery accidents.
- In March 2020, researched and wrote 30 pages of comments on IS/MND for data center in San Jose (Hummingbird) on operational GHG and criteria pollutant emissions, cumulative impacts, and public health risks. Research and write responses to comments.
- In February-March 2020, researched and wrote 30 pages on an IS/MND for a data center in San Jose (Stack) on operational NOx and GHG emissions, cumulative impacts, heath risks, and odor.
- In February 2020, researched and wrote 33 pages of comments on Initial Study for a battery storage facility in Ventura County (Orni) on criteria pollutant and GHG emissions, worker and public health impacts, cumulative impacts, valley fever, and consistency with general plan.
- In February 2020, researched and wrote 20 pages of comments on valley fever in response to applicant's global response to comments on Valley Fever for a wind project in San Diego County.
- In January 2020, researched and wrote 32 pages of comments on the Orni battery storage facility (BESS) on incomplete project description, cumulative GHG and NOx impacts, BESS accidents, and health impacts, including soil contamination and valley fever.
- In January 2020, research and wrote 41 pages of comments on the DEIR for the NuStar Port of Stockton Liquid Bulk Terminal on operational emission calculations, significant NOx emissions, significant GHG emissions. GHG mitigation, and cumulative impacts.
- In December 2019, researched and wrote 3 pages of comments on the Silverstrand Grid battery storage facility on greenhouse gas emissions.
- In December 2019, researched and wrote 15 pages of comments on the Initial Study for the K2 Pure – Chlorine Rail Transportation Curtailment Project, including on air quality baseline, project description, emissions, cancer risks, risk of upset.
- In November 2019, reviewed agency files and researched and wrote 42 pages of comments on the Belridge Solar Project on compliance with local zoning ordinances, water quality impacts, air quality impacts, and worker and public health impacts due to soil contamination and valley fever.
- In October 2019, researched and wrote 49 pages of comments on IS/MND for data center in Santa Clara, CA on operational criteria pollutants (mobile sources, off-site electricity

generation, emergency generators), ambient air quality impacts, greenhouse gas emissions and mitigation, and cumulative impacts.

- In October 2019, researched and wrote 9 pages of comments on the Application, Statement of Basis and draft Permit to Construct and Temporary Permit to Operate for proposed changes at the Paramount Refinery to facilitate refining of biomass-based feedstock to produce renewable fuels.
- In September 2019, reviewed City of Sunnyvale's file on Google's proposed Central Utility Plant and researched and wrote 34 pages of comments on construction and operational air quality impacts, cumulative impacts, and battery fire and explosion impacts. In October 2019, researched and wrote 15 pages of responses to comments.
- In August 2019, research and wrote 37 pages of comments on the DSEIR for the Le Conte Battery Energy Storage System on GHG emissions, hazards and hazardous material impacts, and health impacts.
- In August 2019, researched and wrote 38 pages of comments on IS/MND for the Hanford-Lakeside Dairy digester Project, Kings County, on project description (piecemealing), cumulative impacts, construction impacts, air quality impacts, valley fever and risk of upset.
- In July 2019, researched and wrote 48 pages of comments on IS/MND for the Five Points Pipeline Dairy Digester Cluster Project, including on air quality, cumulative impacts, worker and public health impacts (including on pesticide-contaminated soils), Valley Fever, construction air quality impacts, and risk of upset.
- In June 2019, researched and wrote 15 pages of responses to comments on IS/MND for SV1 Data Center, including operational NOx emissions, air quality analyses, construction emissions, battery hazards, and mitigation plans for noise, vibration, risk management, storm water pollution, and emergency response and evacuation plans.
- In June 2019, researched and wrote 30 pages of comments on DEIR for the Humboldt Wind Energy Project on fire and aesthetic impacts of transmission line, construction air quality impacts and mitigation, and greenhouse gas emissions.
- In May 2019, researched and wrote 25 pages of comments on the DEIR for the ExxonMobil Interim Trucking for Santa Ynez Phased Restart Project on project description, baseline, and mitigation.
- In April 2019, researched and wrote a 16 page letter critiquing the adequacy of the FEIR for CalAm Desalination Project to support a Monterey County Combined Development Permit, consisting of a Use Permit, an Administrative Permit, and Design Approval for the Desalination Plant and Carmel Valley Pump Station.

- In April 2019, researched and wrote 22 pages of comments on DEIR for the Eco-Energy Liquid Bulk Terminal at the Port of Stockton on emissions, air quality impact mitigation, and health risk assessment.
- In March 2019, researched and wrote 43 pages of comments on DEIR for Contanda Renewable Diesel Bulk Liquid Terminal at the Port of Stockton on operational emissions, air quality impacts and mitigation and health risks.
- In February 2019, researched and wrote 36 pages of comments on general cumulative impacts, air quality, accidents, and valley fever for IS/MND for biogas cluster project in Kings County.
- In January 2019, researched and wrote 30 pages of comments on air quality and valley fever for IS/MND for energy storage facility in Kings County.
- In December 2018, researched and wrote 11 pages of comments on air quality for IS/MND for biomass gasification facility in Madera County.
- In December 2018, researched and wrote 10 pages of responses to comments on IS/MND for a wind energy project in Riverside County.
- In December 2018, researched and wrote 12 pages of responses to comments on IS/MND for a large Safeway fueling station in Petaluma. The Planning Commission voted unanimously to require an EIR.
- In November 2018, researched and wrote 30 pages of comments on IS/MND on wind energy project in Riverside County on construction health risks, odor impacts, waste disposal, transportation, construction emissions and mitigation and Valley Fever.
- In November 2018, researched and wrote 32 pages of comments on the DEIR for a solar energy generation and storage project in San Bernardino County on hazards, health risks, odor, construction emissions and mitigation, and Valley Fever.
- In September 2018, researched and wrote 36 pages of comments on the FEIR for the Newland Sierra Project including on greenhouse gas emissions, construction emissions, and cumulative impacts.
- In August 2018, researched and wrote 20 pages of comments on the health risk assessment in the IS/MND for a large Safeway fueling station in Petaluma.
- In August 2018, researched and wrote responses to comments on DEIR for the Newland Sierra Project, San Diego County on greenhouse gas emissions, construction emissions, odor, and Valley Fever.
- In July/August 2018, researched and wrote 12 pages of comments on DEIR for proposed Doheny Desal Project, on GHG, criteria pollutant, and TAC emissions and public health impacts during construction and indirect emissions during operation.

- In June 2018, researched and wrote 12 pages of technical comments rebutting NDDH responses to comments on Meridian Davis Refinery.
- In April 2018, researched and wrote 26 pages of comments on greenhouse gas emissions and mitigation as proposed in the San Diego County Climate Action Plan.
- In April 2018, researched and wrote 24 pages of comments on the FEIR for Monterey County water supply project, including GHG mitigation, air quality impacts and mitigation, and Valley Fever.
- In March-June 2018, researched and wrote 37 pages of comments on the IS/MND for the 2305 Mission College Boulevard Data Center, Santa Clara, California and responded to responses to comments.
- In March 2018, researched and wrote 40 pages of comments on the IS/MND for the Diablo Energy Storage Facility in Pittsburg, California.
- In March 2018, researched and wrote 19 pages of comments on Infill Checklist/Mitigated Negative Declaration for the Legacy@Livermore Project on CalEEMod emission calculations, including NOx and PM10 and construction health risk assessment, including Valley Fever.
- In January 2018, researched and wrote 28 pages of comments on draft Permit to Construct for the Davis Refinery Project, North Dakota, as a minor source of criteria pollutants and HAPs.
- In December 2017, researched and wrote 19 pages of comments on DEIR for the Rialto Bioenergy Facility, Rialto, California.
- In November and December 2017, researched and wrote 6 pages of comments on the Ventura County Air Pollution Control District's Preliminary Determination if Compliance (PDOC) for Mission Rock Energy Center.
- In November 2017, researched and wrote 11 pages of comments on control technology evaluation for the National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry Residual Risk and Technology Review.
- In September and November 2017, prepared comments on revised Negative Declaration for Delicato Winery in San Joaquin County, California.
- In October and November 2017, researched and wrote comments on North City Project Pure Water San Diego Program DEIR/DEIS to reclaim wastewater for municipal use.
- In August 2017, reviewed DEIR on a new residential community in eastern San Diego County (Newland Sierra) and research and wrote 60 pages of comments on air quality, greenhouse gas emissions and health impacts, including Valley Fever.

- In August 2017, reviewed responses to comments on Part 70 operating permit for IGP Methanol's Gulf Coast Methanol Complex, near Myrtle Grove, Louisiana, and researched and wrote comments on metallic HAP issues.
- In July 2017, reviewed the FEIS for an expansion of the Port of Gulfport and researched and wrote 10 pages of comments on air quality and public health.
- In June 2017, reviewed and prepared technical report on an Application for a synthetic minor source construction permit for a new Refinery in North Dakota.
- In June 2017, reviewed responses to NPCA and other comments on the BP Cherry Point Refinery modifications and assisted counsel in evaluating issues to appeal, including GHG BACT, coker heater SCR cost effectiveness analysis, and SO_2 BACT.
- In June 2017, reviewed Part 70 Operating Permit Renewal/Modification for the Noranda Alumina LC/Gramercy Holdings I, LLC alumina processing plant, St. James, Louisiana, and prepared comments on HAP emissions from bauxite feedstock.
- In May and June 2017, reviewed FEIR on Tesoro Integration Project and prepared responses to comments on the DEIR.
- In May 2017, prepared comments on tank VOC and HAP emissions from Tesoro Integration Project, based on real time monitoring at the Tesoro and other refineries in the SCAQMD.
- In April 2017, prepared comments on Negative Declaration for Delicato Winery in San Joaquin County, California.
- In March 2017, reviewed Negative Declaration for Ellmore geothermal facility in Imperial County, California and prepared summary of issues.
- In March 2017, prepared response to Phillips 66 Company's Appeal of the San Luis Obispo County Planning Commission's Decision Denying the Rail Spur Extension Project Proposed for the Santa Maria Refinery.
- In February 2017, researched and wrote comments on Kalama draft Title V permit for 10,000 MT/day methanol production and marine export facility in Kalama, Washington.
- In January 2017, researched and wrote 51 pages of comments on proposed Title V and PSD permits for the St. James Methanol Plant, St. James Louisiana, on BACT and enforceability of permit conditions.
- In December 2016, researched and wrote comments on draft Title V Permit for Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana, responding to EPA Order addressing enforceability issues.
- In November 2016, researched and wrote comments on Initial Study/Mitigated Negative Declaration for the AES Battery Energy Storage Facility, Long Beach, CA.

- In November 2016, researched and wrote comments on Campo Verde Battery Energy Storage System Draft Environmental Impact Report.
- In October 2016, researched and wrote comments on Title V Permit for NuStar Terminal Operations Partnership L.P, Stockton, CA.
- In October 2016, prepared expert report, Technical Assessment of Achieving the 40 CFR Part 423 Zero Discharge Standard for Bottom Ash Transport Water at the Belle River Power Plant, East China, Michigan. Reported resulted in a 2 year reduction in compliance date for elimination of bottom ash transport water. 1/30/17 DEQ Letter.
- In September 2016, researched and wrote comments on Proposed Title V Permit and Environmental Assessment Statement, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana.
- In September 2016, researched and wrote response to "Further Rebuttal in Support of Appeal of Planning Commission Resolution No. 16-1, Denying Use Permit Application 12PLN-00063 and Declining to Certify Final Environmental Impact Report for the Valero Benicia Crude-by-Rail Project.
- In August 2016, reviewed and prepared comments on manuscript: Hutton et al., Freshwater Flows to the San Francisco Bay-Delta Estuary over Nine Decades: Trends Evaluation.
- In August/September 2016, researched and wrote comments on Mitigated Negative Declaration for the Chevron Long Wharf Maintenance and Efficiency Project.
- In July 2016, researched and wrote comments on the Ventura County APCD Preliminary Determination of Compliance and the California Energy Commission Revised Preliminary Staff Assessment for the Puente Power Project.
- In June 2016, researched and wrote comments on an Ordinance (1) Amending the Oakland Municipal Code to Prohibit the Storage and Handling of Coal and Coke at Bulk Material Facilities or Terminals Throughout the City of Oakland and (2) Adopting CEQA Exemption Findings and supporting technical reports. Council approved Ordinance on an 8 to 0 vote on June 27, 2016.
- In May 2016, researched and wrote comments on Draft Title V Permit and Draft Environmental Impact Report for the Tesoro Los Angeles Refinery Integration and Compliance Project.
- In March 2016, researched and wrote comments on Valero's Appeal of Planning Commission's Denial of Valero Crude-by-Rail Project.
- In February 2016, researched and wrote comments on Final Environmental Impact Report, Santa Maria Rail Spur Project.
- In February 2016, researched and wrote comments on Final Environmental Impact Report, Valero Benicia Crude by Rail Project.

- In January 2016, researched and wrote comments on Draft Programmatic Environmental Impact Report for the Southern California Association of Government's (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy.
- In November 2015, researched and wrote comments on Final Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2015(C) (Focused on Oil and Gas Local Permitting), November 2015.
- In October 2015, researched and wrote comments on Revised Draft Environmental Report, Valero Benicia Crude by Rail Project.
- In September 2015, prepared report, "Environmental, Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, and presented oral testimony on September 21, 2015 before Oakland City Council on behalf of the Sierra Club.
- In September 2015, researched and wrote comments on revisions to two chapters of EPA's Air Pollution Control Cost Manual: Docket ID No. EPA-HQ-OAR-2015-0341.
- In June 2015, researched and wrote comments on DEIR for the CalAm Monterey Peninsula Water Supply Project.
- In April 2015, researched and wrote comments on proposed Title V Operating Permit Revision and Prevention of Significant Deterioration Permit for Arizona Public Service's Ocotillo Power Plant Modernization Project (5 GE LMS100 105-MW simple cycle turbines operated as peakers), in Tempe, Arizona; Final permit appealed to EAB.
- In March 2015, researched and wrote "Comments on Proposed Title V Air Permit, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana". Client filed petition objecting to the permit. EPA granted majority of issues. In the Matter of Yuhuang Chemical Inc. Methanol Plant, St. James Parish, Louisiana, Permit No. 2560-00295-V0, Issued by the Louisiana Department of Environmental Quality, Petition No. VI-2015-03, Order Responding to the Petitioners' Request for Objection to the Issuance of a Title V Operating Permit, September 1, 2016.
- In February 2015, prepared compilation of BACT cost effectiveness values in support of comments on draft PSD Permit for Bonanza Power Project.
- In January 2015, prepared cost effectiveness analysis for SCR for a 500-MW coal fire power plant, to address unpermitted upgrades in 2000.
- In January 2015, researched and wrote comments on Revised Final Environmental Impact Report for the Phillips 66 Propane Recovery Project. *Communities for a Better Environment et al. v. Contra Costa County et al. Contra Costa County (Superior Court, Contra Costa County, Case No. MSN15-0301, December 1, 2016).*
- In December 2014, researched and wrote "Report on Bakersfield Crude Terminal Permits to Operate." In response, the U.S. EPA cited the Terminal for 10 violations of the Clean Air

Act. The Fifth Appellate District Court upheld the finding in this report in CBE et al v. San Joaquin Valley Unified Air Pollution Control District and Bakersfield Crude Terminal LLC et al, Super. Ct. No. 284013, June 23, 2017.

- In December 2014, researched and wrote comments on Revised Draft Environmental Impact Report for the Phillips 66 Propane Recovery Project.
- In November 2014, researched and wrote comments on Revised Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project and Crude Unloading Project, Santa Maria, CA to allow the import of tar sands crudes.
- In November 2014, researched and wrote comments on Draft Environmental Impact Report for Phillips 66 Ultra Low Sulfur Diesel Project, responding to the California Supreme Court Decision, *Communities for a Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310.*
- In November 2014, researched and wrote comments on Draft Environmental Impact Report for the Tesoro Avon Marine Oil Terminal Lease Consideration.
- In October 2014, prepared: "Report on Hydrogen Cyanide Emissions from Fluid Catalytic Cracking Units", pursuant to the Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, 79 FR 36880.
- In October 2014, researched and wrote technical comments on Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In October 2014, researched and wrote technical comments on the Title V Permit Renewal and three De Minimus Significant Revisions for the Tesoro Logistics Marine Terminal in the SCAQMD.
- In September 2014, researched and wrote technical comments on the Draft Environmental Impact Report for the Valero Crude by Rail Project.
- In August 2014, for EPA Region 6, prepared technical report on costing methods for upgrades to existing scrubbers at coal-fired power plants.
- In July 2014, researched and wrote technical comments on Draft Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In June 2014, researched and wrote technical report on Initial Study and Draft Negative Declaration for the Tesoro Logistics Storage Tank Replacement and Modification Project.
- In May 2014, researched and wrote technical comments on Intent to Approve a new refinery and petroleum transloading operation in Utah.

- In March and April 2014, prepared declarations on air permits issued for two crude-by-rail terminals in California, modified to switch from importing ethanol to importing Bakken crude oils by rail and transferring to tanker cars. Permits were issued without undergoing CEQA review. One permit was upheld by the San Francisco Superior Court as statute of limitations had run. The Sacramento Air Quality Management District withdrew the second one due to failure to require BACT and conduct CEQA review.
- In March 2014, researched and wrote technical report on Negative Declaration for a proposed modification of the air permit for a bulk petroleum and storage terminal to the allow the import of tar sands and Bakken crude oil by rail and its export by barge, under the New York State Environmental Quality Review Act (SEQRA).
- In February 2014, researched and wrote technical report on proposed modification of air permit for midwest refinery upgrade/expansion to process tar sands crudes.
- In January 2014, prepared cost estimates to capture, transport, and use CO2 in enhanced oil recovery, from the Freeport LNG project based on both Selexol and Amine systems.
- In January 2014, researched and wrote technical report on Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project, Santa Maria, CA. Comments addressed project description (piecemealing, crude slate), risk of upset analyses, mitigation measures, alternative analyses and cumulative impacts.
- In November 2013, researched and wrote technical report on the Phillips 66 Propane Recovery Project, Rodeo, CA. Comments addressed project description (piecemealing, crude slate) and air quality impacts.
- In September 2013, researched and wrote technical report on the Draft Authority to Construct Permit for the Casa Diablo IV Geothermal Development Project Environmental Impact Report and Declaration in Support of Appeal and Petition for Stay, U.S. Department of the Interior, Board of Land Appeals, Appeal of Decision Record for the Casa Diablo IV Geothermal Development Project.
- In September 2013, researched and wrote technical report on Effluent Limitation Guidelines for Best Available Technology Economically Available (BAT) for Bottom Ash Transport Waters from Coal-Fired Power Plants in the Steam Electric Power Generating Point Source Category.
- In July 2013, researched and wrote technical report on Initial Study/Mitigated Negative Declaration for the Valero Crude by Rail Project, Benicia, California, Use Permit Application 12PLN-00063.
- In July 2013, researched and wrote technical report on fugitive particulate matter emissions from coal train staging at the proposed Coyote Island Terminal, Oregon, for draft Permit No. 25-0015-ST-01.

- In July 2013, researched and wrote technical comments on air quality impacts of the Finger Lakes LPG Storage Facility as reported in various Environmental Impact Statements.
- In July 2013, researched and wrote technical comments on proposed Greenhouse Gas PSD Permit for the Celanese Clear Lake Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June/July 2013, researched and wrote technical comments on proposed Draft PSD Preconstruction Permit for Greenhouse Gas Emission for the ExxonMobil Chemical Company Baytown Olefins Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June 2013, researched and wrote technical report on a Mitigated Negative Declaration for a new rail terminal at the Valero Benicia Refinery to import increased amounts of "North American" crudes. Comments addressed air quality impacts of refining increased amounts of tar sands crudes.
- In June 2013, researched and wrote technical report on Draft Environmental Impact Report for the California Ethanol and Power Imperial Valley 1 Project.
- In May 2013, researched and wrote comments on draft PSD permit for major expansion of midwest refinery to process 100% tar sands crudes, including a complex netting analysis involving debottlenecking, piecemealing, and BACT analyses.
- In April 2013, researched and wrote technical report on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Keystone XL Pipeline on air quality impacts from refining increased amount of tar sands crudes at Refineries in PADD 3.
- In October 2012, researched and wrote technical report on the Environmental Review for the Coyote Island Terminal Dock at the Port of Morrow on fugitive particulate matter emissions.
- In October 2012-October 2014, review and evaluate Flint Hills West Application for an expansion/modification for increased (Texas, Eagle Ford Shale) crude processing and related modification, including netting and BACT analysis. Assist in settlement discussions.
- In February 2012, researched and wrote comments on BART analysis in PA Regional Haze SIP, 77 FR 3984 (Jan. 26, 2012). On Sept. 29, 2015, a federal appeals court overturned the U.S. EPA's approval of this plan, based in part on my comments, concluding "..we will vacate the 2014 Final Rule to the extent it approved Pennsylvania's source-specific BART analysis and remand to the EPA for further proceedings consistent with this Opinion." Nat'l Parks Conservation Assoc. v. EPA, 3d Cir., No. 14-3147, 9/19/15.
- Prepared cost analyses and comments on New York's proposed BART determinations for NOx, SO2, and PM and EPA's proposed approval of BART determinations for Danskammer Generating Station under New York Regional Haze State Implementation Plan and Federal Implementation Plan, 77 FR 51915 (August 28, 2012).

- Prepared cost analyses and comments on NOx BART determinations for Regional Haze State Implementation Plan for State of Nevada, 77 FR 23191 (April 18, 2012) and 77 FR 25660 (May 1, 2012).
- Prepared analyses of and comments on New Source Performance Standards for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 FR 22392 (April 13, 2012).
- Researched and wrote comments on CASPR-BART emission equivalency and NOx and PM BART determinations in EPA proposed approval of State Implementation Plan for Pennsylvania Regional Haze Implementation Plan, 77 FR 3984 (January 26, 2012).
- Researched and wrote comments and statistical analyses on hazardous air pollutants (HAPs) emission controls, monitoring, compliance methods, and the use of surrogates for acid gases, organic HAPs, and metallic HAPs for proposed National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 76 FR 24976 (May 3, 2011).
- Prepared cost analyses and comments on NOx BART determinations and emission reductions for proposed Federal Implementation Plan for Four Corners Power Plant, 75 FR 64221 (October 19, 2010).
- Prepared cost analyses and comments on NOx BART determinations for Colstrip Units 1- 4 for Montana State Implementation Plan and Regional Haze Federal Implementation Plan, 77 FR 23988 (April 20, 2010).
- For EPA Region 8, prepared report: Revised BART Cost Effectiveness Analysis for Tail-End Selective Catalytic Reduction at the Basin Electric Power Cooperative Leland Olds Station Unit 2 Final Report, March 2011, in support of 76 FR 58570 (Sept. 21, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, in support of 76 FR 52388 (Aug. 22, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Flue Gas Desulfurization at Coal-Fired Electric Generating Units in Oklahoma: Sooner Units 1 & 2, Muskogee Units 4 & 5, Northeastern Units 3 &4, October 2010, in support of 76 FR 16168 (March 26, 2011). My work was upheld in: *State of Oklahoma v. EPA*, App. Case 12-9526 (10th Cri. July 19, 2013).
- Identified errors in N_2O emission factors in the Mandatory Greenhouse Gas Reporting Rule, 40 CFR 98, and prepared technical analysis to support Petition for Rulemaking to Correct Emissions Factors in the Mandatory Greenhouse Gas Reporting Rule, filed with EPA on 10/28/10.

- Assisted interested parties develop input for and prepare comments on the Information Collection Request for Petroleum Refinery Sector NSPS and NESHAP Residual Risk and Technology Review, 75 FR 60107 (9/29/10).
- Technical reviewer of EPA's "Emission Estimation Protocol for Petroleum Refineries," posted for public comments on CHIEF on 12/23/09, prepared in response to the City of Houston's petition under the Data Quality Act (March 2010).
- Researched and wrote comments on SCR cost effectiveness for EPA's Advanced Notice of Proposed Rulemaking, Assessment of Anticipated Visibility Improvements at Surrounding Class I Areas and Cost Effectiveness of Best Available Retrofit Technology for Four Corners Power Plant and Navajo Generating Station, 74 FR 44313 (August 28, 2009).
- Researched and wrote comments on Proposed Rule for Standards of Performance for Coal Preparation and Processing Plants, 74 FR 25304 (May 27, 2009).
- Prepared comments on draft PSD permit for major expansion of midwest refinery to process up to 100% tar sands crudes. Participated in development of monitoring and controls to mitigate impacts and in negotiating a Consent Decree to settle claims in 2008.
- Reviewed and assisted interested parties prepare comments on proposed Kentucky air toxic regulations at 401 KAR 64:005, 64:010, 64:020, and 64:030 (June 2007).
- Prepared comments on proposed Standards of Performance for Electric Utility Steam Generating Units and Small Industrial-Commercial-Industrial Steam Generating Units, 70 FR 9706 (February 28, 2005).
- Prepared comments on Louisville Air Pollution Control District proposed Strategic Toxic Air Reduction regulations.
- Prepared comments and analysis of BAAQMD Regulation, Rule 11, Flare Monitoring at Petroleum Refineries.
- Prepared comments on Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electricity Utility Steam Generating Units (MACT standards for coal-fired power plants).
- Prepared Authority to Construct Permit for remediation of a large petroleum-contaminated site on the California Central Coast. Negotiated conditions with agencies and secured permits.
- Prepared Authority to Construct Permit for remediation of a former oil field on the California Central Coast. Participated in negotiations with agencies and secured permits.
- Prepared and/or reviewed hundreds of environmental permits, including NPDES, UIC, Stormwater, Authority to Construct, Prevention of Significant Deterioration, Nonattainment New Source Review, Title V, and RCRA, among others.

- Participated in the development of the CARB document, *Guidance for Power Plant Siting and Best Available Control Technology*, including attending public workshops and filing technical comments.
- Performed data analyses in support of adoption of emergency power restoration standards by the California Public Utilities Commission for "major" power outages, where major is an outage that simultaneously affects 10% of the customer base.
- Drafted portions of the Good Neighbor Ordinance to grant Contra Costa County greater authority over safety of local industry, particularly chemical plants and refineries.
- Participated in drafting BAAQMD Regulation 8, Rule 28, Pressure Relief Devices, including participation in public workshops, review of staff reports, draft rules and other technical materials, preparation of technical comments on staff proposals, research on availability and costs of methods to control PRV releases, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and cost of low-leak technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pumps and Compressors, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak and seal-less technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 5, Storage of Organic Liquids, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of controlling tank emissions, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors at Petroleum Refinery Complexes, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 22, Valves and Flanges at Chemical Plants, etc, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pump and Compressor Seals, including participation in public workshops, review of staff reports, proposed rules, and other

supporting technical material, preparation of technical comments on staff proposals, research on availability of low-leak technology, and presentation of testimony before the Board.

- Participated in the development of the BAAQMD Regulation 2, Rule 5, Toxics, including participation in public workshops, review of staff proposals, and preparation of technical comments.
- Participated in the development of SCAQMD Rule 1402, Control of Toxic Air Contaminants from Existing Sources, and proposed amendments to Rule 1401, New Source Review of Toxic Air Contaminants, in 1993, including review of staff proposals and preparation of technical comments on same.
- Participated in the development of the Sunnyvale Ordinance to Regulate the Storage, Use and Handling of Toxic Gas, which was designed to provide engineering controls for gases that are not otherwise regulated by the Uniform Fire Code.
- Participated in the drafting of the Statewide Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries, including participation in workshops, review of draft plans, preparation of technical comments on draft plans, and presentation of testimony before the SWRCB.
- Participated in developing Se permit effluent limitations for the five Bay Area refineries, including review of staff proposals, statistical analyses of Se effluent data, review of literature on aquatic toxicity of Se, preparation of technical comments on several staff proposals, and presentation of testimony before the Bay Area RWQCB.
- Represented the California Department of Water Resources in the 1991 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on a striped bass model developed by the California Department of Fish and Game.
- Represented the State Water Contractors in the 1987 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on natural flows, historical salinity trends in San Francisco Bay, Delta outflow, and hydrodynamics of the South Bay.
- Represented interveners in the licensing of over 20 natural-gas-fired power plants and one coal gasification plant at the California Energy Commission and elsewhere. Reviewed and prepared technical comments on applications for certification, preliminary staff assessments, final staff assessments, preliminary determinations of compliance, final determinations of compliance, and prevention of significant deterioration permits in the areas of air quality, water supply, water quality, biology, public health, worker safety, transportation, site contamination, cooling systems, and hazardous materials. Presented written and oral testimony in evidentiary hearings with cross examination and rebuttal. Participated in technical workshops.

- Represented several parties in the proposed merger of San Diego Gas & Electric and Southern California Edison. Prepared independent technical analyses on health risks, air quality, and water quality. Presented written and oral testimony before the Public Utilities Commission administrative law judge with cross examination and rebuttal.
- Represented a PRP in negotiations with local health and other agencies to establish impact of subsurface contamination on overlying residential properties. Reviewed health studies prepared by agency consultants and worked with agencies and their consultants to evaluate health risks.

WATER QUALITY/RESOURCES

- Directed and participated in research on environmental impacts of energy development in the Colorado River Basin, including contamination of surface and subsurface waters and modeling of flow and chemical transport through fractured aquifers.
- Played a major role in Northern California water resource planning studies since the early 1970s. Prepared portions of the Basin Plans for the Sacramento, San Joaquin, and Delta basins including sections on water supply, water quality, beneficial uses, waste load allocation, and agricultural drainage. Developed water quality models for the Sacramento and San Joaquin Rivers.
- Conducted hundreds of studies over the past 40 years on Delta water supplies and the impacts of exports from the Delta on water quality and biological resources of the Central Valley, Sacramento-San Joaquin Delta, and San Francisco Bay. Typical examples include:
    1. Evaluate historical trends in salinity, temperature, and flow in San Francisco Bay and upstream rivers to determine impacts of water exports on the estuary;
    2. Evaluate the role of exports and natural factors on the food web by exploring the relationship between salinity and primary productivity in San Francisco Bay, upstream rivers, and ocean;
    3. Evaluate the effects of exports, other in-Delta, and upstream factors on the abundance of salmon and striped bass;
    4. Review and critique agency fishery models that link water exports with the abundance of striped bass and salmon;
    5. Develop a model based on GLMs to estimate the relative impact of exports, water facility operating variables, tidal phase, salinity, temperature, and other variables on the survival of salmon smolts as they migrate through the Delta;
    6. Reconstruct the natural hydrology of the Central Valley using water balances, vegetation mapping, reservoir operation models to simulate flood basins, precipitation records, tree ring research, and historical research;

7. Evaluate the relationship between biological indicators of estuary health and down-estuary position of a salinity surrogate (X2);
8. Use real-time fisheries monitoring data to quantify impact of exports on fish migration;
9. Refine/develop statistical theory of autocorrelation and use to assess strength of relationships between biological and flow variables;
10. Collect, compile, and analyze water quality and toxicity data for surface waters in the Central Valley to assess the role of water quality in fishery declines;
11. Assess mitigation measures, including habitat restoration and changes in water project operation, to minimize fishery impacts;
12. Evaluate the impact of unscreened agricultural water diversions on abundance of larval fish;
13. Prepare and present testimony on the impacts of water resources development on Bay hydrodynamics, salinity, and temperature in water rights hearings;
14. Evaluate the impact of boat wakes on shallow water habitat, including interpretation of historical aerial photographs;
15. Evaluate the hydrodynamic and water quality impacts of converting Delta islands into reservoirs;
16. Use a hydrodynamic model to simulate the distribution of larval fish in a tidally influenced estuary;
17. Identify and evaluate non-export factors that may have contributed to fishery declines, including predation, shifts in oceanic conditions, aquatic toxicity from pesticides and mining wastes, salinity intrusion from channel dredging, loss of riparian and marsh habitat, sedimentation from upstream land alternations, and changes in dissolved oxygen, flow, and temperature below dams.

- Developed, directed, and participated in a broad-based research program on environmental issues and control technology for energy industries including petroleum, oil shale, coal mining, and coal slurry transport. Research included evaluation of air and water pollution, development of novel, low-cost technology to treat and dispose of wastes, and development and application of geohydrologic models to evaluate subsurface contamination from in-situ retorting. The program consisted of government and industry contracts and employed 45 technical and administrative personnel.
- Coordinated an industry task force established to investigate the occurrence, causes, and solutions for corrosion/erosion and mechanical/engineering failures in the waterside systems (e.g., condensers, steam generation equipment) of power plants. Corrosion/erosion failures

caused by water and steam contamination that were investigated included waterside corrosion caused by poor microbiological treatment of cooling water, steam-side corrosion caused by ammonia-oxygen attack of copper alloys, stress-corrosion cracking of copper alloys in the air cooling sections of condensers, tube sheet leaks, oxygen in-leakage through condensers, volatilization of silica in boilers and carry over and deposition on turbine blades, and iron corrosion on boiler tube walls. Mechanical/engineering failures investigated included: steam impingement attack on the steam side of condenser tubes, tube-to-tube-sheet joint leakage, flow-induced vibration, structural design problems, and mechanical failures due to stresses induced by shutdown, startup and cycling duty, among others. Worked with electric utility plant owners/operators, condenser and boiler vendors, and architect/engineers to collect data to document the occurrence of and causes for these problems, prepared reports summarizing the investigations, and presented the results and participated on a committee of industry experts tasked with identifying solutions to prevent condenser failures.

- Evaluated the cost effectiveness and technical feasibility of using dry cooling and parallel dry-wet cooling to reduce water demands of several large natural-gas fired power plants in California and Arizona.
- Designed and prepared cost estimates for several dry cooling systems (e.g., fin fan heat exchangers) used in chemical plants and refineries.
- Designed, evaluated, and costed several zero liquid discharge systems for power plants.
- Evaluated the impact of agricultural and mining practices on surface water quality of Central Valley steams. Represented municipal water agencies on several federal and state advisory committees tasked with gathering and assessing relevant technical information, developing work plans, and providing oversight of technical work to investigate toxicity issues in the watershed.

AIR QUALITY/PUBLIC HEALTH

- Prepared or reviewed the air quality and public health sections of hundreds of EIRs and EISs on a wide range of industrial, commercial and residential projects.
- Prepared or reviewed hundreds of NSR and PSD permits for a wide range of industrial facilities.
- Designed, implemented, and directed a 2-year-long community air quality monitoring program to assure that residents downwind of a petroleum-contaminated site were not impacted during remediation of petroleum-contaminated soils. The program included real-time monitoring of particulates, diesel exhaust, and BTEX and time integrated monitoring for over 100 chemicals.
- Designed, implemented, and directed a 5-year long source, industrial hygiene, and ambient monitoring program to characterize air emissions, employee exposure, and downwind environmental impacts of a first-generation shale oil plant. The program included stack

monitoring of heaters, boilers, incinerators, sulfur recovery units, rock crushers, API separator vents, and wastewater pond fugitives for arsenic, cadmium, chlorine, chromium, mercury, 15 organic indicators (e.g., quinoline, pyrrole, benzo(a)pyrene, thiophene, benzene), sulfur gases, hydrogen cyanide, and ammonia. In many cases, new methods had to be developed or existing methods modified to accommodate the complex matrices of shale plant gases.

- Conducted investigations on the impact of diesel exhaust from truck traffic from a wide range of facilities including mines, large retail centers, light industrial uses, and sports facilities. Conducted traffic surveys, continuously monitored diesel exhaust using an aethalometer, and prepared health risk assessments using resulting data.
- Conducted indoor air quality investigations to assess exposure to natural gas leaks, pesticides, molds and fungi, soil gas from subsurface contamination, and outgasing of carpets, drapes, furniture and construction materials. Prepared health risk assessments using collected data.
- Prepared health risk assessments, emission inventories, air quality analyses, and assisted in the permitting of over 70 1 to 2 MW emergency diesel generators.
- Prepare over 100 health risk assessments, endangerment assessments, and other health-based studies for a wide range of industrial facilities.
- Developed methods to monitor trace elements in gas streams, including a continuous real-time monitor based on the Zeeman atomic absorption spectrometer, to continuously measure mercury and other elements.
- Performed nuisance investigations (odor, noise, dust, smoke, indoor air quality, soil contamination) for businesses, industrial facilities, and residences located proximate to and downwind of pollution sources.

PUBLICATIONS AND PRESENTATIONS (Partial List - Representative Publications)

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J.P. Fox, T.P. Rose, and T.L. Sawyer, Isotope Hydrology of a Spring-fed Waterfall in Fractured Volcanic Rock, 2007.

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Phyllis Fox and Elaine Archibald, *Aquatic Toxicity and Pesticides in Surface Waters of the Central Valley*, California Urban Water Agencies (CUWA) Report, September 1997.

Phyllis Fox and Alison Britton, *Evaluation of the Relationship Between Biological Indicators and the Position of X2*, CUWA Report, 1994.

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EXHIBIT B

February 11, 2021

Ms. Kelilah D. Federman
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Subject: Comments on the Draft Environmental Impact Report for the Estrella Substation and Paso Robles Area Reinforcement Project

Dear Ms. Federman:

This letter contains my comments on the Draft Environmental Impact Report ("DEIR") prepared by the California Public Utilities Commission ("CPUC") for the Estrella Substation and Paso Robles Area Reinforcement Project ("Project" or "Proposed Project"). Horizon West Transmission, LLC and Pacific Gas and Electric Company (collectively referred to as the "Applicants") have proposed a project that involves construction and operation of a new 230 kilovolt (kV)/70 kV substation, a new 7-mile-long 70 kV power line, and replacement and reconductoring of approximately 3 miles of an existing 70 kV power line. The Proposed Project also would provide for the future establishment of three new distribution feeders from the proposed Estrella Substation, including construction of roughly 1.7 miles of new distribution line and additional reconductoring activities. All of these facilities would be located within the City of Paso Robles or immediately adjacent areas within unincorporated portions of San Luis Obispo County.

I am an environmental biologist with 28 years of professional experience in wildlife biology and natural resources management. I have served as a biological resources expert for over 125 projects in California. My experience and scope of work in this regard has included assisting various clients with evaluations of biological resource issues, reviewing environmental compliance documents prepared pursuant to the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"), and submitting written comments in response to CEQA and NEPA documents. My work has included the preparation of written and oral testimony for the California Energy Commission, CPUC, and Federal courts. My educational background includes a B.S. in Resource Management from the University of California at Berkeley, and a M.S. in Wildlife and Fisheries Science from the Pennsylvania State University. A copy of my curriculum vitae is attached hereto.

The comments herein are based on my review of the environmental documents prepared for the Project, a review of scientific literature pertaining to biological resources known to occur in the Project area, consultations with other biological resource experts, and the knowledge and experience I have acquired during my 28-year career in the field of natural resources management.

PROJECT DESCRIPTION

The DEIR fails to provide a clear description of the vegetation management activities that would be implemented to comply with: (a) CPUC General Order ("G.O.") 95, and (b) PG&E and HWT wildfire mitigation plans (required under CPUC Code, Chapter 6, Section 8386). For example, the Project Description states:

> An approximately 10-foot radius (approximately 314 square feet) may be maintained around new 70 kV power poles depending on location and equipment installed as required by applicable law, including CPUC G.O. 95. Project proponents may, therefore, keep these areas clear of natural vegetation. Vegetation growing too close to conductors within the easement would be trimmed or removed for safety. Herbicides may be used for some vegetation maintenance activities.[1]

This description is too vague to understand the environmental impacts of the Project. The EIR needs to clearly articulate: (1) the vegetation management activities that would be conducted between power poles and the distance those activities would extend from the power lines (conductors); (2) the methods that would be used to remove, trim, or otherwise manipulate vegetation (e.g., masticators, chainsaws, loppers, etc.); (3) the herbicide products that may be used; (4) the frequency (return interval) of vegetation management activities (by vegetation community, if applicable); (5) the vegetation communities that may be manipulated to comply with G.O. 95; (6) whether the 10-foot radius would be limited to vegetation that grows within 10 horizontal feet of any conductor (as indicated on DEIR p. 4.4-53), or whether it also would include vegetation within 10 vertical feet; and (7) why numerous oak trees along the 70 kV route, but not within a 10-foot radius of the power poles, would be trimmed or removed.[2]

PGE's Wildfire Mitigation Plan states:

> In 2018, PG&E began a fuel reduction program, performing ground-to-conductor vegetative fuel reduction work (i.e. under and adjacent to power lines) in select locations. The goal of the fuel reduction work is to create "fire defense zones" which enhance defensible space for communities, properties, and buildings. These "fire defense zones" can also mitigate the spread of an ignition if one were to occur under or adjacent to PG&E powerlines. As such PG&E will continue to conduct fuel reduction work when appropriate, in select locations.[3]

Fuel reduction programs can cause significant environmental impacts that were not analyzed in the DEIR. For example, fuels reduction treatments in coastal scrub communities promote invasion by non-native plants and may cause type conversion (i.e., one vegetation type is converted into another vegetation type), especially if the treatments exceed the historical disturbance regime frequency.[4] Therefore, the CPUC and Applicants need to clarify whether a

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[1] DEIR, p. 2-87.
[2] *See* DEIR, Figure 3-7.
[3] PG&E. 2020 Feb 28. 2020 Wildfire Mitigation Plan Report. p. 5-187.
[4] Keeley JE. 2006. Fire management impacts on invasive plants in the Western United States. Conservation Biology 20(2):375-384.

fuel reduction program would (or might) be implemented as part of the Project. If a fuel reduction program might be implemented as part of the Project, the EIR must disclose and analyze the environmental impacts of that program.

ENVIRONMENTAL SETTING

Golden Eagle

Project impacts have the potential to be especially severe on golden eagles due to the species': (a) intolerance of anthropogenic forms of disturbance, and (b) susceptibility to collision with, and electrocution from, power lines.[5] As result, robust information on golden eagle nest territories and important eagle-use areas[6] is critical to assessing impacts of the Proposed Project and various Project alternatives. According to the DEIR:

> Multiple active and inactive nests have been identified in the vicinity, including one near the Cava Robles RV Resort and several in the vicinity of the Alternative SE-PLR-2 alignment. Known golden eagle nests are shown in Figure 4.4-5. Expansive grasslands and open oak woodlands within and around the Proposed Project, reasonably foreseeable distribution components, and alternatives areas provide suitable hunting and nesting habitat for this species. Multiple sightings of golden eagles have been recorded within Paso Robles city limits between 1982 and 2015, with the closest observation to the project site being at Cuesta College North Campus just north of SR 46 (eBird 2020b). Horizon biologists also observed golden eagle individuals during March and July 2019 surveys (Horizon 2019a, 2019c).[7]

As described below, additional information is needed to evaluate the sufficiency of the DEIR's description of the environmental setting, and thus, the DEIR's impact assessment and proposed mitigation:

1. It appears the Applicants' biological resource consultant did not conduct protocol-level surveys for eagle nests.[8] Therefore, please identify the methods that were used to obtain information on golden eagle nests in the vicinity of the Proposed Project and Project alternatives.
2. DEIR Figure 4.4-5 does not distinguish between active and inactive nests. Therefore, please clarify whether Figure 4.4-5 depicts all active and inactive nests, or only the active nests.

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[5] U.S. Fish and Wildlife Service, Division of Migratory Bird Management. 2009. Final Environmental Assessment, Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act. Washington: Dept. of Interior. *See also* U.S. Fish and Wildlife Service. 2013 Apr. Eagle Conservation Plan Guidance: Module 1—Land-based Wind Energy, Ver 2. pp. ii and iii.
[6] Important eagle-use area is defined as: "an eagle nest, foraging area, or communal roost site that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nest, foraging area, or roost site that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles" (as defined at 50 CFR 22.3).
[7] DEIR, Table 4.4-1.
[8] *See* Pagel JE, Whittington DM, Allen GT. 2010 Feb. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Birds, United States Fish and Wildlife Service.

3. It can be very difficult to classify the status of an eagle nest. In addition, many inactive nests become active nests in subsequent years. Therefore, please: (a) explain the methods that were used to confirm a nest was inactive, and (b) identify the year(s) each nest was last surveyed to determine its status.
4. California Natural Diversity Database ("CNDDB") staff often have a backlog of occurrence data that have not been entered into the database. This appears to be the case for golden eagle nest records. Therefore, please clarify whether the information provided in the DEIR includes unprocessed data that can be obtained by contacting CNDDB staff and the USFWS.
5. The eBird database has multiple records of golden eagles within the Paso Robles city limits between 2016 and 2020. Therefore, please clarify why the DEIR suggests there have not been sightings of golden eagles within the Paso Robles city limits since 2015.
6. The USFWS recommends surveys for occupied nesting territories within two miles of the area where take may occur.[9] Therefore, please provide information on any protocol-level eagle nest surveys that have been conducted within two miles of the Proposed Project and various Project alternatives.

PROJECT IMPACTS

Sensitive Natural Communities

The DEIR provides the following analysis of impacts to sensitive natural communities:

> The proposed Estrella Substation site is currently in agricultural production and there are no riparian habitats or sensitive natural communities within the site. The Proposed Project's 70 kV power line route, by contrast, would span several riparian corridors, including those along Huer Huero Creek and other unnamed ephemeral drainages in the area (see Figure 4.4-1). Additionally, three vegetation communities observed in the vicinity of the Proposed Project power line route (blue oak woodland, Central Coast cottonwood-willow riparian forest, and coastal and valley freshwater marsh) are considered sensitive communities under the City of Paso Robles General Plan (2011). Five vegetation communities (blue oak woodlands, central [Lucian] coastal scrub, Central Coast cottonwood-willow riparian forest, coastal and valley freshwater marsh, and sandy wash) are considered sensitive natural communities by CDFW.
>
> As described in Impact BIO-1, the Proposed Project has been designed to avoid all riparian habitats. APM HYDRO-1 requires that permanent structures, staging and work areas, and access roads be sited/routed through uplands and outside of existing drainage features to the extent feasible. Prior to construction, sensitive aquatic features slated for avoidance would be identified in the field and clearly marked. As a result, riparian areas would be avoided and no direct impacts to riparian areas would occur as a result of Proposed Project construction. Similarly, the Proposed Project has been designed to avoid central coastal scrub, Central Coast cottonwood-willow riparian forest, coastal and valley freshwater marsh, and sandy wash vegetation communities; however, up to 0.13

[9] U.S. Fish and Wildlife Service. 2020. Updated Eagle Nest Survey Protocol. Available at: <https://www.fws.gov/migratorybirds/pdf/management/EagleNestSurveyGuidanceUpdated.pdf>

> acre of direct permanent impacts to blue oak woodlands would occur as a result of pole and tower installation, vegetation removal, and clearing activities. This would include up to three oak trees that would need to be removed for Proposed Project construction. Further, approximately 6.41 acres of blue oak woodlands would be temporarily affected from construction activities. As described in Chapter 2, Project Description, all areas temporarily disturbed by the Proposed Project would be restored to the extent practicable, following construction.[10]

The 70 kV power line would cross a number of drainage features[11] that qualify as "riparian areas."[12] The DEIR points to APM HYDRO-1 to justify the statement that: "riparian areas would be avoided and no direct impacts to riparian areas would occur as a result of Proposed Project construction."[13] However, APM HYDRO-1 only requires that permanent structures, staging and work areas, and access roads be sited outside of existing drainage features *to the extent feasible*. The DEIR does not discuss factors that would make it infeasible to avoid impacts to riparian areas, nor does it explain why it was impractical for the CPUC to conduct the feasibility analysis prior to publication of the DEIR. Because avoidance of riparian areas is contingent on an undefined level of feasibility, it is impossible for the public to understand the likelihood that Project impacts to riparian areas would indeed be avoided. Similarly, because the DEIR does not discuss factors that would make restoration impracticable, it is impossible for the public to understand the likelihood that ecological functions within temporary impact areas would indeed be restored. This issue is compounded by the lack of ecological performance standards for restoration of habitats in temporary impact areas (except those containing blue oak woodland).

<u>Blue Oak Woodland</u>

The DEIR states: "up to 0.13 acre of direct permanent impacts to blue oak woodlands would occur as a result of pole and tower installation, vegetation removal, and clearing activities. This would include up to three oak trees that would need to be removed for Proposed Project construction. Further, approximately 6.41 acres of blue oak woodlands would be temporarily affected from construction activities."[14] The DEIR's statement that permanent impacts to oak trees would be limited to removal of "up to three oak trees" does not appear to be accurate for several reasons. First, it is inconsistent with DEIR Figure 3-7, which depicts numerous locations along the reconductoring segment that would require "oak tree trimming/removal."[15] This suggests the Applicants have yet to determine how many oak trees require removal. Second, it does not appear to account for tree removal activities associated with implementation of G.O. 95. Third, it does not appear to account for tree removal or mortality in the Project's "temporary" impact areas. According to DEIR:

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[10] DEIR, p. 4.4-51.
[11] DEIR, p. 4.4-53.
[12] Riparian areas in the Project area are not limited to the Central Coast cottonwood-willow riparian forest vegetation community discussed in the DEIR. *See definition in* National Research Council 2002. Riparian Areas: Functions and Strategies for Management. Washington, DC: The National Academies Press. p. 3.
[13] DEIR, p. 4.4-51.
[14] *Ibid*.
[15] It is unclear if the proposed alignment (and MRV) for the 70-kV route between the Estrella Substation and North River Road would require additional trimming/removal of oak trees because unlike the detailed maps of the Project alternatives, the detailed map of the Proposed Project does not depict locations requiring oak tree trimming/removal.

> Proposed Project construction would require establishment of temporary staging areas, structure work areas, conductor pull and tension sites, and helicopter landing areas. Construction of temporary access roads also would be required. The range of site preparation for these areas would include site leveling and grading, fencing, placement of gravel, vegetation removal, tree trimming/removal and/or vine removal, and placement of temporary rock bedding.[16]

The DEIR fails to analyze how these construction activities would affect oak trees and the long-term viability of the blue oak woodland. Oak trees are extremely sensitive to disturbance activities within the root zone, which is approximately one third greater than the distance between the tree and the outermost edge of the tree's foliage (e.g., if the tree's foliage extends 30 feet, the root zone extends 40 feet).[17] Any construction activities that occur in the root zone have the potential to kill the oak tree.[18] This includes grading, trenching, soil compaction, deposition of gravel or rock, and potentially other construction activities in the "temporary" work areas.[19] In addition, any construction activities that causes changes in soil moisture levels or drainage around an oak can kill the tree.[20] The temporary construction activities described in the DEIR are likely to cause permanent impacts to oak trees and the associated oak woodland community, especially in absence of: (a) mitigation to protect the root zone and existing soil properties, and (b) performance standards for survival of oak trees within temporary impact areas.

To facilitate proper understanding of the Project's impacts, the CPUC needs to: (1) provide maps that depict the oaks and oak woodland habitat that would be permanently impacted by the Project; (2) identify and map the specific Project activities that would temporarily impact 6.41 acres of blue oak woodlands; (3) explain the rationale for classifying the impacts as temporary; (4) clarify the maximum number of oak trees that might be removed as a result of the Project; and (5) clarify the extent of impacts associated with implementation of G.O. 95 (and any other vegetation management activities designed to reduce the wildfire risk).

Special-Status Wildlife Habitat

The DEIR states:

> Construction of the proposed Estrella Substation and the 70 kV power line would involve vegetation clearing, excavation, grading, and related ground-disturbing activities. Additionally, access roads would be improved and/or established to allow for access to work areas. Helicopters would be used for a variety of tasks during the construction period and approximately 6 helicopter landing zones would be established and utilized in the Proposed Project area. These activities would have potential to impact special-status species both directly (e.g., crushing from mechanical equipment) and indirectly (e.g., habitat degradation, water quality impacts, etc.).[21]

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[16] DEIR, p. ES-6.
[17] University of California Integrated Hardwood Range Management Program. 2010. Living Among the Oaks: A Management Guide for Landowners. Division of Agriculture and Natural Resources Publication #21538.
[18] *Ibid.*
[19] *Ibid.*
[20] *Ibid.*
[21] DEIR, p. 4.4-40.

The DEIR provides an estimate of the Project's impacts to blue oak woodlands and it states that impacts to other sensitive natural communities would be avoided. However, the DEIR fails to quantify the extent of Project impacts to other habitat types in the Project area (e.g., grassland, agricultural, ruderal). This precludes the ability to understand the severity of the Project's direct and indirect impacts on special-status species associated with those habitat types.

Crotch's Bumble Bee

The DEIR provides the following rationale for the CPUC's conclusion that Project impacts to the Crotch's bumble bee would be less than significant:

> Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch's bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, implementation of APMs BIO-3 and GEN-1 would further reduce potential for any impacts to Crotch's bumble bee during construction. As a State candidate endangered species, the Applicants would be required to notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals identified during pre-construction surveys or during the course of construction activities. If necessary, the Applicants may be required to obtain regulatory approval to relocate the nest. Given implementation of these measures, impacts to special-status invertebrates during construction would be less than significant with mitigation.[22]

Crotch's bumble bees typically construct nests underground.[23] The DEIR fails to provide evidence that Crotch's bumble bee nests can be successfully relocated. It also fails to explain how notifying and coordinating with CDFW would reduce impacts to less than significant levels. As a result, potentially significant impacts to the Crotch's bumble bee remain unmitigated.

Golden Eagle (and other Special-Status Birds)

The DEIR recognizes the Project poses an electrocution and collision hazard to birds, and that bird injuries and fatalities are a potentially significant impact.[24] The DEIR then states that the impact would be mitigated to a less than significant level because:

1. The conductors would be specular (i.e., shiny) and more visible to birds upon initial installation, allowing them time to adjust to the new facilities.
2. The Applicants would implement the avian protection measures outlined in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006), which include solutions such as spacing phase conductors (e.g., greater than the width of birds' wingspans) such that electrocution hazards are minimized.
3. Mitigation Measure BIO-3 also would be implemented, which would require that the Applicants incorporate guidance in *Reducing Avian Collisions with Power Lines: State of the Art in 2012* (APLIC 2012) and develop an Avian Protection Plan.

[22] DEIR, p. 4.4-42.
[23] DEIR, Table 4.4-1.
[24] DEIR, pp. 4.4-49 and -50.

4. The Applicants would implement a minor route variation (“MRV”) prior to construction to avoid a potential golden eagle nest along Huer Huero Creek at Union Road if this nest is determined to be occupied or is expected to be used by golden eagles in future nesting seasons (based on prior observations and the species’ nest site fidelity).[25]

As discussed below, these measures do not ensure avian collisions and electrocutions are mitigated to less than significant levels.

Specular Conductors

The DEIR provides no evidence that specular conductors reduce avian collisions, nor could I find any evidence in the scientific literature. Even if specular conductors reduce avian collisions, their efficacy as a mitigation measure would be short-lived because the conductors become less shiny in the course of a few seasons after installation.[26]

Avian Protection Plan

The DEIR fails to explain how the Avian Protection Plan (“APP”) would help mitigate impacts to less than significant levels. Development of an APP in itself does not reduce avian collisions and electrocutions. The only information the DEIR provides regarding the APP is that it would incorporate “relevant project-specific guidelines found in APLIC’s and USFWS’ 2005 Avian Protection Plan Guidelines.” In this case, it is impossible to assess the value of the APP in reducing avian fatalities because the DEIR does not provide a draft of the APP, nor does it identify the specific guidelines that the Applicants and CPUC consider to be “relevant” to the Project.

The DEIR states: “[a]s part of the Avian Protection Plan development, HWT and PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.”[27] The DEIR does not discuss the efficacy of bird diverters in reducing eagle collisions with power lines. However, bird diverters do not eliminate power line collisions; a considerable amount of mortality still occurs at lines with bird diverters. Barrientos et al. (2012) conducted the largest worldwide experiment to date on the effectiveness of bird diverters.[28] The researchers reported: “[w]e observed a small (9.6%) but significant decrease in the number of casualties after line marking [with diverters] compared to before line marking in experimental lines. This was not observed in control lines.”[29] Thus, bird diverters resulted in a statistically significant reduction in avian mortalities, but the total number of avian mortalities at lines with diverters was still biologically significant.[30] In addition, the researchers noted that bird diverters were ineffective for many species, especially species that have high collision risks.

[25] DEIR, p. 4.4-50.
[26] DEIR, p. 2-54.
[27] DEIR, pp. 4.4-50 and -51.
[28] Barrientos R, Ponce C, Palacin C, Martin CA, Martin B, Alonso JC. 2012. Wire Marking Results in a Small but Significant Reduction in Avian Mortality at Power Lines: A BACI Designed Study. PLoS ONE 7(3):e32569.
[29] *Ibid.*
[30] *Ibid. See also* Savereno AJ, Savereno LA, Boettcher R, Haig SM. 1996. Avian Behavior and Mortality at Power Lines in Coastal South Carolina. Wildlife Society Bulletin 24(4):636-648.

One reason bird diverters may not be effective for golden eagles is that golden eagles are adapted to flying in open airspace clear of hazards. Because golden eagles attack prey from above, their vision during flight is usually directed at the ground where prey are located—not at the airspace ahead of them where foreign hazards (with or without bird diverters) might be located.

<u>Minor Route Variation (MRV)</u>

According to the DEIR: "the Applicants would implement an MRV prior to construction to avoid a potential golden eagle nest along Huer Huero Creek at Union Road if this nest is determined to be occupied or is expected to be used by golden eagles in future nesting seasons (based on prior observations and the species' nest site fidelity)."[31] The criteria that would trigger the MRV are vague. Specifically, the DEIR fails to explain how "prior observations and the species' nest site fidelity" would be evaluated to determine whether the nest "is expected to be used by golden eagles in future nesting seasons," and thus, whether an MRV is needed. Furthermore, if the decision to implement an MRV would be based on "prior observations," there is no need for the CPUC to defer decision on the MRV until after CEQA review of the Project.

Most golden eagle territories have up to six nests, although eggs are laid in only one of the nests during a given year (unless the initial nesting attempt fails).[32] The territorial pair is likely to alternate nest sites among years, and they may add new material to alternative nests they do not use during a given nesting season.[33] Scientific literature indicates alternative nests are biologically significant, and that it is very likely the nest along Huer Huero Creek will be re-used for nesting at some time in the future.[34] Therefore, reducing the potential for significant impacts to golden eagles requires an MRV, regardless of whether eagles occupy the nest prior to Project construction.[35]

The DEIR does not explain how the proposed MRV would reduce impacts on golden eagles. The MRV involves shifting a portion of the 70-kV route slightly north, such that it would be located adjacent to a relatively isolated and dense strip of oak woodland (Figure 1). The trees in the woodland provide perches for golden eagles, and they may contain alternative nests. Whereas the MRV may reduce the potential for construction related impacts (e.g., due to noise and human activity near the nest site), installing the power lines immediately adjacent to the woodland is likely to increase the potential for operations related impacts because it would place power lines in close proximity to an attractive habitat feature, thus increasing the risk of collisions (e.g., as eagles approach or depart perches or nests in the woodland).

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[31] DEIR, p. 4.4-50.
[32] Pagel JE, Whittington DM, Allen GT. 2010 Feb. Interim Golden Eagle inventory and monitoring protocols; and other recommendations. Division of Migratory Birds, United States Fish and Wildlife Service.
[33] Millsap BA, Grubb TG, Murphy RK, Swem T, Watson JW. 2015. Conservation significance of alternative nests of golden eagles. Global Ecology and Conservation 3:234-241.
[34] *Ibid*.
[35] *See* DEIR, p. 2-16: "[t]his MRV would only be implemented if a possible golden eagle nest along Huer Huero Creek in this location is confirmed to have eagles present prior to Project construction."

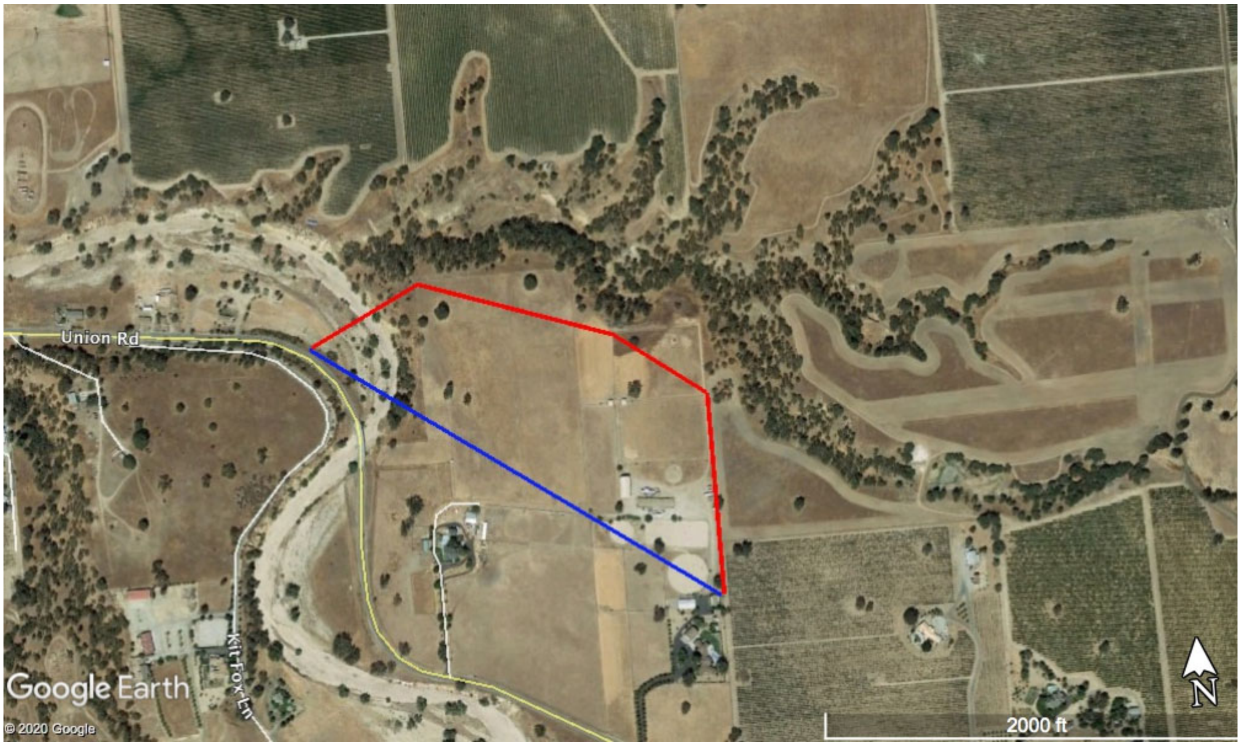

Figure 1. Approximate location of proposed MRV (red line) in relation to the proposed route (blue line). Although the MRV would increase the distance between the power line and the golden eagle nest along Huer Huero Creek, it would place the power line in close proximity to perch (and potentially nest) sites in the oak woodland.

APLIC Guidelines

Implementation of the avian protection measures outlined in the APLIC guidelines (2006 and 2012) is a valuable mitigation measure. However, implementation of the APLIC guidelines would not eliminate the potential for avian collisions and electrocutions.[36] This is especially true for the Project's steel structures, because utility structures made of steel are self-grounded and require just one contact with an energized conductor to be lethal.[37]

Electrocution from, and collision with, power lines is one of the leading causes of golden eagle mortality.[38] The golden eagle population is extremely sensitive to additive mortality because: (a) golden eagles occur at very low densities, (b) a relatively high percentage of juveniles do not survive to breeding age (typically the 4th or 5th year of life), and (c) the population is already

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[36] Lehman RN, Savage JA, Kennedy PL. Harness RE. 2010. Raptor Electrocution Rates for a Utility in the Intermountain Western United States. Journal of Wildlife Management 74(3):459-470. *See also* APLIC 2006 and APLIC 2012.

[37] *Ibid. See also* Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute and APLIC. Washington, D.C. pp. 81 and 82.

[38] U.S. Fish and Wildlife Service, Division of Migratory Bird Management. 2009. Final Environmental Assessment, Proposal to Permit Take as Provided Under the Bald and Golden Eagle Protection Act. Washington: Dept. of Interior. *See also* Avian Power Line Interaction Committee (APLIC). 2018. Eagle Risk Framework: A Practical Approach for Power Lines. Edison Electric Institute and APLIC. Washington, DC. p. 4.

declining.[39] For these reasons, the USFWS has determined that the golden eagle population cannot withstand *any* additional level of take.[40] Consequently, death (or injury) of even one golden eagle due to the Project would constitute a significant impact under CEQA. In addition, any Project-related take of a golden eagle would violate the Bald and Golden Eagle Protection Act if the Applicants do not first obtain an eagle take permit from the U.S. Fish and Wildlife Service. The DEIR does not require the Applicants to obtain an eagle take permit, nor does it suggest the Applicants intend to apply for one.

The DEIR fails to disclose or analyze how many eagles the Project might kill (or injure) even after implementation of the MRV, APLIC guidelines, and other mitigation measures proposed in the DEIR. In addition, the DEIR does not require fatality monitoring, nor does it require remedial actions (e.g., compensatory mitigation) if eagle fatalities are incidentally discovered. For these reasons, Project impacts on the golden eagle remain potentially significant.

The DEIR indicates undergrounding the Project's power lines would reduce impacts to special-status birds by reducing the potential for avian collision and electrocutions.[41] In addition, the DEIR indicates undergrounding would substantially reduce the wildfire risk and associated ecological consequences.[42] Nevertheless, the DEIR's analysis of undergrounding is limited to Alternative PLR-3, which would involve undergrounding a relatively short segment of the power line route in the Golden Hill Road area north of SR 46. The DEIR provides the following rationale for Alternative PLR-3:

> Alternative PLR-3: Strategic Undergrounding would involve undergrounding the portion of the Proposed Project's new 70 kV power line which has the greatest potential for aesthetic and other environmental impacts. During scoping for the Proposed Project, and based on CPUC staff and consultant's preliminary analysis of the Proposed Project's potential impacts, it was determined that the portion of the line that passes through the Golden Hill Road area north of SR 46 had the greatest potential for impacts because this area does not have existing aboveground transmission or distribution electrical infrastructure and is an up-and-coming area with new commercial development, recreational uses, and existing single-family residential development.[43]

The benefits of Alternative PLR-3 in reducing the risks of wildfire and avian impacts would be relatively limited because the majority of the Proposed Project's 70-kV route would be above ground, including in areas that currently do not have existing aboveground transmission or distribution electrical infrastructure. The DEIR provides no evidence that the risks of wildfire and avian impacts are greater in the Golden Hill Road area north of SR 46 relative to other portions of the Proposed Project's 70-kV route. Therefore, if the objective of undergrounding is to reduce "aesthetic and other environmental impacts," the CPUC needs to analyze a Project alternative that involves undergrounding the 70-kV power line along its entire route.

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[39] *Ibid.*
[40] U.S. Fish and Wildlife Service. 2016. Bald and Golden Eagles: Population demographics and estimation of sustainable take in the United States, 2016 update. Division of Migratory Bird Management, Washington D.C., USA.
[41] DEIR, Table 5-1.
[42] DEIR, p. 4.20-18.
[43] DEIR, p. 3-74.

Amphibians

The DEIR provides the following analysis of Project impacts to the California red-legged frog ("CRLF") and western spadefoot toad:

> As discussed above, the Proposed Project has been designed to avoid sensitive aquatic features, which would include any features that would provide suitable aquatic breeding and aquatic non-breeding habitat for these species. Nevertheless, there would be potential for direct significant impacts to CRLF and western spadefoot toad if individuals were present in upland areas where Proposed Project construction activities would occur….Implementation of APM BIO-1 and Mitigation Measure BIO-1 would reduce potential for undetected western spadefoot toad or CRLF individuals in Proposed Project areas to be directly impacted at the start of construction. Likewise, monitoring of initial ground-disturbing activities under APM BIO-3 and Mitigation Measure BIO-1 (through pre-construction surveys, biological monitoring, the monitor's stop-work authority, and exclusion fencing) would ensure that CRLF and western spadefoot toad individuals are not present during these activities, such that they could be directly impacted. Implementation of the WEAP under APM GEN-1 also would minimize potential for adverse direct impacts to special-status amphibians. Further, APM BIO-4 and Mitigation Measure BIO-1 would require that all trenches and excavations in excess of 2 feet deep have a sloped escape ramp or be covered at the end of the day, which would minimize potential for CRLF or western spadefoot toad individuals to become entrapped in Proposed Project construction areas.[44]

Western spadefoot toads spend the majority of the year below ground and are only detectable during a few weeks (or months) of the year.[45] CRLF that disperse from aquatic habitat seek shelter under objects (e.g., rocks, logs) or in small mammal burrows.[46] Terrestrial movements of both species generally occur at night.[47] As a result, detection of western spadefoot and CRLF requires special survey techniques. APM BIO-1 and Mitigation Measure BIO-1 do not require those survey techniques.[48]

The biological monitoring required under APM BIO-3 assumes CRLF and western spadefoot would be visible to the biological monitor. This is not a valid assumption because terrestrial (aboveground) movements of CRLF and western spadefoot occur at night, whereas construction would occur during the day. The DEIR references exclusion fencing as one of the measures that would ensure CRLF and western spadefoot toad individuals are not present during construction activities. However, neither APM BIO-3 nor Mitigation Measure BIO-1 requires installation of an exclusion fence around construction work areas. For these reasons, there is no basis for the

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[44] DEIR, p. 4.4-43.

[45] U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. U.S. Fish and Wildlife Service, Portland, Oregon. pp. II-220 through -235.

[46] U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. p. 14.

[47] U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. U.S. Fish and Wildlife Service, Portland, Oregon. pp. II-220 through -235. *See also* Fellers GM, Kleeman PM. 2006. Diurnal versus Nocturnal Surveys for California Red-Legged Frogs. Journal of Wildlife Management 70(6):1805-1808.

[48] The USFWS has issued a survey protocol for the CRLF. *See* U.S. Fish and Wildlife Service. 2005 Aug. Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog. 26 pp.

DEIR's claim that APM BIO-3 and Mitigation Measure BIO-1 "would ensure that CRLF and western spadefoot toad individuals are not present during these activities, such that they could be directly impacted."

The CRLF and western spadefoot are small animals. Therefore, the threat that trenches pose to these species (and other amphibians) is not limited to trenches in excess of 2 feet deep. Although the measures required under APM BIO-4 and Mitigation Measure BIO-1 would reduce mortality associated with trenches, mortality may still occur, especially if mitigation is limited to escape ramps (i.e., trenches are not covered) as allowed under APM BIO-4 and Mitigation Measure BIO-1.[49] Whereas inspecting the trenches at the beginning of the workday would be effective for CRLF, it would not be effective for western spadefoots, which burrow under soil during the day.[50]

Invasive Plants

Invasive plants threaten native diversity, alter ecosystem processes,[51] and can cause extinction of native species.[52] Indeed, next to habitat loss, invasive species pose the greatest threat to the nation's biodiversity and natural resources.[53] Three things are required for an invasive plant to become established in an area:

1. A vector for transporting the plant or its propagules from one place to another. Some vectors are natural (e.g., wind, water, and wildlife); however, most are related to human activities. Tools, equipment, vehicles, livestock, clothing, and boots are potential vectors for the spread of invasive plants.
2. Suitable conditions for invasive plant colonization. Soil and vegetation disturbance create suitable conditions for the establishment of invasive plants.
3. A suitable environment for the invasive plant to survive, reproduce, and spread. Many invasive species possess a competitive advantage over native species in an area. As a result, invasive species can reproduce and spread exponentially, especially if the ecosystem lacks a mechanism for keeping them in check.[54]

The Project has the potential to facilitate the colonization and spread of invasive plants because construction and operation activities: (a) provide vectors for transporting invasive plant

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[49] Doody JS, West P, Stapley J, et al. 2003. Fauna by-catch in pipeline trenches: conservation, animal ethics, and current practices in Australia. Australian Zoologist 32(3):410-419.
[50] U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. U.S. Fish and Wildlife Service, Portland, Oregon. pp. II-220 through -235.
[51] Vitousek P. 1990. Biological invasions and ecosystem processes: towards an integration of population biology and ecosystem studies. Oikos 57:7–13. *See also* Theoharides KA, Dukes JS. 2007. Plant invasion across space and time: factors affecting nonindigenous species success during four stages of invasion. New Phytologist 176:256-273.
[52] Gurevitch J, Padilla DK. 2004. Are invasive species a major cause of extinctions? Trends in Ecology and Evolution 19(9):470-474.
[53] U.S. Department of the Interior, Office of Congressional and Legislative Affairs. 2013. Invasive Species Management. Statement for the Record: U.S. Department of the Interior Before the House Natural Resources Subcommittee on Public Lands and Environmental Regulation's oversight hearing on "Invasive Species Management on Federal Lands."
[54] California Department of Food and Agriculture, California Invasive Weed Awareness Coalition. 2005. California Noxious & Invasive Weed Action Plan. California Dept. of Food and Agriculture, Sacramento, CA.

propagules, (b) involve soil and vegetation disturbance, and (c) would be conducted in an environment susceptible to invasion.[55] The DEIR does not disclose this issue, nor does it provide any analysis of potentially significant impacts that could occur as the result of Project activities that facilitate the colonization or spread of invasive plants.

Cumulative Impacts

According to the DEIR:

1. The Project would result in significant impacts on a suite of sensitive biological resources.[56]
2. Impacts from the Proposed Project (and all alternatives), in combination with impacts from other projects, would result in a significant cumulative impact on biological resources.[57]
3. There is potential for the Project to have a cumulatively considerable incremental contribution to the significant cumulative impact.[58]

Despite these determinations, the DEIR concludes: "the Proposed Project, reasonably foreseeable distribution components, and alternatives would not make a cumulatively considerable contribution to this significant cumulative impact. The contribution of the Proposed Project, reasonably foreseeable distribution components, and alternatives cumulative impact would be less than significant with mitigation."[59] The CPUC's rationale for this conclusion is that: (a) the Project's significant impacts would be reduced to a less-than-significant level with implementation of the APMs and mitigation measures identified in Section 4.4 of the DEIR; and (b) these measures would ensure that impacts on protected species, communities, and habitats are reduced to a level that would protect their continued existence.[60] The CPUC's rationale is flawed because the APMs and mitigation measures are designed to reduce significant impacts, not eliminate the impacts entirely. Thus, there would be residual impacts. For example, because the DEIR's compensatory habitat requirement is limited to impacts to blue oak woodland, there would be residual impacts to special-status species associated with grasslands and agricultural lands.[61] Similarly, there could be residual impacts on the golden eagle and other special-status birds because the DEIR does not require compensatory mitigation for fatalities caused by electrocutions and collisions with the new power line facilities. Whereas these residual impacts may not rise to the level of significance at the Project level, they may be significant at the cumulative level when combined with the residual impacts of other projects. For example, the DEIR notes that the impact on avian fatalities would not be limited to the Project, but rather, that the Project would incrementally increase a fatality risk that already exists in the area.[62] The

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[55] The cumulative impacts section of the DEIR (pp. 6-6 and -7) identifies "introduction of nonnative plant and animal species" as one of the past and present actions that has most strongly influenced existing conditions in the Project area.
[56] DEIR, p. 6-22.
[57] *Ibid*.
[58] DEIR, Table 6-3.
[59] DEIR, p. 6-22.
[60] *Ibid*.
[61] *See* DEIR, Table 4.4-1.
[62] DEIR, p. 4.4-50.

Project's contribution to this potentially significant cumulative impact is cumulatively considerable because it would place seven miles of new power lines in an area that supports foraging raptors, and that has multiple golden eagle nests.[63]

According to CEQA Guidelines § 15130(a)(3):

> An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

In this case, none of the DEIR's biological resource mitigation measures are designed to alleviate the cumulative impact; they are all specific to the Proposed Project and Project alternatives. Therefore, they do not address potentially significant cumulative impacts, and the CPUC has no basis for its conclusion that the Project's contribution to those cumulative impacts would be less than cumulatively considerable.

MITIGATION ISSUES

APM BIO-1 and MM BIO-1 (Special-Status Animal Species)

The mitigation strategy proposed in Mitigation Measure ("MM") BIO-1 and APM BIO-1 consists of: (a) pre-construction surveys prior to initial vegetation clearance, grubbing, and ground-disturbing activities; (b) a pre-construction survey report that is submitted to the CPUC for review and approval; and (c) delineation of habitat that must be avoided. These measures do not mitigate potentially significant impacts to special-status animals for the following reasons:

First, the DEIR fails to establish standards for the pre-construction survey methods to ensure they are adequate for detection of special-status animals. Many of the special-status species that have the potential to occur in the Project area require special survey techniques (e.g., live-trapping for Salinas pocket mouse, raking the substrate for legless lizards, aerial surveys for eagle nests). In addition, some species are generally only detected at night (e.g., bats, western spadefoot), or require multiple, protocol-level surveys to acquire reliable information on their presence.[64] MM BIO-1 fails to require the survey methods necessary for detection of special-status animal species; the only standards it establishes are that the surveys be conducted by an approved biologist no earlier than 30 days prior to surface disturbance. This issue is exacerbated by the DEIR's failure to establish standards for the survey area. For example, although the DEIR states that the standard buffer distance for golden eagle nests is 2,640 feet, MM BIO-1 does not require pre-construction surveys that extend 2,640 feet from Project work areas.

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[63] DEIR, Table 4.4-1.

[64] The USFWS and CDFW have issued survey protocols for the following species that may occur in the Project area: vernal pool fairy shrimp, California red-legged frog, golden eagle, burrowing owl, Swainson's hawk, and San Joaquin kit fox. Scientific organizations have issued survey protocols for legless lizards, bats, American badger, tricolored blackbird, and other bird species.

Second, some of the special-status species that have the potential to occur in the Project area are only detectable during certain times of year (e.g., Crotch's bumble bee, western spadefoot, Swainson's hawk). Surveys that are limited to "no earlier than 30 days prior to surface disturbance" fail to account for these species and could cause false-negative survey results, which in turn could result in significant impacts. For example, western spadefoots are only detectable at night shortly after rains in the winter and spring; at all other times they are completely surrounded by soil in underground burrows (which are undetectable to humans).[65] As a result, pre-construction surveys in August (for example) would fail to reveal any evidence of the species, when in fact there might be hundreds of spadefoots buried in the soil. Because spadefoots burrow in sandy or gravelly soils, they would be susceptible to being crushed or entombed by soil compaction caused by Project vehicles or machinery.[66]

Third, the DEIR fails to ensure adequate mitigation for special-status that are detected during the pre-construction survey. According to the DEIR, buffers would installed around bird nests. However, mitigation for all other terrestrial wildlife species has be deferred to the pre-construction survey report, which would identify the "anticipated impacts and proposed mitigation."[67] This approach does not comply with CEQA, which prohibits deferral of: (a) the impact assessment; and (b) the mitigation (unless the lead agency establishes specific performance criteria for the mitigation and explains why it was impractical for the lead agency to identify the mitigation in the EIR).

MM BIO-1 states: "[s]ensitive habitat areas, plus a minimum 5-foot buffer for wetlands and waters of the U.S., that will be avoided by construction shall be fenced with orange safety fencing."[68] There are two problems with this measure. First, the DEIR identifies wetlands and blue oak woodlands as sensitive habitats.[69] However, it fails to identify the criteria that would be used to define "sensitive habitat areas." Many of the special-status species that have the potential to occur in the Project area are associated with grasslands or special habitat elements (e.g., burrows). As a result, sensitive habitat areas are not equivalent to sensitive natural communities.

Second, a 5-foot buffer around wetlands waters of the U.S. would not be sufficient to avoid impacts to species associated with wetlands and other aquatic habitat types. Special-status species associated with wetlands (and other aquatic habitat types) in the Project area include the California red-legged frog, western spadefoot, western pond turtle, tricolored blackbird, and yellow warbler. These species use terrestrial habitats that extend well beyond the 5-foot buffer proposed in MM BIO-1. For example, western pond turtles use terrestrial habitat for nesting, resting, refuge, and overland dispersal.[70] Rathbun et al. (2002) examined the distances pond turtles moved away from aquatic habitat for refuge, nesting, and resting. Mean maximum travel

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[65] U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. U.S. Fish and Wildlife Service, Portland, Oregon. pp. II-220 through -235.
[66] *Ibid.*
[67] DEIR, p. 4.4-47.
[68] *Ibid.*
[69] *Ibid.*
[70] Rathbun GB, Scott NJ Jr, Murphey TG. 2002. Terrestrial Habitat Use by Pacific Pond Turtles in a Mediterranean Climate. Southwestern Naturalist 47(2): 225-235. *See also* Jennings MR, Hayes MP. 1994. Amphibian and Reptile Species of Special Concern in California. Final Report to the California Department of Fish and Game.

distances were 49.7 meters, 93.7 meters, and 12.0 meters, respectively.[71] However, western pond turtles have been reported ranging as far as 500 meters (1,640 feet) from a watercourse to find suitable nesting habitat.[72] Nests are typically located in open, grassy areas,[73] such as those that occur in the Project area.

Mitigation for Impacts to Habitat

The DEIR requires compensatory mitigation for the Project's permanent impacts on blue oak woodland. However, it does not require compensatory mitigation for the Project's permanent impacts on other habitat types that support special-status species.

The DEIR states:

> All areas temporarily disturbed by the Project would be restored to the extent practicable, following construction. These disturbed areas include staging areas and access roads, work areas around each tower/pole, and the areas used for conductor stringing and staging. Postconstruction restoration activities would include returning areas to their original contours and drainage patterns in accordance with stormwater pollution prevention plan best management practices and as prearranged through landowner agreements, where applicable.[74]

The DEIR fails to incorporate restoration of temporarily disturbed areas as an enforceable mitigation measure. Furthermore, the DEIR fails to establish performance standards or monitoring requirements for the restoration efforts. For these reasons, the Project's impacts on habitat for special-status animals remain potentially significant.

APM BIO-4 (Special-Status Species Protection)

Open pipes pose a mortality hazard to wildlife. Birds, small mammals, and reptiles enter the pipes to nest or find shelter, but the smooth interior and tight confines of the pipes prevent individuals from escaping, leading to death. The DEIR identifies open pipes (or conduit) as a potentially significant mortality hazard to birds.[75] APM BIO-4 is designed to mitigate the potentially significant impact. APM BIO-4 states: "open-ended project-related pipes 4 inches or greater in diameter will be capped if left overnight or inspected for wildlife prior to being moved." The mortality hazard associated with open pipes is not limited to pipes 4 inches or

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[71] *Ibid.*
[72] Reese DA, Welsh HH Jr. 1997. Use of Terrestrial Habitat by Western Pond Turtles, Clemmys marmorata: Implications for Management. Pp. 352-357. In J. Van Abbema (ed.), Conservation, Restoration, and Management of Tortoises and Turtles, An International Conference WCS Turtle Recovery Program and the New York Turtle and Tortoise Society, New York.
[73] Holland DC. 1994. The Western Pond Turtle: Habitat and History. Final Report. Portland, OR: U.S. Department of Energy, Bonneville Power Administration. *See also* Ernst CH, Lovich JE. 2009. Turtles of the United States and Canada. Second edition. Johns Hopkins University Press. 827 pp.
[74] DEIR, p. 2-86.
[75] DEIR, p. 4.4-44.

greater in diameter.[76] As a result, APM BIO-4 does not ensure avoidance of potentially significant levels of mortality associated with open pipes.

MM BIO-2 (Special-Status Plants)

MM BIO-2 states:

> If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites.

There do not appear to be any CDFW-approved mitigation banks in San Luis Obispo County (or surrounding counties) that sell credits for special-status plants.[77] Therefore, compensation for impacts to special-status plants would require the "salvage and relocation" option. MM BIO-2 does not provide any information on potential mitigation (receiver) sites, nor does it establish criteria for their selection (e.g., geographic location, history of land use, management scheme). This is important because relocating plants to a non-local ecotype may cause significant ecological impacts (e.g., genetic contamination) at the receptor site.[78] Even if plants are relocated to a local ecotype, their long-term viability will depend on the specific characteristics (e.g., soils, topography, adjacent land uses) of the receptor site. In addition to failing to establish selection criteria for the mitigation site, the DEIR fails to establish: (a) a mechanism (e.g., conservation easement) that would ensure the mitigation site is protected in perpetuity after the 5-year monitoring period terminates, (b) a funding mechanism (e.g., endowment), and (c) a management mechanism (e.g., management plan and authority) that ensures the mitigation site is appropriately managed in perpetuity to maintain viability of the special-status plants.

It is unclear whether the 1:1 mitigation ratio proposed in MM BIO-2 would be based on acreage impacted or number of plants impacted. While the DEIR's initial reference to the 1:1 ratio suggests it would be based on acreage, the DEIR's proposed success criteria suggest it would be based on the number of plants.

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[76] Harris M, Clucas B, Stanek J, Whitfield M. 2019. Wildlife Mortalities in Open-Topped Pipes in Central California. Western Wildlife 6:50–60. *See also* American Bird Conservancy. 2014. More Evidence That Open Pipes Kill Birds in the West. Bluebird 37(1):12.

[77] California Department of Fish and Wildlife. 2021. Conservation and Mitigation Banks Established in California by CDFW [webpage]. Available at: <https://wildlife.ca.gov/conservation/planning/banking/approved-banks#r4>. (Accessed 2021 Jan 17).

[78] Longcore T, Mattoni R, Pratt G, Rich C. 2000. On the perils of ecological restoration: Lessons from the El Segundo blue butterfly. Pages 281-286 *in* Keeley JE, Baer-Keeley M, Fotheringham CJ, editors. 2nd Interface Between Ecology and Land Development in California. U.S. Geological Survey Open-file Report 00-62. U.S. Geological Survey, Sacramento, CA.

The DEIR proposes two success criteria, the first of which is: "[a] surveyed plant population size count roughly equal to or greater than the number of individuals transplanted (this total may include both transplanted individuals that have survived, as well as any additional supplemental plantings following the initial transplantation that have survived at least two growing seasons)." This success criterion is inappropriate because it does not address annual plants (which would entail dispersal of seed), and the criterion for perennial plants is contingent on the number of individuals transplanted, for which there is no standard (i.e., would all perennial plants within impact areas be transplanted?). Although the success criterion suggests supplemental plantings may be required, the DEIR does not identify where the supplemental plantings (or seeds of annual species) would come from. As stated above, the introduction of non-local genes into an area can have negative impacts on the ecological community at the receptor site.[79]

The second success criterion is: "[l]ess than 5 percent cover of invasive weeds within the restoration area." This criterion is confusing because restoration involves returning an ecosystem to a close approximation of its condition prior to disturbance.[80] However, MM BIO-2 entails translocation or relocation of plants, not restoration. Therefore, it is unclear whether MM BIO-2 applies to off-site mitigation for the Project's permanent impacts, on-site mitigation for the Project's temporary impacts, or both. Nevertheless, the adequacy of the proposed success criterion cannot be evaluated without corresponding information on invasive plant cover prior to the restoration efforts. For example, the success criterion would be appropriate if invasive plants currently cover 50 percent of the mitigation site; however, it would be inappropriate if invasive plants are currently absent from the mitigation site.[81]

MM BIO-4 (Blue Oak Woodland)

The DEIR concludes that Mitigation Measure BIO-4 would reduce Project impacts on blue oak woodland to less than significant levels because: (a) the Applicants would develop and implement a Habitat Restoration Plan, which would include replacement of permanently impacted blue oak woodland at a ratio of 1.1:1; and (b) oak trees that are removed would be replaced in accordance with provisions of the City of Paso Robles' Oak Tree Ordinance.

The 1.1:1 mitigation ratio proposed in the DEIR would not mitigate the Project's significant impacts on blue oak woodland because it does not account for: (a) uncertainty in the ability to fully replace habitat functions that are impacted, (b) temporal loss (i.e., the lag time between habitat functions lost at the impact site and habitat functions gained at the mitigation site),[82] and

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[79] *Ibid. See also* California Native Plant Society. 2001. CNPS Guidelines for Landscaping to Protect Native Vegetation from Genetic Degradation. Available at: <https://www.cnps.org/wpcontent/uploads/2018/04/landscaping.pdf>. (Accessed 2021 Jan 17).

[80] *See* Longcore T, Mattoni R, Pratt G, Rich C. 2000. On the perils of ecological restoration: Lessons from the El Segundo blue butterfly. Pages 281-286 *in* Keeley JE, Baer-Keeley M, Fotheringham CJ, editors. 2nd Interface Between Ecology and Land Development in California. U.S. Geological Survey Open-file Report 00-62. U.S. Geological Survey, Sacramento, CA.

[81] Only some nonnative plants are invasive. Lists of invasive plants in California are maintained by the California Invasive Plant Council (https://www.cal-ipc.org/plants/inventory/) and the California Department of Food and Agriculture (https://www.cdfa.ca.gov/plant/IPC/encycloweedia/weedinfo/winfo_table-sciname.html).

[82] Moilanen A, van Teeffelen AJA, Ben-Haim Y, Ferrier S. 2009. How Much Compensation is Enough? A Framework for Incorporating Uncertainty and Time Discounting When Calculating Offset Ratios for Impacted Habitat. Restoration Ecology 17(4):470-478.

(c) indirect impacts. In this case, there is considerable uncertainty in whether the habitat compensation required under MM BIO-4 would adequately replace the habitat impacted at the Project site because the only standard the DEIR establishes for the mitigation site is that 65 percent of the oak plantings survive for 5 years. In addition, the duration of temporal loss would be considerable, and the Project's indirect impacts are likely to result in as least some level of oak mortality (e.g., due to root damage caused by construction activities or pathogens caused by tree trimming). Moreover, it is unclear if MM BIO-4 requires 1.1 acres of blue oak woodland creation (or restoration) for each acre of blue oak woodland permanently impacted by the Project, or merely planting of blue oaks across 1.1 acres of existing blue oak woodland (for each acre permanently impacted by the Project).

MM BIO-4 states: "[b]lue oak woodland restoration or compensation may be completed at the work area, in the vicinity, or at a conservation bank with a service area that covers the Proposed Project or selected alternative." There do not appear to be any conservation banks that sell credits for impacts to blue oak woodland.[83] Thus, the mitigation would occur "at the work area [or] in the vicinity." The DEIR fails to establish mechanisms that would ensure a mitigation site "at the work area [or] in the vicinity" would be protected and managed in perpetuity to maintain the blue oak woodland compensation habitat.

Compliance with the City's Oak Tree Ordinance does not mitigate the impact to oak trees because it only applies to trees that have a diameter at breast height ("DBH") of 6 inches or greater, and it only requires replacement at a ratio of 25 percent of the diameter of trees that are removed. In addition, MM BIO-4 only requires 65 percent of the replacement trees to survive beyond 5 years. Thus, MM BIO-4 does not require replacement of small oaks (< 6 inches DBH), but it allows the Applicants to replace large oaks with small ones.[84] This would not mitigate the impacts because small oaks do not provide the same ecological values as large ones, and even if the replacement trees survive to maturity (most do not), it would take decades for them replace the ecological values associated with the trees that are removed.

Blue oak woodlands are comprised of slow growing, long-lived trees.[85] Even at the best sites, it takes blue oaks at least 50 years to reach maturity.[86] Large, mature oak trees are especially important to wildlife because they provide key structural elements and characteristics (e.g., cavities, caching sites, and suitable substrates for raptor nests, among other habitat values) that are unavailable in smaller trees.[87] Verner and Boss (1980) provided data on wildlife use in blue oak savannahs of the western Sierra Nevada. They found that 29 species of amphibians and reptiles, 57 species of birds, and 10 species of mammals find mature stages of blue oak suitable

[83] California Department of Fish and Wildlife. 2021. Conservation and Mitigation Banks Established in California by CDFW [webpage]. Available at: <https://wildlife.ca.gov/conservation/planning/banking/approved-banks#r4>. (Accessed 2021 Jan 17).
[84] Under the City's Oak Tree Ordinance, replacement trees may be as small as 1.5-inch (trunk caliper) in size.
[85] California Wildlife Habitat Relationships System. 2005 [update]. Wildlife Habitats: Blue Oak Woodland. California Department of Fish and Game. California Interagency Wildlife Task Group. Available at: <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.
[86] *Ibid*.
[87] CalPIF (California Partners in Flight). 2002. Version 2.0. The oak woodland bird conservation plan: a strategy for protecting and managing oak woodland habitats and associated birds in California (S. Zack, lead author). Point Reyes Bird Observatory, Stinson Beach, CA.

or optimum for breeding, assuming that other special habitat requirements are met.[88] Most blue oak woodlands are not regenerating naturally, which means most of the mature trees will not be replaced when they die. This heightens the significance of each mature oak tree that is removed by the Project.

The success criterion proposed in MM BIO-4 (i.e., "a minimum of 65 percent survival of woody plantings after 5 years") provides no assurances that the replacement trees are likely to survive, or that they will ever provide structural elements and characteristics comparable to the trees that are removed. Blue oak seedlings are especially vulnerable to mortality factors when they are young and small. Phillips et al. (2007) reported that blue oak seedlings died at an average age of 6.4 years.[89] Once seedlings had grown for approximately a decade and become established, the chances were good that they would remain alive. However, many grew extremely slowly or even diminished in height. Indeed, Phillips et al. (1996) concluded that blue oak seedlings that were only 6.5 inches tall could well have been older than 26 years.[90] Based on these studies, the CPUC should not assume blue oak plantings have a reasonable likelihood of replacing impacted trees until the plantings: (a) are at least 10 years old, (b) have reached the sapling stage, and (c) are protected from herbivory by cattle and deer.

Invasive Plants

The California Invasive Plant Council has published guidelines for preventing the spread of invasive plants.[91] The best management practices ("BMPs") described therein are feasible and should be incorporated as required mitigation measures. The DEIR does not incorporate any mitigation measures for invasive plants, nor does it establish performance standards for invasive plants in the "restoration" areas (unless those areas are being used for special-status plant mitigation). As a result, potentially significant impacts associated with the colonization or spread of invasive plants remains unmitigated.

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[88] *See* California Wildlife Habitat Relationships System. 2005 [update]. Wildlife Habitats: Blue Oak Woodland. California Department of Fish and Game. California Interagency Wildlife Task Group. Available at: <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.
[89] Phillips RL, McDougald NK, McCreary D, Atwill ER. 2007. Blue oak seedling age influences growth and mortality. California Agriculture 61(1):11-15.
[90] Phillips RL, McDougald NK, Standiford RB, Frost WE. 1996. Blue oak seedlings may be older than they look. California Agriculture 50(3):17-19.
[91] Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers (3rd ed.). Cal-IPC Publication 2012-03. California Invasive Plant Council, Berkeley, CA.

CONCLUSION

Substantial evidence demonstrates that the Project could have significant, unmitigated impacts on sensitive biological resources. The DEIR that was prepared for the Project does not adequately disclose and analyze those impacts, nor does it provide the mitigation necessary to ensure significant impacts are reduced to less than significant levels.

Sincerely,

Scott Cashen, M.S.
Senior Biologist

Scott Cashen, M.S.
Senior Wildlife Biologist

Scott Cashen has 28 years of professional experience in natural resources management. During that time he has worked as a field biologist, forester, environmental consultant, and instructor of Wildlife Management. Mr. Cashen focuses on CEQA/NEPA compliance issues, endangered species, scientific field studies, and other topics that require a high level of scientific expertise.

Mr. Cashen has knowledge and experience with numerous taxa, ecoregions, biological resource issues, and environmental regulations. As a biological resources expert, Mr. Cashen is knowledgeable of the various agency-promulgated guidelines for field surveys, impact assessments, and mitigation. Mr. Cashen has led field investigations on several special-status species, including ones focusing on the yellow-legged frog, red-legged frog, desert tortoise, steelhead, burrowing owl, California spotted owl, northern goshawk, willow flycatcher, Peninsular bighorn sheep, red panda, and various forest carnivores.

Mr. Cashen is a recognized expert on the environmental impacts of renewable energy development. He has been involved in the environmental review process of over 100 solar, wind, biomass, and geothermal energy projects. Mr. Cashen's role in this capacity has encompassed all stages of the environmental review process, from initial document review through litigation support. Mr. Cashen provided expert witness testimony on several of the Department of the Interior's "fast-tracked" renewable energy projects. His testimony on those projects helped lead agencies develop project alternatives and mitigation measures to reduce environmental impacts associated with the projects.

Mr. Cashen was a member of the independent scientific review panel for the Quincy Library Group project, the largest community forestry project in the United States. As a member of the panel, Mr. Cashen was responsible for advising the U.S. Forest Service on its scientific monitoring program, and for preparing a final report to Congress describing the effectiveness of the Herger-Feinstein Forest Recovery Act of 1998.

AREAS OF EXPERTISE

- CEQA, NEPA, and Endangered Species Act compliance issues
- Comprehensive biological resource assessments
- Endangered species management
- Renewable energy development
- Scientific field studies, grant writing and technical editing

EDUCATION

M.S. Wildlife and Fisheries Science - The Pennsylvania State University (1998)
Thesis: *Avian Use of Restored Wetlands in Pennsylvania*
B.S. Resource Management - The University of California, Berkeley (1992)

PROFESSIONAL EXPERIENCE

Litigation Support / Expert Witness

Mr. Cashen has served as a biological resources expert for over 125 projects subject to environmental review under the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA). As a biological resources expert, Mr. Cashen reviews CEQA/NEPA documents and provides his clients with an assessment of biological resource issues. He then submits formal comments on the scientific and legal adequacy of the project's environmental documents (e.g., Environmental Impact Report). If needed, Mr. Cashen conducts field studies to generate evidence for legal testimony, or he can obtain supplemental testimony from his deep network of species-specific experts. Mr. Cashen has provided written and oral testimony to the California Energy Commission, California Public Utilities Commission, and U.S. district courts. His clients have included law firms, non-profit organizations, and citizen groups.

REPRESENTATIVE EXPERIENCE

Solar Energy

- Abengoa Mojave Solar Project
- Avenal Energy Power Plant
- Beacon Solar Energy Project
- Blythe Solar Power Project
- Calico Solar Project
- California Flats Solar Project
- Calipatria Solar Farm II
- Carrizo Energy Solar Farm
- Catalina Renewable Energy
- Fink Road Solar Farm
- Genesis Solar Energy Project
- Heber Solar Energy Facility
- Imperial Valley Solar Project
- Ivanpah Solar Electric Generating
- Maricopa Sun Solar Complex
- McCoy Solar Project
- Mt. Signal and Calexico Solar
- Panoche Valley Solar
- San Joaquin Solar I & II
- San Luis Solar Project
- Stateline Solar Project
- Solar Gen II Projects
- SR Solis Oro Loma
- Vestal Solar Facilities
- Victorville 2 Power Project
- Willow Springs Solar

Geothermal Energy

- Casa Diablo IV Geothermal
- East Brawley Geothermal
- Mammoth Pacific 1 Replacement
- Orni 21 Geothermal Project
- Western GeoPower Plant

Wind Energy

- Catalina Renewable Energy
- Ocotillo Wind Energy Project
- SD County Wind Energy
- Searchlight Wind Project
- Shu'luuk Wind Project
- Tres Vaqueros Repowering Project
- Tule Wind Project
- Vasco Winds Relicensing Project

Biomass Facilities

- CA Ethanol Project
- Colusa Biomass Project
- Tracy Green Energy Project

Other Development Projects

- Cal-Am Desalination Project
- Carnegie SVRA Expansion Project
- Lakeview Substation Project
- Monterey Bay Shores Ecoresort
- Phillips 66 Rail Spur
- Valero Benecia Crude By Rail
- World Logistics Center

Project Management

Mr. Cashen has managed several large-scale wildlife, forestry, and natural resource management projects. Many of the projects have required hiring and training field crews, coordinating with other professionals, and communicating with project stakeholders. Mr. Cashen's experience in study design, data collection, and scientific writing make him an effective project manager, and his background in several different natural resource disciplines enable him to address the many facets of contemporary land management in a cost-effective manner.

REPRESENTATIVE EXPERIENCE

Wildlife Studies

- Peninsular Bighorn Sheep Resource Use and Behavior Study: (*CA State Parks*)
- "KV" Spotted Owl and Northern Goshawk Inventory: (*USFS, Plumas NF*)
- Amphibian Inventory Project: (*USFS, Plumas NF*)
- San Mateo Creek Steelhead Restoration Project: (*Trout Unlimited and CA Coastal Conservancy, Orange County*)
- Delta Meadows State Park Special-Status Species Inventory: (*CA State Parks, Locke*)

Natural Resources Management

- Mather Lake Resource Management Study and Plan – (*Sacramento County*)
- Placer County Vernal Pool Study – (*Placer County*)
- Weidemann Ranch Mitigation Project – (*Toll Brothers, Inc., San Ramon*)
- Ion Communities Biological Resource Assessments – (*Ion Communities, Riverside and San Bernardino Counties*)
- Del Rio Hills Biological Resource Assessment – (*The Wyro Company, Rio Vista*)

Forestry

- Forest Health Improvement Projects – (*CalFire, SD and Riverside Counties*)
- San Diego Bark Beetle Tree Removal Project – (*SDG&E, San Diego Co.*)
- San Diego Bark Beetle Tree Removal Project – (*San Diego County/NRCS*)
- Hillslope Monitoring Project – (*CalFire, throughout California*)

Biological Resources

Mr. Cashen has a diverse background with biological resources. He has conducted comprehensive biological resource assessments, habitat evaluations, species inventories, and scientific peer review. Mr. Cashen has led investigations on several special-status species, including ones focusing on the foothill yellow-legged frog, mountain yellow-legged frog, desert tortoise, steelhead, burrowing owl, California spotted owl, northern goshawk, willow flycatcher, Peninsular bighorn sheep, red panda, and forest carnivores.

REPRESENTATIVE EXPERIENCE

Biological Assessments/Biological Evaluations ("BA/BE")

- Aquatic Species BA/BE – Reliable Power Project (*SFPUC*)
- Terrestrial Species BA/BE – Reliable Power Project (*SFPUC*)
- Management Indicator Species Report – Reliable Power Project (*SFPUC*)
- Migratory Bird Report – Reliable Power Project (*SFPUC*)
- Terrestrial and Aquatic Species BA – Lower Cherry Aqueduct (*SFPUC*)
- Terrestrial and Aquatic Species BE – Lower Cherry Aqueduct (*SFPUC*)
- Terrestrial and Aquatic Species BA/BE – Public Lands Lease Application (*Society for the Conservation of Bighorn Sheep*)
- Terrestrial and Aquatic Species BA/BE – Simon Newman Ranch (*The Nature Conservancy*)
- Draft EIR (Vegetation and Special-Status Plants) - Wildland Fire Resiliency Program (*Midpeninsula Regional Open Space District*)

Avian

- Study design and Lead Investigator - Delta Meadows State Park Special-Status Species Inventory *(CA State Parks: Locke)*
- Study design and lead bird surveyor - Placer County Vernal Pool Study *(Placer County: throughout Placer County)*
- Surveyor - Willow flycatcher habitat mapping *(USFS: Plumas NF)*
- Surveyor - Tolay Creek, Cullinan Ranch, and Guadacanal Village restoration projects *(Ducks Unlimited/USGS: San Pablo Bay)*
- Study design and Lead Investigator - Bird use of restored wetlands research *(Pennsylvania Game Commission: throughout Pennsylvania)*
- Study design and surveyor - Baseline inventory of bird species at a 400-acre site in Napa County *(HCV Associates: Napa)*
- Surveyor - Baseline inventory of bird abundance following diesel spill *(LFR Levine-Fricke: Suisun Bay)*

- Study design and lead bird surveyor - Green Valley Creek Riparian Restoration Site *(City of Fairfield: Fairfield, CA)*
- Surveyor - Burrowing owl relocation and monitoring *(US Navy: Dixon, CA)*
- Surveyor - Pre-construction burrowing owl surveys *(various clients: Livermore, San Ramon, Rio Vista, Napa, Victorville, Imperial County, San Diego County)*
- Surveyor - Backcountry bird inventory *(National Park Service: Eagle, Alaska)*
- Lead surveyor - Tidal salt marsh bird surveys (*Point Reyes Bird Observatory: throughout Bay Area*)
- Surveyor – Pre-construction surveys for nesting birds (*various clients and locations)*

Amphibian

- Crew Leader - Red-legged frog, foothill yellow-legged frog, and mountain yellow-legged frog surveys *(USFS: Plumas NF)*
- Surveyor - Foothill yellow-legged frog surveys *(PG&E: North Fork Feather River)*
- Surveyor - Mountain yellow-legged frog surveys *(El Dorado Irrigation District: Desolation Wilderness)*
- Crew Leader - Bullfrog eradication *(Trout Unlimited: Cleveland NF)*

Fish and Aquatic Resources

- Surveyor - Hardhead minnow and other fish surveys *(USFS: Plumas NF)*
- Surveyor - Weber Creek aquatic habitat mapping (*El Dorado Irrigation District: Placerville, CA*)
- Surveyor - Green Valley Creek aquatic habitat mapping *(City of Fairfield: Fairfield, CA)*
- GPS Specialist - Salmonid spawning habitat mapping *(CDFG: Sacramento River)*
- Surveyor - Fish composition and abundance study (*PG&E: Upper North Fork Feather River and Lake Almanor*)
- Crew Leader - Surveys of steelhead abundance and habitat use *(CA Coastal Conservancy: Gualala River estuary)*
- Crew Leader - Exotic species identification and eradication *(Trout Unlimited: Cleveland NF)*

Mammals

- Principal Investigator – Peninsular bighorn sheep resource use and behavior study (*California State Parks: Freeman Properties*)

- Scientific Advisor –Study on red panda occupancy and abundance in eastern Nepal *(The Red Panda Network: CA and Nepal)*
- Surveyor - Forest carnivore surveys *(University of CA: Tahoe NF)*
- Surveyor - Relocation and monitoring of salt marsh harvest mice and other small mammals *(US Navy: Skagg's Island, CA)*
- Surveyor – Surveys for Monterey dusky-footed woodrat. Relocation of woodrat houses (*Touré Associates: Prunedale*)

Natural Resource Investigations / Multiple Species Studies

- Scientific Review Team Member – Member of the scientific review team assessing the effectiveness of the US Forest Service's implementation of the Herger-Feinstein Quincy Library Group Act.
- Lead Consultant - Baseline biological resource assessments and habitat mapping for CDF management units *(CDF: San Diego, San Bernardino, and Riverside Counties)*
- Biological Resources Expert – Peer review of CEQA/NEPA documents (*various law firms, non-profit organizations, and citizen groups)*
- Lead Consultant - Pre- and post-harvest biological resource assessments of tree removal sites *(SDG&E: San Diego County)*
- Crew Leader - T&E species habitat evaluations for Biological Assessment in support of a steelhead restoration plan *(Trout Unlimited: Cleveland NF)*
- Lead Investigator - Resource Management Study and Plan for Mather Lake Regional Park *(County of Sacramento: Sacramento, CA)*
- Lead Investigator - Biological Resources Assessment for 1,070-acre Alfaro Ranch property *(Yuba County, CA)*
- Lead Investigator - Wildlife Strike Hazard Management Plan *(HCV Associates: Napa)*
- Lead Investigator - Del Rio Hills Biological Resource Assessment *(The Wyro Company: Rio Vista, CA)*
- Lead Investigator – Ion Communities project sites (*Ion Communities: Riverside and San Bernardino Counties*)
- Surveyor – Tahoe Pilot Project: Validation of California's Wildlife Habitat Relationships (CWHR) Model *(University of California: Tahoe NF)*

Forestry

Mr. Cashen has five years of experience working as a consulting forester on projects throughout California. Mr. Cashen has consulted with landowners and timber operators on forest management practices; and he has worked on a variety of forestry tasks including selective tree marking, forest inventory, harvest layout, erosion control, and supervision of logging operations. Mr. Cashen's experience with many different natural resources enable him to provide a holistic approach to forest management, rather than just management of timber resources.

REPRESENTATIVE EXPERIENCE

- Lead Consultant - CalFire fuels treatment projects *(SD and Riverside Counties)*
- Lead Consultant and supervisor of harvest activities – San Diego Gas and Electric Bark Beetle Tree Removal Project *(San Diego)*
- Crew Leader - Hillslope Monitoring Program *(CalFire: throughout California)*
- Consulting Forester – Forest inventories and timber harvest projects *(various clients throughout California)*

Grant Writing and Technical Editing

Mr. Cashen has prepared and submitted over 50 proposals and grant applications. Many of the projects listed herein were acquired through proposals he wrote. Mr. Cashen's clients and colleagues have recognized his strong scientific writing skills and ability to generate technically superior proposal packages. Consequently, he routinely prepares funding applications and conducts technical editing for various clients.

PERMITS

U.S. Fish and Wildlife Service Section 10(a)(1)(A) Recovery Permit for the Peninsular bighorn sheep

PROFESSIONAL ORGANIZATIONS / ASSOCIATIONS

The Wildlife Society

Cal Alumni Foresters

Mt. Diablo Audubon Society

OTHER AFFILIATIONS

Scientific Advisor and Grant Writer – *The Red Panda Network*

Scientific Advisor – *Mt. Diablo Audubon Society*

Grant Writer – *American Conservation Experience*

TEACHING EXPERIENCE

Instructor: Wildlife Management - The Pennsylvania State University, 1998

Teaching Assistant: Ornithology - The Pennsylvania State University, 1996-1997

PUBLICATIONS

Gutiérrez RJ, AS Cheng, DR Becker, S Cashen, et al. 2015. Legislated collaboration in a conservation conflict: a case study of the Quincy Library group in California, USA. Chapter 19 *in*: Redpath SR, et al. (eds). Conflicts in Conservation: Navigating Towards Solutions. Cambridge Univ. Press, Cambridge, UK.

Cheng AS, RJ Gutiérrez RJ, S Cashen, et al. 2016. Is There a Place for Legislating Place-Based Collaborative Forestry Proposals?: Examining the Herger-Feinstein Quincy Library Group Forest Recovery Act Pilot Project. Journal of Forestry.

EXHIBIT C

1. Is Estrella needed to solve distribution system problems?

a. Is Estrella needed to meet DPA peak loads?

No. The applicants have repeatedly claimed that summer peak loads in the Paso Robles Distribution Planning Area ("DPA") are expected to exceed the DPA capacity of 212.55 Mw in the next 5 to 15 years (Revised PEA, Appendix G; 2018 update to Appendix G; 2019 updated DPA forecast). The DEIR repeats PG&E's claim that the Paso Robles DPA loads "will exceed the available capacity of the Paso Robles system within 5 to 15 years (see Figure 2-5)." (DEIR, p. 2012). But the very figure the DEIR cites contradicts PG&E's conclusion. DEIR Figure 2-5 shows that, while forecasts made in 2017-19 did indeed show Paso Robles DPA load exceeding its capacity by no later than 2024, the more recent load forecast for the Paso Robles DPA shows no such thing. Paso Robles DPA actual loads in 2019 were only 168 Mw, lower than in 2007, and some 44 MVA below DPA capacity (DEIR, p. 2-13). That 44 MVA margin was the largest since 2011 (DEIR, p. 2-13). The resultant 2020 forecast, even though it is based on 1-year-in-10 hot weather, shows peak loads well below DPA capacity throughout the 2020s. DPA loads grow only 5 Mw from 2020 through 2029, and in 2029 they are still 10 Mw below DPA capacity (DEIR, p. 2-12; note that the DPA capacity already includes a 5% derating of total DPA capacity compared to individual substation capacity, to allow for difficulties in matching loads to the substations with the most spare capacity). At that rate, DPA loads will not exceed the DPA capacity of 212.55 Mw for another 18 years after the last forecast year, or not until 2047. Estrella is not needed to meet a DPA capacity problem that does not exist today, is not projected to exist in this decade, and is on trend to not exist until well into the 2040s.

b. Is Estrella needed to improve distribution system reliability by reducing outages?

No. The DEIR contains language (taken from the applicant's PEA and its Appendix G) indicating that, in theory, longer distribution lines have worse reliability, and that Estrella, by enabling shorter lines will improve reliability (DEIR, p. 2-6). But the actual data do not support the theory. Estrella is proposed to be built in an area now served by distribution circuit Templeton 2109. The data show that the Templeton 2109 distribution circuit has reliability no worse than other Templeton circuits, other Paso Robles DPA circuits, or other circuits in the PG&E service area as a whole. Of the 6 Templeton distribution circuits, the 2012-2017 data in the DEIR shows that Templeton 2109 had the fewest momentary outages and the third-fewest sustained outages, an average of exactly one per year (DEIR, p. 2-8; note that the listing of individual outages on the following pages excludes the Templeton 2113 circuit, the one with the most outages in the 2012-17 period).

Even accounting for the larger number of customers affected by the worst outage on the Templeton 2109 circuit, it still had an annual average outage duration per customer of only 46-58 minutes.[1] That is comparable to the other Templeton circuits (annual average of 49.5 minutes, per DEIR, p. 2-10). It is better than the annual average for other Paso Robles DPA circuits (79.7 minutes, per DEIR, p. 2-11) or other circuits throughout the PG&E service area (67.4 minutes, per DEIR, p. 2-11). Estrella is not needed to improve reliability on a circuit that already has above-average reliability.

2. Is Estrella needed to mitigate reliability impacts of transmission level outages?

a. Is Estrella needed to mitigate the impacts of an outage of the Templeton-Paso Robles 70 kV transmission line?

The proposed Estrella substation is not needed for this purpose, but a new 70 kV circuit would be needed, as has apparently been true for some 20+ years. Paso Robles substation is served by two 70 kV lines. An outage of one of those lines (also known as an "N-1" or P1 outage, or as a Category B outage prior to 2015), means that the entire Paso Robles load would need to be served via the remaining line.

Paso Robles peak loads in 2017 reached 72 Mw (2/23/18 letter from CAISO to CPUC). Of the two lines into Paso Robles, the Templeton-Paso Robles line is capable of delivering over 100 Mw, so an outage of the San Miguel-Paso Robles line would mean the remaining line could easily serve the full Paso Robles load, even at summer peak levels. However, the Coalinga-San Miguel-Paso Robles 70 kV line has a maximum summer capacity of just 42 Mw under N-1 conditions, and some of that capacity is used to serve San Miguel loads before the line continues on to Paso Robles. The net capacity that is available for delivery to Paso Robles from Miguel after an N-1 event is thus only about 27 Mw (only 20 Mw per PG&E, response to DR3, p. 3; 27 Mw based on 42 Mw line capacity minus San Miguel peak load of 15 Mw. The 6/20/18 revised PEA Appendix G, Table 4, shows San Miguel load flat at 15 Mw in every year from 2017-26, inclusive). Thus, an outage of the Templeton-Paso Robles line would cause the San Miguel-Paso Robles line to overload after an outage of the Templeton-Paso Robles line, any time that the Paso Robles load was above 27 Mw.

If Paso Robles peak load reached 72 Mw in 2017, then it must have been above 27 Mw for many years before that. The installation of a UVLS in 2006 (cDR) suggests it was already above 27 Mw then. Indeed, if Paso Robles peak load was less than 27 Mw in 2006, then it grew over 9.3 percent per year from 2006 to 2017 ((72/27)^(1/11)=1.093), a period when PG&E system peak demand was falling (DM data base, using CAISO OASIS data, showing PG&E peak demand of

[1] The DEIR does not say how many customers are served by the Templeton 2109 circuit. At a minimum, there are 4305, the number affected by the May 2012 outage (DEIR, p. 2-9). Multiplying the duration times the affected customers for each Templeton 2109 outage (as shown in the DEIR, p. 2-9), and summing, there were 1.24 million customer minute of outage over the 2012-17 period. Dividing that by 4305 customers yields an annual average of 57.7 minutes per year per customer, which is a worst case. If the actual number of customers is 25 percent higher, because the number of customers grew after 2012 and because the 2012 outage did not affect 100% of the customers on the circuit (which is likely), then the annual average is 46.2 minutes per year per customer.

22,650 Mw in 2006 and 21,713 Mw in 2018). That seems unlikely. If Paso Robles load growth has been "only" 5 percent per year in the years before 2017, then it must have reached 27 Mw in the year 1997. So it would appear that there has been a need for a transmission line with a greater capacity than the Coalinga-San Miguel-Paso Robles line for over 20 years.

The Estrella project is one way to solve the reliability risk due to a Templeton-Paso Robles outage, but it is not the only one. Estrella solves the problem by replacing the low capacity San Miguel-Paso Robles line with a higher capacity Estrella-Paso Robles line with a line capacity of up to 100 MVA (summer normal rating) or 118 MVA (summer emergency rating)(ratings based on CAISO, 2013-2014 Transmission Plan, calling for minimum summer normal/emergency ratings of 825/975 amperes). But the alternate of a 2nd Templeton-Paso Robles 70 kV line, described in the DEIR, would do the same thing, and be considerably shorter and, according to the DEIR, cheaper (DEIR, p. 5-17).

A further potential option, not discussed at all in the DEIR, would be to use the San Miguel-Unionpage 70 kV line mentioned in both a CAISO presentation as part of its 2020-2021 Transmission Plan development (CAISO, 9/23/20 presentation, pdf p. 29 of 247) and the associated model outputs (CAISO, final reliability assessment results for CCLP, pdf pp. 7-9 and 11 of 14), coupled with reconductoring of the entire San Miguel-Paso Robles line (not just the 3 miles already proposed for reconductoring and analyzed in the DEIR). Assuming the San Miguel-Unionpage line exists, is the same size as the San Miguel-Coalinga line, and could be fully loaded after an outage of the Templeton-Paso Robles line, then 84 MVA could be delivered to San Miguel after such an outage. Subtracting the 15 MVA needed to meet San Miguel loads, that would leave 69 MVA deliverable to Paso Robles substation over a reconductored San Miguel-Paso Robles line. 69 MVA is very close to the peak Paso Robles load of 72 MVA experienced in 2017. That 72 MVA peak was, and may well be higher than the reduced Paso Robles substation load forecast that must underlie the reduced 2020-2029 Paso Robles DPA load forecast shown in the DEIR (DEIR, Table 2-5; the DEIR does not provide the 2020-2029 forecast for Paso Robles substation which underlies the 2020-2029 DPA forecast). If this option were indeed viable, it would mean that no new transmission lines would be needed

b. Is Estrella needed to mitigate the impacts of an outage of the Templeton 230/70 kV transformer?

Perhaps, but it is not clear, and is certainly not demonstrated by the DEIR.

An outage of the Templeton transformer would require loads at Templeton, Paso Robles and San Miguel substations to all be met with imports over two 70 kV lines, one from either he southwest (Templeton-Atascadero) and one from the northeast (Coalinga-San Miguel). The normal rating of the Templeton-Atascadero line was increased to 100 MVA by a reconductoring in 2008 (CAISO 2008 Transmission Plan, p. 120, Table A-1). The typical emergency rating of a 100 MVA line (i.e., after an N-1 outage such as a Templeton transformer outage) is 118 Mw. The emergency rating of the Coalinga-San Miguel line is 42 Mw (CAISO letter to CPUC, 2/23/18). (Note that this is a summer rating; the winter rating is much higher). Thus, if the combined loads of San Miguel, Paso Robles, and Templeton were over 160 Mw, an outage of the Templeton transformer would cause overloads of the Coalinga-San Miguel and/or Atascadero-Templeton lines. (Note that the CAISO has recently also referred to another 70 kV line to San Miguel besides the Coalinga-San Miguel and Paso Robles-San Miguel lines, a San Miguel - Unionpgae line. See CAISO, 9/23/20 presentation re 2020-21 Transmission Plan, pdf. p. 29 of 247. This line, if it exists but is no larger than the San Miguel-Coalinga line, could deliver another 42 MVA to the Paso Robles DPA.)

The most recent load forecast for the Paso Robles DPA shows peak summer loads of 193-203 Mw during the 2020s, with the maximum of 203 Mw in 2028 (DEIR, p. 2-12, Figure 2-5). The Paso Robles DPA includes Atascadero substation, with forecast loads of 29.74 Mw in 2028 in an older DPA forecast in which total DPA load was 221.57 Mw during the 2020s (PG&E, response to DR4, p. 4). Put another way, Atascadero loads were 13.42 percent of 2028 Paso Robles DPA loads in the 2019 forecast (29.74/221.57). Assuming the reduced DPA forecast of 2020 includes a proportional reduction for Atascadero substation, then the currently forecasted loads for San Miguel plus Paso Robles plus Templeton reach a peak value of 203 x .8658 = 176 Mw in 2028. That means that there would be an overload of at least 10 percent on one or both of the Coalinga-San Miguel and Atascadero-Templeton lines after an outage of the Templeton 230/70 kV transformer in 2028 at the time of the summer peak.

To mitigate this potential outage, there are at least three options. The first is to drop load, using the existing UVLS which has been in place since 2006 but has never yet needed to operate. That would protect the electrical system, but not its customers, just as the UVLS today protects the Coalinga-San Miguel-Paso Robles line from overloading after an N-1 outage of the Templeton-Paso Robles 70 kV line. The second option is to build a second 230/70 kV transformer feeding the 70 kV lines in the Paso Robles DPA. That second transformer could be the one proposed for Estrella, or the one suggested in the DEIR at an alternate substation location adjacent to Templeton substation (DEIR, Appendix B, p. 3-31), or one at a different alternate substation location 2 miles northeast of Templeton (see below), a location ignored in the DEIR. It apparently could not be at the Templeton substation itself, due to space considerations (DEIR, Appendix B, p. 3-36). The third option is local generation located within the Paso Robles DPA. Such generation would only need to be large enough to mitigate overloads during peak load conditions; during off-peak conditions when loads are lower, the existing 70 kV system would be adequate; during non-summer months, 70 kV line ratings would be higher and overloads would also not occur after a transformer outage. A potential 4th option is to use deliveries over a San Miguel-Unionpgae 70 kV line, probably coupled with reconductoring of the existing San Miguel-Paso Robles line, as described above as possible mitigation for an outage of the Templeton-Paso Robles line.

The applicants may argue that the option of relying upon the UVLS to protect the electrical system from undervoltages after a Templeton transformer outage is inappropriate because it means dropping load after an N-1 contingency. It would indeed, but that has also been true for years with regard to an N-1 outage of the Templeton-Paso Robles 70 kV line. The DEIR should explain why the UVLS alternative has been OK for Paso Robles in the past, but has ceased to be acceptable.

With regard to the alternative of a second 230/70 kV transformer, the DEIR is clear that a new transformer located near the Templeton substation would be electrically suitable as a source of supply for a new 70 kV transmission line to Paso Robles. The DEIR does not explain why the new 230/70 kV substation could not be located 2 miles farther northeast, still adjacent to the existing 230 kV lines, and thus shorten the required 70 kV line by 2 miles. Relocating the 230/70 kV substation farther from Templeton substation would also increase the claimed distribution benefits of the new substation, should it ever be used as a distribution substation, by moving it closer to Paso Robles and farther from Templeton.

With regards to generation alternatives to a new 230/70 kV transformer, it is not clear whether the DEIR has addressed how long it would take after a Templeton transformer outage for loads to fall to the level at which the existing 70 kV transmission system would be adequate, and what generation alternatives would exist to supplement the 70 kV system during the high load hours when they would be needed. Given that the needed generation resources might be as low as 16 Mw under the latest DPA load forecast, and that the highest load summer hours are hours when solar power is likely to be available, it might take as little as 30-40 Mw of installed solar capacity to mitigate the risk of an on-peak failure of the Templeton transformer during the 2020s. A BESS alternative would also be an option if it would only be needed for a few hours until loads dropped overnight, and could then be recharged before the following afternoon's peak loads (assuming a transformer outage took more than 24 hours to repair).

With regards to the possible 4th option, if it exists (see discussion above regarding mitigation for an outage of the Templeton-Paso Robles 70 kV line), then in concert with reconductoring of the San Miguel-Paso Robles line, it would allow up to 84 MVA to be imported into the Paso Robles DPA under emergency conditions after an outage of the Templeton 230/70 kV line. Together with up to 118 MVA via the Atascadero-Templeton line, that would be a total of 202 MVA, more than the projected peak load of 176 MVA in 2028 for San Miguel plus Paso Robles plus Templeton. The DEIR never discusses the existence of a San Miguel-Unionpage line, or its possible contribution to meeting the reliability issues driving the proposed Estrella project.

c. Is Estrella needed to mitigate the impacts of an N-2 (Category C) outage of both 230 kV lines that connect to the Templeton 230/70 kV transformer?

No. Reliability rules allow load to be dropped after the outage of two separate transmission lines. A double 230 kV line outage on the lines feeding Templeton would make the Templeton transformer unusable, and thus cause overloads on the underlying 70 kV system during high load periods, but that is irrelevant. Indeed, even if Estrella were built as proposed, Paso Robles would still face a blackout after an N-2 outage of the Estrella-Paso Robles and Templeton-Paso Robles 70 kV lines. The same is true for the environmentally preferred alternative described in the DEIR. Paso Robles is currently at risk of blackouts from a double transmission line outage, and Estrella would not change that fact. The CAISO's original authorization of Estrella was based on mitigating N-1 contingencies, and Estrella cannot be justified by its impact on N-2 contingencies.

In any case, even if it were appropriate to build new facilities just to mitigate the consequences of an N-2 outage, it is unclear that Estrella would be adequate. The year after Estrella was approved, the CAISO concluded that the proposed new Estrella-Paso Robles line would overload after an N-2 outage of the two 230 kV lines connected to the Templeton substation (CAISO, 9/24/14 presentation, pdf p. 91 of 162).

3. Is Estrella needed to mitigate reliability issues at and around the Cholame substation?

No. Although there are about 1500 Cholame-area customers at risk for scheduled outages every 1-2 years for maintenance work on the 70 kV line feeding Cholame substation, those outages are not a violation of NERC or CAISO or PG&E reliability criteria. PG&E has stated clearly that it has no plans to use the proposed Estrella substation as a source for a new 70 kV line to Cholame to supplement the existing single line there. (**Electric Distribution Resources Plan Application 2015 Rulemaking 14-10-003 Application 15-07-006, data request ED_019-Q01-18_Rev01, response to question 4)**.

On the other hand, in this proceeding the applicants filed a revised Appendix G to their PEA which states that "The proposed project provides a future opportunity to add an additional transmission line to Cholame Substation to create a looped circuit to improve reliability and operational flexibility on the 70 kV system. This line would likely be constructed within 2 to 3 years after Estrella Substation is built" (Appendix G to PEA, 6/20/18, p. UG-27). To the extent that building Estrella **would** lead to construction of a new 70 kV (or 21 kV) from Estrella to Cholame, the DEIR should have addressed that result; to do otherwise would be the kind of piecemealing that CEQA forbids.

4. The DEIR misstates the cost of the proposed project

The CAISO approved the Estrella project with an estimated cost of $35-45 million (CAISO, 2013-14 Transmission Plan), in 2014 dollars (CAISO, 21013-2014 Transmission Plan, 7/16/14, Appendix F, pdf p. 5 of 22). The project that the CAISO approved included all facilities above 50 kV, the threshold of CAISO jurisdiction. In particular, it included the short bits of 230 kV line which would connect the existing 230 kV line to the north and south ends of the proposed substation (to be built by PG&E), the 230/70 kV substation (to be built by HWT), and the 70 kV transmission line and line reconductoring (to be built by PG&E). It did not include 70/21 kV transformers or 21 kV distribution lines, which would be built by PG&E subject to CPUC jurisdiction. The DEIR errs when it says that the $35-45 million estimate is just for the 230/70 kV substation to be built by HWT (DEIR, p. 5-16, fn. 2).

The DEIR also appears to err when it says the estimated total cost of the project is $150 million. CAISO-jurisdictional transmission projects with a capital cost over $50 million require CAISO Board approval, which the Estrella project has never received, since it was described to the CAISO in 2013-14 as having a $35-45 million total cost. If the $150 million figure in the DEIR were correct, then unless the distribution components cost over $100 million, that would mean the CAISO-jurisdictional transmission components will cost over $50 million.

The DEIR needs to be corrected to show current cost estimates for each of it three main components - the transmission level parts to be built by HWT, the transmission level parts to be built by PG&E, and the distribution level parts (if any, given the lack of need discussed above) to be built by PG&E.

RESUME

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Employment

Self-employed, March 1981 - Present

Consultant on energy and electricity issues. Clients have included Imperial Irrigation District, the cities of Albuquerque and Boulder, the Rural Electrification Administration (REA), BPA, EPA, the Attorney Generals of California and New Mexico, the California Public Utilities Commission, alternative energy and cogeneration developers, environmental groups, labor unions, other energy consultants, and the Navajo Nation. Projects have included economic analyses of utility resource options and power contracts, utility restructuring, utility bankruptcy, coal and nuclear power plants, non-utility cogeneration plants, and offshore oil and hydroelectric projects. Experienced user of production cost models to evaluate utility economics. Very familiar with western U.S. grid (WSCC) electric resources and transmission systems and their operation and economics. Have also performed EIR/EIS reviews and need analyses of proposed coal, gas and hydro powerplants, transmission lines, substations, and coal mines. Have presented expert testimony before FERC, the California Energy Commission, the Public Utility Commissions of California, New Mexico, and Colorado, the Interstate Commerce Commission, and the U.S. Congress.

Environmental Defense Fund (EDF), October 1983 - April 1985

Economic analyst, employed half time at EDF's Berkeley, CA office. Analyzed nuclear power plant economics and coal plant sulfur emissions in New York state, using ELFIN model. Wrote critique of Federal coal leasing proposals for New Mexico and analysis of southwest U.S. markets for proposed New Mexico coal-fired power plants.

California Energy Commission (CEC), January 1980 - February 1981

Advisor to Commissioner. Wrote "California Electricity Needs," Chapter 1 of <u>Electricity Tomorrow</u>, part of the CEC's 1980 Biennial Report. Testified before California PUC and coauthored CEC staff brief on alternatives to the proposed 2500 megawatt Allen-Warner Valley coal project.

CEC, October 1977 - December 1979

Worked for CEC's Policy and Program Evaluation Office. Analyzed supply-side alternatives to the proposed Sundesert nuclear power plant and the proposed Point Concepcion LNG terminal. Was the CEC's technical expert in PG&E et. al. vs. CEC lawsuit, in which the U.S. Supreme Court ultimately upheld the CEC's authority to regulate nuclear powerplant siting.

Energy and Resources Group, U.C. Berkeley, Summer 1976

Developed a computer program to estimate the number of fatalities in the first month after a major meltdown accident at a nuclear power plant.

Federal Energy Agency (FEA), April- May 1976

Consultant on <u>North Slope Crude. Where To? How?</u>, a study by FEA's San Francisco office on the disposition of Alaskan oil.

Angeles Chapter, Sierra Club, September 1974 - August 1975

Reviewed EIRs and EISs. Chaired EIR Subcommittee of the Conservation Committee of the Angeles Chapter, January - August 1975.

Bechtel Power Corporation (BPC), June 1973 - April 1974

Planning and Scheduling Engineer at BPC's Norwalk, California office. Worked on construction planning for the Vogtle nuclear power plant (in Georgia).

<u>Education</u>

Energy and Resources Group, U.C. Berkeley, 1975 - 1977

M.A. in Energy and Resources. Two year master's degree program, with course work ranging from economics to engineering, law to public policy. Master's thesis on the causes of the 1972-77 boom in the price of yellowcake (uranium ore). Fully supported by scholarship from National Science Foundation.

University of California, San Diego, 1969 - 1973

B.A. in Mathematics. Graduated with honors. Junior year abroad at Trinity College, Dublin, Ireland.

<u>Professional Publications</u>

"Rate Making for Sales of Power to Public Utilities," with Michael D. Yokell, in <u>Public Utilities Fortnightly</u>, August 2, 1984.

EXHIBIT D

Re: Review of Mitigation Measures Proposed for Agriculture and Forestry Resources, Estrella Substation and Paso Robles Area Reinforcement Project DEIR

I. Mitigation Measure AG-1, "Provide Compensation for Loss of Agricultural Land"

A. The DEIR proposes a 1:1 ratio for land mitigation.
The placing of conservation easement at a 1:1 ratio to land permanently lost to agriculture is recognized in the DEIR to "not fully offset the significant impact because it does not create any new Important Farmland."

There are other jurisdictions and agencies that have struggled with this problem. Here are a few ways they have found to help on the offset not achieved by the 1:1 land mitigation.

1. Increase the ratio: Yolo County California, the City of Davis, and the City of Arroyo Grande all have mitigation ordinance requiring more than a 1:1 ration. See https://sustainablecitycode.org/brief/offsetting-agricultural-land-loss-stemming-from-new-development-3/#:~:text=The%20ordinance%20requires%20mitigation%20at%20a%203%3A1%20ratio,as%20affordable%20housin g%20projects%2C%20parks%2C%20and%20schools.%20T

2. Donate additional funds to a local land trust or the California Council of Land Trusts, whose mission is to preserve agricultural lands in California. The Land Trust of San Luis Obispo County is one of several land trusts active in the area of the project.

3. Implement one or more of the many strategies suggested in Agriculture and Land Stewardship Framework and Strategies, a guidebook published by California Department of Water Resources. This resource is dedicated to the preservation of agricultural land in California, and has many ideas that could be included in the Estrella mitigation proposal to help close the admitted gap between the significant loss of land and full mitigation.

B. The proposed land mitigation fee will be "based on market price for commensurate agricultural land."
1. **How is this to be done?** A licensed, certified appraiser should determine the price to be paid. "Commensurate" should be defined by metrics such as soil quality (Storie Index or USDA Capability Class rating) equivalent supply of water for irrigation, and other factors which are described and utilized in the LESA model. The mitigation land should have an equal or better LESA score than the land lost. Who monitors the mitigation – is it San Luis Obispo County, LAFCo, USDA Natural Resource Conservation Service, or the local Resource Conservation District?

2. The proposed land mitigation fee will be contributed to the California Farmland Conservancy Program.

I am not aware that the California Department of Conservation's California Farmland Conservancy Program is set up to receive agricultural land mitigation fees, and I have never understood this as its function. It is a grant program that awards grants to applicants for farmland conservation, but its funding comes from various state acts and bond funds. The California Department of Conservation's

Agricultural Land Mitigation Program (ALMP) does *partner* with local land trusts, cities, counties, resource conservation districts, and open-space districts to award grants, but my understanding is that the funding for these grants still comes from state and federal programs, and not directly from a mitigation fee from some CEQA triggering project such as the subject Estrella project.

Mitigation Proposal AG-1 therefore fall short of a thorough or even credible mitigation plan for the permanent loss of agricultural land from this project. To be effective, the plan should identify a legal entity that can receive the mitigation fees and utilize them for the intended purpose, to wit, to acquire a permanent conservation easement on “commensurate” land. This would be a local agricultural land trust, San Luis Obispo County, or one of the other entities mentioned above. Better yet, see No. 3, immediately below.

3. “In lieu” mitigation fees can be misused or misapplied

Contributing money in an amount commensurate with the value of the land lost is problematic in that there is no guarantee that the original intention of the mitigation can be postponed, lose its purchase power through time lapse and administration costs, or even be diverted to other uses. These effects have been seen throughout the country with in-lieu fees , and have been a ongoing criticism of in-lieu mitigation fees.

The best way to avoid these problems is to require that the DEIR directly identify and purchase the conservation easement with the oversight and approval of the appropriate jurisdiction (San Luis Obispo County?) This way the specific intent of the law can be met directly and effectively.

II. Mitigation Measure AG-2, “Restore Agricultural Land Temporarily Impacted by Construction Activities”

The activities are described as:

- temporary staging and storage areas
- installation of underground fiber optic cable
- installation of 230 kV interconnection structures
- preparation and temporary use of pull sites and crossing guard structures
- preparation and use of helicopter landing zones

and the mitigation is described as restoring the sites to pre-project conditions by:

- removal of rock or material imported to stabilize the site
- replacement of topsoil
- de-compacting any soil that has been compacted by heavy equipment
- replanting of agricultural crops

A. Commentary

Perhaps the most significant problem with this proposed mitigation measure is its almost complete lack of specificity as to how these measures will be accomplished. In all likelihood the real impacts are not fully known or understood, and this paragraph is just a cipher or placeholder to acknowledge that something will need to be done after the construction is completed. Below I will discuss the proposed mitigation measures and offer commentary and suggestions. I will assume that the measures will be performed in the sequence as presented in the DEIR.

1. Removal of rock or material imported to stabilize the site

To fully remove these materials will require scraping into the topsoil, and thus remove some if not most of the native topsoil in the process. This is probably being acknowledged by the proposal to replace the topsoil. While it is theoretically possible to remove all the placed rock and other imported materials, in practice this is generally economically infeasible, and it may as well be acknowledged that a 95% cleanup job is about the best likely outcome, thus this aspect of the temporary construction will not be fully restored to pre-construction conditions.

2. Replacement of topsoil

As noted above, undoubtedly topsoil will be scraped away with the placed rock. The Soil Survey of San :Luis Obispo County, Paso Robles Area (USDA Soil Conservation Service, 1983) notes that the topsoil for the principle soils at theses sites is approximately 10 inches deep. Thus removal of even two inches of topsoil is a 20% loss, and in all likelihood about 4 inches 40%, will be scraped away. The plan does not state how the topsoil will be replaced, but assuming it will be purchased from a landscape materials yard somewhere in San Luis Obispo County, imported to the site and spread by dump truck, the replacement topsoil should match, as close as possible, the pale brown fine sandy loam found naturally at the various temporary construction sites. The amount of topsoil removed should be replaced by an equal amount, recognizing that when applied the topsoil will be unsettled and less compact than the original site condition; thus more appropriate topsoil should be applied than the amount measured as removed with the end result that the settled ten inches or so is replaced.

It is commonly known that just replacing topsoil with fresh fill is insufficient to restore a landscape to its original condition. Problems include soil erosion, lack of fertility, and a minimized soil biology. The plan should require that the soil be conditioned through re-establishment of ground vegetation at each site. This could be accomplished by planting a grass-forb-mix cover crop, with a species mix that is similar or identical to that which was removed. The Soil Survey describes the rangeland species as "soft chess, wild oats and burclover," but the DEIR gives a longer list of "non-native grasses" in section 4.4.3. In the tilled crop land areas, specific cover crops to condition the soil and provide other ecosystem services are warranted. It is common for the land between the vineyard rows to be planted to a variety of cover crop species; a description of this practice has been published by Cal Poly Center for Sustainability at https://cfs.calpoly.edu/cphealthysoils.

Note also that restoring soil to its pre-project condition will likely take more than one year to accomplish and a plan to monitor the site and continue with restoration practices for two to three years will probably be necessary to achieve the stated goal of restoring soil to its pre-project condition.

3. De-compacting soil that has been compacted by heavy equipment

Once the topsoil has been "replaced," but before planting cover crops or other vegetation, the plan calls for de-compacting the soil. No further description is provided, so I assume that the typical practice of using a crawler tractor or bulldozer fitted with ripper shanks is the proposed operation. To do this effectively, the compacted layer must be broken in several directions, and the ripper shank must penetrate to a depth slightly below the compacted zone. Monitoring of the efficacy of the operation is paramount if the compaction is to be remedied. This tillage should be done when the soil profile is dry enough to fracture; ripping in wet soil only causes additional damage. Again, ripping compacted soil is a standard practice and while it can't fully recreate the original conditions of a natural soil profile, ripping is the prescribed method to alleviate compacted soils. As with the top soil/vegetation/life-of-the-soil aspect discussed earlier, time is required to bring the soil system back into balance and a semblance of what existed prior to the project activities. Establishing the vegetation is key to this re-balancing.

The tillage process of decompaction creates an erosion hazard by loosening the soil, breaking up soil aggregates, and altering its native physical structure. Because this land is sloping and has a light, loamy texture, the decompaction will aggravate the erosion hazard, especially in the rainy season. This is why a serious plan for cover cropping and restoration of the vegetation must be part of the plan to return the land to its pre-project condition.

The process of decompaction, either through ripping, chiseling or some other tillage method aerates the soil and stimulates microbial activity which in turn leads to a breakdown of soil organic matter (thus a loss of carbon in the soil) and a strong surge, or release of CO_2 into the atmosphere. This effect is increased under wet soil conditions. The DEIR should be revised and recirculated to analyze the impacts from decompaction of soil on GHG emissions.

4. Replanting of agricultural crops

Annual crops such as hay or row crops are easy to restore in the sense that in one year the crop rotation can be put back into place. Even for the annual crops, however, the cover cropping immediately after (as a soil conditioner prior to planting the commercial agricultural crop) the "de-compacting" must be an added requirement to this mitigation plan.

For grape vineyards, the vines take more than one year to reach crop bearing age. It is therefore necessary for the mitigation that the act of replanting of the grape vines encompasses the several years (typically 3 to 5 years) it takes to develop mature grape vines. The University of California Cooperative Extension publishes studies on the costs to establish wine grape vineyards, and these studies can form an objective basis for the full cost and time period required for the replanting mitigation

5. Additional observations

a. Soil disturbance.

The degree of soil disturbance for each proposed project activity is not stated, and may actually be unknown at this time. Depending on the particular project operation, the depth of disturbance through excavation or severe compaction may make it impracticable to reasonably fully restore the so-disturbed site to pre-project conditions, and thus fail to mitigate these activities.

b. Hazardous materials.

There is no discussion of the use of hazardous materials on the temporary construction sites; however this is a real concern; prevention and containment measures must be part of the plan, along with contingency plans for hazardous waste cleanup if needed.

c. Restoration of slopes and contours.

The temporary construction sites are located on undulating land with slopes up to 15%, according to the Soil Survey. Such topography is prone to soil erosion from rainfall; the mitigation plan must restore the temporary construction sites to their original slopes and contours for proper surface water drainage. Drainage pipes and other conveyance or water calming structures may be required to prevent water erosion on sloping land. Satellite LIDAR mapping is likely available to establish the original slopes and contours.

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Experience

Agricultural Consultant, House Agricultural Consultants, providing agricultural science, economics, management, and appraisal services, 1983–present

Farmer, 1987–present. Organic apples, peaches, cherries, apricots, field and seed crops

Corporation Secretary & Consulting Agronomist, Hannesson, Riddle & Associates, Inc., 1977–1983.

Professional Affiliations

- American Society of Farm Managers & Rural Appraisers
- American Society of Agronomy
- Crop Science Society of America
- Soil Science Society of America
- California Certified Organic Farmers
- California Farm Bureau

Accreditations

- Accredited Farm Manager (AFM), American Society of Farm Managers & Rural Appraisers, Certificate #501
- Certified Professional Agronomist (CPAg), American Registry of Certified Professionals in Agronomy, Crops. & Soils, Ltd. Certificate # 2319
- Certified Crop Advisor CCA), American Registry of Certified Professionals in Agronomy, Crops. & Soils, Ltd.
- Accredited Rural Appraiser (ARA), American Society of Farm Managers & Rural Appraisers, Certificate #749
- Certified General Appraiser, State of California License # AG 001999

  These credentials have continuing education requirements with which I am in compliance.

Education

- B.S., Crop Ecology, University of California, Davis, 1975, with Honors
- Numerous courses from the University of California Extension in agricultural economics, crop management, real estate, & hazardous waste management
- Courses of the American Society of Farm Managers and Rural Appraisers:

  Principles of Rural Appraisal
  Advanced Rural Appraisal
  Eminent Domain
  Report Writing School
  Economics of Farm Management
  Principles of Farm Management
  Standards and Ethics
  Permanent Plantings Seminar
  Standards and Ethics for Farm Managers
  ASFMRA Code of Ethics
  National Uniform Standards of Professional Appraisal Practice

  Courses of the Appraisal Institute:

  Basic Valuation Procedures
  Real Estate Statistics and Valuation Modeling
  Advanced Income Capitalization
  Valuation of Conservation Easements Certificate Program
  Condemnation Appraising: Principles and Applications
  Appraising the Appraisal

Expert Witness Court Testimony

- Superior Court Qualified Expert Witness in the following California counties: Alameda, Colusa, Kern, Fresno, Madera, Merced, Monterey, Orange, Riverside, San Joaquin, San Luis Obispo, Santa Barbara, Santa Cruz, Solano, Sonoma, Sutter, Yolo
- United States Tax Court Qualified Expert Witness
- United States Bankruptcy Court Qualified Expert Witness

A list of depositions and trial appearances is available upon request

Qualifications of Gregory A. House, continued

Awards

- CCOF Presidential Award, California Certified Organic Farmers, February, 2001
- Meritorious Service in Communications, American Society of Farm Managers and Rural Appraisers, November 2004
- H.E. Buck Stalcup Excellence in Education Award, American Society of Farm Managers and Rural Appraisers, October, 2011

Appointments & Activities

- Adjunct Lecturer, Farm Management Courses ARE 140 & ARE 198, University of California, Davis, Department of Agricultural & Resource Economics, current
- Instructor, "Principles of Farm Management", an Internet course of the American Society of Farm Managers and Rural Appraisers, 1996 to 2007
- President, California Chapter American Society of Farm Managers & Rural Appraisers 1994–1995; Secretary-Treasurer, 1984 to 1990
- Board of Directors, Yolo Land Trust, 1993–2001
- Board of Directors, American Red Cross, Yolo County Chapter 1987–1989
- Member, Yolo County Right to Farm Grievance Committee 1992–1995
- Vice Chairman, Management Education Committee, American Society of Farm Managers and Rural Appraisers, 1998–2000 (committee member since 1986)
- Yolo County LAFCo Agricultural Forum LESA subcommittee, 1999
- California Certified Organic Farmers: Treasurer of the Board of Directors, 1998–2003; Executive Director, 1999-2000; Chairman of Certification Committee, Yolo Chapter, 1993-2005; Member of the Finance Committee, 1998-current
- CCOF Foundation Going Organic Program, Management Team member and Chapter Leader, 2006-current
- USDA Organic Grant Panel member, 2002
- City of Davis Open Space and Habitat Commission, 2006–current, Chairman, 2007-2009
- Member, Fruit Orchard Technical Advisory Group, Filoli Gardens, Woodside, California
- Member, Organic and Sustainable Agriculture Program Steering Committee, University of California Cooperative Extension, Yolo and Solano Counties, California, 2008-2013

Qualifications of Gregory A. House, continued

Speaking Engagements

- Guest Lecturer, University of California at Davis, Agricultural Economics 145, Farm and Rural Resources Appraisal, on professional farm appraisal (1985–1997)
- Guest Lecturer, University of California at Davis, Agricultural Economics Department, Course 140, "Farm Management", on adoption of new technologies, farm budgeting, cash flow management, cost accounting, etc. (1985–present)
- Guest Lecturer, University of Florida at Gainesville, Vegetable Crops Department, seminar on transition to organic agriculture, (November, 1994)
- Featured Program Speaker, 1995 Eco-Farm Conference, Asilomar, California , on economics of organic apple production
- Guest Speaker, Community Alliance with Family Farmers, on farm management and agricultural economics, 1996 and 1997
- Instructor, American Society of Farm Managers and Rural Appraisers, Course M-12, "Standards and Ethics for Professional Farm Managers", March, 1997
- Guest Speaker, American Horticultural Society, "Challenges of Organic Stone Fruit Production", Sacramento, California, July 2001
- Organizer and Presenter, Going Organic Kickoff Meetings, November 2005 and December 2006
- Master of Ceremonies, California Certified Organic Farmers, Annual Meeting, February, 2006, Sacramento, California
- Featured Program Speaker, 2012 Eco-Farm Conference, Asilomar, California, "Imitating Natural Systems: Towards an Indigenous Agro-forestry"
- Seminar presentation: "What Makes for Comparable Sales in Condemnation Appraisal" , Rpid Fire Seminar, American Society of Farm Managers and Rural Appraisers, Reno , NV, October 2013.

Publications

- "Principles of Farm Management", Course M-10, a 40-hour professional credit Internet educational offering of the American Society of Farm Managers & Rural Appraisers
- "Conservation Issues in Agriculture", a unit of Course M-25, a 15-hour professional credit Internet educational offering of the American Society of Farm Managers & Rural Appraisers
- "A Primer on Organic Agriculture," an article in *2006 Trends in Agricultural Land and Lease Values*, a publication of the California Chapter of the American Society of Farm Managers & Rural Appraisers
- "Case Study: Using Indigenous Agroforestry Management Techniques to Support Sustainability in Production Agriculture", a paper-poster presented at Harlan II, An International Symposium on Biodiversity in Agriculture: Domestication, Evolution and Sustainability, September 14-18, 2008, University of California, Davis

House Agricultural Consultants
Partial Listing of Clients Served

Allied Insurance Group

American Farmland Trust

Balverne Winery & Vineyards
Sonoma County, California

Bank of America

Best, Best & Kreiger, LLP
Riverside, California

California Giant Berry Farms

California Department of Fish & Game
Wildlife Conservation Board

California Department of Justice

City of Davis

City of Fairfield

City of Morgan Hill

City of Sacramento, City Attorney

Continental Casualty Company
Chicago, Illinois

County of Solano

County of Yolo

Downey, Brand, Seymour & Rohwer
Sacramento, California

Glenn-Colusa Irrigation District

Hamel Ranch Partnership
Davis, California

Harris Farms, Inc.

Farmers' Home Administration (U.S.D.A.)
Sacramento, California

Internal Revenue Service, District Counsel
San Francisco, California

McMahon-Graf Partners
Winters, California

Morrison & Foerster
San Francisco, California

Oakdale Irrigation District

Pajaro Valley Water Management Agency
Watsonville, California

Phillips 66 Company

Republic Indemnity Company of America
San Francisco, California

Royal & Sun Alliance

Sacramento Valley Conservancy

Sacramento Valley Farm Credit Banks

San Andreas Farms
Fresno County, California

San Joaquin Council of Governments

San Luis Delta Mendota Water Authority

Sanwa Bank, N.A.
Sacramento, California

Solano Land Trust

Stanford Management Company
Stanford University

The Nature Conservancy

The Prudential Agricultural Group
Sacramento, California

The Travelers Insurance Company

The Trust for Public Land

U. S. Fish & Wildlife Service

U. S. Departments of Justice & Treasury

University of California, Davis

Yolo Land Trust

Wells Fargo Bank, N.A.

Environmental Permitting Specialists' Analysis of Public Health Risks Associated with the Estrella Substation and Paso Robles Area Reinforcement Project

Analysis of Public Health Risks Associated with the Estrella Substation and Paso Robles Area Reinforcement Project

Paso Robles, California

February 15, 2021

Prepared By:
Environmental Permitting Specialists
7068 Riverside Boulevard
Sacramento, CA 95831
Contact: Ray Kapahi, Principal
Tel: 916-687-8352
Ray.Kapahi@gmail.com

TABLE OF CONTENTS

SECTION 1: INTRODUCTION

1.1 Background and Project Area

The Estrella Substation and the Paso Robles Area Reinforcement Project (Project) has been proposed in order to upgrade the electrical infrastructure in the Paso Robles and San Luis Obispo area. This Project is described in the Draft Environmental Impact Report (DEIR)[1] and in the Proponent's Environmental Assessment (PEA).[2] Environmental Permitting Specialists (EPS) has prepared this evaluation to determine impacts to public health associated with the construction of this project.

The proposed project would consist of the construction of a new 230 kV/70 kV substation, a 7 mile long 230 kV transmission line interconnection and replacement/reconductoring of approximately 3 miles of an existing 70 kV power line and pole replacement, and various other equipment.

Figure 1-1 illustrates the location and the main components of the overall project. Construction would occur over 18 months. The project is scheduled to go on-line in 2023.

The objective of the health risk assessment is to determine if construction of the proposed project is likely to expose residents living near different portions of the project to significant cancer and acute health impacts.

1.2 Scope of the Risk Assessment

Preparation of risk assessments is a three step process. The first step is to identify potential contaminants that may lead to public health risks. The second step is to assess the amount of contaminants that may reach the public (exposure assessment). The last step is to calculate the magnitude of the health risks as a result of exposure to harmful contaminants on the basis of the toxicology of the contaminants.

The California Air Resources Board (CARB), the Office of Environmental Health Hazard Assessment (OEHHA), and other countries have established standards and guidelines intended to protect the public from exposure to harmful compounds.

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[1] Horizon, Draft Environmental Impact Report, Estrella Substation and Paso Robles Area Reinforcement Project, Prepared for California Public Utilities Commission (CPUC), December 2020; https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/DEIR.html.

[2] SWCA, Proponent's Environmental Assessment Estrella Substation and Paso Robles Area Reinforcement Project, Prepared for NextEra Energy Transmission West, LLC and Pacific Gas and Electric Company (PEA), January 2017; https://www.cpuc.ca.gov/environment/info/horizonh2o/estrella/docs/PEA_January2017.pdf.

The current analysis focuses on three types of risks to the public:

1. Cancer risk from exposure to toxic air contaminant (TACs)
2. Short-term (acute) risk from exposure to TACs
3. Exposure to high concentrations of certain regulated air pollutants, such as oxides of nitrogen (NOx)

1.3 Significance Criteria

The following significance criteria are used in this report to assess the significance of public health risks. These criteria are based on the Office of Environmental Health Hazard Assessment (OEHHA),[3] California Ambient Air Quality Standards, and standards established by other countries. Collectively, these standards are designed to inform the public and the Lead Agencies of the extent of public health impacts associated.

Table 1-1
Thresholds of Significance for Public Health Risks

Risk Metric	Project Level	Reference
Cancer Risk	10 cancers per million	OEHHA, SLOAPCD[4]
Ambient Concentration of Regulated Air Pollutants (NOx, CO, PM-10, etc.)	Maximum Allowable Concentration	California Ambient Air Quality Standards. For NOx, the 1-hour standard is 339 ug/m^3
Acute Hazard Index (HI)	HI = 1	Ratio of Project Impacts to the Recommended Exposure Level. For DPM,[5] the REL is 10 ug/m^3

[3] Office of Environmental Health Hazard Assessment (OEHHA), Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015 (OEHHA 2015), Section 8.2.10: Cancer Risk Evaluation of Short Term Projects, pp. 8-17/18; https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

.

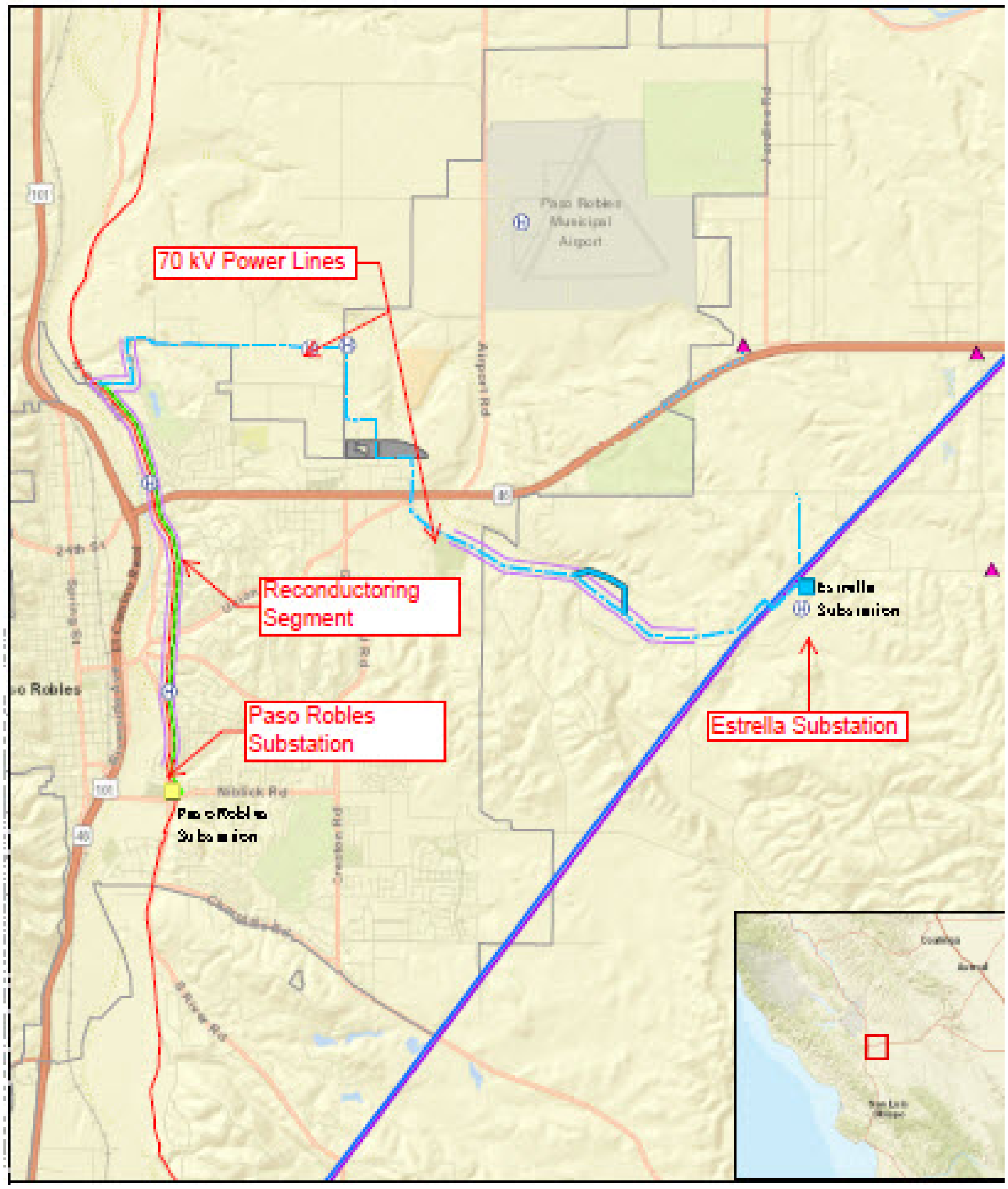
[4] SLOAPCD, "SLO County CEQA Air Quality Hadbook" Section 3.6.1 (Toxic Air Contaminants). Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Map2019%29_LinkedwithMemo.pdf

[5] Government of Canada, Human Health Risk Assessment for Diesel Exhaust, March 4, 2016; http://publications.gc.ca/collections/collection_2016/sc-hc/H129-60-2016-eng.pdf.

1.4 Report Organization

This report is divided into four Sections and two Appendices. Immediately following this Introduction, Section 2 discusses the short-term (construction-related) emissions associated with the project. This is followed by Section 3 which describes the exposure assessment. This assessment details the data and tools used to determine the dispersion pattern of emissions from the project. This analysis takes into account the location of nearby homes and businesses and local wind patterns. Section 4 describes the risk calculations using results from Sections 2 and 3 to calculate health risks. The report concludes with Section 4 which discusses the results and the significance of the findings. Technical data and calculations are in the Appendices.

Figure 1-1
Project Map
Source: Horizon Water and Environment[6]



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[6] DEIR, Figure ES-1, pdf 27.

SECTION 2: EMISSIONS SUMMARY

EPS reviewed the Project's annual and daily construction emissions [CO, SOx, NOx, PM-10, ROG, PM-2.5 (DPM)] in Section 4.3 of the DEIR.[7]

EPS focused on the following air pollutants:

DPM (Diesel Particulate Matter): This is regulated as a toxic air contaminant or TAC. In addition to being a known carcinogen, it also has short-term acute (1-hour) health effects. Currently, OEHHA has not established a recommended acute exposure level for DPM. However, other countries, such as Canada have established a REL for acute DPM exposure. OEHHA Guidelines do not prohibit the use of health standards established by other countries.

NOx (Oxides of Nitrogen): California has established a short-term air quality standard for NOx. Currently, it is set at 339 micrograms per cubic meter (ug/m^3) over one hour.[8]

The main toxic air contaminant associated with construction is diesel exhaust consisting of fine particulate matter (DPM) from construction equipment. The same equipment also releases NOx. Two emission scenarios were evaluated:

Scenario 1: The construction emissions in DEIR Table 4.3-5, which assume that all construction equipment will use EPA Tier 4 final engines.[9]

Scenario 2: The DEIR only requires "expanding the use of Tier 3 off-road engines" as mitigation in APM AIR-2.[10] The PEA notes that the actual equipment that would be used would consist of Tier 2 to Tier 4 engines. Thus, the applicant can use cheaper, higher polluting lower tier engines, such as Tier 1, 2 or 3 engines. Emissions depend upon the tier and are much higher for lower tier equipment.[11] Thus, in Scenario 2, we assumed the use of 100% Tier 2 engines, which have 10 times higher DPM emissions compared to equipment equipped with Tier 4 Final engines.[12]

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[7] Abbreviations: CO: carbon monoxide, SOx: oxides of sulfur, NOx: oxides of nitrogen, ROG; reactive organic gases, PM-2.5: ultra fine particulate, PM-10: fine particulate matter, DPM: diesel particulate matter.

[8] Please add a reference.

[9] DEIR, Appendix C, pdf 3: "Construction Off-road Equipment Mitigation – Change to assume all equipment Tier 4 Final." See also Appendix C, pdf 420, 560, 561.

[10] DEIR, Appendix C, pdf 3: "Construction Off-road Equipment Mitigation – Change to assume all equipment Tier 4 Final." See also Appendix C, pdf 420, 560, 561.

[11] DieselNet, United States: Nonroad Diesel Engines, Tables 3-4; https://dieselnet.com/standards/us/nonroad.php.

[12] DEIR Appendix C indicates the Project will be constructed using a mix of equipment ranging in size from 78 hp to 402 hp. The emission factors by tier are reported at: https://dieselnet.com/standards/us/nonroad.php#tier4.

Emissions of NOx are 5 to 8 times higher for Tier 2 to Tier 4 engines depending on engine size. A factor of 5 was used in the current analysis.

In addition to emissions from on-site construction equipment, there would be emissions from mobile sources including helicopters. These emissions are distributed over a wide area and occur outside of the modeling region. As a result, these emissions have not been included.

The emissions that were modeled in the health risk assessment and NOx ambient air quality analyses are summarized below in Table 2-1.

Table 2-1 Summary of Emissions		
Pollutant	Scenario 1	Scenario 2
DPM	0.37 tons per year (740 lbs/yr)	3.7 tons per (7,400 lbs/year)
NOx	141.38 pounds per day or 17.67 lbs/hr over an 8 hour day)	707 pounds per day or 88.4 lbs/hr over an 8 hour day)

To determine emissions associated with a given phase of the project, such as construction of the Estrella Substation, reconductoring, etc., EPS reviewed the list of construction equipment that would be used. This list appears in Appendix C of the DEIR and is provided in Appendix 1 to this report. In addition to identifying the equipment, the equipment list also included fuel consumption data for each piece of equipment. Based on the review of the equipment, EPS assigned the equipment into three main construction components of the project:

1. Construction of the Estrella Substation
2. Construction along the Reconductoring Segment
3. Construction along the 70 kV Route

These are shown in Figure 1-1. By reviewing the fuel consumption and assuming that emissions are directly related to fuel consumption, it is possible to assign the percent of the total construction emissions to each of the three components of the project as summarized in Table 2-2.

Table 1 at this link reports DPM emission factors for Tier 2 equipment of 50 to 100 hp is 0.3 g/bhp-hr and for 300-600 hp engines, 0.14 g/bhp-hr. Table 3 shows that the DPM emission factor for Tier 4 equipment of 75-750 hp equipment is 0.015 g/bhp/hr. Thus, I assumed DPM emissions would increase by a factor of 0.15/0.015 = 10 in scenario 2.

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Table 2-2 Summary of Emissions						
Construction Element	Fuel Consumption	Percent of Fuel Consumption and Emissions	DPM Emissions *(lbs/yr)*		NOx Emissions *(lbs/hr)*	
	(gallons)	*(%)*	*Scenario 1*	*Scenario 2*	*Scenario 1*	*Scenario 2*
Construction of Estrella Substation	34,194	18.7%	138.1	1,381.0	3.30	16.49
Construction of the Reconductoring Segment	72,342	39.5%	292.2	2,921.7	6.98	34.89
Construction Along the 70 kV Route	76,698	41.9%	309.7	3,097.3	7.40	36.98
	183,225	100%	740	7,400	17.67	88.36
Note: Appendix C reported total annual diesel consumption to equal 183,523 gallons per year. Our review indicates the total to be 183,225 gallons per year.						

SECTION 3: EXPOSURE ASSESSMENT

Exposure assessment involves translating the emission rate (e.g., lbs/hr) of individual toxic air contaminants into the concentration (e.g., grams/cubic meter or parts per million) of each toxic air contaminant. The key step in performing an exposure assessment is the application of an air dispersion model. The dispersion model incorporates the local meteorological data (wind speed, wind direction, local temperature, inversion heights, etc.), emission source geometry, release height into the concentration of individual air contaminant around the emission source. The CARB and OEHHA recommended AERMOD dispersion model (Version 19191) was employed in the current exposure assessment. The plot files created using Lakes Environmental (AERMODVIEW) Version 9.8.3 were exported into the risk model.

This section discusses the model set-up, the extent of the modeling area, and the choice and duration of meteorological data.

3.1 Model Set-Up

The following regulatory default options were used. They are based on the latest EPA guidance on running AERMOD.

- Use of Calm Wind Processing
- Use of Missing Data Processing

Emissions associated with the reconductoring route and along the 70 kV line were modeled as two separate line sources. Emissions associated with construction of the Estrella Substation were modeled as a single area source.

3.2 Modeling Grid and Coordinate System

A rectangular (x-y) Cartesian coordinate system was used. A region 7,500 x 5,250 meters (4.5 miles x 3.3 miles) was used. The modeling region was divided into 100 meter x 250 meter cells for a total of 1,575 individual receptors in the vicinity of the project area. See Figure 3-1 for a layout of the modeling grid.

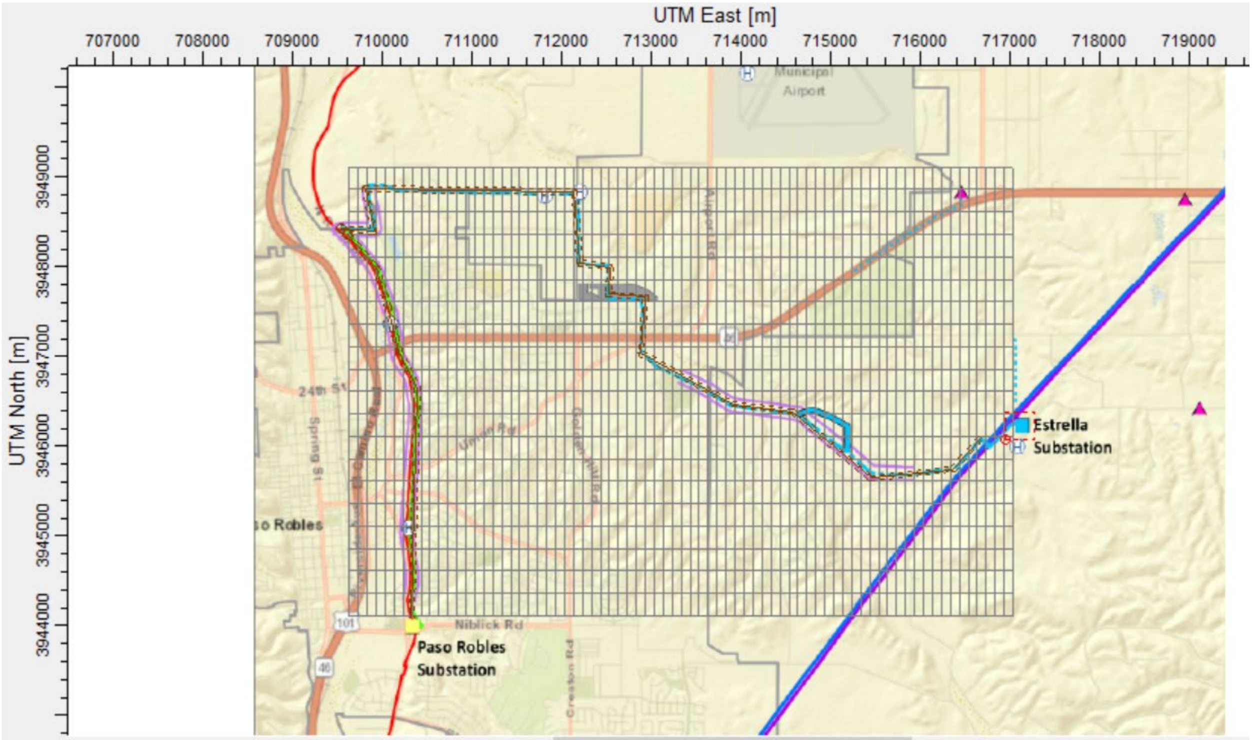
3.3 Meteorological Data

Five years (2009 to 2013) of meteorological data was used in the exposure assessment. The surface data (wind speed, wind direction, temperature, etc.) were recorded at Paso Robles Airport located 1.5 miles Northeast of the Project site. These data were obtained from CARB.

In addition to surface meteorological data, hourly inversion height data are also required. Four years of data from the nearest upper air station (Vandenberg AFB, CA) were used to develop hourly inversion heights.

Figure 3-1

Lay-Out of Modeling Grid and Emission Sources



SECTION 4: HEALTH RISK ANALYSIS

Health risks from exposure to DPM and NOx are discussed in this section. The emission rates of DPM and NOx discussed in Section 2 were used as a basis to quantify health risks. EPS used the HARP2 risk model developed by CARB and the Office of Environmental Health Hazard Assessment (OEHHA)[13] to calculate the health risks. As noted in Section 1, three types of health risks were calculated (cancer, acute non-cancer from exposure to TACs and acute non-cancer from exposure to NOx).

4.1 Cancer Risks (2 Year Exposure to DPM)

The results of the cancer risk analysis are presented in Figures 4-1 and 4-2 for Scenarios 1 and 2. For Scenario 1, the cancer risk ranges from 0.1 to 25 in a million. For Scenario 2, the cancer risk exceeds 50 in a million for hundreds of homes, especially east of the reconductoring segment. These homes are shown in Figure 4-3.

4.2 Acute Non-Cancer Risks (1-Hour Exposure to DPM)

The spatial distribution of 1-hour construction DPM is presented in Figures 4-4 and 4-5 for Scenarios 1 and 2 respectively. The results show that the 1-hour DPM concentration is below 10 ug/m^3 for Scenario 1. However, the 1-hour DPM concentration exceeds 10 ug/m^3 over a wide area around the Estrella Substation, 70 kV power line, and the reconductoring segment. Thus, acute health impacts are significant over a large area around the Estrella Substation and reconductoring segment if Tier 2 and 3 construction equipment is used, as allowed by the DEIR.

4.1 Acute Non-Cancer Risk (1-Hour Exposure to Oxides of Nitrogen (NOx))

In order to determine if the construction NOx emissions would exceed the state's 1-hour air quality standard of 339 ug/m^3, the AERMOD model was used to calculate the maximum 1-hour concentration in the vicinity of the project. The results indicate that the State's 1-hour NOx standard would not be exceeded under Scenario 1, which uses NOx emissions based on the use of all Tier 4 final construction equipment. However, it would be exceeded for Scenario 2, which assumes the use of Tier 3 construction equipment, as allowed in the DEIR.

Figures 4-6 and 4-7 show the spatial variation of NOx concentration for both scenarios. Figure 4-6 (for Scenario 1) shows that numerous homes near the reconducting corridor would be impacted with high concentrations of NOx. Figure 4-7 (for Scenario 2) shows that numerous

[13] OEHHA Hotspots Analysis and Reporting Program (HARP) available at: https://ww3.arb.ca.gov/toxics/harp/harp.htm

homes near the reconducting corridor as well as the transmission line and substation would be impacted with high concentrations of NOx.

Figure 4-1
Spatial Variation of Cancer Risk per Million
Scenario 1

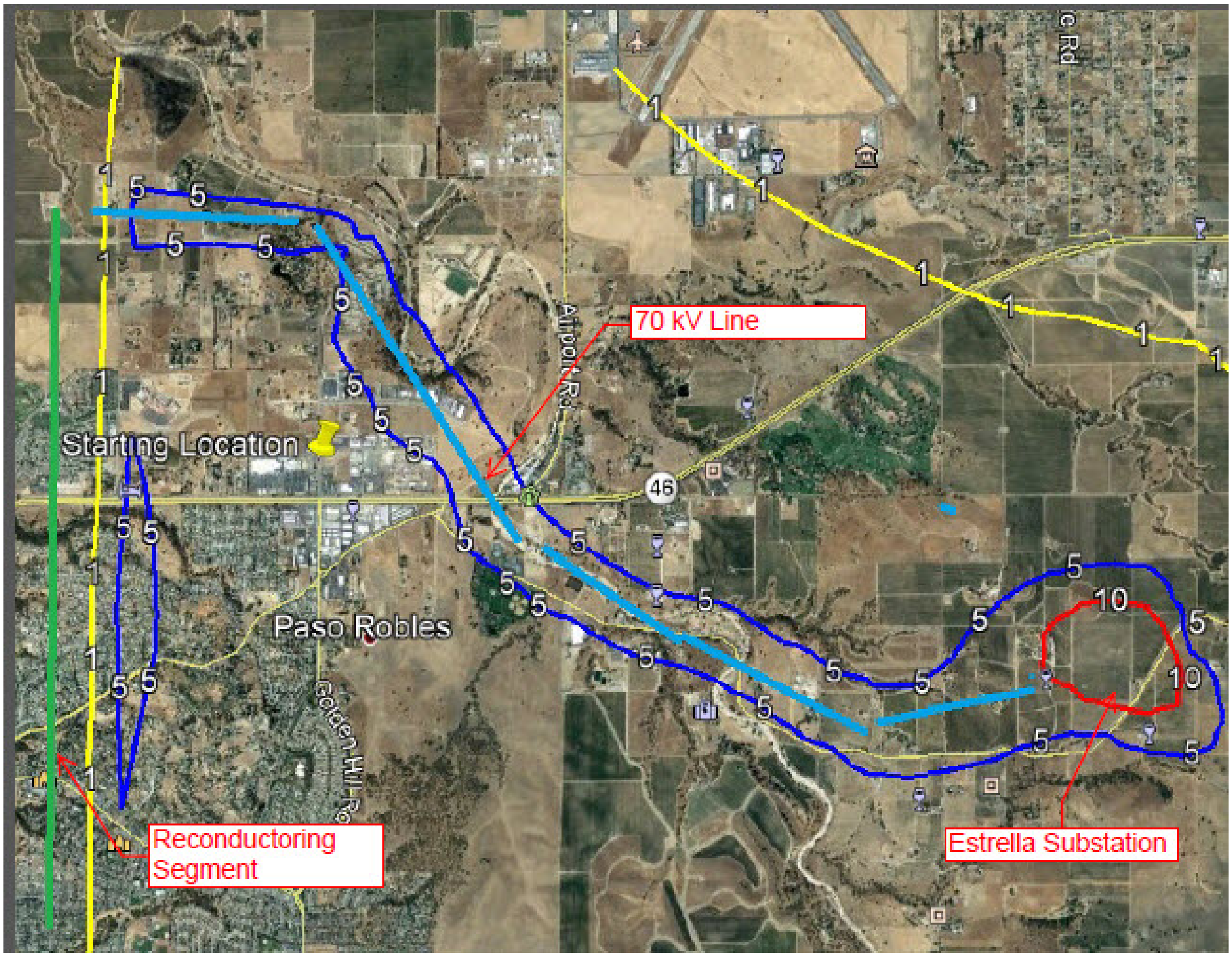


Figure 4-2
Spatial Variation of Cancer Risk per Million
Scenario 2

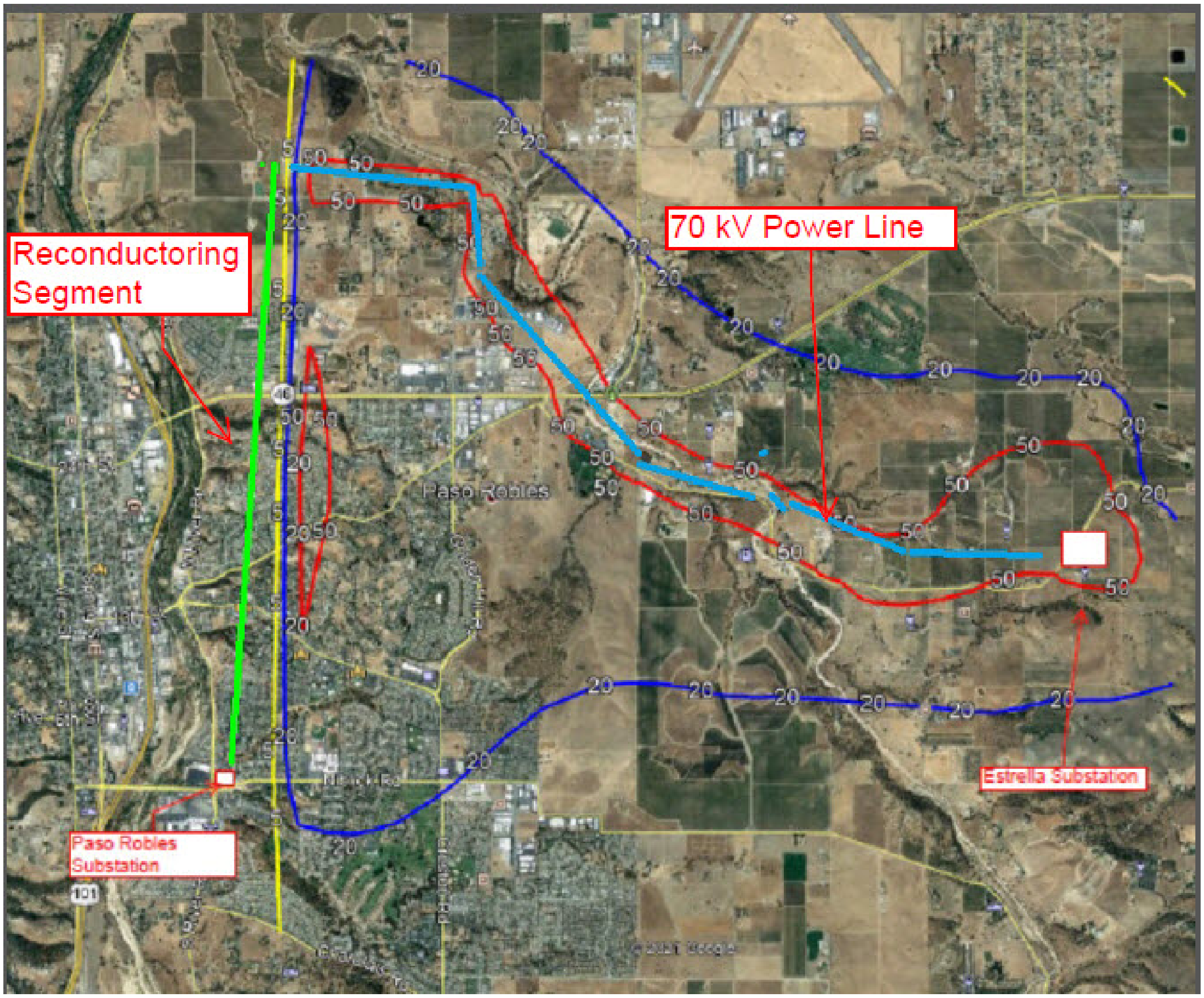


Figure 4-3

Spatial Variation of Cancer Risk Cancer Risk per Million
For Scenario 2 Showing Homes East of the Reconductoring Segment

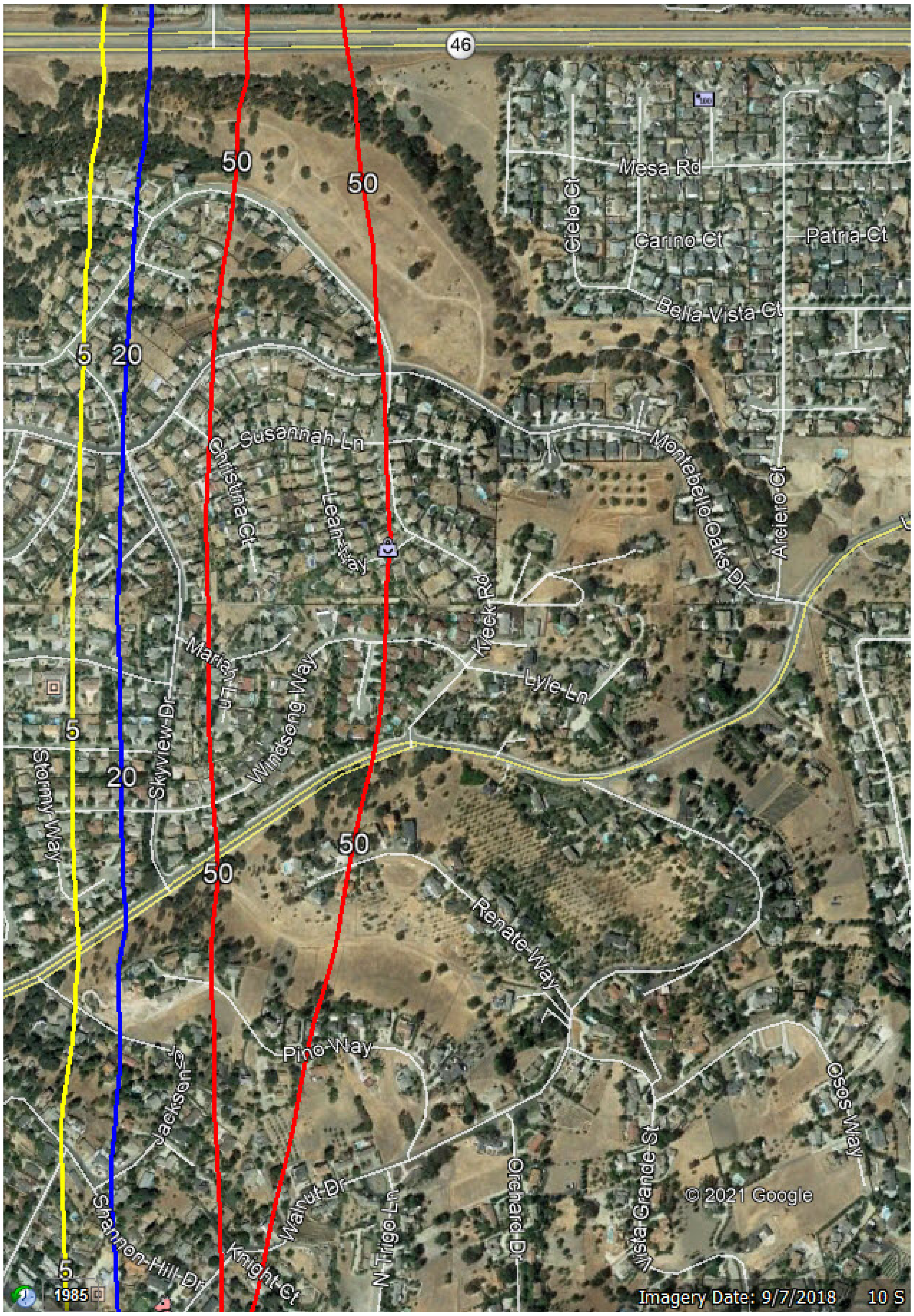


Figure 4-4
Results of Acute DPM Modeling in Micrograms per Cubic Meter
Scenario 1

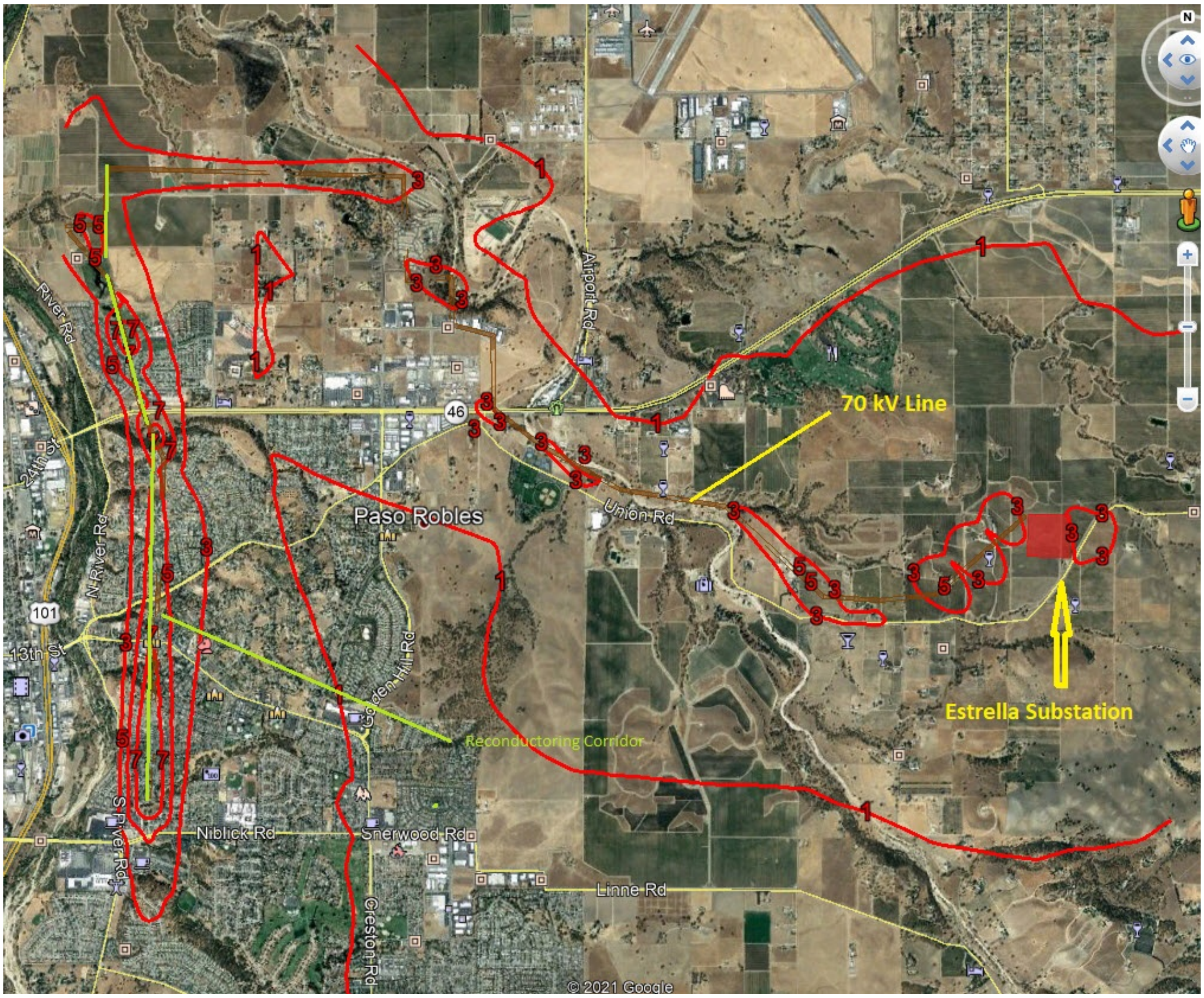


Figure 4-5
Results of Acute DPM Modeling in Micrograms per Hour
Scenario 2

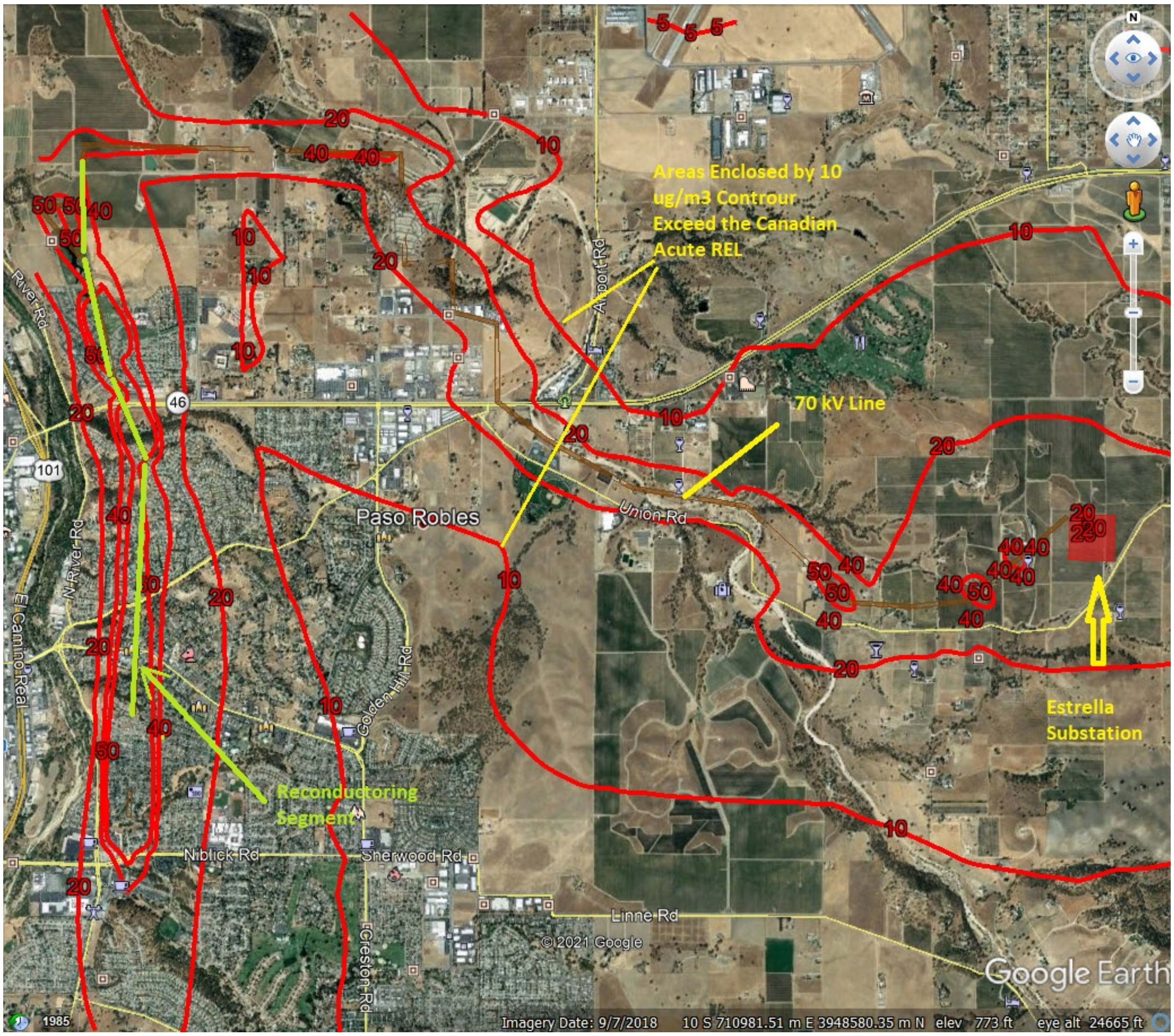


Figure 4-6
Spatial Variation of 1-Hour NOx Concentration
Scenario 1

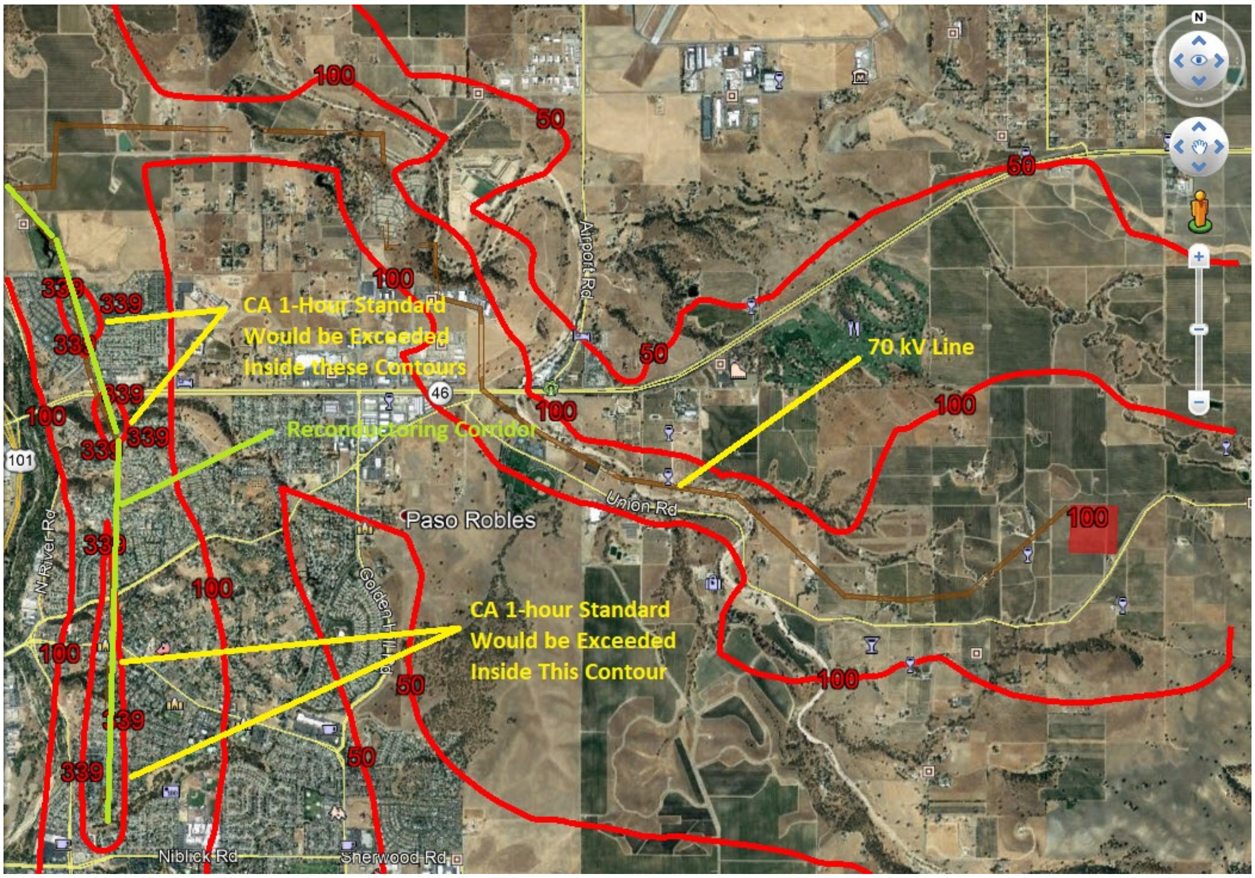
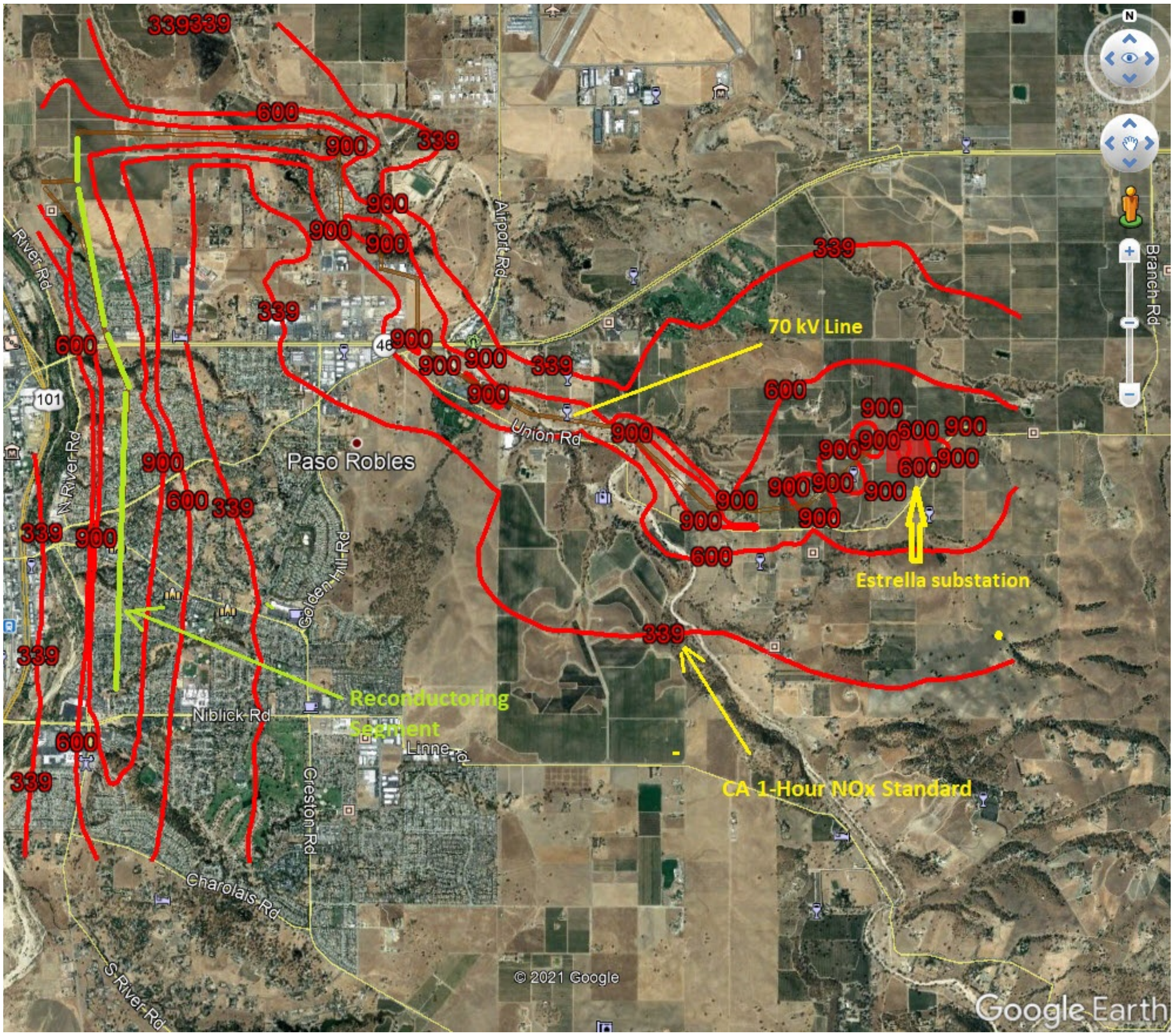


Figure 4-7
Spatial Variation of 1-Hour NOx Concentration
Scenario 2



SECTION 5: RESULTS AND CONCLUSIONS

The results of the DPM and NOx analyses are summarized in Table 5-1.

Table 5-1
Summary of Maximum Project Level Health Risks

Risk Metric	Scenario 1	Scenario 2	Significance Threshold	Significant?
Maximum Residential Cancer Risk	0.5 to 40 cancers per million	5 to 75 cancers/million	10 (per million)	Scenario 1 – Yes Scenario 2 - Yes
Maximum Acute Hazard Index from 1-Hour Exposure to DPM	0.1 to less than 0.5	1 to < 4	1.0	Scenario 1 – No Scenario 2 - Yes
Maximum Acute Impact from Exposure to 1-Hour NOx	100 to 500 ug/m^3	00 to 760 ug/m^3	339 ug/m^3	Scenario 1 – Yes Scenario 2 - Yes

The results of the current analysis demonstrate that with the exception of acute (short-term) impacts from exposure to DPM under Scenario 1, the project would have significant impacts to public health. The impact is most significant to residents adjacent to the reconductoring corridor. The highest risks are associated with Scenario 2, which assumes the use of Tier 2 construction equipment, where short-term (acute) and long-term (cancer) exposure to DPM would result in significant health impacts. This is true even if one accounts for the short duration (maximum 24 months) of the construction period.

SECTION 6: REFERENCES

Government of Canada, Human Health Risk Assessment for Diesel Exhaust, March 4, 2016; http://publications.gc.ca/collections/collection_2016/sc-hc/H129-60-2016-eng.pdf..

EPA (2012) "Technical Support Document for Exposure Assessment and Stochastic Analysis. Office of Environmental Health Hazard Assessment. California Environmental Protection Agency, August 2012.

CARB (2003) HARP User's Guide. Available at: http://www.arb.ca.gov/toxics/harp/harp.htm December 2003.

EPA (2004) "User's Guide for the AMS/EPA Regulatory Model – AERMOD". EPA Document No. EPA=454/B-03-001 September 2004.

OEHHA (2014) Consolidated Table of Approved health Risk Values. Cal EPA, Office of Environmental Health Hazard Assessment. Available at: file:///C:/2014%20Feather%20River%20AQMD/Hollycross%20Cemetary/OEHHA%20contable.pdf. July 3, 2014.

SLOAPCD (2012) "CEQA Air Quality Handbook". April 2012. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Map2019%29_LinkedwithMemo.pdf

Pacific Gas & Electric Company’s Comments on the Draft Environmental Impact Report

Law Department
77 Beale Street, B30A
San Francisco, CA 94105

Pacific Gas and Electric Company ™

VIA ELECTRONIC MAIL

February 22, 2021

Mr. Robert Peterson
California Public Utilities Commission
c/o Tom Engels
Horizon Water and Environment
266 Grand Avenue, Suite 210
Oakland, CA 94610

Re: **Estrella Substation and Paso Robles Area Reinforcement Project (A.17-01-023) – Pacific Gas and Electric Company Comments on Draft Environmental Impact Report**

Dear Mr. Peterson:

Enclosed are Pacific Gas and Electric Company's ("PG&E") comments on the Draft Environmental Impact Report ("DEIR") that the California Public Utilities Commission ("CPUC") Infrastructure Permitting and CEQA Section ("Energy Division") released on December 8, 2020 regarding the Estrella Substation and Paso Robles Area Reinforcement Project ("Proposed Project" or "Project"). PG&E reserves the right to supplement its comments on the DEIR at a later date.

PG&E appreciates the time and effort that the Energy Division and its consultants spent on preparing the DEIR. PG&E's comments are intended to ensure that the final environmental impact report for the Project ("FEIR") will be accurate, complete, and consistent with the California Environmental Quality Act ("CEQA").

I. INTRODUCTION

PG&E and NextEra Energy Transmission West, LLC [now known as Horizon West Transmission ("HWT")] (collectively referred to as "Applicants"), jointly filed on January 25, 2017 an application requesting Permits to Construct ("PTCs") the Proposed Project, with a targeted in-service date of May 2019. The Proposed Project is a reliability-based upgrade to the Los Padres Area transmission system and the Paso Robles Distribution Planning Area that was selected by the California Independent System Operator through its regional transmission planning process. The Proposed Project would interconnect a new 230 kilovolt ("kV") source into the Paso Robles area by constructing a new 230/70 kV substation, as described in the Applicants' application for PTCs.

PG&E appreciates the opportunity to provide comments on the DEIR. PG&E's comments consist of this cover letter, Attachment 1 (Text Corrections and Requests for Clarification), Attachment 2 (Comments on Behind-the-Meter Analysis), Attachment 3 (Revised Air Quality Analysis) and Attachment 4 (Revised Helicopter Noise Analysis). PG&E requests that the CPUC incorporate into the FEIR the information and proposed revisions to the DEIR presented in this letter and Attachments 1-4 hereto.

II. COMMENTS ON OVERARCHING CEQA ISSUES

A. The CPUC's Distribution Project Objective Should Include Enhanced Reliability To Be Consistent with the Fundamental Underlying Purpose of the Proposed Project

CEQA requires an EIR to contain a clearly written statement of the underlying fundamental purpose and the objectives sought by the proposed project, which will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and aid the decision-makers in preparing findings or a statement of overriding considerations, if necessary. (*See* CEQA Guidelines § 15124(b).) The project objectives are integral to the analysis of alternatives because CEQA requires an EIR to focus on alternatives that can eliminate or reduce significant environmental impacts while attaining most of the project objectives. (*Id.* at § 15126.6(a)-(b).)

The fundamental underlying purpose of the Proposed Project is to reinforce the electric transmission and distribution system in the Paso Robles Distribution Planning Area (DPA), as reflected in the name of the project: the Estrella Substation and Paso Robles Area *Reinforcement* Project. Reinforcement in this case means improving the reliability, capacity and flexibility of the interconnected transmission and distribution systems in the DPA.[1] However, the CPUC, functioning as the CEQA lead agency in charge of preparing the DEIR, asserts that improving distribution service reliability is not a driver of the project: "The issue of long feeders and poor service reliability was not identified as a fundamental project objective by the CPUC; however, it is considered a beneficial effect of the Proposed Project." (DEIR p. 2-6.) In other words, the distribution project objective in the DEIR references increasing capacity, but not enhancing reliability. As a result, the DEIR does not take into account reliability enhancement when it evaluates the two battery energy storage system ("BESS") alternatives, Alternatives BS-2 and BS-3, to the reasonably foreseeable distribution components of the Proposed Project.

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[1] The Proposed Project would accomplish these fundamental reinforcement goals by constructing a new substation that would (1) interconnect a second existing 230 kV transmission line into the DPA, (2) create a second 70 kV power source for the Paso Robles and San Miguel substations by constructing a 70kv power line connecting these substations to Estrella Substation, (3) include space for new 70/21 kV transformers to meet anticipated distribution demand in the DPA that will likely exceed existing capacity in approximately five to 15 years, (4) be located close to the area in which demand is forecasted to increase, (5) be located where it would be relatively easy to interconnect with existing distribution circuits, (6) shorten existing distribution feeders from Templeton Substation that now travel long routes into the Paso Robles DPA, and (7) provide additional substation 230/70kV transformer bank capacity that can be shared by substations within the DPA during substation maintenance, outages, and clearances to improve operational flexibility and reliability within the DPA. The Applicants' described the underlying purpose of the Proposed Project in PEA Section 1.3 ("Purpose, Need, and Project Objectives) and PEA Appendix G ("Distribution Need Analysis").

The DEIR should factor distribution reliability into its comparison of the two BESS alternatives to the reasonably foreseeable distribution components. The DEIR already acknowledges that the reasonably foreseeable distribution components:

> would address existing undesirable conditions and projected load growth in the distribution system in the Paso Robles area. As described in detail in Appendix G of the Applicants' PEA, the Paso Robles system is characterized by very long distribution feeders particularly those extending from Templeton Substation (see Figure 2-4). This is undesirable because long feeders are more susceptible to potential outages caused by vehicle pole strikes, downed vegetation from storms, or other incidents (NEET West and PG&E 2020a). Additionally, outages that occur on long feeders may affect larger numbers of people than similar events that occur on feeders of moderate length. (DEIR p. 2-6.)[2]

The DEIR recognizes that the Proposed Project is sited and designed to address these "undesirable" reliability issues:

> Locating the new substation at its proposed location would allow for the long feeders to be split in half and for some of the load currently being served by the Templeton Substation to be served by the new Estrella Substation. Reducing the length of these feeders would reduce potential outages for customers in this area and improve the reliability of the distribution system in this area. (DEIR p. 2-6.)

Additional details about the distribution reliability benefits of the Proposed Project are provided in PEA Appendix G. To summarize, if and when the reasonably foreseeable distribution components are added at the proposed Estrella Substation (assuming the CPUC approves its construction), all customers within the Paso Robles DPA will enjoy reliability benefits because installing three new 21 kV distribution circuits will shorten distribution feeder line lengths out of Templeton Substation, share load with existing circuits and substations, and provide critical back feed support and redundancy to respond to real-time operational needs. (PEA Appendix G at UG-27 to UG-28.)

Given the important role of enhancing distribution reliability in the fundamental underlying purpose and design of the Proposed Project, the distribution project objective should specifically include "improve service reliability."

At the very least, the DEIR should discuss whether Alternative BS-2 or BS-3 would enhance the reliability of the existing distribution system by rectifying existing "undesirable conditions" or achieve the other reliability enhancements of the Proposed Project. PG&E contends that they would not. Adding solar and battery storage could provide additional generation and storage capacity to the DPA (see comments in Attachment 2), but they would not reduce the length of the Templeton 21 kV feeders, nor would they create back ties into existing

[2] The DEIR pulls extensively from PEA Appendix G and provides outage data and statistics that highlight the service reliability issues that currently exist. (DEIR pp. 2-6 to 2-11.)

circuits that enable load transfers between substations during emergencies, clearances, or planned maintenance. In fact, battery storage systems can actually hinder system operational flexibility and reliability since, once discharged, they must be recharged to support load. Depending upon the duration of outages or maintenance windows, the batteries may not be able to be charged until the circuit and the system returns to normal or may not provide needed electricity supply during the full duration of a maintenance or outage window.

B. The DEIR Does Not Present Substantial Evidence On Which To Conclude that Alternative BS-2 or Alternative BS-3 Is Environmentally Preferable To the Reasonably Foreseeable Distribution Components of the Proposed Project

The DEIR does not contain substantial evidence to conclude that Alternatives BS-2 and BS-3 are environmentally preferable to the reasonably foreseeable distribution components that PG&E proposed.

The DEIR states at the beginning of the impacts discussion in Chapter 4 that: "Because the specific characteristics of Alternatives BS-2 and BS-3 are unknown, these alternatives are evaluated for illustrative purposes in the DEIR. Consistent with CEQA Guidelines section 15145, no significance conclusions are provided for the Alternative BS-2 and BS-3 impact discussions." (DEIR at 4.0-2 to 4.0-3.) For example, in the evaluation of aesthetic impacts in Section 4.1, the DEIR states:

> Overall, because FTM BESS sites were selected for illustrative purposes only, BESS installations have not been designed and technologies have not been selected, and the specifics of Alternative BS-2 are unknown, project-level determinations cannot be made as impacts are speculative. Therefore, consistent with CEQA Guidelines section 15145, no significance conclusion is provided for any of the significance criteria. (DEIR at 4.1-53.)
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> Overall, due to the fact that specific locations and characteristics of BTM resources procured under Alternative BS-3 are unknown at this time, project-level impact determinations are not possible as the impacts are speculative. Therefore, consistent with CEQA Guidelines section 15145, no significance conclusion is reached under any of the significance criteria. (DEIR at 4.1-54.)

This finding that impact determinations for Alternatives BS-2 and BS-3 would be speculative is repeated in Sections 4.2 to 4.20, which represent all resource areas evaluated in the DEIR.

Given these findings, the DEIR lacks substantial evidence to conclude that: "Impacts [of the reasonably foreseeable distribution components] would be greater than under the alternative combinations evaluated because of the approximately 1.7 miles of new distribution line and 8 miles of reconductoring." (DEIR p. 5-15.) The DEIR cannot compare actual impact findings regarding the reasonably foreseeable distribution components to speculative assessments of the impacts of Alternatives BS-2 and BS-3 and conclude that these alternatives are environmentally preferable.

C. The DEIR Should Not Recommend Implementation of Alternative BS-2 or BS-3 Because the Decision Whether a BESS or Any Other Kind of Distributed Energy Resources Will Be Implemented Instead of the Reasonably Foreseeable Distribution Components Will Be Determined In a Separate CPUC Proceeding

The DEIR should clearly state that whether Alternative BS-2 and/or BS-3, or some other Distributed Energy Resource (DER), gets implemented instead of the reasonably foreseeable distribution components of the Proposed Project will not be decided in the PTC proceeding. Instead, the decision to implement a DER solution or the reasonably foreseeable distribution components would be made in a separate CPUC proceeding, the Distribution Infrastructure Deferral Framework (DIDF) pursuant to the Distribution Resources Plan proceeding (R.14-08-013). At the time that PG&E determines that the energy demand and reliability concerns in the DPA warrant constructing the reasonably foreseeable distribution components, PG&E will identify this as a "planned investment" in its annual Grid Needs Assessment (GNA) and Distribution Deferral Opportunity Report (DDOR). At that point, DER alternatives to the proposed distribution investment, which may include Alternative BS-2 and/or BS-3 among other DERs, will be considered in the annual DIDF.

Thus, no findings are appropriate – in either the DEIR or the current PTC proceeding – to establish that Alternative BS-2 and/or BS-3 is environmentally preferred to the reasonably foreseeable distribution components. As noted above, PG&E disagrees that the DEIR has established that Alternatives BS-2 and BS-3 would "likely" reduce environmental impacts as compared to the reasonably foreseeable distribution components (DEIR pp. ES-5, 5-15) because this finding is based on hypothetical, illustrative BS-2 and BS-3 alternatives for which no impact determination is made (DEIR p. 3-112).

In addition, PG&E offers a number of clarifying comments regarding the discussion of Alternatives BS-2 and BS-3 and the role of the DIDF proceeding.

The DEIR states that both Alternatives BS-2 and BS-3 could be "developed" through the DIDF proceeding. (DEIR pp. ES-13, 5-16.) PG&E clarifies that DER alternatives (including but not limited to BS-2 and BS-3) to the reasonably foreseeable distribution components will be *evaluated* in the DIDF. No alternatives are developed in the DIDF.

Furthermore, the DIDF evaluation is technology agnostic so all DER alternatives would be evaluated equally, with no preference given to Alternative BS-2 or BS-3. As the DEIR notes:

> It is anticipated that BTM resources installed as an alternative to the Proposed Project would be procured under the CPUC's DIDF pursuant to the Distribution Resources Plan or its successor proceeding… The DIDF is technology neutral but, for the purposes of this CEQA analysis, solar and battery storage DERs were assumed. Other types of DERs could also be procured, such as energy efficiency and demand response. (DEIR p. 3-134.)

PG&E agrees that DER alternatives, including alternatives other than a BESS, would be evaluated and potentially procured in the DIDF, making a finding in the DEIR or the current

PTC proceeding on Alternatives BS-2 and BS-3 inappropriate and in conflict with the Distribution Resources Plan.

PG&E agrees with the statement in the DEIR that: "The size of the BESS required would be dictated by the grid capacity needs PG&E identifies pursuant to their annual Grid Needs Assessment and Distribution Deferral Opportunity Report filing to the Distribution Resources Plan proceeding (R.14-08-013) or its successor proceeding." Further, given that the size and location of the DER alternative would be dictated by the GNA and DDOR in the Distribution Resources Plan, it is impossible to evaluate Alternative BS-2 or BS-3 without knowing the specific electrical system needed, the required battery storage size, and the location needed. No findings should be made in the DEIR about the environmental preferability of these alternatives. Instead, the BESS alternatives should be evaluated with other potential DERs in the Distribution Resources Plan once PG&E decides to make a planned investment in the reasonably foreseeable distribution components.

PG&E disagrees with the following statement: "In PG&E's 2018 and 2019 filings, the distribution capacity requirements identified ranged from 3.4 MW to 5.9 MW (CPUC 2020). In their 2020 filing, however, PG&E indicated that the distribution capacity need no longer exists within the 10-year planning horizon (PG&E 2020a)." (DEIR p. 3-126.) In fact, a distribution capacity need does still exist and PG&E identified it in its 2020 GNA and DDOR. These reports state that the reasonably foreseeable distribution components of the Proposed Project are no longer considered a timely solution to this need; therefore, a planned emergency expansion of the existing San Miguel Substation in the Paso Robles DPA was identified and is being pursued instead.

The DEIR contains an incorrect statement regarding the cost effectiveness cap that would be used in the DIDF to evaluate DER alternatives to the reasonably foreseeable distribution components. The DEIR states: "As of 2019, the reasonably foreseeable distribution components associated with the Proposed Project were estimated to cost $18.5 million (CPUC 2020). For Alternative BS-2 and BS-3 to be developed through the DIDF, the cost cap would be less than this amount since the DER solution needs to be cost-effective." (DEIR p. 5-16.) PG&E agrees that any DER solution evaluated in the Distribution Resources Plan would need to be less than the cost effectiveness cap, but it is factually incorrect that the cost cap would be "less than this [$18.5 million] amount." The $18.5 million was the unit cost, not the cost cap, for the reasonably foreseeable distribution components, which is not currently a "planned investment." Instead, the annual DIDF will evaluate any new planned investment in that area, which would include the reasonably foreseeable distribution components if PG&E proposes them during that annual cycle. Any cost cap would be determined as part of that annual DIDF process. PG&E believes it is not accurate or relevant to the CEQA evaluation to introduce the incomplete $18.5M figure within this DEIR.

D. The Analysis of Alternative BS-3 Is Flawed

PG&E offers a number of comments on the DEIR's discussion of Alternative BS-3 in DEIR Chapter 3 and the supporting study, Behind-the-Meter Solar Plus Storage Adoption Propensity Analysis (BTM Analysis), provided by the CPUC as Appendix B to DEIR

Appendix B. PG&E provides detailed comments on the BTM Analysis in Attachment 2 hereto. PG&E provides a snapshot of some of the key comments here.

First, the BTM Analysis is speculative at its heart, admitting that "Economic propensity analyses simply identify customers for which it would make economic sense to adopt a technology, not necessarily what is likely to occur." (BTM Analysis p. 14). The BTM Analysis does not constitute substantial evidence that any one residential or commercial customer would decide to install a BTM BESS.

Second, the BTM Analysis overestimates the number of customers in the DPA. It states that there are approximately 75,000 customers in the DPA, whereas PG&E's records show that there are approximately 47,000 customers in the DPA. By overstating the number of customers in the DPA by nearly 60 percent, the study overestimates the number of customers for which it may make economic sense to install a BTM BESS.

Third, the hosting capacity analysis provided in the BTM Analysis is flawed because it assesses the hosting capacity of each distribution circuit in the DPA. Actual hosting capacity of a particular circuit in the DPA is limited to the hosting capacity of each segment of the circuit, which can be far lower than the theoretical hosting capacity of the circuit as a whole. For example, DEIR Table 3-20 shows an adoption potential on the Paso Robles 1102 circuit of 4.8 MW or 7.3 MW of solar plus storage for a Low or High Scenario, respectively. (DEIR p. 3-133.) In comparison, PG&E's published ICA data from October 2020 shows a maximum hosting capacity of 0.84 MW on the Paso Robles 1102 circuit. The scope and magnitude of distribution upgrades required to interconnect BESS above and beyond actual hosting capacity limits is unknown at this time, and have not been assessed in the DEIR.

Fourth, the BTM Analysis incorrectly assumes that BESSs would be able to discharge energy to PG&E's distribution system in the DPA. In fact, no commercially available residential battery storage system is currently approved to discharge to PG&E's grid.

Fifth, a master control system that the BTM Analysis and the DEIR hypothesize would be needed to coordinate the discharge of energy from BTM batteries to the grid to offset peak demand does not exist at this time. Even if the batteries were approved to discharge to the grid, this master control system is not described or evaluated in the BTM Analysis. Any control system would require telemetry from circuits/banks/various circuit locations where capacity constraints exist in order to trigger BESS dispatch to mitigate overloads. The location of the BESS would have to be sited specific to distribution facility deficiencies.

In light of the foregoing, as elaborated on in Attachment 2 hereto, the BTM Analysis in the DEIR does not constitute substantial evidence in support of Alternative BS-3.

E. The DEIR Should Clarify that the Ultimate Substation Buildout Is Speculative and Not Part of the Proposed Project

Chapters 2, 4 and 5 of the DEIR should be revised to clarify that the ultimate substation buildout is speculative and not included in the CEQA review of the Proposed Project. As PG&E

explained in its August 28, 2017 response to the Energy Division's June 29, 2017 deficiency letter, space at the proposed substation has been reserved to preserve the option of future expansion. However, such expansion may never occur; the ultimate substation buildout is not planned, designed or reasonably foreseeable. (Letter from PG&E to Energy Division, August 28, 2017, Response to Deficiency List No. 2, Item 18 at p. 17.) For that reason, PG&E marked the figures it prepared in response to the Energy Division's request to describe what the ultimate substation buildout might look like with labels describing the components as the "speculative ultimate substation components." Consistent with PG&E's description, DEIR Figure 2-18 contains the same captions describing the components for the ultimate substation buildout as speculative.

The DEIR tacitly acknowledges that the ultimate substation buildout is speculative by declining to consider the necessary line work that would be associated with such buildout: "The ultimate substation buildout would support additional distribution and power lines emanating from the Estrella Substation; however, the specific routes and lengths of these lines are not known at this time and are not evaluated in the DEIR." (DEIR p. ES-5.) The same logic applies to the substation buildout itself. CEQA does not condone an analysis of future effects that is based on speculation or conjecture. "[W]here future development is unspecified and uncertain, no purpose can be served by requiring an EIR to engage in sheer speculation as to future environmental consequences." (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3dd 692, 712.) Because the substation buildout is not reasonably foreseeable or capable of meaningful environmental review, the DEIR must not draw conclusions, make findings or impose mitigation on speculative future facilities. The dimensions of the proposed substation have been appropriately considered in the DEIR; nothing further is justified or appropriate.

F. Placing Portions of High-Voltage Power Lines Underground Would Create Reliability Concerns as well as Greater Environmental Impacts

The DEIR proposes two project alternatives – PLR-3A and PLR-3B – that add a "strategic underground section" of the Proposed Project's new, double-circuit 70 kV power line through the Golden Hill Road area of Paso Robles around San Antonio Winery. The two alternatives are similar except that Alternative PLR-3A extends underground in front of the San Antonio Winery, while PLR-3B extends behind it. The stated reason for undergrounding high-voltage lines in this location is "because this area does not have existing aboveground transmission or distribution electrical infrastructure and is an up-and-coming area with new commercial development, recreational uses, and existing single-family residential development." (DEIR, at 3-74.) In fact, the surrounding area is largely empty parcels or industrial/commercial, with only 6-9 large residences lining this 1.2-mile route. Ironically, if aesthetics is the justification, the transition stations needed at each end of the underground sections would likely create greater visual impacts in the area. Residents in the northern section of the proposed undergrounding would be burdened not only with a transition station, but also the loss of trees and other vegetation along the underground circuit routes due to the underground construction and need to keep the right of way clear of deep-rooted vegetation. (*See* Section III.C below.)

Aside from aesthetics, undergrounding sections of high-voltage transmission lines (also referred to as hybrid lines because they combine overhead and underground sections) raises the following additional concerns:

1. Limiting Transmission-Level Service Available to Large Block Loads

Installing a hybrid line could jeopardize the availability of power critical to large transmission-level block loads that may want to locate within the Golden Hill Industrial Park. First, the cost to serve a large customer from an underground transmission section of line would likely be prohibitive for the customer since one of the underground circuits would have to be looped in and out of the customer's substation facility (*see* paragraph 5 below). Moreover, serving these large transmission-level block loads with hybrid lines would be ill-advised for the reliability concerns described in paragraphs 2-3 below.

2. Lengthy Fault Outages

The DEIR alludes to the challenges of isolating faults along an underground line, and the time it could take to do so. It suggests, however, that transition stations at each end of the underground sections would address the issue of lengthy outages, which is only partially true. Transition stations with monitoring capabilities (differential type relays) would be able to determine whether a fault is located in the underground portion of the line; if it is not, local repair crews would be able to concentrate repair efforts on the overhead sections of the line and handle repairs more quickly. With differential relays detecting no faults, retesting of the underground line segment could occur as soon as the line cools – in about 30 minutes. However, if the fault is in an underground section of the lines, lengthy outages can be expected, as PG&E's transmission underground crews must travel from Daly City to the underground segment, locate the electrical fault cause, and make the repairs.

As the DEIR points out, lengthy delays would occur if transition stations are not constructed:

> Without the transition stations and their electrical current differential sensing, the underground section of line would need to remain de-energized after any circuit fault and be patrolled and inspected by an underground specialist prior to re-energizing. This means that the entire circuit would remain de-energized until the underground section can be patrolled and inspected and cleared for re-energization. This could substantially lengthen the restoration time following a circuit fault, particularly given the fact that all Pacific Gas and Electric Company (PG&E) underground specialists are located in the San Francisco Bay Area and would need to travel down to the central coast area. (DEIR pp.3-74 to 3-75.)

However, even with transition stations, a problem in the underground line section will require a lengthy trip for the troubleshooters, and a lengthy repair.

3. Dig-Ins

Unlike overhead lines, underground lines are also vulnerable to dig-ins from excavations or directional drilling. While such issues are uncommon, the outages can be lengthy. For a dig-in that takes a line out of operation, PG&E's underground crews must travel from Daly City to the underground segment, locate the electrical fault cause, and excavate to make the repairs, including cable replacement and splicing. Such a repair would take a minimum of 4 weeks.

4. Construction Impacts

It is unclear from the DEIR whether there is adequate space along the proposed routes to ensure at least 15 feet between duct banks and manholes, but this spacing would be mandatory to safely operate the lines. Closer spacing can increase heat transfer between circuits, and reduce the ampacity of each circuit, or create unsafe inducted voltages from the adjacent, energized circuit during servicing. While PG&E evaluated the conductor spacing from available above ground utility markers as part of the feasibility review, it did not conduct pot-holing to validate if there are any subsurface conflicts.

Underground construction of a double-circuit, 70 kV line will significantly extend the construction schedule, prolong construction impacts and create additional environmental impacts. Underground line construction requires three main phases, with construction of one circuit being completed before construction of the second circuit is begun.

1) Trenching/Duct Bank Installation. After the two circuit routes are marked and determined to be free of underground obstructions, the pavement or cement within the first trench line will be removed. Jackhammers will be used to break up sections of concrete that the saw-cutting and pavement-breaking machines cannot handle. The typical trench dimensions for installation of a single circuit will measure approximately 2 feet wide by 6 feet deep, although typical trench depths may vary depending on soil stability and the presence of existing substructures. The trench will be widened and shored where needed to meet California Occupational Safety and Health Administration safety requirements. Dewatering will be conducted using a pump or well points to remove water from the trench.

A maximum open trench length of 150 to 300 feet in or along the street will be typical at any one time, depending on local permitting requirements. Steel plating will be placed over the trench to maintain vehicular and pedestrian traffic across areas that are not under active construction. Traffic controls will also be implemented to direct local traffic safely around the work areas.

As the trench for the underground 70 kV cable is completed, PG&E will install the cable conduit, ground wire, and concrete conduit encasement duct bank. The duct bank typically will consist of four 6-inch-diameter polyvinyl chloride (PVC) conduits (PG&E may elect to install 1-2 spare conduits for future use). The dimensions of the duct bank will be approximately 24 inches wide by 34 inches in height. Once the PVC conduits are installed, thermal-select or controlled backfill will be transported, placed and compacted. A road base backfill or slurry concrete cap will be installed, and the road surface will be restored.

The installation of the first trench and duct bank, in or along streets, will be completed before starting the installation of the second trench due to traffic control and congestion concerns.

2) Vault Installation. Splice vaults will be installed at approximately 1,600- to 2,000-foot intervals during trenching (approximately 10-12 vaults total for this segment). The total excavation footprint for a vault will be approximately 22 feet long by 12 feet wide by 10 feet deep. Installation of each vault will occur over a one-week period with excavation and shoring of the vault pit followed by delivery and installation of the vault, filling and compacting the backfill, and repaving the excavation area. Each underground circuit will require its own set of splice vaults (5-6 vaults per circuit over the 1.2-mile route).

3) Cable Pulling, Splicing and Termination. After installation of the conduit and splice vaults, PG&E will install cables in the duct banks. Each cable segment will be pulled into the duct bank, spliced at each of the vaults along the route, and terminated at the transition stations.

As noted in the DEIR, construction of the underground segment would take approximately one year (DEIR p. 3-86), adding approximately 9-12 months to the Project construction schedule. Traffic, air quality, noise and other construction impacts would be shared by residents and businesses in the area.

5. Excessive Increased Cost of Undergrounding

The DEIR cost estimates (Table 5-3, Alternative 1 Combination with Undergrounding) appear incorrect. The table indicates a 1.1-mile underground segment, while actually the segment is 1.2 miles long. Therefore, using the DEIR per mile cost, the resulting cost of undergrounding 1.2 miles would be $21.2 million. However, according to PG&E experts, the per mile cost shown in Table 5-3 would be for a single circuit. The cost to install both circuits underground (which are in entirely different trenches at least 15 feet apart) would be over $40 million. The cost for the 1.2-mile underground segment would be approximately 12 times the cost of 1.2 miles of the new overhead circuits (a $3.6 million cost for the 1.2-mile, overhead, double circuit section is derived from DEIR Table 5-3). The extremely high cost to install underground transmission lines is unwarranted here and would be an unfair burden on ratepayers.

G. Mitigation Measures Should Not Apply To the Reasonably Foreseeable Distribution Components Because the PTCs Will Not Authorize Their Construction

The PTCs sought by the Applicants do not include authorization for PG&E to construct the reasonably foreseeable distribution components. The mitigation measures in the PTCs will apply to the project components Applicants are authorized to construct under the PTCs. Because PG&E is not seeking authority to construct the reasonably foreseeable distribution components under the PTCs, mitigation measures imposed under the PTCs should not apply to the reasonably foreseeable distribution components. For example, Mitigation Measure HYD/WQ-1 should be deleted. In addition, all references to "RFDC" in the "Applicability" column of the Mitigation Monitoring and Reporting Plan (DEIR Appendix F) should be deleted. PG&E will comply with all applicable laws and regulations if and when it constructs the distribution components, and will implement appropriate APMs, including those described in the DEIR if applicable at the time.

III. Comments on Impact Analysis and Mitigation Measures

A. Because Impact AG-1 Is Not a Significant and Unavoidable Impact, Mitigation Measure AG-1 Should Be Removed or Revised To Be More Practicable

1. The Permanent Conversion of Farmland Resulting from the Proposed Project Is Below the Significance Threshold Used Previously by the CPUC, Which Should Be Used Here

The CPUC determined that the Proposed Project's permanent conversion of 2.66 acres of Farmland of Statewide Importance, 11.70 acres of Unique Farmland and less than 0.01 acres of Prime Farmland is a significant and unavoidable impact. This conclusion is at odds with the threshold of significance applied by the CPUC in several recent siting cases. The CPUC appears to have interpreted the question posed in CEQA Guidelines Appendix G—whether the Proposed Project would "Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance . . . to nonagricultural use"—to be a significance threshold so that any amount greater than zero acres of permanent conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance is a significant impact. However, the first paragraph of Appendix G: Environmental Checklist Form of the CEQA Guidelines specifically notes that "the sample questions in [Appendix G] are intended to encourage thoughtful assessment of impacts, and do not necessarily represent thresholds of significance." Subsequent caselaw confirms that lead agencies are not required to use any of the questions in the checklist as standards of significance and may develop their own thresholds instead. *See e.g., San Francisco Baykeeper, Inc. v State Lands Comm'n* (2015) 242 CA4th 202, 227; *Save Cuyama Valley v County of Santa Barbara* (2013) 213 CA4th 1059, 1068; *Mount Shasta Bioregional Ecology Ctr. v County of Siskiyou* (2012) 210 CA4th 184, 205.

The significance threshold applied here contrasts with other siting proceedings in which the CPUC applied a standard of significance for permanent impacts to agricultural resources based on the Williamson Act's declaration that farmland is large enough to sustain agricultural use if it is at least 10 acres of prime farmland or at least 40 acres for land that is not prime farmland. Cal. Government Code § 51222. S*ee* Shepherd Substation Project IS/MND (May 2012)), pp. 3.2-8 to 3.2-9; Sanger Substation Expansion Project IS/MND (March 2017), p. 5.2-4; Gill Ranch Gas Storage Project Final Initial Study/MND (September 2009); SCE's Devers-Palo Verde No. 2 Transmission Line Project EIR (October 2006). *See also* SCE's Antelope-Vincent 500 kV Project, where the CPUC found that the total amount of Prime Agricultural Land that would be permanently disturbed could exceed "the 10 acres for Prime Farmland that has been established as the threshold level of significance for conflicting with a Williamson Act contract, thereby resulting in significant and unavoidable impacts." (D.07-03-045, March 15, 2007.) In other projects, the CPUC simply found the amount of converted farmland negligible compared to the amount of farmland available in the county-wide area. *See* Fulton-Fitch Mountain Reconductoring Project IS/MND (October 2017), p. 3.2-7; SCE Valley-Ivyglen and Alberhill Projects' combined EIR (April 2017), p. 4.2-6.

The significance threshold in these prior cases is far more reasonable than the illogical threshold proposed in the DEIR. The "greater-than-zero" threshold applied in the DEIR would result in a significant impact finding for any project that permanently converts any measurable amount of Prime Farmland, Unique Farmland or Farmland of Statewide Importance, potentially triggering an EIR for most projects that currently could be analyzed with an mitigated negative declaration (MND). Applying instead the significance threshold endorsed by the CPUC in the Sanger Project and other projects mentioned above, the proposed Estrella Substation site – which would permanently convert 14.36 acres of Farmland of Statewide Importance and Unique Farmland and less than 0.01 acres of Prime Farmland – would be less than the 10-acre significance threshold for prime farmland and less than the 40-acre significance threshold for non-prime farmland. In short, under this threshold, substation construction would not result in a significant conversion of agricultural resources.

The DEIR's analysis of agricultural impacts of the proposed 70 kV line demonstrates the absurdity of relying on the greater-than-zero significance threshold. The DEIR concludes that the proposed power line route would result in a significant impact to agricultural resources because it would convert less than 0.01 acres of Prime Farmland, less than 0.01 acres of Farmland of Statewide Importance, and approximately 0.06 acres of Unique Farmland.[3] Under the significance threshold adopted by the CPUC on previous projects, and under any logical analysis, these minimal conversions of farmland due to construction of the 70 kV line would be found less than significant.

2. In Finding Conservation Easements Insufficient Mitigation for Impacts Due to Farmland Conversion, the DEIR Ignores the 2018 Amendment to the CEQA Guidelines' Definition of Mitigation

Even if there were a significant impact due to farmland conversion, the DEIR is mistaken in concluding that Mitigation Measure AG-1 would not reduce it to a less-than-significant level. Given the 2018 amendments to the definition of mitigation in the CEQA Guidelines,[4] as explained by the California Natural Resources Agency and endorsed by the Department of

[3] The DEIR also fails to consider the Unique Farmland and Farmland of Statewide Importance that would be restored following the removal of the existing distribution poles and the existing 230 kV tower located in the general vicinity of the proposed Estrella Substation. Four existing poles to be removed are located on Unique Farmland and four are located on Farmland of Statewide Importance. The existing 230 kV tower to be removed is located in Unique Farmland. Agricultural crops were previously removed within an area around each existing distribution pole equal to approximately 10 feet in diameter, returning this area back to agricultural use would result in a net reduction of permanent impacts by approximately 314 square feet of Unique Farmland and 314 square feet Farmland of Statewide Importance. Agricultural crops were previously removed within an approximately 100-foot by 50-foot area around the existing 230 kV tower, returning this area back to agricultural use would result in a net reduction of permanent impacts by approximately 5,000 square feet (0.12 acre) of Unique Farmland. The DEIR should be revised to account for this restored farmland.

[4] On December 28, 2018, Section 15370(e) of the CEQA Guidelines was revised to define mitigation as: "Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements." (Underlining to show new text.) The revised version of Section 15370(e) applies to this DEIR because they were in effect when the document was sent out for public review in December 2020. The revised definition places establishment of conservation easements on the same footing as replacing or providing substitute resources when it comes to the adequacy of the mitigation; it does not create a second-tier level of mitigation for conservation easements.

Conservation,[5] conservation easements are appropriate and available to mitigate significant impacts from the loss of farmland.

To conclude otherwise could establish a precedent that mandates a significant and unavoidable impact finding for any project that permanently converts any measurable amount of Prime Farmland, Unique Farmland or Farmland of Statewide importance, triggering an EIR for numerous projects that could otherwise be analyzed with an MND. In light of the revised definition of mitigation in CEQA Guidelines Section 15370(e), statements by the California Natural Resources Agency in the FSOR, observations by the Department of Conservation, and the far reaching consequences of maintaining the current analysis, the CPUC should acknowledge that conservation easements such as those proposed in Mitigation Measure AG-1 can be used to reduce significant impacts due to farmland conversion – when needed – to a less-than-significant level.

While PG&E disagrees that the Project would create a significant impact due to farmland conversion, PG&E is willing to implement Mitigation Measure AG-1 for the Proposed Project (with revisions – see comment below) in recognition that the Project will cause some loss of farmland. PG&E will contribute funds or otherwise arrange for creation of conservations easements equal to the acreage impacted by its part of the Proposed Project to ensure the protection and preservation of high-quality farmlands elsewhere in San Luis Obispo County. PG&E believes that Mitigation Measure AG-1 would further reduce less-than-significant impacts due to farmland conversion.

3. Mitigation Measure AG-1 Needs Revision To Be Practicable

To the extent that Mitigation Measure AG-1 is required, PG&E concurs in the comments by HWT regarding text changes that should be made to Mitigation Measure AG-1 to make it more practicable and effective. Specifically, the measure should be revised to allow HWT and PG&E to utilize other comparable mitigation measures that would achieve conservation easements for farmland, such as through agreements with landowners to establish and record a

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[5] The California Natural Resources Agency stated in its Final Statement of Reasons (FSOR) document for the December 2018 revisions to the CEQA Guidelines that it revised the definition of Section 15370(e) to incorporate the holding in *Masonite Corporation v. County of Mendocino* (2013) 218 Cal.App.4th 230, in which the First Circuit "ruled that off-site agricultural conservation easements constitute a potential means to mitigate for direct, in addition to cumulative and indirect, impacts to farmland. The court stated that although such easements do not replace lost onsite resources, they 'may appropriately mitigate for the direct loss of farmland when a project converts agricultural land to a nonagricultural use….'" (FSOR at 92-93.) The Natural Resources Agency also notes that conservation easements are commonly used to mitigate impacts to other resources, such as biological resources. (FSOR at 93.)

The Department of Conservation also notes that conservation easements are commonly used to mitigate impacts to farmland. "Conservation easements are an available mitigation tool and considered a standard practice in many areas of the State. As such, the Department advises the use of permanent agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land. Conservation easements will protect a portion of those remaining land resources and lessen project impacts in accordance with CEQA Guidelines § 15370. The Department highlights this measure because of its acceptance and use by lead agencies." (Department of Conservation website: https://www.conservation.ca.gov/dlrp/Pages/CA-Environmental-Quality-Act-(CEQA)-.aspx (visited on February 9, 2021).

conservation easement, or through contributions to a local agency to achieve the agricultural land conservation requirement. Proposed text changes to Mitigation Measure AG-1 are as follows:

> HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.

B. CPUC's Analysis of Aesthetic Impacts for the Proposed Power Line Route Improperly Considers Private Views as Determining Factors of Significance

Within the Golden Hill Road area north of State Route (SR-) 46, the proposed 70 kV power line route would traverse a commercial/industrial area. Overhead power lines are common features within commercial/industrial areas and align with viewer expectations, resulting in less severe changes to visual character and quality than if constructed in a more rural area that tends to lack engineered landscape features. Because commercial/industrial areas typically have low viewer sensitivity, the Applicants strategically selected this portion of the proposed route to avoid sensitive viewers to the maximum extent possible. The route was further modified to avoid other potentially visually sensitive land uses such as the San Antonio Winery. North of the San Antonio Winery, the proposed route parallels Golden Hill Road.

The DEIR finds that the portion of the proposed route running north of San Antonio Winery parallel to Golden Hill Road would cause a significant and unavoidable aesthetic impact. The DEIR cites the moderate-to-high visual quality of the area, lack of existing power line infrastructure, and presence of the Cava Robles Recreational Vehicle (RV) Park property to the east as supporting evidence. (DEIR p.4.1-41.)

While the area does contain moderate-to-high visual quality and lacks existing power line infrastructure, the presence of the Cava Robles RV Park in the vicinity of the proposed route should not be a basis for determining visual significance. First, as the DEIR acknowledges at page 4.1-38, the significance criterion under which the DEIR found a significant and unavoidable impact (criterion c) only protects public views. (*See* CEQA Guidelines, App. G, §I.c (rev. effective 12-28-2018); *see also Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal. App. 4th 477, 492 ("question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons").) Because Cava Robles RV Park is a private recreational facility, it should not be a factor in the DEIR's determination of significance. Second, the DEIR states that the Cava Robles RV park is designated as Parks and Open Space by the City of Paso Robles, seeming to imply that the power line would be visually incompatible with this land use designation even though the power line would not cross Cava Robles RV Park property. The fact that the power line would be sited outside the RV park should preclude the CPUC from relying on its land use designation to identify an incompatible aesthetic impact of an adjacent use. For these reasons, the DEIR improperly considers the proximity of the Parks and Open Space designation as a contributing factor in its determination of significance.

The removal of Cava Robles RV Park from consideration in the aesthetics analysis would leave only the moderate-to-high visual quality and lack of existing power line infrastructure along Golden Hill Road as the sole determinants of the impact determination. The significant impact identified at Key Observation Point (KOP) 6 should be weighed against the entirety of the proposed route, which the DEIR acknowledges would result in only incremental impacts. (DEIR p. 4.1-41.) Accordingly, PG&E disagrees with the CPUC's significant and unavoidable impact determination.

C. The DEIR's Analysis of Alternatives PLR-3A and PLR-3B Does Not Adequately Consider Impacts to Aesthetics, Noise, Air Quality, and Biological Resources, Which Indicate that these Alternatives Are Not Environmentally Preferable to the Proposed Project

The DEIR concludes that Alternatives PLR-3A and PLR-3B (referred to in this comment as Alternative PLR-3 for simplicity) would avoid the significant adverse aesthetic effects identified along Golden Hill Road and, as a whole, are environmentally preferable to constructing the proposed overhead 70 kV line. This conclusion is inconsistent with the aesthetic, noise, air quality and biological resource impacts of Alternative PLR-3 identified in the DEIR.

The DEIR fails to adequately account for the visual impacts resulting from the two 150-foot by 150-foot transition stations that would need to be constructed at each end of the underground segment, particularly from the visual impact of the northern transition station. The northern transition station would permanently impact approximately 0.5 acres of blue oak woodland habitat, including removal of up to 47 oak trees, which the DEIR neglected to consider from an aesthetics perspective. Further, the northern transition station would introduce industrial facilities into an area that currently lacks utility infrastructure, a circumstance that was considered a key determinant of the significant and unavoidable impact determination for the proposed route of the overhead line. In addition, constructing the underground 70 kV circuits would require the permanent removal of the strip of oak trees north of KOP 6, resulting in a permanent aesthetic impact. As such, the DEIR applies an inconsistent standard of review when evaluating the significance of aesthetic impacts between Alternative PLR-3 and the proposed route.

The DEIR does not adequately consider the increased permanent impacts to noise that would result from operation of the northern transition station. The transition stations would include an HVAC unit, which would be a permanent source of noise. Because the northern facility would be located within 50 feet of a residence and within 300 feet of the Cava Robles RV Park, this permanent source of noise should be disclosed in the DEIR and accounted for in the comparison of Alternative PLR-3 to the proposed above-ground 70 kV line in this area.

The DEIR does not adequately consider the impacts from fugitive dust and diesel particulate matter on the Cava Robles RV Park or Circle B HOA residents. The DEIR states: "However, the limited construction duration in any particular location and relatively sparsely populated area surrounding the Alternative PLR-3 alignments (both options) would result in low potential for fugitive dust or diesel particulate matter (DPM) to impact sensitive receptors during construction." (DEIR, p. 4.3-24.) While it is true the area is relatively sparsely populated, the Cava Robles RV Park and Circle B HOA are in close vicinity to the alignments. Guests and residents would be exposed to fugitive dust and DPM for several months longer than they would during construction of the proposed above-ground 70 kV line.

Regarding biological resources, the construction of the northern transition station would result in the permanent loss of foraging habitat for special-status raptors. The loss of foraging habitat and its effect on special-status raptors was not analyzed in the DEIR. Further, the DEIR's assertion that Alternative PLR-3 would reduce significant impacts on special-status raptors due to reduced potential to cause electrocution or collision hazards for birds fails to acknowledge that these impacts can be reduced to less than significant levels with implementation of PG&E's Avian Protection Plan, which is equal to or greater than the standards provided in the Suggested Practices for Avian Protection on Power Lines.

In summary, the permanent aesthetic, noise, air quality and biological impacts of Alternative PLR-3 must be taken into consideration in the DEIR. Based on these impacts, Alternative PLR-3 is not environmentally preferable to the Proposed Project.

D. PG&E's Updated Assumptions on Helicopter Use and Other Construction Details Change the Air Quality Impact Determination to Less than Significant With Mitigation

The DEIR overestimates the air quality emissions from the Proposed Project based on exaggerated assumptions about helicopter use: "The helicopter was assumed to operate for 132 days with up to 10-hour days and it was assumed to have up to 20 LTOs [landing take offs] per day." (DEIR p. 4.3-12.) In fact, both the usage and the trips will be substantially less. The PEA stated that "helicopter activities will be limited (where access or local terrain conditions prohibit the work from being conducted by ground-based crews and equipment, or during conductor installation and removal activities)," (PEA p. 3.3-21), and did not estimate daily hours or trips. However, the PEA did estimate that helicopters would be used "for about 132 days during the 7-month construction period." (*Id*.) With the latest project information available, PG&E was able to revise and clarify previous assumptions about helicopter use for greater accuracy (*see* Attachment 4 hereto [Helicopter Noise Analysis]). Under these updated calculations, the light/medium lift helicopter (only required for the 70 kV Power Line Conductor Installation) is assumed to operate for 6 days with approximately 4.3-hour days and have up to 10 LTOs per day. The heavy lift helicopter (only required for the Reconductoring Segment Pole Installation / Transfer Distribution / Pole Removal) is assumed to operate for 5 days with approximately 2.5-hour days and have up to 14 LTOs per day.

The construction schedule was also updated to account for the phasing of construction and the addition of one week of grading at the 230 kV substation. The number of truck trips for the 230 kV substation was also updated based on reduced distance for delivery of aggregate materials during the Access Roads phase, increased number of trips for material deliveries during the Foundation Construction phase, reduced distance for water delivery due to use of the well adjacent to the site (except for the Control Enclosure Delivery and Installation and Testing and Commissioning phases), and addition of trips for the top soil reuse during the Cleanup and Restoration phase.

With these updated assumptions, the air quality impacts and greenhouse gas emissions were recalculated to account for the changes to helicopter use, schedule and trips, as well as the emissions reductions from implementation of APMs and mitigation measures (*see* Attachment 3 hereto [Revised Air Quality Analysis]). The revised calculations indicate that air quality and greenhouse gas impacts would be less than significant with implementation of the APMs.

Under the original calculations, the DEIR concludes that reactive organic gas (ROG) and nitrogen oxides (NOX) emissions would be significant even with the implementation of mitigation measures:

> Even with the implementation of APM measures, construction-related ROG and NOX emissions threshold exceedances would be considered a significant impact. Mitigation Measure AIR-1 [sic] is proposed to reduce potentially significant impacts, requiring implementation of SLOCAPCD standard mitigation measures, BACT, and preparation of a site-specific CAMP that must be reviewed and approved by the APCD prior to the start of construction. The CAMP would be a comprehensive document that captures all pollutant emission reduction measures to be implemented for the approved project. Approval by the APCD would ensure all feasible and appropriate mitigation measures have been incorporated.
>
> Even with implementation of Mitigation Measure AIR-1 [sic], ROG and NOX emissions would still be expected to exceed significance thresholds; therefore, this impact would result in a cumulatively considerable increase in criteria pollutants for which the region is in non-attainment, and the impact remains significant and unavoidable. (DEIR p. 4.3-17.)

The basis for this significant impact determination is not substantiated because the DEIR does not quantify mitigated emissions. In any event, with the revised calculations, the Proposed Project will not exceed the daily or quarterly threshold for ROG and NOX emissions.

The Final EIR should be updated to incorporate these revised calculations and MM AQ-1 should be deleted.

E. PG&E's Revised Noise Analysis Shows that Helicopter Noise Impacts Are Less than Significant with Mitigation, Not Significant and Unavoidable

The DEIR uses the Federal Transit Administration (FTA) guidelines in the Transit Noise and Vibration Impact Assessment Manual to evaluate the significance of construction noise impacts; however, this manual is for transit projects and is inappropriate for determining the noise threshold of significance for the proposed utility project. Significance criterion a asks if the project would result in the "Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance <u>or in the applicable standards of other agencies</u>." (Emphasis added.) As stated in the DEIR, "No federal laws, regulations, or policies for construction-related noise and vibration apply to the Proposed Project" (DEIR p. 4.13-4) and the FTA guidelines are not applicable to utility projects. Therefore, the Project would not increase ambient noise levels above any applicable standards and the DEIR should have found a less-than-significant impact under criterion a.

Even if the FTA guidelines were applicable, the DEIR's reference to the construction noise criteria of 90 A-weighted decibel (dBA) equivalent sound level (L_{eq}) for residential land uses is misleading. It does not specify that the criteria is 90 dBA $L_{eq(1hr)}$, which is the A-weighted equivalent sound level metric normalized over a one-hour time period, not an instantaneous value.

As stated previously, the helicopter assumptions in the DEIR are inaccurate and resulted in an overestimate of the helicopter noise levels. PG&E has updated and clarified the assumptions about helicopter use and recalculated the noise levels in Attachment 4 hereto (Helicopter Noise Analysis). As a result of the reduced helicopter use, the distance from the helicopter activities to 90 dBA $L_{eq(1hr)}$ is substantially reduced. As described in the DEIR, there are residences as close as 100 feet to planned helicopter landing zones in this area and helicopters operating above pole installation locations could be as close as approximately 250 feet to residences. The light/medium lift helicopter to be used for the installation of conductor on the New 70 kV Power Line will not result in noise levels above 90 dBA $L_{eq(1hr)}$ at any distance. The heavy lift helicopter to be used for the Pole Installation / Transfer Distribution / Pole Removal on the Reconductoring Segment will not result in noise levels above 90 dBA $L_{eq(1hr)}$ at the residences from the helicopter landing zones or the pole installation locations, but may result in noise levels above 90 dBA $L_{eq(1hr)}$ for brief time periods at sensitive receptors along or within 858 feet of the flight paths. Travel along the flight paths will require less than two hours per day for five days and will move regularly along the flight paths. Due to the limited duration of travel along the flight paths, the mobile nature of the flights, implementation of APM

NOI-1 (Construction Schedule Limits) and APM AG-1 (Coordinate with Landowners, Farmers, and Ranchers Regarding Construction Activities), implementation of Mitigation Measure NOI-2 (as modified in Attachment 1 hereto [Text Corrections and Requests for Clarification]), and the inapplicability of the FTA noise threshold, residences along helicopter flight paths for the Reconductoring Segment would not experience significant helicopter noise impacts. As a result, noise impacts from helicopter use will be less than significant with the implementation of these measures.

Using the updated helicopter assumptions and recalculated noise levels, the distances referenced in Mitigation Measure NOI-2 must be revised. Mitigation Measure NOI-2 should also be revised because securing written permission from sensitive receptors is not feasible and helicopters are required for construction. Accordingly, Mitigation Measure NOI-2 should be revised as follows:

> *~~HWT and~~ PG&E shall implement the following procedures for helicopter activities:*
>
> - *Public Notice. Residences and places of worship (e.g., The Cove) within ~~1450~~ 858 feet from ~~any location where helicopter activities may occur, including~~ flight paths ~~if applicable,~~ shall be provided ~~written~~ notice at least ~~30~~ 14 days prior to beginning heavy lift helicopter activities to inform them of the schedule for helicopter use and potential noise disruptions. Methods for receptors to reduce noise in structures shall be included in the notice (i.e., closing doors and windows facing the alignment). The notice shall describe procedures for submitting any noise complaints during construction and provide a phone number for submitting such complaints, as required by MM NOI-1.*
> - *Flight Paths. Helicopter flight paths shall be planned along routes that would result in the least noise exposure possible to receptors. If helicopter noise complaints are received, work crews will attempt to adjust the flight paths to reduce noise exposure to the complainant, without substantially increasing noise exposure to other receptors.*
> - *Helicopter Hovering. ~~Light/medium~~ Heavy lift helicopters shall not operate closer than ~~200~~ 100 feet from any receptors unless actively working at pole locations along the alignment. Helicopters may operate closer than these distances if all affected receptors are notified ~~agree in writing to a shorter distance~~. Prior to reducing the minimum distance from receptors, PG&E shall provide the CPUC with the names~~,~~ and contact information~~, and written agreements~~ for all affected persons notified within the applicable distances. ~~The written agreements shall clearly identify the anticipated helicopter noise levels, daily schedule, and duration of helicopter activities in the vicinity.~~*
> - *Helicopter Landing Zones. Helicopter landing zones within staging areas shall be positioned as far as possible from receptors. Helicopter landing zones shall not be positioned closer than ~~1,450~~ 100 feet from any receptor.*

> *Helicopters may land closer than these distances if all affected receptors <u>are notified</u> ~~agree in writing to allow a shorter distance~~.*

F. The Mitigation Monitoring and Reporting Program Should Be Revised to Eliminate Certain Conditions and Clarify Which Applicant Each Mitigation Measure Applies To

The mitigation measures should be drafted so that it is clear which applicant is obligated to comply with each measure and which project component the mitigation measure applies to. PG&E recognizes that sometimes a mitigation measure will apply to both applicants and/or all project components, however certain mitigation measures should be revised to correctly state which applicant is responsible for implementing the measure.

1. Mitigation Measure BIO-3 Requires Clarification

First, this mitigation measure only applies to PG&E because HWT is not constructing any of the 230 kV interconnection or the 70 kV powerline.

Second, it is unnecessary for PG&E to create an additional project-specific Avian Protection Plan (APP) document to detail avian-safe construction standards for the Proposed Project. PG&E will implement the company's Avian Protection standards, which are consistent with the Avian Power Line Interaction Committee's (APLICs) guidelines (APLIC 2006 and APLIC 2012) and are tested and considered in conjunction with other required power line engineering standards. PG&E funds an annual bird-safe retrofit program and builds new construction to raptor-safe standards as outlined in the APLIC guidance. Potential impacts will be further minimized by the installation of specular conductor that will be more visible for the birds and allow them time to adjust to the new facilities. In addition, avian protection measures outlined in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) will be implemented. Therefore, PG&E proposes that the text of Mitigation Measure BIO-3 be revised as follows:

> "*In conjunction with these publications, ~~HWT and~~ PG&E shall be responsible for <u>implementing the company's</u> ~~creating an~~ Avian Protection ~~Plan (APP~~) <u>standards</u> that incorporates relevant ~~project-specific~~ <u>raptor-safe construction</u> guidelines found in APLIC's and USFWS' 200~~5~~<u>6</u> Avian Protection Plan Guidelines*."

Third, Mitigation Measure BIO-3 should be revised to clarify that it does not apply to the 230 kV interconnection. APLIC does not have phase to phase recommendations for high voltage lines in the 230kV range, since the spacing between higher voltage lines is such that it does not present a substantial threat of bird electrocution, even for larger species. Because there are no guidelines, there is no way to design the 230kV interconnection to APLIC standards.

Lastly, Mitigation Measure BIO-3 requires coordination and approval from CDFW and/or USFWS when no-disturbance buffers are reduced. It is not appropriate or feasible for PG&E to seek approvals for buffer reductions pertaining to individual nests from CDFW or USFWS, as there is no specific mechanism (beyond California Fish and Game Code or

Migratory Bird Treaty Act take prohibitions) for either agency to grant approvals for particular nest buffer distance reductions. Therefore, the text of Mitigation Measure BIO-3 should be revised as follows:

> "*If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive in accordance with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA) as detailed in APM Bio-2. If operational construction activities must occur within this buffer, the biologist shall inform ~~coordinate with~~ CPUC, CDFW and, as necessary, USFWS as to the details of the ~~determine~~ buffer reductions and/or nest monitoring to avoid impacts to active nests*."

2. Mitigation Measure TR-1 Must Be Revised To Acknowledge that Each Encroachment Permit Obtained by the Applicants Will Require the Preparation of a Traffic Control Plan

Mitigation Measure TR-1 is unworkable as written because it would require the Applicants to develop a single traffic control plan. The Applicants will need to obtain numerous encroachment permits, including multiple permits each from CalTrans, San Luis Obispo County and the City of Paso Robles, over the course of constructing the Proposed Project. Each encroachment permit will require the preparation of a traffic control plan that is specifically tailored to the location of the encroachment, the traffic conditions during that time of the year, the time of day during which construction activities will occur, the nature of the construction activities themselves, and the requirements of the agency issuing the encroachment permit. This is why it is not possible to develop a single traffic control plan that would satisfy the requirements of all of the encroachment permits that the Applicants must obtain.

Accordingly, Mitigation Measure TR-1 should be revised as follows:

> *HWT and PG&E shall each implement ~~a~~ traffic control plans ~~during Proposed Project construction and/or during construction of the reasonably foreseeable distribution components or selected alternative. The traffic control plan will minimize vehicle travel delays and potential roadway hazards on public roadways during construction activities. The traffic control plan may be used to satisfy requirements imposed in~~ in accordance with the applicable encroachment permits ~~from~~ issued by Caltrans, County of San Luis Obispo, and/or City of Paso Robles. The traffic control plans may ~~shall~~ provide for the following, as required by the relevant agency:*
>
> - *In situations where slow-moving trucks or construction equipment are operated on public roadways (e.g., accessing the Estrella Substation site or staging or work areas along the Proposed Project's 70 kV power line route), signage and/or flaggers shall be used to warn motorists of potential safety hazards associated with the slow- moving vehicles.*
> - *For any lane closures, signage, flaggers, and/or other devices shall be used to route vehicle traffic around the construction work area. The traffic control*

measures shall ensure that pedestrians and bicyclists are provided safe passage around the work area, where applicable.

- *For any road closures, detours will be provided and signage, flaggers, and/or other devices shall be used to ensure motorists, pedestrians, and bicyclists are able to safely pass through the detour areas.*
- *Protocols from the applicable agencies to notify police, fire, and other emergency services departments serving the area ~~shall be notified~~ of planned lane or road closures on public roadways at least 48 hours in advance.*
- *Crossing structure installation and, or traffic control for conductor crossings shall occur during periods of low traffic (e.g., avoiding the morning and evening rush hour periods) to the extent practicable.*
- *All warning signs, lights, devices, and procedures used in the construction traffic control plan shall conform to the latest California Manual of Uniform Traffic Control Devices.*

The Applicants can provide the CPUC copies of the various traffic control plans submitted to the agencies upon request.

3. Mitigation Measure NOI-1 Should Not Apply to Ground-Level Construction Activities

Page 4.13-18 of the DEIR states that "ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously)." Despite the DEIR's finding of less than significant for ground-level construction noise, the DEIR applies Mitigation Measure NOI-1 to all construction activities (DEIR p. 4.13-18). The DEIR provides no rationale for applying this mitigation measure to all construction activities, and this requirement is unnecessary, especially given that PG&E will implement APM NOI-1 and APM NOI-2 to reduce already less than significant ground level construction noise. Nothing more is required or authorized by CEQA. Accordingly, Mitigation Measure NOI-1 should be revised to not apply to ground-level construction noise.

* * * * *

Thank you for considering PG&E's comments. Please do not hesitate to contact me with any questions.

Very truly yours,

/s/ Mathew Swain

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Attachments: Additional Documents Provided With This Letter:

Attachment 1: **Table of Text Corrections and Requests for Clarification**

Attachment 2: **Comments on Behind the Meter Analysis**

Attachment 3: **Revised Air Quality Analysis**

Attachment 4: **Revised Helicopter Noise Analysis**

Attachment 1

Text Revisions and Requests for Clarification

Page	Draft EIR Language	Comments
Executive Summary		
ES-6	Proposed Project construction activities would include site preparation, excavation, installation of equipment and structures, and restoration. Construction of the Estrella Substation would require a survey marking staging areas and work areas, establishment of the private access road, vegetation clearance, fencing installation, grading, installation of culverts and swales, excavation of foundations, installation of facilities, and cleanup and post-construction restoration.	A land survey would not be required to mark staging areas and work areas. Revise text as follows: Proposed Project construction activities would include site preparation, excavation, installation of equipment and structures, and restoration. Construction of the Estrella Substation would require ~~a survey~~ ~~marking~~ staging areas and work areas, establishment of the private access road, vegetation clearance, fencing installation, grading, installation of culverts and swales, excavation of foundations, installation of facilities, and cleanup and post-construction restoration.
ES-11	Under the No Project Alternative, HWT and PG&E would not construct or operate the substation or new and reconductored 70 kV power line segments. The No Project Alternative would not provide transmission system redundancy, increased distribution capacity or improved electrical service reliability, and would not meet any of the project objectives.	Also supports reliability objective.
ES-11	The Bonel Ranch site is located within the County of San Luis Obispo North County Planning Area, El Pomar-Estrella Sub Area, and is currently used to grow alfalfa.	The sub areas are not described for the other substation sites in the Executive Summary chapter. Delete reference for consistency. Revise text as follows: The Bonel Ranch site is located within the County of San Luis Obispo North County Planning Area, ~~El Pomar-Estrella Sub Area~~, and is currently used to grow alfalfa.
ES-15	CEQA Guidelines Section 15123(b) requires that an Executive Summary identify "areas of controversy known to a lead agency including issues raised by agencies and the public." To date, a number of issues have been raised regarding the Proposed Project which may be considered controversial, including the following: Potential for overhead power lines to result in various environmental and societal impacts, including aesthetic impacts, fire risk, hazards associated with electromagnetic fields (EMFs), decreased property values, noise impacts, and interference with helicopters used in firefighting.	The EIR should clarify that EMFs and property value considerations fall outside the scope of CEQA. Revise text as follows: CEQA Guidelines Section 15123(b) requires that an Executive Summary identify "areas of controversy known to a lead agency including issues raised by agencies and the public." To date, a number of issues have been raised regarding the Proposed Project which may be considered controversial, including the following: Potential for overhead power lines to result in various environmental and societal impacts, including aesthetic impacts, fire risk, hazards associated with electromagnetic fields (EMFs), decreased property values, noise impacts, and interference with helicopters used in firefighting. However, CEQA is concerned with impacts on the physical environment; therefore, issues related to EMFs and decreased property values are outside the scope of this EIR.
Chapter 1 - Introduction		
1-1	Per CEQA Guidelines section 15022, CEQA's basic purposes are to:	The CEQA Guidelines citation is incorrect. Revise text as follows: Per CEQA Guidelines section ~~15022~~ 15002, CEQA's basic purposes are to:
Chapter 2 – Project Description		
2-13	Table 2-4, Footnote 3: "The original 190.14 MW from 2016 has been corrected to reflect the true value of 185.50."	This clarification was made by PG&E in Appendix G to explain the change from previous versions; however, without the original version, this footnote may cause confusion to the public. This footnote should be removed. Remove the following text:: ~~The original 190.14 MW from 2016 has been corrected to reflect the true value of 185.50."~~
2-18	PG&E to construct, own and operate a new 230 kV transmission line interconnection that will loop the existing Gates-Morro Bay 230kV into Estrella.	The name of the transmission line has changed. Revise text as follows: PG&E to construct, own and operate a new 230 kV transmission line interconnection that will loop the existing ~~Gates~~-Morro Bay-California Flats 230 kV transmission line into Estrella Substation.
2-21	Power would be supplied by tapping into the existing PG&E Gates- Morro Bay 230kV power line adjacent to the HWT substation site.	The name of the transmission line has changed. Revise text as follows: Power would be supplied by tapping into the existing PG&E ~~Gates-~~ Morro Bay-California Flats 230 kV ~~power~~ transmission line adjacent to the HWT substation site.

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2-61	Once all of the environmental permits from the applicable siting and regulatory agencies have been obtained, and grading and drainage has been constructed for the entire substation site, HWT would sell PG&E the land necessary for construction of the 70 kV substation and 230 kV interconnection.	Revise text as follows: Once all of the environmental permits from the applicable siting and regulatory agencies have been obtained, and grading and drainage has been constructed for the entire substation site, HWT would sell the land and/or grant easements to PG&E ~~the land~~ necessary for construction of the 70 kV substation and 230 kV interconnection.
2-61 and 2-62	Two additional LSTs would be used to complete the interconnection and would be installed on the parcel that would be acquired for the development of Estrella Substation.	Revise text as follows: Two additional LSTs or TSPs would be used to complete the interconnection and would be installed on the parcel that would be acquired for the development of Estrella Substation.
2-63	Site construction fencing would be installed during the site preparation stage, and would require digging to a depth of 4 feet to install fencing anchors.	As stated in our comments on the Draft Project Description, construction fencing would require digging to a depth of 5 feet to install fence footings. Revise text as follows: Site construction fencing would be installed during the site preparation stage, and would require digging to a depth of ~~4~~ 5 feet to install fence~~ing~~ ~~anchors~~ footings.
2-64	The control house will be delivered and installed on concrete piers.	The control house will be installed on a concrete slab. Revise as follows: The control house will be delivered and installed on a concrete ~~piers~~ slab.
2-65	The OPGW at each new tower would be secured, an existing LST would be removed, and two LSTs would be installed for the Estrella Substation interconnection.	Changes made to be consistent with Section 2.4 Easement Requirements Revise text as follows: • The OPGW at each new tower would be secured~~,~~ • The relocated 230 kV tower and three LSTs associated with the 230 kV interconnection would be installed within the existing transmission line easement • ~~an existing LST would be removed, and~~ • ~~two LSTs would be installed for the Estrella Substation interconnection~~ • Two additional LSTs or TSPs would be used to complete the interconnection and would be installed on the parcel that would be acquired for the development of Estrella Substation
2-71	Old wood poles would simply be lifted out of the ground using mechanical equipment. Removal of steel poles would occur by excavating an area around the pole to a depth of approximately 2 to 4 feet, or deeper if requested by private property owners. The pole would then be cut off and the remaining base would be buried in place. All removed poles would be transported off site to the staging area or to the PG&E Service Center for reuse evaluation. Bases of the poles would then be removed by excavating the area around the base. The remaining void would then be backfilled with native soil saved from other excavations in the surrounding area. The site would be returned, as near as practicable, to its original contours (or in accordance with prearranged landowner agreements, where applicable).	Revise text as follows: Old wood poles would simply be lifted out of the ground using mechanical equipment. Removal of steel poles would occur by excavating an area around the pole to a depth of approximately 2 to 4 feet, or deeper if requested by private property owners. The remaining void would then be backfilled with native soil saved from other excavations in the surrounding area. The site would be returned, as near as practicable, to its original contours (or in accordance with prearranged landowner agreements, where applicable). The pole would then be cut off and the remaining base would be buried in place. All removed poles would be transported off site to the staging area or to the PG&E Service Center for reuse evaluation. ~~Bases of the poles would then be removed by excavating the area around the base. The remaining void would then be backfilled with native soil saved from other excavations in the surrounding area. The site would be returned, as near as practicable, to its original contours (or in accordance with prearranged landowner agreements, where applicable).~~
2-71	Sometimes the switches are thrown at a central location such as a substation.	Revise text as follows: Sometimes ~~the switches are thrown~~ circuit breakers are opened at a central location such as a substation.
Chapter 3 –Alternatives Description		
3-112	BESS facilities under Alternative BS-2 would function to “shave” peak loads during periods when energy use along these feeders is high (i.e., reduce peak loads during the summer) to relieve pressure on the area substations and feeders. BESSs would likely operate on a daily cycle where they would discharge to the distribution grid during hours of peak demand and charge from the distribution grid during hours of lower demand (e.g., nighttime). Sites	Please move “Sites” to precede the paragraph and make a heading. Revise text as follows: **Sites** BESS facilities under Alternative BS-2 would function to “shave” peak loads during periods when energy use along these feeders is high (i.e., reduce peak loads during the summer) to relieve pressure on the area substations and feeders. BESSs would likely operate on a daily cycle where they would discharge to the distribution grid during hours of peak demand and charge from the distribution grid during hours of lower demand (e.g., nighttime). ~~Sites~~
Chapter 4 –Environmental Analysis		
Aesthetics		
4.1-4	The reasonably foreseeable northern distribution line segment would follow the existing SR 46 right-of-way (installed within the median).	The northern distribution segment would not be installed within the median. It would be installed on one side of the SR-46, which has not yet been determined. Revise as follows: The reasonably foreseeable northern distribution line segment would ~~follow~~ parallel the existing SR 46 right-of-way (installed ~~within the median~~ on one side or the other on private property).

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4.1-8	Additionally, the northern reasonably foreseeable new distribution line segment would be installed within the median of SR 46 , while Alternative PLR-1A would also traverse SR 46 near the intersection with Branch Road.	The northern distribution segment would not be installed within the median. It would be installed on one side of the SR-46, which has not yet been determined. Revise as follows: The reasonably foreseeable northern distribution line segment would follow the existing SR 46 right-of-way (installed ~~within the median~~ on one side or the other on private property).
4.1-38	For criterion C, as described in Section 4.1.4, the Proposed Project, reasonably foreseeable distribution components, and alternatives are located primarily in non-urbanized areas.	Per CEQA Guidelines Section 21071, the Proposed Project, reasonably foreseeable distribution components, and alternatives are entirely located in non-urbanized areas. Revise text as follows: For criterion C, as described in Section 4.1.4, the Proposed Project, reasonably foreseeable distribution components, and alternatives are located ~~primarily~~ in non-urbanized areas.
4.1-41	The Proposed Project's new 70 kV power line segment would have similar adverse effects on the existing visual conditions, although the degree of impact would vary by location. Effects would be most pronounced in areas of the proposed 70 kV alignment that do not have existing transmission or distribution lines and in areas subject to immediate views from residents and recreationists. Dissimilarly, the reconductoring segment would replace existing poles and reconductor the existing power line; thus, it would not substantially change the existing visual character or quality in this area or be inconsistent with zoning regulations (transmission structures are allowed in all zoning districts along the alignment).	State that the proposed new power line segment would also not be inconsistent with zoning regulations. Revise text as follows: The Proposed Project's new 70 kV power line segment would have similar adverse effects on the existing visual conditions, although the degree of impact would vary by location. Effects would be most pronounced in areas of the proposed 70 kV alignment that do not have existing transmission or distribution lines and in areas subject to immediate views from residents and recreationists. Dissimilarly, the reconductoring segment would replace existing poles and reconductor the existing power line; thus, it would not substantially change the existing visual character or quality in this area. It is worth noting that the new 70 kV power line segment and reconductoring segment would not be ~~or be~~ inconsistent with zoning regulations (transmission structures are allowed in all zoning districts along the alignment).
4.1-41	Mitigation Measure AES-1, described below, would require that landscaping, including drought- and fire- resistant native shrubs, be incorporated along Union Road in front of the substation (to the extent that this does not increase fire risk) and that materials and paint colors be selected for Proposed Project features that would reduce visual contrast and complement the surrounding landscape. Mitigation Measure AES-1 would also require that transmission structures have a dulled finish.	Revise text as follows: Mitigation Measure AES-1, described below, would require that landscaping, including drought- and fire- resistant native shrubs, be incorporated along Union Road in front of the substation (to the extent that this does not increase fire risk and complies with the standards provided PG&E's Wildfire Safety Inspection Program and Cal Fire's defensible space guidelines) and that materials and paint colors be selected for Proposed Project features that would reduce visual contrast and complement the surrounding landscape. Mitigation Measure AES-1 would also require that transmission structures have a dulled finish.
4.1-42	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk.	Revise text as follows: Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation in accordance with the standards provided in PG&E's Wildfire Safety Inspection Program and Cal Fire's defensible space guidelines. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE ~~/ County Fire Department~~ to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk.
4.1-42	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** At the substation, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast	In accordance with PG&E' standards, the 70 kV substation would include a heavy duty, tightly woven anti-climb mesh fabric with 0.5-inch diamonds installed on a chain-link fence to prevent toe hold climbing. Slats are not made that small; therefore, slats would not be compatible. The slats are also an issue due to fire hazard. PG&E has been removing slatted fences in some areas. The mesh fabric comes in galvanized grey that would blend in with the existing and proposed structures in the area. While you can see through the mesh when you look at the fence straight on, when you are at an angle to the fence all you see is the fabric and not the equipment behind it due to the tightness of the mesh. Remove this requirement in the mitigation measure. Revise text as follows: At the substation (where practicable), incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown, gray) in order to minimize visual contrast.
4.1-42	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** For all Proposed Project and alternative components, use materials and paint colors that are compatible with the surrounding area (i.e., dull grey, light brown, or green colors) in order to minimize visual contrast. Avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. Use a dulled finish on power line and transmission structures.	Tubular steel poles and light duty steel poles are ordered with a dulled finish. Lattice steel towers that have a dulled finished need to be pre-ordered 6 months ahead of time and are priced at a premium. As such, PG&E's preference is to not have to purchase these special ordered structures. The conventional structures would dull over time. Power line conductors will be specular to make the power line more noticeable in appearance against the background landscape, and therefore more visible to small aircraft pilots that fly over the area. Specular conductor transitions to non-specular (i.e., becomes less shiny) in the course of a few seasons after installation. PG&E's standard design is to use galvanized structures and tubing in the substation to reduce corrosion, extend life, and maintain proper grounding. Revise text as follows: For all Proposed Project and alternative components (not including the power line conductors, lattice steel towers, or substation structures), use materials and paint colors that are compatible with the surrounding area (i.e., dull grey, light brown, or green colors) in order to minimize visual contrast. Avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. Use a dulled finish on power line and transmission structures.

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4.1-42	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** With respect to power line and transmission structures, balance the needto minimize visual contrast with ensuring that structures are visible to aircraft pilots and birds	Mitigation Measure AES-1 also requires that all components be dulled. This requirement conflicts with this portion of the measure regarding balancing the need to minimize visual contrast with visibility. Given that certain components would not be dulled (as noted above), PG&E recommends removing this portion of the measure. Revise text as follows: **Mitigation Measure AES-1** ~~With respect to power line and transmission structures, balance the needto minimize visual contrast with ensuring that structures are visible to aircraft pilots and birds.~~
4.1-43	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** For all Proposed Project and alternative components, use materials and paint colors that are compatible with the surrounding area (i.e., dull grey, light brown, or green colors) in order to minimize visual contrast. Avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. Use a dulled finish on power line and transmission structures.	Tubular steel poles and light duty steel poles are ordered with a dulled finish. Lattice steel towers that have a dulled finished need to be pre-ordered 6 months ahead of time and are priced at a premium. As such, PG&E's preference is to not have to purchase these special ordered structures. The conventional structures would dull over time. Power line conductors will be specular to make the power line more noticeable in appearance against the background landscape, and therefore more visible to small aircraft pilots that fly over the area. Specular conductor transitions to non-specular (i.e., becomes less shiny) in the course of a few seasons after installation. PG&E's standard design is to use galvanized structures and tubing in the substation to reduce corrosion, extend life, and maintain proper grounding. Revise text as follows: For all Proposed Project and alternative components (not including the power line conductors, lattice steel towers, or substation structures), use materials and paint colors that are compatible with the surrounding area (i.e., dull grey, light brown, or green colors) in order to minimize visual contrast. Avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. Use a dulled finish on power line and transmission structures.
4.1-43	While most operation and maintenance activities would occur during the daytime hours when no or minimal additional lighting would be needed, it is possible that nighttime maintenance may be needed on rare occasions (e.g., in the event of an emergency). In these instances, maintenance activities at the Estrella Substation and along the power line route may require extra nighttime lighting; however, use of nighttime lighting would be sporadic and limited in duration. Additionally, implementation of APM AES-2 would further reduce this impact.	APMs should not be applied to operation and maintenance. Revise text as follows: While most operation and maintenance activities would occur during the daytime hours when no or minimal additional lighting would be needed, it is possible that nighttime maintenance may be needed on rare occasions (e.g., in the event of an emergency). In these instances, maintenance activities at the Estrella Substation and along the power line route may require extra nighttime lighting; however, use of nighttime lighting would be sporadic and limited in duration. ~~Additionally, implementation of APM AES-2 would further reduce this impact.~~
4.1-51	In particular, the segment along South River Road to Santa Ysabel Avenue would adversely affect the existing visual character and quality of views in this area, as no electrical power lines currently exist in this non-urbanized rural-residential area, which is characterized by mature trees that line the road and rolling hillsides (as seen in KOP 22, Figure 4.1-17).	Clarify the starting point along South River Road. Revise text as follows: In particular, the segment along South River Road between Lothan lane and Santa Ysabel Avenue would adversely affect the existing visual character and quality of views in this area, as no electrical power lines currently exist in this non-urbanized rural-residential area, which is characterized by mature trees that line the road and rolling hillsides (as seen in KOP 22, Figure 4.1-17).
Agriculture		
4.2-4	Table 4.2-1. FMMP Acreage at the Estrella Substation Site	Farmland of Local Potential is not defined. According to the Department of Conservation (https://www.conservation.ca.gov/dlrp/fmmp/Documents/Farmland_of_Local_Importance_2016.pdf), this farmland category is defined as follows: Add a footnote to define Farmland of Local Potential as: *Local Potential (LP):* lands having the potential for farmland, which have Prime or Statewide characteristics and are not cultivated.
4.2-12	70 kV power line would occur within the immediate footprint of individual poles, as well as 10- foot radius around each pole that would be maintained clear of vegetation. As shown in Table 4.2-2, the Proposed Project (substation and power line) would permanently convert 2.66 acres of Farmland of Statewide Importance and 11.76 acres of Unique Farmland to non-agricultural uses. Additionally, 0.69 acres of Prime Farmland, 4.9 acres of Farmland of Statewide Importance, and 25.28 acres of Unique Farmland would be temporarily affected by the Proposed Project construction activities. Temporary effects include temporary loss or destruction of crops, placement of rock and materials, compaction of soil from heavy equipment and vehicles, and removal of topsoil.	Revise the disturbance calculations to account for the four exiting distribution poles that will be removed on Unique Farmland and the four existing distribution poles that will be removed on Farmland of Statewide Importance in the vicinity of Estrella Substation. Assuming agricultural crops were previously removed within an area around each existing pole equal to 10 feet in diameter, returning this area back to agricultural use would result in a net reduction of permanent impacts by approximately 314 square feet of Unique Farmland and 314 square feet Farmland of Statewide Importance.
4.2-13 and 4.2-14	**Mitigation Measure AG-1: Provide Compensation for Loss of Agricultural Land.** HWT and PG&E, prior to the completion of Proposed Project or alternativeconstruction, shall contribute sufficient funds (i.e., adequate to support the conservation ratio described below) to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements. The amount of HWT's and PG&E's contribution shall ensure the conservation of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by the Proposed Project or alternatives, based on the market price for the commensurate agricultural land at the time that the impacts occur.	Revise text as follows: HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.

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4.2-14	**Mitigation Measure AG-2: Restore Agricultural Land Temporarily Impacted by Construction Activities.** HWT or PG&E shall ensure that agricultural land temporarily impacted by construction activities is adequately restored following completion of construction to pre-project conditions. These include areas impacted from establishment of temporary staging and storage areas, installation of the underground fiber optic cable link, installation of the 230 kV interconnection structures, preparation and temporary use of pull sites and crossing guard structures, and preparation and use of helicopter landing zones. Restoration of sites will involve removing any rock or material imported to stabilize the site, replacement of topsoil, de-compacting any soil that has been compacted by heavy equipment, and re-planting of agricultural crops. The responsibility of performing these various tasks may be stipulated in an agreement between HWT or PG&E, and the landowner(s) completed for the Proposed Project or alternatives. If a landowner is better equipped or prefers to replant crops or perform other tasks themselves, then HWT and PG&E shall provide just compensation for this work.	Revise text as follows: HWT or PG&E shall ensure that agricultural land temporarily impacted by construction activities associated with their respective components is adequately restored following completion of construction to pre-project conditions. These include areas impacted from establishment of temporary staging and storage areas, installation of the underground fiber optic cable link, installation of the 230 kV interconnection structures, preparation and temporary use of pull sites and crossing guard structures, and preparation and use of helicopter landing zones. Restoration of sites will involve removing any rock or material imported to stabilize the site, replacement of topsoil, de-compacting any soil that has been compacted by heavy equipment, and re-planting of agricultural crops unless the property owner requests that the material remain for their use. The responsibility of performing these various tasks may be stipulated in an agreement between HWT or PG&E, and the landowner(s) completed for the Proposed Project or alternatives. If a landowner is better equipped or prefers to replant crops or perform other tasks themselves, then HWT ~~and~~or PG&E shall provide just compensation for this work.
4.2-16	The northern reasonably foreseeable new distribution line segment would be installed primarily within the median of SR- 46 and would not substantially affect Important Farmland, zoning for agricultural uses, or Williamson Act contracts.	The northern distribution segment would not be installed within the median. It would be installed on one side of the SR-46, which has not yet been determined. Revise as follows: The northern reasonably foreseeable new distribution line segment would ~~be installed primarily within the median of~~ parallel the existing SR- 46 right-of-way and would not substantially affect Important Farmland, zoning for agricultural uses, or Williamson Act contracts.
4.2-17	The Bonel Ranch parcel is not under a Williamson Act contract; therefore, there would be no potential to conflict with a Williamson Act contract. As a result, impacts under significance criterion B would be less than significant	According to the San Luis Obispo County Land Use Viewer, the Bonel Ranch site is subject to a Williamson Act contract. Revise text as follows: The Bonel Ranch parcel is ~~not~~ under a Williamson Act contract; therefore, ~~there~~ construction of Bonel Ranch Substation would ~~would be no potential to~~ conflict with a Williamson Act contract. As a result, impacts under significance criterion B would be ~~less than~~ significant and unavoidable~~.~~
4-2.20	The routes would pass through some areas of Farmland of Local Importance, Farmland of Local Potential, and Grazing Land, but the 70 kV power line segment under Alternative PLR-3 would be almost entirely underground (other than the small transition stations on either end of the alignments) and would not permanently substantial agricultural land.	Revise text as follows: The routes would pass through some areas of Farmland of Local Importance, Farmland of Local Potential, and Grazing Land, but the 70 kV power line segment under Alternative PLR-3 would be almost entirely underground (other than the small transition stations on either end of the alignments) and would not permanently ~~substantial~~ impact agricultural land.
Air Quality		
4.3-14	Impact AQ-2: Potential to violate ROG, NOX, and PM10 significance thresholds and contribute substantially to an existing or projected air quality violation - Significant and Unavoidable	The impact title does not match the title on page 4.3-12. Revise text as follows: Impact AQ-2: ~~Potential to violate ROG, NOX, and PM10 significance thresholds and contribute substantially to an existing or projected air quality violation - Significant and Unavoidable~~ Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard
4.3-16	Table 4.3-5, Construction Emissions	Provide the tier associated with the 26.3 tons/quarter ROG + NOX significance threshold.
4.3-18	**Mitigation Measure AQ-1. Prepare a Construction Activity Management Plan for Approval by SLOCAPCD.** HWT, PG&E, or their contractor(s) shall implement the following measures: Prepare a Construction Activity Management Plan (CAMP) that contains at a minimum the following SLOCAPCD standard mitigation measures, BACT measures and diesel idling restrictions that are not already in the APMs. The CAMP shall be submitted to the air pollution control district (APCD) for review and approval prior to the start of construction and shall include, but not be limited to, the following elements: 1. A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section; 2. Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation). Use of diesel construction equipment meeting ARB's Tier 3 and Tier 4 off-road and 2010 on-road compliant engines; Repowering equipment with the cleanest engines available; At a minimum the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year. 3. Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions	The CAMP submitted to the SLOCAPCD will meet all of their requirements, which are subject to change. To avoid confusion and unnecessary overlap, we will follow the guidance for development of the CAMP, with regard to dust control, construction equipment requirement, scheduling, hours of operation, length of work periods, and any other requirements. Revise text as follows HWT, PG&E, or their contractor(s) shall implement the following measures: Prepare a Construction Activity Management Plan (CAMP) that contains ~~at a minimum~~ the following SLOCAPCD standard mitigation measures, BACT measures and diesel idling restrictions that are not already in the APMs. The CAMP shall be submitted to the air pollution control district (APCD) for review and approval prior to the start of construction. ~~and shall include, but not be limited to, the following elements:~~ ~~1. A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section;~~ ~~2. Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation). Use of diesel construction equipment meeting ARB's Tier 3 and Tier 4 off-road and 2010 on-road compliant engines; Repowering equipment with the cleanest engines available; At a minimum the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year.~~ ~~3. Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions~~
4.3-18	**Mitigation Measure AQ-1: Prepare a Construction Activity Management Plan for Approval by SLOCAPCD.** 3. Scheduling of construction truck trips during non-peak hours to reducepeak hour emissions	Clarify the meaning of non-peak hour and revise text as follows: 3. Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions, when possible.

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4.3-19	Construction and operation activities for the reasonably foreseeable distribution components would be similar to the Proposed Project, but on a much smaller scale.	Revise text as follows: Construction and operation activities for the reasonably foreseeable distribution components would be similar to the Proposed Project, but on a much smaller scale and would not require the use of helicopters.
4.3-27	Furthermore, the use of battery stored power during high demand periods will reduce the need for criteria pollutant emitting sources of electricity generation throughout the electricity grid, such as the use of peaker plants, which are fossil- fueled based. The impact of this alternative would depend on construction schedule overlap of the remaining construction phases, therefore it is unknown if this alternative would reduce the significant impact of construction emissions as compared to the Proposed Project.	This statement is misleading and should be deleted; PG&E does not have any peaker plants in the SLO area. Revise text as follows: ~~Furthermore, the use of battery stored power during high demand periods will reduce the need for criteria pollutant emitting sources of electricity generation throughout the electricity grid, such as the use of peaker plants, which are fossil- fueled based. The impact of this alternative would depend on construction schedule overlap of the remaining construction phases, therefore it is unknown if this alternative would reduce the significant impact of construction emissions as compared to the Proposed Project.~~
Biological Resources		
4.4-1 to 4.4-2	The Bald and Golden Eagle Protection Act (16 USC Section 668; 50 CFR Part 22) prohibits take of bald and golden eagles and their occupied and unoccupied nests. USFWS administers the Bald and Golden Eagle Protection Act. In addition to immediate impacts, "take" also covers impacts that result from human-induced alterations initiated around a previously used nest site. Even if eagles are not present during the time of the alterations, if eagle(s) subsequently return and the alterations agitate or bother an eagle to a degree that it interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment, this would be considered take.	Revise text as follows: The Bald and Golden Eagle Protection Act (16 USC Section 668; 50 CFR Part 22) prohibits take of bald and golden eagles and their occupied and unoccupied nests. USFWS administers the Bald and Golden Eagle Protection Act. PG&E is in the process of working with the USFWS to receive a permit under the Bald and Golden Eagle Protection Act to address work activities in areas with eagle territories. In addition to immediate impacts, "take" also covers impacts that result from human-induced alterations initiated around a previously used nest site. Even if eagles are not present during the time of the alterations, if eagle(s) subsequently return and the alterations agitate or bother an eagle to a degree that it interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment, this would be considered take.
4.4-1 to 4.4-2	In addition to immediate impacts, "take" also covers impacts that result from human-induced alterations initiated around a previously used nest site. Even if eagles are not present during the time of the alterations, if eagle(s) subsequently return and the alterations agitate or bother an eagle to a degree that it interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment, this would be considered take.	This interpretation of "take" is speculative and should be limited to the USFWS administration of the Bald and Golden Eagle Protection Act to protect eagles, eagle nests, and eggs or young from all definitions of take under the ESA. Revise as follows: ~~In addition to immediate impacts, "take" also covers impacts that result from human-induced alterations initiated around a previously used nest site. Even if eagles are not present during the time of the alterations, if eagle(s) subsequently return and the alterations agitate or bother an eagle to a degree that it interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment, this would be considered take.~~
4.4-9	Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be "rare, threatened, or endangered in California" (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected in California.	Revise text as follows: Special-status species include (1) species listed, or that are candidates for future listing, as threatened or endangered under the federal ESA or CESA; (2) plants listed as rare under NPPA; (3) plants considered by the CNPS to be "rare, threatened, or endangered in California" (CNPS Rare Plant Ranks 1 and 2); (4) species that meet the definitions of rare or endangered under CEQA; (5) animals fully protected in California under the CFGC, and (6) nesting raptors protected in California under CFGC 3503.5.
4.4-20, Table 4.4-1	Table 4.4-1	Remove great blue heron from Table 4.-1, as it is not a special-status species
4.4-29	Figure 4.4-1	Please label the Salinas River and Dry Creek in Figure 4.4-1
4.4-39	Based on a review of the Ventura USFWS office's Habitat Conservation Plans (HCPs) and CDFW's California Regional Conservation Plans map (CDFW 2019b), there are no adopted HCPs or Natural Community Conservation Plans (NCCPs) in the vicinity of the Proposed Project, reasonably foreseeable distribution components, or alternatives	Revise text as follows: Based on a review of the ~~Ventura USFWS office's Habitat Conservation Plans (HCPs) and~~ CDFW's California Regional Conservation Plans map (CDFW 2019b), there are no adopted ~~HCPs or~~ Natural Community Conservation Plans (NCCPs) in the vicinity of the Proposed Project, reasonably foreseeable distribution components, or alternatives. PG&E has executed a Multi-Region Habitat Conservation Plan (HCP), which provides federal endangered species coverage for the entire service territory. However, the HCP does not apply to new construction over 10 acres or more than 2 miles. As such, the HCP would not apply to the proposed project, although it would apply to the Reasonably Foreseeable Distribution Components and Ultimate Substation Buildout.
4.4-40	In regard to significance criterion F above, no NCCPs or HCPs are adopted in the vicinity of the Proposed Project, reasonably foreseeable distribution components, and alternatives. Therefore, there is no potential for conflicts and no impact would occur. This significance criterion is dismissed from further discussion.	The Multi-Region HCP would apply to the reasonably foreseeable distribution components.
4.4-41	If special-status plant species are identified in the construction disturbance area, however, and avoidance is not possible, direct impacts to these species would occur, which would be a significant impact due to the potential loss of a high number of individuals or entire populations within the region.	This is speculative. Surveys have not identified special-status plant populations in construction disturbance areas and if a special status plant were found it may or may not constitute "a potential loss of a high number of individuals or entire populations within the region" Revise text as follows: If special-status plant species are identified in the construction disturbance area, however, and avoidance is not possible, direct impacts to these species would occur, which may ~~would~~ have the potential to be a significant impact in certain circumstances due to the potential loss of a high number of individuals or entire populations within the region.

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4.4-42	Crotch's bumble bee, which utilize rodent burrows, tufts of grass, old bird nests on the ground, rock piles, or cavities in dead trees for nest construction, has potential to occur within the Proposed Project area. Direct impacts to Crotch's bumble bee could occur if rodent burrows within the Proposed Project disturbance area were utilized as nests and destroyed through construction activities. Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch's bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, implementation of APMs BIO-3 and GEN-1 would further reduce potential for any impacts to Crotch's bumble bee during construction. As a State candidate endangered species, the Applicants would be required to notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals identified during pre-construction surveys or during the course of construction activities.	While preconstruction surveys would help avoid and minimize impacts to special-status species, surveying rodent burrows for the state candidate endangered Crotch's bumblebee within the project footprint is impracticable due to the abundance of burrow systems and absence of protocol survey guidance for identification of nest colonies. Current review of iNaturalist (https://www.inaturalist.org/taxa/271451-Bombus-crotchii accessed: January 4, 2021) show observation of the species occurring south and southeast of Santa Maria. The document recognizes the potential of species occurrence in the region, but little is known about its current distribution, hibernacula, or overwintering sites, and direct impacts cannot be adequately concluded due to the lack of this information. Applicants are required to follow all provisions of CESA in regard to California candidate or listed species, but are not specifically required to "notify and coordinate with CDFW" on any candidate or listed species identified during pre-construction surveys. An example would be Swainson hawk sightings may be voluntarily submitted to CDFW by filing a CNDDB detection form, but coordination and notification are not required for each sighting event. Revise text as follows: ~~Pre-construction surveys required under APM BIO-1 and Mitigation Measure BIO-1 would identify Crotch's bumble bee individuals or nests that could be present within the Proposed Project footprint. Additionally, i~~Implementation of APMs BIO-3 and GEN-1 would ~~further~~ reduce potential for any impacts to Crotch's bumble bee during construction. As a State candidate endangered species, the Applicants would be required to follow all provisions of CESA in regard to California candidate or listed species ~~notify and coordinate with CDFW regarding any Crotch's bumble bee nests or individuals~~ identified during ~~pre-construction surveys or during~~ the course of construction activities.
4.4-44	Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts would be significant.	Revise text as follows: Construction could disturb breeding and nesting birds in the area by generating noise, creating visual distractions, or having a direct impact on occupied nests (e.g., vegetation removal or nest abandonment) and burrows (used by burrowing owls). Uncovered pipes or conduit could be used as nesting habitat for birds, and if left uncovered, birds could become trapped. Removal and disturbance of vegetation and trees along the proposed 70 kV power line route could directly impact foraging and nesting habitat for special-status birds. There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts may be ~~would be~~ significant
4.4-44	There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. Without implementation of preventative measures, these impacts may be significant.	PG&E has an avian protection plan and implements standard protective measures for birds during nesting season. Revise text to state: There is a higher potential for impacts during the nesting/breeding season for birds because of the potential effects on reproductive success and young. ~~Without implementation of preventative measures, these impacts may be significant.~~
4.4-45	If work is scheduled during the nesting season (January 15 through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).	Standard nesting season dates are March 1st through August 15th or 31st; occasionally starting as early as February 1st. January 15th is still in winter timeframes with only select species such as golden eagles beginning to nest. As such, the January 15 nesting season restriction should only apply to golden eagles. Revise text as follows: If work is scheduled during the nesting season (commencing January 15 for golden eagle and February 1 for all other birds through August 31), APM BIO-2 and Mitigation Measure BIO-1 would require that nest detection surveys be implemented corresponding with the species-specific buffers set forth in PG&E's Nesting Birds: Specific Buffers for PG&E Activities (Appendix E to the PEA).
4.4-46	If any such roosts or bat individuals were identified, the Applicants would be required to notify and coordinate with CDFW. Additionally, APM AES-2 would require that construction lighting be selectively placed and shielded to minimize nighttime glare, which would minimize potential for this lighting to adversely affect bats.	If any such roosts or bat individuals were identified, the Applicants would be required to notify ~~and coordinate with~~ CDFW. Additionally, APM AES-2 would require that construction lighting be selectively placed and shielded to minimize nighttime glare, which would minimize potential for this lighting to adversely affect bats.
4.4-46	**Mitigation Measure BIO-1. Actions to Further Avoid and Minimize Impacts to Special-Status.** **Special-Status Plants:** Pre-construction surveys required under APM BIO-1 shall be conducted of all proposed work, plus a 100-foot buffer, within 1 year before commencement of ground-disturbing activities according to the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018 or current version). Floristic surveys shall be performed during the appropriate bloom period(s) for each species. HWT/PG&E or their contractor(s) shall work with the CDFW-approved qualified botanist to identify plants	Revise as follows: Special-Status Plants: Pre-construction surveys required under APM BIO-1 shall be conducted of all proposed work, plus a 100-foot buffer, ~~within 1 year~~ before commencement of ground-disturbing activities according to the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities Floristic surveys shall be performed during the appropriate bloom period(s) for each species. HWT/PG&E or their contractor(s) shall work with the ~~CDFW~~ CPUC-approved qualified botanist to identify plants
4.4-46	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** HWT/PG&E shall retain a CPUC-, USFWS-, and CDFW-approved biologist(s) to conduct pre-construction surveys for special-status plants and wildlife prior to initial vegetation clearance, grubbing, and ground-disturbing activities.	Revise text as follows: **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** HWT/PG&E shall retain a CPUC~~-, USFWS-, and CDFW-~~approved biologist(s) to conduct pre-construction surveys for special-status plants and wildlife prior to initial vegetation clearance, grubbing, and ground- disturbing activities.
4.4-46	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** The pre-construction survey report shall be submitted to the CPUC for review and approval prior to the start of construction. The pre-construction surveys shall be conducted no earlier than 30 days prior to surface disturbance. The results of the pre-construction surveys shall be documented by the approved biologist in a pre-construction survey report. The pre-construction survey report shall be submitted to the CPUC for review and approval prior to the start of construction, and the results shall be submitted to USFWS and CDFW as required by any regulatory permits or approvals. The pre- construction study report shall include the following:	Revise text as follows: The pre-construction survey report shall be submitted to the CPUC ~~for review and approval~~ prior to the start of construction The pre-construction surveys shall be conducted no earlier than 30 days prior to surface disturbance within the work areas. The results of the pre-construction surveys shall be documented by the approved biologist in a pre-construction survey report. The pre-construction survey report shall be submitted to the CPUC ~~for review and approval~~ prior to the start of construction, and the results shall be submitted to USFWS and CDFW as required by any regulatory permits or approvals. The pre- construction study report shall include the following:

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4.4-47	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** Sensitive habitat areas, plus a minimum 5-foot buffer for wetlands and waters of the U.S., that will be avoided by construction shall be fenced with orange safety fencing. Biological monitoring required by APM BIO-3 is extended to be necessary when each portion of previously undisturbed ground is disturbed, based on special- status species' requirements and the profession opinion of the qualified biological monitor; however, work near wetlands and waters of the U.S. will be monitored by a biological monitor over its duration.	Revise text as follows: Sensitive habitat areas, plus a minimum 5-foot buffer for wetlands and waters of the U.S., that will be avoided by construction shall be fenced with orange safety fencing. Biological monitoring required by APM BIO-3 is extended to be necessary when each portion of previously undisturbed ground is disturbed, based on special- status species' requirements and the profession opinion of the qualified biological monitor; however, work ~~near~~ within 50 feet of wetlands and waters of the U.S. will be monitored by a biological monitor over its duration.
4.4-47	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species**: Biological monitoring required by APM BIO-3 is extended to be necessary when each portion of previously undisturbed ground is disturbed, based on special-status species' requirements and the profession opinion of the qualified biological monitor;	Please correct typo regarding biological monitoring being "extended." Per APM BIO-3, biological monitoring will be conducted during initial ground-disturbing activities in and adjacent to sensitive habitat areas to ensure compliance with Best Management Practices and APMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the biologists. The monitor will have authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.
4.4-47	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species**: In order to ensure that habitats are not adversely affected, the USFWS- and CDFW- approved biologist shall flag boundaries of habitat, which must be avoided	Revise text as follows: In order to ensure that habitats are not adversely affected, the ~~USFWS- and CDFW~~ CPUC- approved biologist shall flag boundaries of habitat, which must be avoided.
4.4-47	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** The USFWS- and CDFW-approved biologist shall be contacted to perform a pre-activity survey when vegetation trimming is planned in sensitive habitats	Revise text as follows: The ~~USFWS- and CDFW~~CPUC-approved biologist shall be contacted to perform a pre-activity survey when vegetation trimming is planned in sensitive habitats
4.4-48	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction. Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.	Gravel bags and other sediment controls will be requirements of the SWPPP and should not be included as mitigation. Revise text as follows: ~~Pg. 29 Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction.~~ Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.
4.4-48	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species**: In the event that any work will occur beyond the approved limits, it shall be reported to HWT's and PG&E's compliance teams and the CPUC.	Revise text as follows: In the event that any work will occur beyond the approved limits, it shall be reported to ~~HWT's and PG&E's compliance teams and~~ the CPUC.
4.4-48	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Wildlife Protection from Work Areas:** In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment. Large/steep excavations shall be covered and/or fenced nightly to prevent wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.	Revise text as follows: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all uncovered and unfenced steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment. Large/steep excavations shall be covered and/or fenced nightly to prevent wildlife entrapment. Excavations shall provide an earthen ramp.
4.4-48	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Nesting Birds:** Activities conducted pursuant to APM BIO-2 shall considerthe nesting bird season revised to be January 15 through August 31	Revise text as follows: Activities conducted pursuant to APM BIO-2 shall considerthe nesting bird season, commencing January 15 for golden eagle and February 1 for all other birds through August 31~~revised to be January 15 through August 31~~
4.4-49	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **San Joaquin Kit Fox:** If a kit fox is discovered at any time in the project area, all construction must stop and the CDFW and USFWS contacted immediately. The appropriate federal and state permits must be obtained before the project can proceed.	Revise text as follows: If a kit fox is discovered at any time in the project area, all construction in the immediate vicinity must stop, photos taken as feasible, and the CDFW and USFWS contacted immediately. ~~The appropriate federal and state permits must be obtained before the project can proceed.~~

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4.4-49	**Mitigation Measure BIO-2: Compensate for Impacts to Special-Status Plant Species** If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness. At the end of the 5-year monitoring period, the mitigation shall have met the following success criteria: • A surveyed plant population size count roughly equal to or greater than the number of individuals transplanted (this total may include both transplanted individuals that have survived, as well as any additional supplemental plantings following the initial transplantation that have survived at least two growing seasons), and Less than 5 percent cover of invasive weeds within the restoration area.	Plant monitoring requirements would depend on the species impacted and restored and can be included in the salvage and relocation plan referenced. The 5-year monitoring requirement should be removed, as the amount of monitoring should be paired with the specific special-status plant restored. Revise text as follows: If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at an ~~CDFW-~~approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of the CPUC~~CDFW~~. Where salvage and relocation is demonstrated to be feasible and biologically preferred ~~by the CDFW~~, it shall be conducted pursuant to a CPUC- ~~and CDFW~~ approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. ~~Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness. At the end of the 5-year monitoring period, the mitigation shall have met the following success criteria:~~ • ~~A surveyed plant population size count roughly equal to or greater than the number of individuals transplanted (this total may include both transplanted individuals that have survived, as well as any additional supplemental plantings following the initial transplantation that have survived at least two growing seasons), and~~ ~~Less than 5 percent cover of invasive weeds within the restoration area.~~
4.4-50	Additionally, the Applicants would implement the avian protection measures outlined in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), which include solutions such as spacing phase conductors (e.g., greater than the width of birds' wingspans) such that electrocution hazards are minimized.	PG&E has avian protection standards that are detailed within PG&E's companywide Avian Protection Plan. These standards have been tested and considered in conjunction with other required engineering standards. PG&E does not need to develop a project-specific Avian Protection Plan since it follows the companywide Avian Protection Plan to prevent collision and electrocutions of bird species, including special-status birds. Revise text as follows: Additionally, the Applicants would implement the avian protection measures outlined in PG&E's Avian Protection Plan, which incorporates relevant raptor -safe construction guidelines found in APLIC's and USFWS' 2005 Avian Protection Plan Guidelines.~~. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006)* which include solutions such as spacing phase conductors (e.g., greater than the width of birds' wingspans) such that electrocution hazards are minimized.~~
4.4-50	To ensure that all potential hazards to special-status birds are minimized to the extent possible, **Mitigation Measure BIO-3** also would be implemented, which would require that the Applicants incorporate guidance in *Reducing Avian Collisions with Power Lines: State of the Art in 2012* (APLIC 2012) and develop an Avian Protection Plan.	PG&E has avian protection standards that are detailed within PG&E's companywide Avian Protection Plan. These standards have been tested and considered in conjunction with other required engineering standards. PG&E does not need to develop a project-specific Avian Protection Plan since it follows the companywide Avian Protection Plan to prevent collision and electrocutions of bird species, including special-status birds. Revise text as follows: To ensure that all potential hazards to special-status birds are minimized to the extent possible, PG&E would implement Mitigation Measure BIO-3 also would be implemented, which would require that ~~the Applicants~~ PG&E implement the company's Avian Protection Plan ~~incorporate guidance in Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012) and develop an Avian Protection Plan.~~
4.4-50	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** HWT, PG&E, and/or their contractor(s) shall construct all aboveground power transmission and power lines to the APLIC's recommended publications: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006, and Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2006, 2012). In conjunction with these publications, HWT and PG&E shall be responsible for creating an Avian Protection Plan that incorporates relevant project-specific guidelines found in APLIC's and USFWS' 2005 Avian Protection Plan Guidelines. As part of the Avian Protection Plan development, HWT and PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.	PG&E incorporates APLIC guidance into PG&E's Avian Protection Plan and formulates standards for avian protection that are consistent with engineering requirements. PG&E should not be required to generate a separate project-specific avian protection plan to address concerns that are mitigated through its avian protection program which PG&E coordinates directly with USFWS on an annual basis. Revise text as follows:' ~~HWT,~~ PG&E, and/or their contractor(s) shall construct all aboveground power transmission and power lines to the APLIC's recommended publications: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006, and Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2006, 2012). In conjunction with these publications, ~~HWT and~~ PG&E shall be responsible for implementing the company's ~~creating an~~ Avian Protection Plan that incorporates relevant ~~project~~-raptor -safe construction ~~specific~~ guidelines found in APLIC's and USFWS' 2005 Avian Protection Plan Guidelines.
4.4-51	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** As part of the Avian Protection Plan development, HWT and PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.	Bird diverters may not be very helpful to prevent eagle contacts, instead careful consideration of design components should be followed under PG&E's avian protection standards to ensure that distribution lines are raptor-safe. Revise text as follows: As part of the Avian Protection Plan ~~development~~, ~~HWT and~~ PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.
4.4-51	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** Operational construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible.	Revise text as follows: ~~Operational~~ ~~c~~Construction or replacement work shall be avoided during the nesting bird season (~~January 15 to August 31~~ commencing January 15 for golden eagle and February 1 for all other birds through August 31) to the extent feasible.

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4.4-51	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If operational construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.	This statement requires coordination and approval from CDFW and/or USFWS when no-disturbance buffers are reduced. It is not appropriate or feasible for PG&E to seek approvals for buffer reductions pertaining to individual nests from CDFW or USFWS, as there is no specific mechanism (beyond CFGC or MBTA take prohibitions) for either agency to grant approvals for particular nest buffer distance reductions. Revise text as follows: If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive in accordance with the species-specific buffers set forth in PG&E's *Nesting Birds: Specific Buffers for PG&E Activities* (Appendix E to the PEA) as detailed in APM BIO-2 and Mitigation Measure BIO-1. If ~~operational~~ construction activities must occur within this buffer, the biologist shall inform CPUC, ~~coordinate with CDFW, and, as necessary, USFWS to determine~~ of any buffer reductions and/or nest monitoring to avoid impacts to active nests.
4.4-52	**Mitigation Measure BIO-4: Develop and Implement a Restoration Plan for Blue Oak Woodland Habitat.** HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat. For any temporary impact, all disturbed soils and new fill in this habitat shall be revegetated with site-appropriate native species. For any permanent impact, blue oak woodland habitat shall be mitigated at a ratio of 1.1:1 (replacement to impact). Blue oak trees and valley oak trees that are removed shall be mitigated at a ratio that shall be determined based on the diameter at breast height (dbh) of the tree, as described further below.	Woody vegetation would be prohibited along the underground corridor. Revise text as follows: HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat. For any temporary impact, all disturbed soils and new fill in this habitat shall be revegetated with site-appropriate native species compatible with the facility. For any permanent impact, blue oak woodland habitat shall be mitigated at a ratio of 1.1:1 (replacement to impact). Blue oak trees and valley oak trees that are removed shall be mitigated at a ratio that shall be determined based on the diameter at breast height (dbh) of the tree, as described further below.
4.4-52	**Mitigation Measure BIO-4: Develop and Implement a Restoration Plan for Blue Oak Woodland Habitat.** Blue oak woodland restoration or compensation may be completed at the work area, in the vicinity, or at a conservation bank with a service area that covers the Proposed Project or selected alternative. Revegetated or restored areas shall be maintained and monitored to ensure a minimum of 65 percent survival of woody plantings after 5 years .	Revise text as follows: Blue oak woodland restoration or compensation may be completed at the work area, in the vicinity, or at a conservation bank with a service area that covers the Proposed Project or selected alternative. Revegetated or restored areas shall be maintained and monitored to ensure a minimum of 65 percent survival of woody plantings after 5 years or 75 percent survival of woody plantings after 3 years.
4.4-53	Implementation of APM HAZ-1 would prevent the introduction of hazardous materials into natural communities,	APM's do not apply to O&M activities. PG&E would implement BMP's during O&M activities. Revise text as follows: Implementation of ~~APM HAZ-1~~ standard BMPs would prevent the introduction of hazardous materials into natural communities,
4.4-56	Although special-status plants are not likely to be encountered, if such species are discovered within the proposed work area and cannot be avoided impacts would be significant.	Revise text as follows: Although special-status plants are not likely to be encountered, if such species are discovered within the proposed work area and cannot be avoided impacts ~~would~~ have the potential to be significant.
4.4-56	Although the northern reasonably foreseeable distribution line segment would cross Dry Creek, the distribution line would be installed within the median of SR 46	Revise text as follows: Although the northern reasonably foreseeable distribution line segment would cross Dry Creek, the distribution line would be ~~installed within the median of~~ parallel the existing SR 46 right-of-way.
4.4-60	The Alternative PLR-1A route would cross several major surface water bodies (i.e., Dry Creek, Huer Huero Creek), as well as several unnamed drainages	Indirect effects to water quality are not discussed under criterion B. The discussion should analyze potential indirect effects to water quality and reference applicable APMs similar to the discussion under criterion C.
4.4-62	The Alternative PLR-1C route would parallel Estrella River for a portion of its length and would cross Huer Huero Creek, as well as several unnamed drainages.	Indirect effects to water quality are not discussed under criterion B. The discussion should analyze potential indirect effects to water quality and reference applicable APMs similar to the discussion under criterion C.
4.4-63	General comment regarding Alternative PLR-3: Strategic Undergrounding (Option 1 & 2)	The potential for wildlife entrapment would increase under this alternative and should be addressed.
4.4-58	While the operation and maintenance activities at the substation would not be anticipated to impact special-status species, the 230 kV interconnection would have potential to impact special-status birds (e.g., via electrocution or collision) if not designed properly, which would be a significant impact. To avoid or minimize these effects, Mitigation Measure BIO-3 would be implemented, which would require that the 230 kV interconnection follow APLIC guidelines for avian protection. Implementation of this mitigation measure would reduce effects on special-status species during operation to a level that is less than significant. Overall, impacts under significance criterion A would be less than significant with mitigation.	APLIC does not have guidelines for high voltage lines in the 230kV range, since the spacing between higher voltage lines is such that it does not present a substantial threat of bird electrocution, even for larger species. Because there are no guidelines, there is no way to design the 230kV interconnection to APLIC standards. Subsequently, the 230kV interconnection should not be considered as a threshold for significant impacts. Revise text as follows: ~~While t~~The operation and maintenance activities at the substation would not be anticipated to impact special-status species~~, the 230 kV interconnection would have potential to impact special-status birds (e.g., via electrocution or collision) if not designed properly, which would be a significant impact. To avoid or minimize these effects, Mitigation Measure BIO-3 would be implemented, which would require that the 230 kV interconnection follow APLIC guidelines for avian protection. Implementation of this mitigation measure would reduce effects on special-status species during operation to a level that is less than significant~~. Overall, impacts under significance criterion A would be less than significant ~~with mitigation~~.
4.4-61	One important difference is that in starting at the Bonel Ranch Substation Site (Alternative SS-1), Alternative PLR-1C would parallel the Estrella River at the outset, where there would be increased potential for special-status species to be present, including nesting birds, which may use the Estrella River corridor.	Special-status species commonly refers to listed, candidate, and special-concern species but the term does not normally encompass all nesting birds. Revise text as follows: One important difference is that in starting at the Bonel Ranch Substation Site (Alternative SS-1), Alternative PLR-1C would parallel the Estrella River at the outset, where there would be increased potential for special-status species to be present, ~~including nesting birds,~~ which may use the Estrella River corridor.

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4.4-63 to 4.4-64	Strategic undergrounding. "Alternative PLR-3 would permanently impact 0.52 acre and temporarily impact 3.44 to 3.51 acres of blue oak woodland habitat, which is a sensitive natural community. These impacts would be considered significant. To mitigate the impacts to blue oak woodland, Mitigation Measure BIO-4 would be implemented, which would require development and implementation of a blue oak woodland habitat restoration plan. This would include replacement of any removed trees and would reduce impacts on blue oak woodland from Alternative PLR-3 to a level that is less than significant."	Revise for clarity of impacts. Revise as follows: Alternative PLR-3 would permanently impact 0.52 acre and temporarily impact 3.44 to 3.51 acres of blue oak woodland habitat, which is a sensitive natural community. In addition, up to 47 oak trees would be required to be removed permanently. These impacts would be considered significant. To mitigate the impacts to blue oak woodland, Mitigation Measure BIO-4 would be implemented, which would require development and implementation of a blue oak woodland habitat restoration plan. This would include ~~replacement~~ off-site mitigation of any removed trees and would reduce impacts on blue oak woodland from Alternative PLR-3 to a level that is less than significant with mitigation.
4.4-64	Indirect effects are not discussed under criterion B. Where are the APMs & MMs to address indirect impacts similar to impacts under significance criterion C? (e.g., erosion and sedimentation, fugitive dust, release of hazardous materials) would be minimized through implementation of APMs HYDRO-1, HAZ-1, GEN-1, and AIR-3?	Indirect effects to water quality are not discussed under criterion B. The discussion should analyze potential indirect effects to water quality and reference applicable APMs similar to the discussion under criterion C.
4.4-65	By undergrounding the 70 kV power line, the alternative would avoid or minimize impacts on special-status bird species (e.g., golden eagle), which would further the goals and policies in the County's and City's General Plans to avoid or minimize impacts on biological resources.	The transition stations and riser poles at each end of the underground line would include above-ground electrified components that could pose an electrocution hazard to birds. Because of this consideration, MM BIO-3 will be implemented for criterion A, and so MM BIO-3 should be implemented here for this criterion or this statement should be removed. If the statement is to remain, revise text as follows: By undergrounding the 70 kV power line, the alternative would ~~avoid or~~ minimize impacts on special-status bird species (e.g., golden eagle), which would further the goals and policies in the County's and City's General Plans to avoid or minimize impacts on biological resources.
4.4-66	The substation under Alternative SE-1A would not directly impact riparian habitat or the drainage features to the south of the site. Alternative SE-1A would not directly affect any of the vegetation communities considered sensitive by CDFW (i.e., blue oak woodland, central coastal scrub, Central Coast cottonwood-willow riparian forest, coastal and valley freshwater marsh, and sandy wash). Because the individual oak trees on the site would not be part of a larger sensitive natural community, these impacts would not be significant and would not require mitigation. As a result, impacts under significance criterion B would be less than significant.	Indirect effects to water quality are not discussed under criterion B. The discussion should analyze potential indirect effects to water quality and reference applicable APMs similar to the discussion under criterion
4.4-68	Alternative SE-PLR-2 route would parallel and cross Spanish Camp Creek at South River Road. The route also would pass through areas of blue oak woodland (PG&E 2019), which is considered a sensitive natural community by the City of Paso Robles and CDFW.	Indirect effects to water quality are not discussed under criterion B. The discussion should analyze potential indirect effects to water quality and reference applicable APMs similar to the discussion under criterion
4.4-64	The undergrounded power line under Alternative PLR-3 would have no potential to cause substantial adverse effects (e.g., electrocution, collision) to special-status birds; however, the transition stations and riser poles at each end of the underground line would include above-ground electrified components that could pose an electrocution hazard to birds, which would be a significant impact.	Revise text as follows: The undergrounded power line under Alternative PLR-3 would have no potential to cause substantial adverse effects (e.g., electrocution, collision) to special-status birds; however, the transition stations and riser poles at each end of the underground line would include above-ground electrified components that could pose an electrocution hazard to birds, which would only be a significant impact if not designed to raptor-safe standards.
4.4-61	Other operation and maintenance activities would not be expected to substantially affect special-status invertebrates, amphibians, reptiles, or mammals. Overall, impacts under significance criterion A would be less than significant with mitigation.	The underground route consists of much higher ground disturbance and therefore higher potential to impact special-status wildlife during construction; this does not seem clear in this description.
4.4-66	To avoid or minimize these effects, Mitigation Measure BIO-3 would be implemented, which would require that the 230 kV interconnection follow APLIC guidelines for avian protection.	APLIC does not have a recommendation for this 230 voltage (construction spacing). Only the 2012 collision manual would apply.
4.4-68	This risk would be elevated for the Alternative SE-PLR-2 route given the presence of several known golden eagle nests within proximity to this route.	Eagles have large territories; this statement is speculative, especially with raptor-safe construction. Any power line has the potential to impact birds by collision. Revise text as follows: ~~This risk would be elevated for the Alternative SE-PLR-2 route given the presence of several known golden eagle nests within proximity to this route.~~
4.4-70	There are several oak trees present on potential FTM Site 6, as well as on potential FTM Sites 3 and 7, which could require removal depending on the ultimate size of the BESSs. However, removal of these isolated trees would not constitute a substantive impact to a sensitive natural community.	Other alternatives have mentioned oak removals at very low levels (3 trees) and indicated that this was a significant impact; this statement indicates that oak tree removal is not substantive. There is no mention of mitigation for the removal of oak trees. This analysis should be treated the same as the other locations when it comes to oak tree removal.
Cultural Resources		
4-5.1	This section describes the potential impacts of the Proposed Project, reasonably foreseeable distribution components, and alternatives related to cultural resources. Section 15064.5(a)(3) of the CEQA Guidelines defines cultural resources as objects, buildings, structures, sites, areas, places, records or manuscripts that are determined historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Relative to the Proposed Project, these resources can be further described as prehistoric archaeological sites, historic-era archaeological sites, historic buildings and structures, landscapes, districts, and linear features. Prehistoric archaeological sites are places where Native Americans lived or carried out activities during the prehistoric period, which is generally prior to the late 1700s for the region. Historic-era archaeological sites reflect the activities of people after initial exploration and settlement in the region by the Spanish during the late 1700s, and later by others. Native American sites can also reflect the historic era. Prehistoric and historic-era sites contain artifacts, cultural features, subsistence remains, and human burials.	Please add the following text to the end of the paragraph: Although this section generally discusses cultural resources, it is primarily focused on archaeological and built environment resources. Tribal cultural resources, which can include archaeology and built environment, but are also comprised of a wider range of resources of concern to Native Americans with ties to the project area, are discussed in Chapter 4.18.

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4.5-1	***California Environmental Quality Act*** Section 21083.2 of CEQA (PRC Section 21000 et seq.) requires that the lead agency determine whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it: • ▪Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information; • ▪Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or • ▪Is directly associated with a scientifically recognized important prehistoric or historic event or person. Measures to conserve, preserve, or mitigate and avoid significant effects on these resources are also provided under CEQA Section 21083.2. CEQA Guidelines Section 15064.5 also provides criteria and processes/procedures for identifying and minimizing harm to historical resources.	Revise text as follows: ***Unique Archaeological Resources*** ~~***California Environmental Quality Act***~~ In addition to the protection of Historic Resources, Section 21083.2 of CEQA (PRC Section 21000 et seq.) requires that the lead agency determine whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it: • Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information; • Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or • Is directly associated with a scientifically recognized important prehistoric or historic event or person. Measures to conserve, preserve, or mitigate and avoid significant effects on these resources are also provided under CEQA Section 21083.2. CEQA Guidelines Section 15064.5 also provides criteria and processes/procedures for identifying and minimizing harm to historical resources. Although historical resources and unique archaeological resources are discussed separately within the CEQA guidelines, in practice, the criteria overlap sufficiently that it is difficult to conceive of a unique archaeological resource that would not also be a historical resource.
4-5.2	***California Health and Safety Code Section 7050.5*** Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be a Native American, the Coroner must then contact the Native American Heritage Commission (NAHC).	Revise text as follows: ***California Health and Safety Code Section 7050.5*** Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be a Native American, the Coroner must then contact the Native American Heritage Commission (NAHC). Under Section 5097.98 of the Public Resources Code (PRC), the NAHC will determine the Most Likely Descendants (MLD) and notify them of the discovery. As per Section 5097.98 (a-b), the landowner (and presumably the project proponent and CPUC, though proponents and lead agencies are not discussed within the PRC) will confer with the MLD to determine appropriate treatment of the human remains.
4-5.2	***California Register of Historical Resources*** The California Register of Historical Resources (CRHR) is established in PRC Section 5024.1. The register lists all California properties considered to be significant historical resources, including all properties listed in, or determined to be eligible for listing, the National Register of Historic Places (NRHP). Resources listed in, or eligible for listing in, the CRHR are referred to as *historical resources.* The criteria for listing in the CRHR include resources that: 1. Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage; 2. Are associated with the lives of persons important in our past; 3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or 4. Have yielded, or may be likely to yield, information important in prehistory or history. CCR Section 4852 sets forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations	Please move this section to precede the Unique Archaeological Resources Section, as modified above, and add the following text: ***California Register of Historical Resources*** Under CCR Section 21084.1: "A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." A historical resource is defined as "a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1…" The California Register of Historical Resources (CRHR) is established in PRC Section 5024.1. The register lists all California properties considered to be significant historical resources, including all properties listed in, or determined to be eligible for listing, the National Register of Historic Places (NRHP). Resources listed in, or eligible for listing in, the CRHR are referred to as *historical resources.* The criteria for listing in the CRHR include resources that: 1. Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage; 2. Are associated with the lives of persons important in our past; 3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or 4. Have yielded, or may be likely to yield, information important in prehistory or history. CCR Section 4852 sets forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.
4.5-8	The cedar utility pole is located 9 feet southwest of the well and is about 256 feet tall	Revise text as follows: The cedar utility pole is located 9 feet southwest of the well and is about 256 feet tall
4.5-14	The seven archaeological isolates were not indicative of larger sites and thus are not considered eligible for listing in the CRHR or unique archaeological resources; however, their presence attests to the widespread general use of the region by the indigenous population during the pre-historic and historic past. As noted above, coordination with Native American tribes in the area indicated that the areas of the Proposed Project region near surface waterbodies, in particular (e.g., Dry Creek, and Estrella and Salinas rivers), are sensitive for cultural resources. Of the 11 built environment resources, only the Johnson House appears to be eligible for listing on the CRHR. This house is situated off Union Road along the Proposed Project's 70 kV power line route near the point where the power line would cross SR 46.	The reasoning provided in the document that the tribes indicate higher sensitivity at the rivers is sufficient for calling out the sensitivity for Tribal Cultural Resources. To call it out for general archeological sensitivity requires more explanation. Revise text as follows: The seven archaeological isolates were not indicative of larger sites and thus are not considered eligible for listing in the CRHR or unique archaeological resources; however, their presence attests to the widespread general use of the region by the indigenous population during the pre-historic and historic past. As described earlier in the chapter, previous activities near the rivers and a tendency for people to settle near perennial water sources increase the likelihood of archaeological sites in the vicinity of rivers and creeks. As noted above, coordination with Native American tribes in the area indicated that the areas of the Proposed Project region near surface waterbodies, in particular (e.g., Dry Creek, and Estrella and Salinas rivers), are sensitive for tribal cultural resources. Of the 11 built environment resources, only the Johnson House appears to be eligible for listing on the CRHR. This house is situated off Union Road along the Proposed Project's 70 kV power line route near the point where the power line would cross SR 46.

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4.5-14	Based on the buried site sensitivity analysis described in Section 4.5.3, construction of new 70 kV power line poles across Huer Huero Creek near Union Road would also have potential to encounter preserved buried cultural deposits in the Holocene-aged valley floor and stream channel alluvium. In particular, installation of concrete pier foundations for poles, which will reach depths of up to 20 feet, would have the greatest potential to encounter/impact buried resources. Minor grading for structure locations, pull and tension sites, and access roads could also reveal buried archaeological materials.	This is not consistent with the findings of the buried site sensitivity analysis in Section 4.5.3. The analysis indicates that deeper excavation is likely to hit culturally sterile landforms that predate human occupation of the Americas. Holocene-aged sediments closer to the surface are more likely to contain archeological resources. Therefore, the likelihood of the pole footing excavation or more minor grading to encounter resources is similar. Revise text as follows: Based on the buried site sensitivity analysis described in Section 4.5.3, construction of new 70 kV power line poles across Huer Huero Creek near Union Road would also have potential to encounter preserved buried cultural deposits in the Holocene-aged valley floor and stream channel alluvium. ~~In particular, installation of concrete pier foundations for poles, which will reach depths of up to 20 feet, would have the greatest potential to encounter/impact buried resources. Minor grading for structure locations, pull and tension sites, and access roads could also reveal buried archaeological materials.~~
4-5.16	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** The following actions by the CPUC are designed to augment the APMs provided by the Project proponents to ensure that construction impacts to cultural resources are mitigated to a level of less than significant: a. The CPUC shall appoint a qualified archaeologist to represent the interests of the CPUC and oversee the implementation of the APMs with regard to archaeological resources on their behalf. The archaeologist shall meet the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology.	This portion of the measure refers to an action taken by the CPUC, not the Applicants. Therefore, it should be removed. Revise text as follows: The following actions ~~by the CPUC~~ are designed to augment the APMs provided by the Project proponents to ensure that construction impacts to cultural resources are mitigated to a level of less than significant: ~~a. The CPUC shall appoint a qualified archaeologist to represent the interests of the CPUC and oversee the implementation of the APMs with regard to archaeological resources on their behalf. The archaeologist shall meet the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology.~~
4-5.16	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** b. The Project proponents shall make every effort to design the project to avoid known eligible or potentially eligible cultural resources for the Proposed Project, reasonably foreseeable distribution components, and alternatives. A 50-foot buffer, using flagging, rope, tape, or fencing, shall be established around the boundary of each respective resource, which shall be designated an environmentally sensitive area. If the proponent engineers determine that the project cannot be designed to avoid known cultural resources and construction will encroach upon the resource buffer, construction monitoring by an archaeologist shall be required.	This portion of the measure is already required by APM Cul-4 and should therefore be removed. Revise text as follows: ~~b. The Project proponents shall make every effort to design the project to avoid known eligible or potentially eligible cultural resources for the Proposed Project, reasonably foreseeable distribution components, and alternatives. A 50-foot buffer, using flagging, rope, tape, or fencing, shall be established around the boundary of each respective resource, which shall be designated an environmentally sensitive area. If the proponent engineers determine that the project cannot be designed to avoid known cultural resources and construction will encroach upon the resource buffer, construction monitoring by an archaeologist shall be required.~~
4-5.16	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** A Native American representative from a consulting tribe shall be retained to monitor the construction activities if the resource is a Native American archaeological site.	The CPUC performed AB 52 consultation, and PG&E was not present. Given local tribal territories and desires, it is inappropriate for PG&E to choose a monitor, that should be done by the CPUC. Revise text as follows: A Native American representative from a ~~consulting~~ tribes identified by the CPUC shall be retained to monitor the construction activities if the resource is a Native American archaeological site. The Project proponent will be responsible for communicating project schedules and needs to the Native American monitor and/or tribe, but it is the responsibility of the tribe to ensure that the monitor is on site when called for, and work may proceed if the Project proponent has provided adequate notice of work.
4-5.17	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** The archaeological monitor shall notify the Project's cultural resources principal investigator immediately, and the principal investigator shall, in turn, notify the CPUC and their appointed professional archaeologist. If an archaeological monitor is not present at the time of the find, Project proponent's environmental inspector or construction supervisor shall make the notifications. The Project's cultural resources principal investigator shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment.	Revise text as follows: The archaeological monitor shall notify the Project's cultural resources principal investigator immediately, and the principal investigator shall, in turn, notify the CPUC and their appointed professional archaeologist. If the discovery happens during work being performed by PG&E, the PG&E cultural resource specialist (CRS) must also be notified alongside the CPUC. PG&E's CRSs meet Secretary of the Interior Qualifications as archaeological principal investigators, and have extensive experience performing cultural resources studies within the electrical utility environment. If an archaeological monitor is not present at the time of the find, Project proponent's environmental inspector or construction supervisor shall make the notifications. The Project's cultural resources principal investigator shall inspect the find within 24 hours of discovery and notify the CPUC, and, if on a PG&E portion of the project, PG&E's CRS, of their initial assessment.
4.5-17	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.	Add the following text: Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. If the assessment of significance can be made by the cultural resources principal investigator based on a small sample of discovered material, then the CPUC must respond in writing within 48 hours, or it may be assumed that the CPUC concurs with the principal investigator's findings. If analysis of the discovery requires an in-depth study (i.e., eligibility excavations, etc.) then the CPUC must respond in writing within 1 week of receipt of the principal investigator's report, or it may be assumed that the CPUC concurs with the principal investigator's findings. If the resource is found during PG&E work, or PG&E work will be impacted by the presence or discovery of the resource, then the principal investigator will consult with the PG&E CRS throughout the assessment and, if appropriate, treatment process.

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4-5.17	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. Work in the area may commence, at the direction of the CPUC, upon completion of treatment and under the direction of the qualified archaeologist.	Revise text as follows: The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. The CPUC must provide either concurrence or comments in writing within 1 week of receiving the report. A lack of response from the CPUC may be taken as concurrence with the sufficiency of the treatment documented within the report. Work in the area may commence, ~~at the direction of the CPUC~~, following concurrence from the CPUC that the work performed was sufficient, upon completion of treatment and under the direction of the qualified archaeologist. Should the resource also be identified as a tribal cultural resource, then measures outlined in Section 4.18 will also apply if resource-specific measures identified during the resource-specific consultation do not supersede them.
4-5.18	However, there would be potential to encounter buried human remains in any area the Proposed Project plans disturbance, especially where there would be deep excavations for pole and tower foundations.	This statement contradicts the buried site analysis in this chapter in which concluded deeper excavation is more likely to encounter resources, which is not true in this geological environment, where deeper excavation is likely to encounter deposits that pre-date humans. Revise text as follows: However, there would be potential to encounter buried human remains in any area the Proposed Project plans disturbance~~, especially where there would be deep excavations for pole and tower foundations~~.
4-5.18	The most likely descendant would then inspect the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of the human remains and any items associated with Native American burials.	The statement seems to indicate that the MLD could only recommend excavation, which is not correct according to the law. Revise text as follows: The most likely descendant would then inspect the site within 48 hours of notification and may recommend measures that they feel are appropriate, potentially including scientific removal and nondestructive analysis of the human remains and any items associated with Native American burials.
4-5.19	**Mitigation Measure CR-2: Comply with the Legal Requirements of PRC 5097.98.** In turn, the principal investigator shall immediately notify the County coroner, as well as the CPUC and their appointed professional archaeologist.	Revise text as follows: In turn, the principal investigator shall immediately notify the County coroner, as well as the CPUC and their appointed professional archaeologist and, if the discovery is made during PG&E activities, the PG&E CRS.
4.5-19	**Mitigation Measure CR-2: Comply with the Legal Requirements of PRC 5097.98.** The most likely descendent will complete inspection of the site and make recommendations or preferences for treatment within 48 hours of being granted access to the site. Construction will not continue in the protected area until treatment of the remains has been resolved and notice is provided by the CPUC archaeologist to resume work in the area.	Revise text as follows: The most likely descendent will complete inspection of the site and make recommendations or preferences for treatment within 48 hours of being granted access to the site. As per Section 5097.98 of the PRC, the MLD must also work with the landowner to determine appropriate treatment of remains.
4.5-19	**Mitigation Measure CR-2: Comply with the Legal Requirements of PRC 5097.98.** Construction will not continue in the protected area until treatment of the remains has been resolved and notice is provided by the CPUC archaeologist to resume work in the area.	Time limits are valuable as they allow PG&E to know clearly when something is complete, as opposed to when it is ongoing, and it allows. Revise text as follows: Construction will not continue in the protected area until treatment of the remains has been resolved and notice is provided by the CPUC archaeologist to resume work in the area, which the CPUC must provide within 24 hours of resolution. If an MLD is not identified by the NAHC, or if the MLD and the landowner cannot reach agreement, then the provisions of PRC Section 5097.98 will be put into effect.
4.5-20	**Mitigation Measure CR-3: Complete Cultural Resources Studies, Evaluate Resources for Significance, and Implement Avoidance and Minimization Measures.** The archaeological and built environment resources surveys shall be completed prior to construction of the respective components and prior to final design.	Revise text as follows: The archaeological and built environment resources surveys shall be completed prior to construction of the respective components and prior to final design. The CPUC must either comment on or concur with the findings of the report within 30 days of receipt. Lack of response within 30 days may be considered concurrence.
4-5.20	**Mitigation Measure CR-3: Complete Cultural Resources Studies, Evaluate Resources for Significance, and Implement Avoidance and Minimization Measures.** The pedestrian survey shall include systematic surface inspection with transects spaced at 15-meter (approximately 50-foot) intervals, or less, and shall cover the entire site or alignment and a 100-foot buffer around the site or alignment.	Depending on the locations, 15 meter transects or less, while preferred, may not be possible or safe. Revise text as follows: The pedestrian survey shall include systematic surface inspection with transects spaced at 15-meter (approximately 50-foot) intervals~~,~~ or less where feasible and safe (owing to landform, paving, and previous construction). Where such transects are not feasible or safe, survey shall provide the most complete coverage possible either through wider transects (ex. on steep slopes near rivers) or opportunistic survey (ex.: locations where private property fences or buildings/pavement obscure the ground), and shall cover the entire site or alignment and a 100-foot buffer around the site or alignment.
4-5.21	**Mitigation Measure CR-3: Complete Cultural Resources Studies, Evaluate Resources for Significance, and Implement Avoidance and Minimization Measures.** Archaeological sites found to contain human remains must be treated in accordance with the provisions of Section 7050.5 of the California Health and Safety Code (see APM CUL-4 and Mitigation Measure CR-2). Should any archaeological site be determined eligible for listing in the CRHR, and if Project proponent design engineers determine that any portion of the site that contributes to its eligibility cannot be avoided by construction, a data recovery program shall be necessary and a detailed data recovery plan shall be prepared by a qualified archaeologist per Mitigation Measure CR-1(b). The data recovery plan must be submitted and approved by the CPUC prior to implementation of the plan. The CPUC shall ensure that consulting tribes will have the opportunity to review the data recovery plan for any CRHR-eligible Native American site.	Revised text as follows: Archaeological sites found to contain human remains must be treated in accordance with the provisions of Section 7050.5 of the California Health and Safety Code (see APM CUL-4 and Mitigation Measure CR-2). The CPUC and tribes must either comment on or concur with the findings of the report within 30 days of receipt. Lack of response within 15 days may be considered concurrence. Should any archaeological site be determined eligible for listing in the CRHR, and if Project proponent design engineers determine that any portion of the site that contributes to its eligibility cannot be avoided by construction, a data recovery program shall be necessary and a detailed data recovery plan shall be prepared by a qualified archaeologist per Mitigation Measure CR-1(b). The data recovery plan must be submitted and approved by the CPUC prior to implementation of the plan. The CPUC shall ensure that consulting tribes will have the opportunity to review the data recovery plan for any CRHR-eligible Native American site. The CPUC and tribes must either comment on or concur with the findings of the report within 30 days of receipt. Lack of response within 15 days may be considered concurrence.

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4-5.21	For any artifacts removed during project evaluation or data recovery excavations, the Project proponent's qualified archaeologist must provide for the curation of such artifact(s).	Tribes often ask for reburial rather than curation. Is that feasible for the CPUC?
4.5-22	The potential would be slightly elevated under Alternative SS-1 due to the site's location close to the Estrella River, which Native American tribes in the area have indicated is sensitive for cultural resources.	Revise text as follows: The potential would be slightly elevated under Alternative SS-1 due to the site's location close to the Estrella River, which both general archaeological practice and the advice of Native American tribes in the area indicate~~d~~ is sensitive for cultural resources.
4.5-23	Mitigation Measure CR-3 would be applied to ensure that avoidance and minimization measures are implemented for these resources. Because the Alternative PLR-1A route has already been subject to a pedestrian archaeological survey, this would not be required under Mitigation Measure CR-3.	This statement is only partially correct. Portions of PLR-1 (all versions) were surveyed, not the entire line. Revise text as follows: Mitigation Measure CR-3 would be applied to ensure that avoidance and minimization measures are implemented for these resources and that the portions of the Alternative PLR-1C alignment not previously surveyed are subjected to a pedestrian archaeological survey. ~~Because the Alternative PLR-1A route has already been subject to a pedestrian archaeological survey, this would not be required under Mitigation Measure CR-3.~~
4.5-24	Additionally, only a portion of the alignment was surveyed for built environment resources and several of the built environment resources that were identified along the alignment were not evaluated for significance. Thus, Alternative PLR-1C would result in significant impacts absent implementation of mitigation measures.	This is only true if the resources are both present and found to be eligible. Changing the language to indicate that it may cause impacts is appropriate. Revise text as follows: Additionally, only a portion of the alignment was surveyed for built environment resources and several of the built environment resources that were identified along the alignment were not evaluated for significance. Thus, Alternative PLR-1C ~~would~~ may result in significant impacts absent implementation of mitigation measures.
4.5-25	Construction of Alternative SE-1A would have similar potential to encounter buried human remains as the proposed Estrella Substation. Implementation of APM CUL-4 would require that HWT and PG&E follow protocols that are consistent with those outlines in California Health and Safety Code Section 7050.5, but would not reduce this impact to a level of less than significant.	Revise text as follows: Construction of Alternative SE-1A would have similar potential to encounter buried human remains as the proposed Estrella Substation. Implementation of APM CUL-4 would require that ~~HWT and~~ PG&E follow protocols that are consistent with those outlines in California Health and Safety Code Section 7050.5, but would not reduce this impact to a level of less than significant.
4-5.26	Coordination with Native American tribes indicated that the Santa Ysabel Ranch area (through which the Alternative SE-PLR-2 alignment would pass) is sensitive for cultural resources.	This requires more explanation. Did they indicate that it is sensitive for tribal cultural resources, which includes a wide range of resources such as landscapes, ceremonial area, plant gathering, etc.? If so, then by AB 52, they would be the people with the knowledge, so that's fine, but this should specifically say that it means sensitivity for tribal cultural resources If this means cultural resources generally, including archeological and built environment, then some explanation is necessary. Someone saying that an area is sensitive does not necessarily make it so, and the data on which that conclusion is based should be presented. As this same section indicates that monitoring would not be necessary here, this creates confusion. Again, if this is talking about TCRs, then there is no objection. If it is talking about other resources, an argument for that must be made.
Geology and Soils		
4.7-2	The 2012 International Building Code (IBC) (known as the Uniform Building Code prior to 2000) was developed by the International Conference of Building Officials (ICBO) and is used by most states, including California, as well as local jurisdictions to set basic standards for acceptable design of structures and facilities.	Revise to the current year of IBC (2018). Revise text as follows: The ~~2012~~ 2018 International Building Code (IBC) (known as the Uniform Building Code prior to 2000) was developed by the International Conference of Building Officials (ICBO) and is used by most states, including California, as well as local jurisdictions to set basic standards for acceptable design of structures and facilities.
4-7.3	Add after Public Resources Code 5097.5	Add the following text after the section on Public Resources Code 5097.5 ***California Environmental Quality Act*** State guidelines for the implementation of CEQA, as amended March 29, 1999 (14 CCR Division 6, Chapter 3, 15000 et seq.) define procedures, types of activities, persons, and public agencies required to comply with CEQA. The guidelines include as one of the questions to be answered in the Environmental Checklist (Appendix G, Section V, Part c) the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" CEQA includes in its definition of historical resources, "any object [or] site …that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature constitutes a significant impact under CEQA" (State CEQA Guidelines Appendix G). CEQA does not provide an explicit definition of a "unique paleontological resource," but a definition is implied by comparable language within the act relating to archeological resources: "The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in: Guidelines for the Implementation of CEQA, as amended March 29, 1999" (14 CCR Chapter 3, 15000 et seq.). CEQA encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses. Treatment of paleontological resources under CEQA is generally conducted according to guidance from the SVP or other agencies (BLM, etc.) and typically includes identification, assessment, and development of mitigation measures for potential impacts to significant or unique resources. Appendix G (Part V) of the State CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, which states, "a project will normally result in a significant impact on the environment if it will … disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study."

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4.7-21	Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material.	It is common for large formation to be only sensitive for paleontological resources within specific areas, and not sensitive overall. Revise text as follows: Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations (or, in many cases, specific elements of facies of those formations) that have produced fossil material.
4.7-27	Specifically, the Proposed Project components would be designed in accordance with CPUC G.O. 174, which outlines minimum construction material requirements, calculations for foundations, and utility safety measures designed to withstand damage from ground rupture and seismic shaking. The proposed 70 kV power line structures also would be engineered to meet loads generated by forces such as seismic activity, as required by CPUC G.O. 95.	CPUC G.O. 95 does not mitigate for seismic activity, but for wind events at elevations below 3,000 feet mean sea level (msl), and for wind and ice events above 3,000 feet msl. Per American Society of Civil Engineers (ASCE) 74 – Guidelines for Electrical Transmission Line Structural Loading, "Transmission structures need not be designed for ground-induced vibrations caused by earthquake motion because, historically, transmission structures have performed well under earthquake events, and transmission structure loadings caused by wind/ice combinations and broken wire forces exceed earthquake loads" (ASCE 2020). Revise text as follows: Specifically, the Proposed Project components would be designed in accordance with CPUC G.O. 174, which outlines minimum construction material requirements, calculations for foundations, and utility safety measures designed to withstand damage from ground rupture and seismic shaking. ~~The proposed 70 kV power line structures also would be engineered to meet loads generated by forces such as seismic activity, as required by CPUC G.O. 95.~~
4.7-29 to 4.7-30	**Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report.** HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017). These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.	Revise text as follows: HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017), as appropriate for the work, as well as any addenda or subsequent modifications to such reports to account for updated structural design criteria based on the latest California Building Code requirements. These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.
4.7-36	**Mitigation Measure GEO-2. Paleontological Resources Survey, Technical Report, and Construction Monitoring.** The PRTR shall be prepared in accordance with standards provided by the Society for Vertebrate Paleontology and shall assign site sensitivity based on the potential fossil yield classification system utilized by the Bureau of Land Management.	Revise text as follows: The PRTR shall be prepared in accordance with standards provided by the Society for Vertebrate Paleontology and shall assign site sensitivity based on the potential fossil yield classification system utilized by the Bureau of Land Management, and may use additional measures of paleontological sensitive as determined appropriate by the qualified paleontologist.
4.7-39	As noted above, the majority of both Alternative PLR-3 route options would follow, and be installed within, existing roads; therefore, it is unlikely this undergrounding route would encounter unstable geologic/soil conditions or expansive soils such that construction or operation of Alternative PLR-3 could cause the soils beneath to be unstable. The Alternative PLR-3 alignment (both options) is relatively flat and in an area mapped as having low potential for liquefaction. Following the design and construction requirements in G.O. 95 and 174, as well as the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils.	Revise text as follows: As noted above, the majority of both Alternative PLR-3 route options would follow, and be installed within, existing roads; therefore, it is unlikely this undergrounding route would encounter unstable geologic/soil conditions or expansive soils such that construction or operation of Alternative PLR-3 could cause the soils beneath to be unstable. The Alternative PLR-3 alignment (both options) is relatively flat and in an area mapped as having low potential for liquefaction. Following the design and construction requirements in G.O. 128 ~~95 and 174~~, as well as the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils.
4.7-40	Nevertheless, implementation of APM GEN-1 and APMs PALEO-1 through PALEO-4 would avoid or minimize potential impacts to paleontological resources during construction, as described in Impact GEO-6.	Revise text as follows: Nevertheless, implementation of APM GEN-1 and APMs PALEO-1 through PALEO-4 would avoid or minimize potential impacts to paleontological resources during construction, as described in Impact GEO-6. APM PALEO-3 should be implemented in a manner consistent with how it is proposed for construction within the Estrella Substation site.
4.7-43	The FTM sites also are mapped as having low to moderate potential for liquefaction. In general, following the design and construction requirements in G.O. 95 and 174, as well as the CBC, would minimize hazards associated with unstable geologic units/soils or expansive soils.	G.O 95 and G.O 174 do not apply to battery storage structures Revise text as follows: The FTM sites also are mapped as having low to moderate potential for liquefaction. In general, following the design and construction requirements in ~~G.O. 95 and 174, as well as~~ the CBC would minimize hazards associated with unstable geologic units/soils or expansive soils.
Hazards and Hazardous Materials		
4.9-4	California Accidental Release Prevention program	The California Accidental Release Prevention program does not apply to substations
4.9-5	**California Emergency Services Act** The California Emergency Services Act (California Government Code, Chapter 7) established Cal EMA and created requirements for emergency response training and planning. Under this act, the State is required to develop a statewide toxic disaster contingency plan that can facilitate an California Public Utilities Commission 4.9. Hazards and Hazardous Materials Estrella Substation and Paso Robles Area Reinforcement Project Draft Environmental Impact Report 4.9-6 December 2020 Project 17.010 effective, multi-agency response to a situation in which toxic substances are dispersed in the environment so as to cause, or potentially cause, injury or death to a substantial number of persons or substantial harm to the natural environment (7 California Government Code, Section 8574.18). The California Emergency Services Act also requires the agency to develop and manage the California Hazardous Substances Incident Response Training and Education Program, which provides classes in hazardous substance response (7 California Government Code 8574.20). Under the California Emergency Services Act, Cal EMA would have the ability to provide an effective response to a catastrophic hazardous materials release.	The California Emergency Services Act does not apply to the project. Remove the following text: ~~**California Emergency Services Act**~~ ~~The California Emergency Services Act (California Government Code, Chapter 7) established Cal EMA and created requirements for emergency response training and planning. Under this act, the State is required to develop a statewide toxic disaster contingency plan that can facilitate an California Public Utilities Commission 4.9. Hazards and Hazardous Materials~~ ~~Estrella Substation and Paso Robles Area Reinforcement Project Draft Environmental Impact Report 4.9-6 December 2020 Project 17.010~~ ~~effective, multi-agency response to a situation in which toxic substances are dispersed in the environment so as to cause, or potentially cause, injury or death to a substantial number of persons or substantial harm to the natural environment (7 California Government Code, Section 8574.18). The California Emergency Services Act also requires the agency to develop and manage the California Hazardous Substances Incident Response Training and Education Program, which provides classes in hazardous substance response (7 California Government Code 8574.20). Under the California Emergency Services Act, Cal EMA would have the ability to provide an effective response to a catastrophic hazardous materials release.~~

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4.9-31 and 4.9-32	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** For project or alternative components located within a very high or high fire hazard severity zone, HWT and PG&E shall prepare and implement a fire prevention and management plan. The document will address fire prevention measures that will be employed during the construction phases, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The fire prevention and management plan shall also address potential ignition risks during operation of the project or alternative components. Coordination with state and local fire agencies is required, as specified below, and the plan shall be submitted to the CPUC for final review and approval prior to start of construction. Where applicable, overlap with the HWT and PG&E Wildfire Mitigation Plans prepared pursuant to California Public Utilities Code Section 8386 shall be highlighted in the fire prevention and management plan. Specifically, the plan will include, at a minimum, the following:	PG&E and HWT would develop and implement separate fire prevention and management plans. Revise text as follows: For ~~project or~~ alternative components located within a very high or high fire hazard severity zone, HWT and PG&E shall prepare and implement ~~a~~ separate fire prevention and management plans. These documents will address fire prevention measures that will be employed during the construction phases, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The fire prevention and management plans shall also address potential ignition risks during operation of the project or alternative components. Coordination with state and local fire agencies is required, as specified below, and the plans shall be submitted to the CPUC for final review and approval prior to start of construction. Where applicable, overlap with the HWT and PG&E Wildfire Mitigation Plans prepared pursuant to California Public Utilities Code Section 8386 shall be highlighted in the fire prevention and management plan. Specifically, the plans will include, at a minimum, the following:
4.9-32	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** **Design and Operation Considerations to Minimize Fire Hazard** Development and implementation of protocols for de-energizing the substation and/or transmission line components in the event of a wildfire; and	At a system level, PG&E's grid control center manages coordination of transmission line and substation clearances/outages during wildfire events, including coordination with CDF and other fire agencies. As such, thus portion of the measure should be removed. Revise text as follows: ~~Development and implementation of protocols for de-energizing the substation and/or transmission line components in the event of a wildfire; and~~
4.9-32	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** **Design and Operation Considerations to Minimize Fire Hazard** Inclusion of any needed water storage facilities on-site at the substation accessible to firefighters.	PG&E does not have access to a water source. This portion of the measure is not feasible and should be removed. Revise text as follows: ~~Inclusion of any needed water storage facilities on-site at the substation accessible to firefighters.~~
Hydrology and Water Quality		
4.10-30	**Mitigation Measure HYD/WQ-1. Implement Construction Best Management Practices for Erosion Control.** For ground-disturbing construction activities that do not require coverage under the Construction General Permit (e.g., total ground disturbance associated with that action does not exceed 1 acre), HWT, PG&E, and/or their contractors shall implement the following measures during construction of the alternative components, or shall implement alternative measures that are equally or more effective: • Implement practices to reduce erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls. • Minimize soil disturbance areas. • Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm-drain inlet protection. • Where feasible, limit construction to dry periods. • Revegetate disturbed areas.	The PTCs sought by the Applicants do not include authorization to construct the reasonably foreseeable distribution components. The mitigation measures will apply to the project components Applicants are authorized to construct under the PTCs. However, because the Applicants are not seeking authority to construct the reasonably foreseeable distribution components under the PTCs, mitigation measures imposed under the PTCs should not apply to the reasonably foreseeable distribution components. Revise text as follows: ~~For ground-disturbing construction activities that do not require coverage under the Construction General Permit (e.g., total ground disturbance associated with that action does not exceed 1 acre), HWT, PG&E, and/or their contractors shall implement the following measures during construction of the alternative components, or shall implement alternative measures that are equally or more effective:~~ • ~~Implement practices to reduce erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls.~~ • ~~Minimize soil disturbance areas.~~ • ~~Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm-drain inlet protection.~~ • ~~Where feasible, limit construction to dry periods.~~ • ~~Revegetate disturbed areas.~~
Noise		
4.13-18	**Mitigation Measure NOI-1: General Construction Noise.**	The DEIR on page 4.13-18 states that "ground-level construction noise from the Proposed Project would not be significant given: (1) the limited number of noise-sensitive receptors in proximity to much of the Proposed Project; (2) the relatively rapid attenuation of even the loudest pieces of construction equipment with distance from the source, and (3) the impacts would be temporary and occur over a relatively short duration at individual structure locations or segments of the 70 kV power line alignment (as opposed to work occurring along the entire alignment simultaneously)." However, the DEIR states that Mitigation Measure NOI-1 is applicable to all construction activities. What is the basis for requiring this mitigation measure for ground level construction noise when the DEIR concluded less than significant impacts?
4.13-19	**Mitigation Measure NOI-1: General Construction Noise.** Nighttime work between the hours of 10:00 pm and 7:00 am shall not occur, except when electrical clearances are available or when safe completion of a construction procedure is needed.	Nighttime work between the hours of 10:00 pm and 7:00 am shall not occur, except when electrical clearances are not available during daytime hours or when safe completion of a construction procedure is needed.

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4.13-20	**Mitigation Measure NOI- 2: Minimize Noise Impacts from Helicopters.** HWT and PG&E shall implement the following procedures for helicopter activities: ▪ Public Notice. Residences and places of worship (e.g., The Cove) within 1450 feet from any location where helicopter activities may occur, including flight paths if applicable, shall be provided written notice at least 30 days prior to beginning helicopter activities to inform them of the schedule for helicopter use and potential noise disruptions. Methods for receptors to reduce noise in structures shall be included in the notice (i.e., closing doors and windows facing the alignment). The notice shall describe procedures for submitting any noise complaints during construction and provide a phone number for submitting such complaints, as required by MM NOI-1. ▪ Helicopter Hovering. Light/medium lift helicopters shall not operate closer than 1,450 feet from any receptors unless actively working at pole locations along the alignment. Helicopters may operate closer than these distances if all affected receptors agree in writing to a shorter distance. Prior to reducing the minimum distance from receptors, PG&E shall provide the CPUC with the names, contact information, and written agreements for all affected persons within the applicable distances. The written agreements shall clearly identify the anticipated helicopter noise levels, daily schedule, and duration of helicopter activities in the vicinity. ▪ Helicopter Landing Zones. Helicopter landing zones shall not be positioned closer than 1,450 feet from any receptor. Helicopters may land closer than these distances if all affected receptors agree in writing to allow a shorter distance.	As described in the comment letter, the FTA Transit Noise and Vibration Impact Assessment Manual, which contains guidelines for the evaluation of the significance of construction noise impacts, is for transit projects and should not be used to determine significance of the proposed utility project. The Proposed Project would comply with local noise ordinances; therefore, impacts will be less than significant and mitigation is not necessary. However, if MM NOI-1 is included, it should be modified since securing written permission from sensitive receptors is not feasible. In addition, light/medium lift helicopters will not exceed the FTA threshold of 90 dBA Leq(1hr), so MM NOI-1 should only apply to heavy lift helicopter operation. Revise text as follows: ~~HWT and~~ PG&E shall implement the following procedures for helicopter activities: ▪ Public Notice. Residences and places of worship (e.g., The Cove) within ~~1450~~ 200 feet from any location where heavy lift helicopter activities may occur (limited to up to 10 pole replacements on the Reconductoring Segment), including flight paths if applicable, shall be provided ~~written~~ notice at least ~~30~~ 14 days prior to beginning helicopter activities to inform them of the schedule for helicopter use and potential noise disruptions. Methods for receptors to reduce noise in structures shall be included in the notice (i.e., closing doors and windows facing the alignment). The notice shall describe procedures for submitting any noise complaints during construction and provide a phone number for submitting such complaints, as required by MM NOI-1. ▪ Helicopter Hovering. ~~Light/medium~~ Heavy lift helicopters shall not operate closer than 200 feet from any receptors unless actively working at pole locations along the alignment. Helicopters may operate closer than these distances if all affected receptors ~~agree~~ are notified ~~in writing to a shorter distance~~. Prior to reducing the minimum distance from receptors, upon request, PG&E shall provide the CPUC with the names~~,~~ and contact information~~, and written agreements~~ for all affected persons notified within the applicable distances. ~~The written agreements shall clearly identify the anticipated helicopter noise levels, daily schedule, and duration of helicopter activities in the vicinity.~~ ▪ Helicopter Landing Zones. Helicopter landing zones within staging areas shall be positioned as far as possible from receptors. Helicopter landing zones shall not be positioned closer than ~~1,450~~ 200 feet from any receptor. Helicopters may land closer than these distances if all affected receptors ~~agree in writing to allow a shorter distance~~ are notified.
4.13-31	Once constructed, the underground power line segment would not generate any noise. Likewise, the transition stations at either end of the underground power line segment would not include transformers, HVAC units, or other equipment that would generate substantial noise.	The transitions stations would each require a small HVAC to keep the controls and relays cool.
Population and Housing		
4.14-3	At the peak of construction of the respective components, it is estimated that construction of the Estrella Substation would require 12 to 15 workers per day, while construction of the 70 kV power line would require 30 workers per day.	Revise text as follows: At the peak of construction of the respective components, it is estimated that construction of the Estrella Substation would require ~~12~~10 to 15 workers per day, while construction of the 70 kV power line would require 30 workers per day.
Public Services		
4.15-12	However, the northern new distribution line segment would be installed within the SR 46 median, which could result in temporary impacts to this highway.	Revise text as follows: However, the northern new distribution line segment would be installed ~~within the~~along one side of SR 46 on private property~~median~~, which could result in temporary impacts to this highway.
4.15-16	As described in Chapter 3, *Alternatives Description*, construction of Alternative PLR-3 (both Options 1 and 2) would require extended single lane closures on the roadways included in the alternative alignments (i.e., Germaine Way, Wisteria Lane, Golden Hill Road, Cava Robles RV Resort driveway, and Circle B HOA road).	Revise text as follows: As described in Chapter 3, Alternatives Description, construction of Alternative PLR-3 (both Options 1 and 2) would require extended single lane closures on the roadways included in the alternative alignments (i.e., Germaine Way, Wisteria Lane, Golden Hill Road, Cava Robles RV Resort driveway, and Circle B HOA road). The extended single lane closures would adversely affect emergency vehicle access and access to the Cava Robles RV Park.
Transportation		
4.17-4	Alternatives PLR-1A and PLR-C propose improvements in the vicinity of an unsignalized four-way intersection of US 101 with Wellsona Road.	Revise text as follows: Alternatives PLR-1A and PLR-C propose improvements in the vicinity of an unsignalized four-way intersection of ~~US 101~~North River Road with Wellsona Road.
4.17-4	The northern reasonably foreseeable distribution new line segment would be installed within the SR 46 right of way adjacent to and northeast of Hunter Ranch Golf Course. The 70 kV power line under Alternative PLR-1A would cross SR 46 near the intersection with Branch Road	Revise text as follows: The northern reasonably foreseeable distribution new line segment would be installed ~~within the~~ along one side of the SR 46 right of way adjacent to and northeast of Hunter Ranch Golf Course. The 70 kV power line under Alternative PLR-1A would cross SR 46 near the intersection with Branch Road
4.17-22	The work within Estrella Substation for the reasonably foreseeable distribution components would have no potential to directly impact public roadways. Likewise, the southern reasonably foreseeable new distribution line segment would be installed largely along an existing private road within agricultural fields north of the Estrella Substation and would not impact the circulation system. However, the northern reasonably foreseeable new distribution line segment would be installed within the SR 46 right-of-way and the additional 21/12 kV pad-mounted transformers would be installed along existing public roadways; thus, these activities would have potential to disrupt traffic and alternative transportation modes	Revise text as follows: The work within Estrella Substation for the reasonably foreseeable distribution components would have no potential to directly impact public roadways. Likewise, the southern reasonably foreseeable new distribution line segment would be installed largely along an existing private road within agricultural fields north of the Estrella Substation and would not impact the circulation system. However, the northern reasonably foreseeable new distribution line segment would be installed ~~within the~~ along one side of the SR 46 right-of-way and the additional 21/12 kV pad-mounted transformers would be installed along existing public roadways; thus, these activities would have potential to disrupt traffic and alternative transportation modes
Tribal Cultural Resources		

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4-18.7	As described in Section 4.5, "Cultural Resources," a pedestrian archaeological survey (NEET West and PG&E 2017a) identified three previously unrecorded resources, one of which was a prehistoric lithic scatter (Site 36052-S-003) on the edge of a bluff near the Salinas River and the Proposed Project's new 70 kV power line segment. For purposes of this analysis, this site is considered potentially CRHR-eligible, and thus is also considered to be a TCR, although none of the tribes contacted by the Applicants or the CPUC through the AB 52 process commented on this site. The pedestrian archaeological survey also identified a number of isolated prehistoric archaeological items, which are not CRHR-eligible, but attest to the widespread use of the Proposed Project area by ancient peoples. In particular, Dry Creek is known to have been used as a transportation corridor by Native Americans and the areas surrounding the Estrella and Salinas Rivers are considered sensitive for cultural resources.	As per PRD Section 21074, the tribes must ascribe importance to a site for it to be TCR. As written, this reads as if the tribe is being told what they consider important, rather than them telling us what they consider important, which seems to violate the spirit of AB53. Revise text as follows: As described in Section 4.5, "Cultural Resources," a pedestrian archaeological survey (NEET West and PG&E 2017a) identified three previously unrecorded resources, one of which was a prehistoric lithic scatter (Site 36052-S-003) on the edge of a bluff near the Salinas River and the Proposed Project's new 70 kV power line segment. While none of the consulted tribes identified this site as a TCR, it is possible that they may do so in the future, and as such, the resource will be treated with appropriate respect and avoided. ~~For purposes of this analysis, this site is considered potentially CRHR-eligible, and thus is also considered to be a TCR, although none of the tribes contacted by the Applicants or the CPUC through the AB 52 process commented on this site.~~ The pedestrian archaeological survey also identified a number of isolated prehistoric archaeological items, which are not CRHR-eligible, but attest to the widespread use of the Proposed Project area by ancient peoples. In particular, Dry Creek is known to have been used as a transportation corridor by Native Americans and the areas surrounding the Estrella and Salinas Rivers are considered sensitive for cultural resources.
4-18.7	Apart from the general information regarding sensitivity of certain areas for cultural resources, none of the tribes contacted by the CPUC identified known TCRs in the Proposed Project area. As such, it is unlikely that there are any significant above-ground known sites, features, places, or cultural landscapes, other than the prehistoric lithic scatter discussed above, that would be considered TCRs that could be impacted by the Proposed Project.	Revise text as follows: Apart from the general information regarding sensitivity of certain areas for cultural resources, none of the tribes contacted by the CPUC identified known TCRs in the Proposed Project area. As such, it is unlikely that there are any significant above-ground known sites, features, places, or cultural landscapes, ~~other than the prehistoric lithic scatter discussed above,~~ that would be considered TCRs that could be impacted by the Proposed Project. .
4-18-7	However, archaeological deposits may be buried and exposed during Proposed Project construction (in particular, during deep excavations for installation of pole foundations).	This statement appears to contradict the buried site sensitivity analysis in Chapter 4.4, which found that deeper deposits generally preceded human occupation of the project area. This statement is also inconsistent with the TCR-1 measure, as it calls for monitoring to six feet in depth, but not deeper. The monitoring mitigation measures provided by the CPUC make sense for archeology, and PG&E does not object to them, but the rationale provided here and in Chapter 4.5 need to be consistent with the buried sensitivity analysis provided in Chapter 4.5. Revise text as follows: However, archaeological deposits may be buried and exposed during Proposed Project construction ~~(in particular, during deep excavations for installation of pole foundations)~~
4-18.7	APM CUL-5 would require that a tribal monitor is present for initial ground-disturbing activities in culturally sensitive areas, which would reduce potential for impacts to TCRs.	Revise text as follows: APM CUL-5 would require that a tribal monitor is present for initial ground-disturbing activities in culturally sensitive areas, which would allow for the identification of potential TCRs and therefore reduce potential for impacts to TCRs.
4-18.7	Additionally, APM GEN-1 would be implemented to ensure that construction workers are aware of the types of archaeological materials that could be encountered in situations when the tribal monitor may not be present (e.g., ground-disturbing activities away from sensitive locations) and the proper protocols to follow for discoveries.	While true, this statement conflates TCRs with archeological sites.
4.18-9	**Mitigation Measure TCR-1: Tribal Monitoring and Treatment of Tribal Cultural Resources.** Monitoring of ground disturbance would also occur in the vicinity of Santa Ysabel Ranch, which was identified as culturally sensitive by the tribe.	Please confirm if defined as culturally sensitive, which may indicate a broad range of things, or archaeologically sensitive, which is much narrower. Knowing which was called for by the tribe would assist PG&E in knowing the types of resources that may be encountered and how to avoid them.
4.18-9	**Mitigation Measure TCR-1: Tribal Monitoring and Treatment of Tribal Cultural Resources.** All TCRs unearthed by project activities shall be evaluated by the Applicants' qualified cultural resources principal investigator and the tribal monitor or other tribal representative identified by the Xolon-Salinan Tribe. If the TCR cannot be avoided, a detailed archaeological treatment plan shall be developed and implemented by the Applicants' cultural resources principal investigator. The CPUC shall ensure that the treatment plan shall developed with input from and agreed upon by the Xolon-Salinan Tribe per Mitigation Measure CR-1. The Xolon-Salinan Tribe will determine the disposition of any TCRs artifacts discovered during construction or artifacts resulting from execution of a treatment plan, such as, but not limited to, reburying in close proximity of the finds without scientific study, allowing scientific study before reburying the materials either near the origin of the find or in another protected place, or curation at a facility at an institution that meets the U.S. Secretary of the Interiors criteria for curation (36 CFR 79).	This assumes that any TCRs identified will be archaeological in nature. If the tribe stated that they anticipated archaeological remains to be the only types of TCRs identified, then this is fine. However, if they did not specify that TCRs in this area would be archaeological, then this will be insufficient.
Utilities and Service Systems		
4.19-5	PG&E provides electrical power to San Luis Obispo County, including the city of Paso Robles. PG&E generates electricity from the following sources: (1) PG&E-owned generators; (2) non-PG&E-owned generators within California; and (3) out-of-state generators.	Revise text as follows: PG&E provides electrical power to San Luis Obispo County, including the city of Paso Robles. PG&E ~~generates~~ provides electricity from the following sources: (1) PG&E-owned generators; (2) non-PG&E-owned generators within California; and (3) out-of-state generators.
4.19-16	Construction of the FTM BESSs under Alternative BS-2 would likely generate reduced quantities of solid waste compared to the proposed Estrella Substation. Although sizes of FTM BESSs are unknown and would depend on future load conditions, FTM BESSs would likely be smaller than the substation and involve less excavation and vegetation clearing.	Construction of the FTM BESSs under Alternative BS-2 would likely generate reduced quantities of solid waste compared to the reasonably foreseeable distribution components ~~proposed Estrella Substation~~. ~~Although sizes of FTM BESSs are unknown and would depend on future load conditions, FTM BESSs would likely be smaller than the substation and involve less excavation and vegetation clearing.~~
4.20-21	No new roads, fire breaks, or related additional infrastructure would need to be installed or maintained as a result of Alternative BS-2.	This is incorrect. Depending on the sites selected, access roads may need to be constructed and maintained throughout the operation of the FTM facilities.
Chapter 6 – other statutory considerations and cumulative impacts		
6-13	Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant on their own.	This statement conflicts with the findings from the Aesthetics analysis. As described therein, the DEIR found significant impacts for SS-1, PLR-1A, and PLR-1C. Mitigation was identified to reduce impacts to less than significant. As such, these alternatives were not less than significant on their own. Revise as follows: Other alternatives, as well as the reasonably foreseeable distribution components, would have adverse aesthetic effects (related to the addition of utility infrastructure), although these effects would be less than significant or less-than-significant with mitigation on their own.

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6-16	Other alternatives and the reasonably foreseeable distribution components would generate noise, but this would be less than significant on the project level.	Alternative SE-1A was determined in the Noise analysis to have significant impacts. Mitigation was identified to reduce impacts to less than significant levels. Revise text as follows: Other alternatives and the reasonably foreseeable distribution components would generate noise, but this would be less than significant with mitigation on the project level.
Appendix F – Mitigation Monitoring and Reporting Plan		
F-6	These monitors shall provide daily reports/surveys that are entered into a field record environmental database employed by HWT and PG&E.	We have provided weekly reports to the CPUC in the past, but not recorded in an environmental database. If a database is used, PG&E and HWT will have separate databases. Revise as follows: These monitors shall provide daily reports/surveys ~~that are entered into a field record environmental database employed by HWT and PG&E~~.
F-11	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE / County Fire Department to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk.	Revise text as follows: Incorporate drought- and fire-resistant native shrubs within the hardscape landscaping proposed in APM AES-1 between Union Road and the Estrella Substation in accordance with the standards provided in PG&E's Wildfire Safety Inspection Program and Cal Fire's defensible space guidelines. For alternative substation sites, incorporate drought- and fire-resistant shrubs between the adjacent roadway and the substation. Coordinate with CAL FIRE ~~/ County Fire Department~~ to ensure that any shrubs used in landscaping adjacent to the substation do not substantially increase fire risk.
F-11	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** At the substation, incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown) in order to minimize visual contrast	In accordance with PG&E' standards, the 70 kV substation would include a heavy duty, tightly woven anti-climb mesh fabric with 0.5-inch diamonds installed on a chain-link fence to prevent toe hold climbing. Slats are not made that small; therefore, slats would not be compatible. The slats are also an issue due to fire hazard. PG&E has been removing slatted fences in some areas. The mesh fabric comes in galvanized grey that would blend in with the existing and proposed structures in the area. While you can see through the mesh when you look at the fence straight on, when you are at an angle to the fence all you see is the fabric and not the equipment behind it due to the tightness of the mesh. Remove this requirement in the mitigation measure. Revise text as follows: At the substation (where practicable), incorporate chain link fence slats using natural colors that are compatible with the surrounding area (i.e., green, light brown, gray) in order to minimize visual contrast
F-11	**Mitigation Measure AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** For all Proposed Project and alternative components, use materials and paint colors that are compatible with the surrounding area (i.e., dull grey, light brown, or green colors) in order to minimize visual contrast. Avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. Use a dulled finish on power line and transmission structures.	Tubular steel poles and light duty steel poles are ordered with a dulled finish. Lattice steel towers that have a dulled finished need to be pre-ordered 6 months ahead of time and are priced at a premium. As such, PG&E's preference is to not have to purchase these special ordered structures. The conventional structures would dull over time. Power line conductors will be specular to make the power line more noticeable in appearance against the background landscape, and therefore more visible to small aircraft pilots that fly over the area. Specular conductor transitions to non-specular (i.e., becomes less shiny) in the course of a few seasons after installation. PG&E's standard design is to use galvanized structures and tubing in the substation to reduce corrosion, extend life, and maintain proper grounding. Revise text as follows: For all Proposed Project and alternative components (not including the power line conductors, lattice steel towers, or substation structures), use materials and paint colors that are compatible with the surrounding area (i.e., dull grey, light brown, or green colors) in order to minimize visual contrast. Avoid the use of large expanses of reflective glazing, aluminum panels, and other materials not normally found in the environment. Use a dulled finish on power line and transmission structures.
F-12	**Mitigation Measure AES-1. AES-1. Use Landscaping, Design and Architectural Elements to Complement the Surrounding Visual Landscape.** With respect to power line and transmission structures, balance the need to minimize visual contrast with ensuring that structures are visible to aircraft pilots and birds.	Mitigation Measure AES-1 also requires that all components be dulled. This requirement conflicts with this portion of the measure regarding balancing the need to minimize visual contrast with visibility. Given that certain components will not be dulled (as noted above), PG&E recommends removing this portion of the measure. Revise text as follows: ~~With respect to power line and transmission structures, balance the need to minimize visual contrast with ensuring that structures are visible to aircraft pilots and birds.~~

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F-13	**Mitigation Measure AG-1: Provide Compensation for Loss of Agricultural Land.** HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall contribute sufficient funds (i.e., adequate to support the conservation ratio described below) to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements. The amount of HWT's and PG&E's contribution shall ensure the conservation of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by the Proposed Project or alternatives, based on the market price for the commensurate agricultural land at the time that the impacts occur.	Revise text as follows: HWT and PG&E, prior to the completion of Proposed Project or alternative construction, shall finalize and effectuate any combination of the following as long as the total acreage in the aggregate equals the amount required by the conservation ratio specified below: either (1) contribute ~~sufficient~~ funds, in an amount equal to the fair market value (determined as of the date construction commenced) of each acre for which the contribution is made, ~~(i.e., adequate to support the conservation ratio described below)~~ to the California Farmland Conservancy Program to compensate for the loss of Farmland of Statewide Importance and Unique Farmland that would occur from the Proposed Project or alternatives, or to another public agency or non-profit organization able to achieve long-term preservation of agricultural lands in San Luis Obispo County; and/or (2) enter into and record one or more conservation easements with landowners for specific farmland in San Luis Obispo County. The California Farmland Conservancy Program is established under PRC Sections 10200-10277 to promote the long-term preservation of agricultural lands in California though the use of agricultural conservation easements and is one potential recipient of any contribution in clause (1) above. The acreage for which ~~amount of~~ HWT's and PG&E's contributions are made in clause (1) above, together with any acreage preserved through recorded conservation easements in clause (2) above, shall equal a minimum total ~~ensure the conservation~~ of one acre of agricultural land in San Luis Obispo County for each acre of agricultural land converted by their respective components associated with the Proposed Project or alternatives~~, based on the market price for the commensurate agricultural land at the time that the impacts occur~~.
F-14	**Mitigation Measure AG-2: Restore Agricultural Land Temporarily Impacted by Construction Activities.** HWT or PG&E shall ensure that agricultural land temporarily impacted by construction activities is adequately restored following completion of construction to pre-project conditions. These include areas impacted from establishment of temporary staging and storage areas, installation of the underground fiber optic cable link, installation of the 230 kV interconnection structures, preparation and temporary use of pull sites and crossing guard structures, and preparation and use of helicopter landing zones. Restoration of sites will involve removing any rock or material imported to stabilize the site, replacement of topsoil, de-compacting any soil that has been compacted by heavy equipment, and re-planting of agricultural crops. The responsibility of performing these various tasks may be stipulated in an agreement between HWT or PG&E, and the landowner(s) completed for the Proposed Project or alternatives. If a landowner is better equipped or prefers to replant crops or perform other tasks themselves, then HWT and PG&E shall provide just compensation for this work.	Revise text as follows: HWT or PG&E shall ensure that agricultural land temporarily impacted by construction activities associated with their respective components is adequately restored following completion of construction to pre-project conditions. These include areas impacted from establishment of temporary staging and storage areas, installation of the underground fiber optic cable link, installation of the 230 kV interconnection structures, preparation and temporary use of pull sites and crossing guard structures, and preparation and use of helicopter landing zones. Restoration of sites will involve removing any rock or material imported to stabilize the site, replacement of topsoil, de-compacting any soil that has been compacted by heavy equipment, and re-planting of agricultural crops unless the property owner requests that the material remain for their use. The responsibility of performing these various tasks may be stipulated in an agreement between HWT or PG&E, and the landowner(s) completed for the Proposed Project or alternatives. If a landowner is better equipped or prefers to replant crops or perform other tasks themselves, then HWT ~~and~~or PG&E shall provide just compensation for this work.
F-14	**Mitigation Measure AG-2: Restore Agricultural Land Temporarily Impacted by Construction Activities.** 1. Confirm the measure is incorporated into the project contract documents. (CPUC)	In numerous APMs and mitigation measures in the MMRP, the following monitoring and reporting action is required: "Confirm that this measure is included in contract documents. (CPUC)" The CPUC is directed to confirm implementation of this requirement "During the preparation of plans and specifications." So far as the PG&E team is aware, this condition has never been imposed in an MMRP prepared by the CPUC. The condition is not needed to ensure that APMs and mitigation measures are implemented. PG&E is obligated to comply with all APMs and mitigation measures, and it is liable to the CPUC for any non-compliance with these measures that may result from the acts or omissions of its contractors. The language CPUC proposed is problematic because it inserts the CPUC into the contractual relationship between PG&E and its contractors. PG&E proposes that the text be revised as follows: "~~Confirm that this measure is included in contract documents. (CPUC~~ Provide documentation that contractors have received a copy of this measure. (PG&E / HWT)"
F-17	**Mitigation Measure AQ-1. Prepare a Construction Activity Management Plan for Approval by SLOCAPCD.** HWT, PG&E, or their contractor(s) shall implement the following measures: Prepare a Construction Activity Management Plan (CAMP) that contains at a minimum the following SLOCAPCD standard mitigation measures, BACT measures and diesel idling restrictions that are not already in the APMs. The CAMP shall be submitted to the air pollution control district (APCD) for review and approval prior to the start of construction and shall include, but not be limited to, the following elements: 1. A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section; 2. Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation). Use of diesel construction equipment meeting ARB's Tier 3 and Tier 4 off-road and 2010 on-road compliant engines; Repowering equipment with the cleanest engines available; At a minimum the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year. 3. Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions	The CAMP submitted to the SLOCAPCD will meet all of their requirements, which are subject to change. To avoid confusion and unnecessary overlap, we will follow the guidance for development of the CAMP, with regard to dust control, construction equipment requirement, scheduling, hours of operation, length of work periods, and any other requirements. Revise text as follows HWT, PG&E, or their contractor(s) shall implement the following measures: Prepare a Construction Activity Management Plan (CAMP) that contains ~~at a minimum~~ the following SLOCAPCD standard mitigation measures, BACT measures and diesel idling restrictions that are not already in the APMs. The CAMP shall be submitted to the air pollution control district (APCD) for review and approval prior to the start of construction. ~~and shall include, but not be limited to, the following elements:~~ ~~1. A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section;~~ ~~2. Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation). Use of diesel construction equipment meeting ARB's Tier 3 and Tier 4 off-road and 2010 on-road compliant engines; Repowering equipment with the cleanest engines available; At a minimum the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year.~~ 3. ~~Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions~~
F-17	**Mitigation Measure AQ-1: Prepare a Construction Activity Management Plan for Approval by SLOCAPCD.** 3. Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions	Clarify the meaning of non-peak hour and revise text as follows: 3. Scheduling of construction truck trips during non-peak hours to reduce peak hour emissions, when possible.
F-18	**APM BIO-1:** Design Project to Avoid or Minimize Impacts on Known Occurrences of Conduct Pre-Construction Survey(s) for Special-Status Plants Species and Sensitive Resource Areas	Revise text as follows: APM BIO-1. ~~Design Project to Avoid or Minimize Impacts on Known Occurrences of Conduct Pre-Construction Survey(s) for Special-Status Plants Species and Sensitive Resource Areas~~ Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas

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F-21	**APM BIO-3 - Monitoring and Reporting Action (Responsible Party)** 2. Confirm that biologists monitor initial ground- disturbing activities in and adjacent to sensitive habitat areas. (CPUC)	Revise text as follows: 2. Confirm that biologists monitor initial ground- disturbing activities in and adjacent to sensitive habitat areas and implement the measures in accordance with this APM. (CPUC)
F-22	**APM BIO-4 - Monitoring and Reporting Action (Responsible Party)** 2. Confirm that trenches/excavations have a sloped escape ramp or are covered at the end of each day. (Project Proponents)	Revise text as follows: 2. Confirm that trenches/excavations have a sloped escape ramp or are covered at the end of each day. (Project proponents ~~CPUC~~)
F-22	**APM BIO-4 - Monitoring and Reporting Action (Responsible Party)** 3. Confirm that trenches and excavations are inspected for wildlife at the beginning of the workday and prior to backfilling. (Project proponents)	Revise text as follows 3. Confirm that trenches and excavations are inspected for wildlife at the beginning of the workday and prior to backfilling. (Project proponents~~CPUC~~)
F-23	**Mitigation Measure BIO-1. Actions to Further Avoid and Minimize Impacts to Special-Status.** **Special-Status Plants:** Pre-construction surveys required under APM BIO-1 shall be conducted of all proposed work, plus a 100-foot buffer, within 1 year before commencement of ground-disturbing activities according to the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018 or current version). Floristic surveys shall be performed during the appropriate bloom period(s) for each species. HWT/PG&E or their contractor(s) shall work with the CDFW-approved qualified botanist to identify plants	Revise as follows: Special-Status Plants: Pre-construction surveys required under APM BIO-1 shall be conducted of all proposed work, plus a 100-foot buffer, ~~within 1 year~~ before commencement of ground-disturbing activities according to the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities Floristic surveys shall be performed during the appropriate bloom period(s) for each species. HWT/PG&E or their contractor(s) shall work with the ~~CDFW~~ CPUC-approved qualified botanist to identify plants
F-24	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** HWT/PG&E shall retain a CPUC-, USFWS-, and CDFW-approved biologist(s) to conduct pre-construction surveys for special-status plants and wildlife prior to initial vegetation clearance, grubbing, and ground-disturbing activities.	Revise text as follows: **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** HWT/PG&E shall retain a CPUC~~-, USFWS-, and CDFW~~-approved biologist(s) to conduct pre-construction surveys for special-status plants and wildlife prior to initial vegetation clearance, grubbing, and ground- disturbing activities.
F-25	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** The pre-construction survey report shall be submitted to the CPUC for review and approval prior to the start of construction. The pre-construction surveys shall be conducted no earlier than 30 days prior to surface disturbance. The results of the pre-construction surveys shall be documented by the approved biologist in a pre-construction survey report. The pre-construction survey report shall be submitted to the CPUC for review and approval prior to the start of construction, and the results shall be submitted to USFWS and CDFW as required by any regulatory permits or approvals. The pre- construction study report shall include the following:	Revise text as follows: The pre-construction survey report shall be submitted to the CPUC ~~for review and approval~~ prior to the start of construction The pre-construction surveys shall be conducted no earlier than 30 days prior to surface disturbance within the work areas. The results of the pre-construction surveys shall be documented by the approved biologist in a pre-construction survey report. The pre-construction survey report shall be submitted to the CPUC ~~for review and approval~~ prior to the start of construction, and the results shall be submitted to USFWS and CDFW as required by any regulatory permits or approvals. The pre- construction study report shall include the following:
F-25	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** Sensitive habitat areas, plus a minimum 5-foot buffer for wetlands and waters of the U.S., that will be avoided by construction shall be fenced with orange safety fencing. Biological monitoring required by APM BIO-3 is extended to be necessary when each portion of previously undisturbed ground is disturbed, based on special- status species' requirements and the profession opinion of the qualified biological monitor; however, work near wetlands and waters of the U.S. will be monitored by a biological monitor over its duration.	Revise text as follows: Sensitive habitat areas, plus a minimum 5-foot buffer for wetlands and waters of the U.S., that will be avoided by construction shall be fenced with orange safety fencing. Biological monitoring required by APM BIO-3 is extended to be necessary when each portion of previously undisturbed ground is disturbed, based on special- status species' requirements and the profession opinion of the qualified biological monitor; however, work ~~near~~ within 50 feet of wetlands and waters of the U.S. will be monitored by a biological monitor over its duration.
F-25	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** In order to ensure that habitats are not adversely affected, the USFWS- and CDFW-approved biologist shall flag boundaries of habitat,	Revise text as follows: In order to ensure that habitats are not adversely affected, the ~~USFWS- and CDFW~~CPUC-approved biologist shall flag boundaries of habitat,
F-26	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species** The USFWS- and CDFW-approved biologist shall be contacted to perform a pre-activity survey when vegetation trimming is planned in sensitive habitats	Revise text as follows: The ~~USFWS- and CDFW~~CPUC-approved biologist shall be contacted to perform a pre-activity survey when vegetation trimming is planned in sensitive habitats
F-27	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species:** Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction. Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.	Gravel bags and other sediment controls will be requirements of the SWPPP and should not be included as mitigation. Revise text as follows: ~~Pg. 29 Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into nearby wetlands and/or waters of the U.S., and removed upon completion of construction.~~ Any project related work scheduled to occur within the exclusion/buffer zone of the wetland shall be conducted when the wetland is dry as determined by the approved biological monitor. Best management practices (BMPs) referred to in APM BIO-3 indicate stormwater and water quality projection BMPs.
F-27	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Biological Monitoring, Sensitive Habitat Areas, and Special-Status Species**: In the event that any work will occur beyond the approved limits, it shall be reported to HWT's and PG&E's compliance teams and the CPUC.	Revise text as follows: In the event that any work will occur beyond the approved limits, it shall be reported to ~~HWT's and PG&E's compliance teams and~~ the CPUC.

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F-28	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Wildlife Protection from Work Areas:** In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment. Large/steep excavations shall be covered and/or fenced nightly to prevent wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route. .	Revise text as follows: In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment. Large/steep excavations shall be covered and/or fenced nightly to prevent wildlife entrapment. Excavations shall provide an earthen ramp (where feasible) and, if not, wood planks or escape ramps to allow for a wildlife escape route.
F-28	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Wildlife Protection from Work Areas:** In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment. Large/steep excavations shall be covered and/or fenced nightly to prevent wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.	In addition to the requirements of APM BIO-4, HWT/PG&E shall retain a CPUC-approved biologist to inspect all uncovered and unfenced steep trenches and excavations during construction twice daily (i.e., morning and evening) to monitor for wildlife entrapment. Large/steep excavations shall be covered and/or fenced nightly to prevent wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.
F-28	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **Nesting Birds:** Activities conducted pursuant to APM BIO-2 shall considerthe nesting bird season revised to be January 15 through August 31	Revise text as follows: Activities conducted pursuant to APM BIO-2 shall considerthe nesting bird season, commencing January 15 for golden eagle and February 1 for all other birds through August 31~~revised to be January 15 through August 31~~
F-28 and F-29	**Mitigation Measure BIO-1: Actions to Further Avoid and Minimize Impacts to Special-Status Species.** **San Joaquin Kit Fox:** If a kit fox is discovered at any time in the project area, all construction must stop and the CDFW and USFWS contacted immediately. The appropriate federal and state permits must be obtained before the project can proceed.	Revise text as follows: If a kit fox is discovered at any time in the project area, all construction in the immediate vicinity must stop, photos taken as feasible, and the CDFW and USFWS contacted immediately. ~~The appropriate federal and state permits must be obtained before the project can proceed.~~
F-29 and F-30	**Mitigation Measure BIO-2: Compensate for Impacts to Special-Status Plant Species** If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at a CDFW-approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of CDFW. Where salvage and relocation is demonstrated to be feasible and biologically preferred by the CDFW, it shall be conducted pursuant to a CPUC- and CDFW-approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness. At the end of the 5-year monitoring period, the mitigation shall have met the following success criteria: • A surveyed plant population size count roughly equal to or greater than the number of individuals transplanted (this total may include both transplanted individuals that have survived, as well as any additional supplemental plantings following the initial transplantation that have survived at least two growing seasons), and • Less than 5 percent cover of invasive weeds within the restoration area.	Plant monitoring requirements would depend on the species impacted and restored and can be included in the salvage and relocation plan referenced. The 5-year monitoring requirement should be removed, as the amount of monitoring should be paired with the specific special-status plant restored. Revise text as follows: If avoidance of special-status plants is not feasible, HWT and PG&E shall implement measures to compensate for impacts to special-status plants. Compensation may be provided by purchasing credits at an ~~CDFW-~~approved mitigation bank (provided at a minimum 1:1 ratio [mitigation to impact]), or through transplanting perennial species and collecting and dispersing seed of annual species (i.e., salvage and relocation) under the direction of the CPUC~~CDFW~~. Where salvage and relocation is demonstrated to be feasible and biologically preferred ~~by the CDFW~~, it shall be conducted pursuant to a CPUC- ~~and CDFW~~ approved salvage and relocation plan that details the methods for salvage, stockpiling, and replanting, as well as the characteristics of the receiver sites. ~~Monitoring of plant populations shall be conducted annually for 5 years to assess the mitigation's effectiveness. At the end of the 5-year monitoring period, the mitigation shall have met the following success criteria:~~ • ~~A surveyed plant population size count roughly equal to or greater than the number of individuals transplanted (this total may include both transplanted individuals that have survived, as well as any additional supplemental plantings following the initial transplantation that have survived at least two growing seasons), and~~ • ~~Less than 5 percent cover of invasive weeds within the restoration area.~~
F-29 and F-30	**MM BIO-2. Compensate for Impacts to Special-Status Plant Species.** **Monitoring and Reporting Action (Responsible Party):** 2. If salvage and relocation is selected as the compensation method, confirm annual monitoring and achievement of success criteria at the end of 5 years. (CPUC).	Revise text as follows: ~~If salvage and relocation is selected as the compensation method, confirm annual monitoring and achievement of success criteria at the end of 5 years. (CPUC).~~
F-30 and F-31	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** HWT, PG&E, and/or their contractor(s) shall construct all aboveground power transmission and power lines to the APLIC's recommended publications: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006, and Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2006, 2012). In conjunction with these publications, HWT and PG&E shall be responsible for creating an Avian Protection Plan that incorporates relevant project-specific guidelines found in APLIC's and USFWS' 2005 Avian Protection Plan Guidelines. As part of the Avian Protection Plan development, HWT and PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.	PG&E incorporates APLIC guidance into PG&E's Avian Protection Plan and formulates standards for avian protection that are consistent with engineering requirements. PG&E should not be required to generate a separate project-specific avian protection plan to address concerns that are mitigated through its avian protection program which PG&E coordinates directly with USFWS on an annual basis. Revise text as follows:' ~~HWT,~~ PG&E, and/or their contractor(s) shall construct all aboveground power transmission and power lines to the APLIC's recommended publications: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006, and Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2006, 2012). In conjunction with these publications, ~~HWT and~~ PG&E shall be responsible for implementing the company's ~~creating an~~ Avian Protection Plan that incorporates relevant ~~project-~~raptor -safe construction ~~specific~~ guidelines found in APLIC's and USFWS' 2005 Avian Protection Plan Guidelines.
F-31	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** As part of the Avian Protection Plan development, HWT and PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.	Bird diverters may not be very helpful to prevent eagle contacts, instead careful consideration of design components should be followed under PG&E's avian protection standards to ensure that distribution lines are raptor-safe. Revise text as follows: As part of the Avian Protection Plan ~~development~~, ~~HWT and~~ PG&E shall work with USFWS to determine the need for installation of bird diverters in areas near known golden and bald eagle nests.

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F-31	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** Operational construction or replacement work shall be avoided during the nesting bird season (January 15 to August 31) to the extent feasible.	Revise text as follows: ~~Operational c~~Construction or replacement work shall be avoided during the nesting bird season (~~January 15 to August 31~~ commencing January 15 for golden eagle and February 1 for all other birds through August 31) to the extent feasible.
F-31	**Mitigation Measure BIO-3: Minimize Impacts to Raptors and Other Avian Life from Transmission and Power Line Facilities.** If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive. If operational construction activities must occur within this buffer, the biologist shall coordinate with CDFW and, as necessary, USFWS to determine buffer reductions and/or nest monitoring to avoid impacts to active nests.	This statement requires coordination and approval from CDFW and/or USFWS when no-disturbance buffers are reduced. It is not appropriate or feasible for PG&E to seek approvals for buffer reductions pertaining to individual nests from CDFW or USFWS, as there is no specific mechanism (beyond CFGC or MBTA take prohibitions) for either agency to grant approvals for particular nest buffer distance reductions. Revise text as follows: If an active nest is found, the biologist shall establish a no-disturbance nesting buffer until the nest is inactive in accordance with the species-specific buffers set forth in PG&E's *Nesting Birds: Specific Buffers for PG&E Activities* (Appendix E to the PEA) as detailed in APM BIO-2 and Mitigation Measure BIO-1. If ~~operational~~ construction activities must occur within this buffer, the biologist shall inform CPUC, ~~coordinate with CDFW, and, as necessary, USFWS to determine~~ of any buffer reductions and/or nest monitoring to avoid impacts to active nests.
F-31 and F-32	**Mitigation Measure BIO-4: Develop and Implement a Restoration Plan for Blue Oak Woodland Habitat.** HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat. For any temporary impact, all disturbed soils and new fill in this habitat shall be revegetated with site-appropriate native species. For any permanent impact, blue oak woodland habitat shall be mitigated at a ratio of 1.1:1 (replacement to impact). Blue oak trees and valley oak trees that are removed shall be mitigated at a ratio that shall be determined based on the diameter at breast height (dbh) of the tree, as described further below.	Woody vegetation would be prohibited along the underground corridor. Revise text as follows: HWT, PG&E, and/or their contractor(s) shall develop and implement a Habitat Restoration Plan to mitigate any temporary and permanent impact on blue oak woodland habitat. For any temporary impact, all disturbed soils and new fill in this habitat shall be revegetated with site-appropriate native species compatible with the facility. For any permanent impact, blue oak woodland habitat shall be mitigated at a ratio of 1.1:1 (replacement to impact). Blue oak trees and valley oak trees that are removed shall be mitigated at a ratio that shall be determined based on the diameter at breast height (dbh) of the tree, as described further below.
F-32	**Mitigation Measure BIO-4: Develop and Implement a Restoration Plan for Blue Oak Woodland Habitat.** Blue oak woodland restoration or compensation may be completed at the work area, in the vicinity, or at a conservation bank with a service area that covers the Proposed Project or selected alternative. Revegetated or restored areas shall be maintained and monitored to ensure a minimum of 65 percent survival of woody plantings after 5 years .	Revise as follows: Blue oak woodland restoration or compensation may be completed at the work area, in the vicinity, or at a conservation bank with a service area that covers the Proposed Project or selected alternative. Revegetated or restored areas shall be maintained and monitored to ensure a minimum of 65 percent survival of woody plantings after 5 years (or 75 percent after 3 years).or at a conservation bank with a service area that covers the Proposed Project or selected alternative.
F-36 and F-37	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** The following actions by the CPUC are designed to augment the APMs provided by the Project proponents to ensure that construction impacts to cultural resources are mitigated to a level of less than significant: a. The CPUC shall appoint a qualified archaeologist to represent the interests of the CPUC and oversee the implementation of the APMs with regard to archaeological resources on their behalf. The archaeologist shall meet the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology.	This portion of the measure refers to an action taken by the CPUC, not the Applicants. Therefore, it should be removed. Revise text as follows: The following actions ~~by the CPUC~~ are designed to augment the APMs provided by the Project proponents to ensure that construction impacts to cultural resources are mitigated to a level of less than significant: ~~a. The CPUC shall appoint a qualified archaeologist to represent the interests of the CPUC and oversee the implementation of the APMs with regard to archaeological resources on their behalf. The archaeologist shall meet the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology.~~
F-36 and F-37	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** b. The Project proponents shall make every effort to design the project to avoid known eligible or potentially eligible cultural resources for the Proposed Project, reasonably foreseeable distribution components, and alternatives. A 50-foot buffer, using flagging, rope, tape, or fencing, shall be established around the boundary of each respective resource, which shall be designated an environmentally sensitive area. If the proponent engineers determine that the project cannot be designed to avoid known cultural resources and construction will encroach upon the resource buffer, construction monitoring by an archaeologist shall be required.	This portion of the measure is already required by APM Cul-4 and should therefore be removed. Revise text as follows: ~~b. The Project proponents shall make every effort to design the project to avoid known eligible or potentially eligible cultural resources for the Proposed Project, reasonably foreseeable distribution components, and alternatives. A 50-foot buffer, using flagging, rope, tape, or fencing, shall be established around the boundary of each respective resource, which shall be designated an environmentally sensitive area. If the proponent engineers determine that the project cannot be designed to avoid known cultural resources and construction will encroach upon the resource buffer, construction monitoring by an archaeologist shall be required.~~
F-37	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** A Native American representative from a consulting tribe shall be retained to monitor the construction activities if the resource is a Native American archaeological site.	The CPUC performed AB 52 consultation, and PG&E was not present. Given local tribal territories and desires, it is inappropriate for PG&E to choose a monitor, that should be done by the CPUC. Revise text as follows: A Native American representative from a ~~consulting~~ tribes identified by the CPUC shall be retained to monitor the construction activities if the resource is a Native American archaeological site. The Project proponent will be responsible for communicating project schedules and needs to the Native American monitor and/or tribe, but it is the responsibility of the tribe to ensure that the monitor is on site when called for, and work may proceed if the Project proponent has provided adequate notice of work.

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F-38	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** The archaeological monitor shall notify the Project's cultural resources principal investigator immediately, and the principal investigator shall, in turn, notify the CPUC and their appointed professional archaeologist. If an archaeological monitor is not present at the time of the find, Project proponent's environmental inspector or construction supervisor shall make the notifications. The Project's cultural resources principal investigator shall inspect the find within 24 hours of discovery and notify the CPUC of their initial assessment.	Revise text as follows: The archaeological monitor shall notify the Project's cultural resources principal investigator immediately, and the principal investigator shall, in turn, notify the CPUC and their appointed professional archaeologist. If the discovery happens during work being performed by PG&E, the PG&E cultural resource specialist (CRS) must also be notified alongside the CPUC. PG&E's CRSs meet Secretary of the Interior Qualifications as archaeological principal investigators, and have extensive experience performing cultural resources studies within the electrical utility environment. If an archaeological monitor is not present at the time of the find, Project proponent's environmental inspector or construction supervisor shall make the notifications. The Project's cultural resources principal investigator shall inspect the find within 24 hours of discovery and notify the CPUC, and, if on a PG&E portion of the project, PG&E's CRS, of their initial assessment.
F-38	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.	Add the following text: Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. If the assessment of significance can be made by the cultural resources principal investigator based on a small sample of discovered material, then the CPUC must respond in writing within 48 hours, or it may be assumed that the CPUC concurs with the principal investigator's findings. If analysis of the discovery requires an in-depth study (i.e., eligibility excavations, etc.) then the CPUC must respond in writing within 1 week of receipt of the principal investigator's report, or it may be assumed that the CPUC concurs with the principal investigator's findings. If the resource is found during PG&E work, or PG&E work will be impacted by the presence or discovery of the resource, then the principal investigator will consult with the PG&E CRS throughout the assessment and, if appropriate, treatment process.
F-38	**Mitigation Measure CR-1: CPUC Enhancements to APMs CUL-1, CUL-2, CUL-3, CUL-5, and CUL-6.** The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. Work in the area may commence, at the direction of the CPUC, upon completion of treatment and under the direction of the qualified archaeologist.	Revise text as follows: The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. The CPUC must provide either concurrence or comments in writing within 1 week of receiving the report. A lack of response from the CPUC may be taken as concurrence with the sufficiency of the treatment documented within the report. Work in the area may commence, ~~at the direction of the CPUC,~~ following concurrence from the CPUC that the work performed was sufficient, upon completion of treatment and under the direction of the qualified archaeologist. Should the resource also be identified as a tribal cultural resource, then measures outlined in Section 4.18 will also apply if resource-specific measures identified during the resource-specific consultation do not supersede them.
F-42	**Mitigation Measure CR-2: Comply with the Legal Requirements of PRC 5097.98.** In turn, the principal investigator shall immediately notify the County coroner, as well as the CPUC and their appointed professional archaeologist.	Revise text as follows: In turn, the principal investigator shall immediately notify the County coroner, as well as the CPUC and their appointed professional archaeologist and, if the discovery is made during PG&E activities, the PG&E CRS.
F-42	**Mitigation Measure CR-2: Comply with the Legal Requirements of PRC 5097.98.** The most likely descendent will complete inspection of the site and make recommendations or preferences for treatment within 48 hours of being granted access to the site. Construction will not continue in the protected area until treatment of the remains has been resolved and notice is provided by the CPUC archaeologist to resume work in the area.	Revise text as follows: The most likely descendent will complete inspection of the site and make recommendations or preferences for treatment within 48 hours of being granted access to the site. As per Section 5097.98 of the PRC, the MLD must also work with the landowner to determine appropriate treatment of remains.
F-42	**Mitigation Measure CR-2: Comply with the Legal Requirements of PRC 5097.98.** Construction will not continue in the protected area until treatment of the remains has been resolved and notice is provided by the CPUC archaeologist to resume work in the area.	Time limits are valuable as they allow PG&E to know clearly when something is complete, as opposed to when it is ongoing, and it allows. Revise text as follows: Construction will not continue in the protected area until treatment of the remains has been resolved and notice is provided by the CPUC archaeologist to resume work in the area, which the CPUC must provide within 24 hours of resolution. If an MLD is not identified by the NAHC, or if the MLD and the landowner cannot reach agreement, then the provisions of PRC Section 5097.98 will be put into effect.
F-43	**Mitigation Measure CR-3: Complete Cultural Resources Studies, Evaluate Resources for Significance, and Implement Avoidance and Minimization Measures.** The pedestrian survey shall include systematic surface inspection with transects spaced at 15-meter (approximately 50-foot) intervals, or less, and shall cover the entire site or alignment and a 100-foot buffer around the site or alignment.	Depending on the locations, 15 meter transects or less, while certainly preferred, may not be possible or safe. Revise text as follows: The pedestrian survey shall include systematic surface inspection with transects spaced at 15-meter (approximately 50-foot) intervals~~,~~ or less where feasible and safe (owing to landform, paving, and previous construction). Where such transects are not feasible or safe, survey shall provide the most complete coverage possible either through wider transects (ex. on steep slopes near rivers) or opportunistic survey (ex.: locations where private property fences or buildings/pavement obscure the ground), and shall cover the entire site or alignment and a 100-foot buffer around the site or alignment.
F-45	**Mitigation Measure CR-3: Complete Cultural Resources Studies, Evaluate Resources for Significance, and Implement Avoidance and Minimization Measures.** Archaeological sites found to contain human remains must be treated in accordance with the provisions of Section 7050.5 of the California Health and Safety Code (see APM CUL-4 and Mitigation Measure CR-2). Should any archaeological site be determined eligible for listing in the CRHR, and if Project proponent design engineers determine that any portion of the site that contributes to its eligibility cannot be avoided by construction, a data recovery program shall be necessary and a detailed data recovery plan shall be prepared by a qualified archaeologist per Mitigation Measure CR-1(b). The data recovery plan must be submitted and approved by the CPUC prior to implementation of the plan. The CPUC shall ensure that consulting tribes will have the opportunity to review the data recovery plan for any CRHR-eligible Native American site.	Revised text as follows: Archaeological sites found to contain human remains must be treated in accordance with the provisions of Section 7050.5 of the California Health and Safety Code (see APM CUL-4 and Mitigation Measure CR-2). The CPUC and tribes must either comment on or concur with the findings of the report within 30 days of receipt. Lack of response within 15 days may be considered concurrence. Should any archaeological site be determined eligible for listing in the CRHR, and if Project proponent design engineers determine that any portion of the site that contributes to its eligibility cannot be avoided by construction, a data recovery program shall be necessary and a detailed data recovery plan shall be prepared by a qualified archaeologist per Mitigation Measure CR-1(b). The data recovery plan must be submitted and approved by the CPUC prior to implementation of the plan. The CPUC shall ensure that consulting tribes will have the opportunity to review the data recovery plan for any CRHR-eligible Native American site. The CPUC and tribes must either comment on or concur with the findings of the report within 30 days of receipt. Lack of response within 15 days may be considered concurrence.

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F-53	**Mitigation Measure GEO-1. Mitigation Measure GEO-1: Implement Recommendations in the Project Geotechnical Investigation Report.** HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017). These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.	Revise text as follows: HWT, PG&E, and/or their contractors shall implement the recommendations contained in the geotechnical investigation report prepared for the proposed Estrella Substation (RRC 2016) and proposed 70 kV power line (Kleinfelder 2017), as appropriate for the work, as well as any addenda or subsequent modifications to such reports to account for updated structural design criteria based on the latest California Building Code requirements. These include recommendations for a professional geotechnical engineer or his/her representative to be present during construction to evaluate the suitability of excavated soils for use as engineered fill, to observe and test site preparation and fill placement, and to assess the need for densification of subgrade materials.
F-54	**Mitigation Measure GEO-2. Paleontological Resources Survey, Technical Report, and Construction Monitoring.** Applicability: RFDC, SS-1, PLR-1C	RFDC would not be constructed under this PTC. Therefore, this measure should not apply to this alternative. Revise text as follows: Applicability**:** ~~RFDC~~, SS-1, PLR-1C
F-54	**Mitigation Measure GEO-2. Paleontological Resources Survey, Technical Report, and Construction Monitoring.** The PRTR shall be prepared in accordance with standards provided by the Society for Vertebrate Paleontology and shall assign site sensitivity based on the potential fossil yield classification system utilized by the Bureau of Land Management.	Revise text as follows: The PRTR shall be prepared in accordance with standards provided by the Society for Vertebrate Paleontology and shall assign site sensitivity based on the potential fossil yield classification system utilized by the Bureau of Land Management, and may use additional measures of paleontological sensitivity as determined appropriate by the qualified paleontologist.
F-58	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** **Monitoring and Reporting Action (Responsible Party)** 3. Confirm that the plan is reviewed the San Luis Obispo County Fire Department. (CPUC)	CAL FIRE functions as the County Fire Department under a contract with the County of San Luis Obispo. Revised text as follows: 3. Confirm that the plan is reviewed by CALFIRE~~the San Luis Obispo County Fire Department~~. (CPUC)
F-58	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** For project or alternative components located within a very high or high fire hazard severity zone, HWT and PG&E shall prepare and implement a fire prevention and management plan. The document will address fire prevention measures that will be employed during the construction phases, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The fire prevention and management plan shall also address potential ignition risks during operation of the project or alternative components. Coordination with state and local fire agencies is required, as specified below, and the plan shall be submitted to the CPUC for final review and approval prior to start of construction. Where applicable, overlap with the HWT and PG&E Wildfire Mitigation Plans prepared pursuant to California Public Utilities Code Section 8386 shall be highlighted in the fire prevention and management plan. Specifically, the plan will include, at a minimum, the following:	PG&E and HWT would develop and implement separate fire prevention and management plans. Revise text as follows: For ~~project or~~ alternative components located within a very high or high fire hazard severity zone, HWT and PG&E shall prepare and implement ~~a~~ separate fire prevention and management plans. These documents will address fire prevention measures that will be employed during the construction phases, identifying potential sources of ignition and detailing the measures, equipment, and training that will be provided to all site contractors. The fire prevention and management plans shall also address potential ignition risks during operation of the project or alternative components. Coordination with state and local fire agencies is required, as specified below, and the plans shall be submitted to the CPUC for final review and approval prior to start of construction. Where applicable, overlap with the HWT and PG&E Wildfire Mitigation Plans prepared pursuant to California Public Utilities Code Section 8386 shall be highlighted in the fire prevention and management plan. Specifically, the plans will include, at a minimum, the following:
F-60	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** **Design and Operation Considerations to Minimize Fire Hazard** ▪ Development and implementation of protocols for de-energizing the substation and/or transmission line components in the event of a wildfire; and	At a system level, PG&E's grid control center manages coordination of transmission line and substation clearances/outages during wildfire events, including coordination with CDF and other fire agencies. As such, thus portion of the measure should be removed. Revise text as follows: ▪ ~~Development and implementation of protocols for de-energizing the substation and/or transmission line components in the event of a wildfire; and~~
F-60	**Mitigation Measure HAZ-1. Prepare and Implement a Fire Prevention and Management Plan.** **Design and Operation Considerations to Minimize Fire Hazard** ▪ Inclusion of any needed water storage facilities on-site at the substation accessible to firefighters.	PG&E does not have access to a water source. This portion of the measure is not feasible and should be removed. Revise text as follows: ▪ ~~Inclusion of any needed water storage facilities on-site at the substation accessible to firefighters.~~
F-62	**Mitigation Measure HYD/WQ-1. Implement Construction Best Management Practices for Erosion Control.** For ground-disturbing construction activities that do not require coverage under the Construction General Permit (e.g., total ground disturbance associated with that action does not exceed 1 acre), HWT, PG&E, and/or their contractors shall implement the following measures during construction of the alternative components, or shall implement alternative measures that are equally or more effective: • Implement practices to reduce erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls. • Minimize soil disturbance areas. • Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm-drain inlet protection. • Where feasible, limit construction to dry periods. • Revegetate disturbed areas.	The PTCs sought by the Applicants do not include authorization to construct the reasonably foreseeable distribution components. The mitigation measures will apply to the project components Applicants are authorized to construct under the PTCs. However, because the Applicants are not seeking authority to construct the reasonably foreseeable distribution components, mitigation measures imposed under the PTCs should not apply to the reasonably foreseeable distribution components. Revise text as follows: ~~For ground-disturbing construction activities that do not require coverage under the Construction General Permit (e.g., total ground disturbance associated with that action does not exceed 1 acre), HWT, PG&E, and/or their contractors shall implement the following measures during construction of the alternative components, or shall implement alternative measures that are equally or more effective:~~ • ~~Implement practices to reduce erosion of exposed soil and stockpiles, including watering for dust control, establishing perimeter silt fences, and/or placing fiber rolls.~~ • ~~Minimize soil disturbance areas.~~ • ~~Implement practices to maintain water quality, including silt fences, stabilized construction entrances, and storm-drain inlet protection.~~ • ~~Where feasible, limit construction to dry periods.~~ ~~Revegetate disturbed areas~~

Page	Draft EIR Language	Comments
F-67	**Mitigation Measure NOI-1: General Construction Noise.** Nighttime work between the hours of 10:00 pm and 7:00 am shall not occur, except when electrical clearances are available or when safe completion of a construction procedure is needed.	Nighttime work between the hours of 10:00 pm and 7:00 am shall not occur, except when electrical clearances are not available or when safe completion of a construction procedure is needed.
F-66 and F-67	**Mitigation Measure NOI- 2: Minimize Noise Impacts from Helicopters.** HWT and PG&E shall implement the following procedures for helicopter activities: ▪ Public Notice. Residences and places of worship (e.g., The Cove) within 1450 feet from any location where helicopter activities may occur, including flight paths if applicable, shall be provided written notice at least 30 days prior to beginning helicopter activities to inform them of the schedule for helicopter use and potential noise disruptions. Methods for receptors to reduce noise in structures shall be included in the notice (i.e., closing doors and windows facing the alignment). The notice shall describe procedures for submitting any noise complaints during construction and provide a phone number for submitting such complaints, as required by MM NOI-1. ▪ Helicopter Hovering. Light/medium lift helicopters shall not operate closer than 1,450 feet from any receptors unless actively working at pole locations along the alignment. Helicopters may operate closer than these distances if all affected receptors agree in writing to a shorter distance. Prior to reducing the minimum distance from receptors, PG&E shall provide the CPUC with the names, contact information, and written agreements for all affected persons within the applicable distances. The written agreements shall clearly identify the anticipated helicopter noise levels, daily schedule, and duration of helicopter activities in the vicinity. ▪ Helicopter Landing Zones. Helicopter landing zones shall not be positioned closer than 1,450 feet from any receptor. Helicopters may land closer than these distances if all affected receptors agree in writing to allow a shorter distance.	As described in the comment letter, the FTA Transit Noise and Vibration Impact Assessment Manual, which contains guidelines for the evaluation of the significance of construction noise impacts, is for transit projects and should not be used to determine significance of the proposed utility project. The Proposed Project would comply with local noise ordinances; therefore, impacts will be less than significant and mitigation is not necessary. However, if MM NOI-1 is included, it should be modified since securing written permission from sensitive receptors is not feasible. In addition, light/medium lift helicopters will not exceed the FTA threshold of 90 dBA Leq(1hr), so MM NOI-1 should only apply to heavy lift helicopter operation. Revise text as follows: ~~HWT and~~ PG&E shall implement the following procedures for helicopter activities: ▪ Public Notice. Residences and places of worship (e.g., The Cove) within ~~1450~~ 200 feet from any location where heavy lift helicopter activities may occur (limited to up to 10 pole replacements on the Reconductoring Segment), including flight paths if applicable, shall be provided ~~written~~ notice at least ~~30~~ 14 days prior to beginning helicopter activities to inform them of the schedule for helicopter use and potential noise disruptions. Methods for receptors to reduce noise in structures shall be included in the notice (i.e., closing doors and windows facing the alignment). The notice shall describe procedures for submitting any noise complaints during construction and provide a phone number for submitting such complaints, as required by MM NOI-1. ▪ Helicopter Hovering. ~~Light/medium~~ Heavy lift helicopters shall not operate closer than 200 feet from any receptors unless actively working at pole locations along the alignment. Helicopters may operate closer than these distances if all affected receptors ~~agree~~ are notified ~~in writing to a shorter distance~~. Prior to reducing the minimum distance from receptors, upon request, PG&E shall provide the CPUC with the names~~,~~ and contact information~~, and written agreements~~ for all affected persons notified within the applicable distances. ~~The written agreements shall clearly identify the anticipated helicopter noise levels, daily schedule, and duration of helicopter activities in the vicinity.~~ ▪ Helicopter Landing Zones. Helicopter landing zones within staging areas shall be positioned as far as possible from receptors. Helicopter landing zones shall not be positioned closer than ~~1,450~~ 200 feet from any receptor. Helicopters may land closer than these distances if all affected receptors ~~agree in writing to allow a shorter distance~~ are notified.
F-69	**Mitigation Measure TR-1. Construction Traffic Control Plan.** HWT and PG&E shall implement a traffic control plan during Proposed Project construction and/or during construction of the reasonably foreseeable distribution components or selected alternative. The traffic control plan will minimize vehicle travel delays and potential roadway hazards on public roadways during construction activities. The traffic control plan may be used to satisfy requirements imposed in encroachment permits from Caltrans, County of San Luis Obispo, and/or City of Paso Robles. The traffic control plan shall provide for the following: ▪ In situations where slow-moving trucks or construction equipment are operated on public roadways (e.g., accessing the Estrella Substation site or staging or work areas along the Proposed Project's 70 kV power line route), signage and/or flaggers shall be used to warn motorists of potential safety hazards associated with the slow- moving vehicles. ▪ For any lane closures, signage, flaggers, and/or other devices shall be used to route vehicle traffic around the construction work area. The traffic control measures shall ensure that pedestrians and bicyclists are provided safe passage around the work area, where applicable. ▪ For any road closures, detours will be provided and signage, flaggers, and/or other devices shall be used to ensure motorists, pedestrians, and bicyclists are able to safely pass through the detour areas. ▪ Police, fire, and other emergency services departments serving the area shall be notified of planned lane or road closures on public roadways at least 48 hours in advance. ▪ Crossing structure installation shall occur during periods of low traffic (e.g., avoiding the morning and evening rush hour periods) to the extent practicable.	Revise text as follows: HWT and PG&E shall each implement ~~a~~ traffic control plans ~~during Proposed Project construction and/or during construction of the reasonably foreseeable distribution components or selected alternative. The traffic control plan will minimize vehicle travel delays and potential roadway hazards on public roadways during construction activities. The traffic control plan may be used to satisfy requirements imposed in~~ in accordance with the applicable encroachment permits ~~from~~ issued by Caltrans, County of San Luis Obispo, and/or City of Paso Robles. The traffic control plans may ~~shall~~ provide for the following, as dictated by the relevant agency: • In situations where slow-moving trucks or construction equipment are operated on public roadways (e.g., accessing the Estrella Substation site or staging or work areas along the Proposed Project's 70 kV power line route), signage and/or flaggers shall be used to warn motorists of potential safety hazards associated with the slow- moving vehicles. • For any lane closures, signage, flaggers, and/or other devices shall be used to route vehicle traffic around the construction work area. The traffic control measures shall ensure that pedestrians and bicyclists are provided safe passage around the work area, where applicable. • For any road closures, detours will be provided and signage, flaggers, and/or other devices shall be used to ensure motorists, pedestrians, and bicyclists are able to safely pass through the detour areas. • Protocols from the applicable agencies to notify police, fire, and other emergency services departments serving the area ~~shall be notified~~ of planned lane or road closures on public roadways at least 48 hours in advance. • Crossing structure installation and, or traffic control for conductor crossings shall occur during periods of low traffic (e.g., avoiding the morning and evening rush hour periods) to the extent practicable. • All warning signs, lights, devices, and procedures used in the construction traffic control plan shall conform to the latest California Manual of Uniform Traffic Control Devices.

Estrella Substation and Paso Robles Area Reinforcement Project
PG&E Comments on Draft Environmental Impact Report
Attachment 2
Comments on the Behind-the-Meter Analysis

Below are PG&E's detailed comments on the Behind-the-Meter Solar Plus Storage Adoption Propensity Analysis (BTM Analysis), provided by Energy Division as Appendix B to DEIR Appendix B (Final Alternatives Screening Analysis). Page references are to the BTM Analysis.

Scope of BTM Analysis Is Flawed

- The BTM Analysis states that its analysis is based on evaluation of the time-series load profiles for approximately 75,000 customers (p. 10). However, the Paso Robles DPA only has approximately 47,000 customers. Therefore, the study is flawed because it is based on too large a pool of customers and therefore overestimates the number of potential BTM adopters in the Paso Robles DPA.
- It is unclear how the study's analysis incorporates the number of customers who either already have storage systems installed or have applied to install such systems. The total BTM adoption propensity scenarios listed in Table 4 range from -low, medium and high estimates of approximately 17,000, 19,000 and 21,000 customers, respectively. The total Paso Robles DPA has roughly 47,000 customers, and approximately 6,000 of these are already residential solar PV customers. Of the remaining 41,000 customers, some portion of them reside in apartment buildings or multi-family units. The BTM Analysis does not account for these customers or explain why they should be included in the group of customers that could install a solar plus storage system. Even assuming that all customers in the DPA that rent could install solar plus storage, based on the estimates provided in Table 4, the study predicts a BTM adoption propensity for solar plus storage that ranges between 41 to 51 percent of these remaining 41,000 customers.
- The study is unclear whether its analysis is based on the economic propensity of customers in the Paso Robles DPA to adopt BTM storage or BTM storage plus solar
- The study, admittedly, does not address the likelihood or timing of customer's adopting storage: "Economic propensity analyses simply identify customers for which it would make economic sense to adopt a technology, not necessarily what is likely to occur" (p. 14).
    - The study's propensity finding is high relative to statewide forecast. The study finds a propensity for 125-175 MW of storage in the Paso Robles DPA. For comparison, the CEC forecasts the state of California will have approximately 700-900 MW of behind-the-meters storage. In other words, the study finds that approximately 18 percent of the CEC's adoption forecast for the entire state could be achieved in the Paso Robles DPA
    - Given the absence of storage mandates, future storage adoption is highly uncertain.

Modeling Assumptions are Not Reasonable and Skew the Results of the Analysis

The inputs and assumptions used in the model to assess BTM adoption propensity are flawed.

- The study arbitrarily uses a 10-year payback period as the threshold below which a customer is determined to have a propensity to invest in BTM storage or storage plus PV system. Moreover, the study is vague as to whether the 10-year payback period is applied in the context of purchasing a PV system or a PV plus storage system.

- The study does not provide a range of dollar amounts used for the cost of a residential PV solar system. Instead, it states that the size of a PV system "is optimized based on household energy consumption," and "cost is aligned with IRP assumptions on dollars per watt ($/W) for 2019." The BTM Analysis should provide greater detail and transparency to describe these calculations.
- The study states that "publicly available studies" on the value of lost load range from $5 to $20/kWh. The BTM Analysis should provide a citation to the studies it relied on.

Incentives Availability Is Overestimated

- Incentives can have significant impact on the economic feasibility of storage systems, but the BTM Analysis does not explicitly detail its assumptions about how the incentives in the SGIP and ITC programs were factored into its analysis. These programs provide a wide range of incentives based on customer eligibility and year of adoption, which will influence the results produced by the BTM Analysis.
  - The BTM Analysis says that it incorporates SGIP incentives (p.13). Depending on customer eligibility, residential SGIP incentives currently range from $250 - $1,000 per kWh of battery capacity. What dollar amount was used in the BTM Analysis? Moreover, SGIP funding is currently scheduled to end in 2024, and funding could be exhausted sooner. This means that SGIP funding will end on or before the in-service date of the Proposed Project and should not be factored into the BTM Analysis for purposes of comparing Alternative BS-3 to the reasonably foreseeable distribution components.
  - The study says that it incorporates the ITC program (p. 13). The level of ITC incentive decreases every year between 2019 and 2022, and the residential incentive ends in 2021. This means that ITC funding will end on or before the PTC proceeding is completed and well before the actual in-service date of the Proposed Project. Similar to the SGIP incentive, ITC program incentives should not be factored into the BTM Analysis for purposes of comparing Alternative BS-3 to the reasonably foreseeable distribution components.
  - Unless the economic propensity analysis in the study excludes the SGIP and ITC program incentives, the calculation of the total number potential adopters is flawed because it underestimates the cost of BTM adoption since those incentives will not be available when the PTC is issued and the substation constructed.
- Achieving estimated adoption propensity would require a significant incentive to influence customer behavior. It seems reasonable for cost-comparison purposes to assume that the total dollars for an incentive program would be equivalent to the $18.5 million estimated unit cost of the Proposed Project's distribution components. Using that figure, under the low BTM adoption propensity scenario the $18.5 million incentive would be divided among 17,000 customers, which equals approximately $1,100 per customer, or $881 per person if divided among 21,000 customers. This amount of incentive does not seem like it would drive the high level of market participation estimated by the BTM Analysis.

Attachment 2

Comments on the Behind-the-Meter Analysis

Peak Period of Use and Peak Period of Solar Generation Do Not Align

Table 4 on page 15 estimates that the BTM solar contribution for 17,000 customers during the peak demand period is approximately 88 MW or roughly 5.2 kW per customer. Based on our review, the *average* residential solar PV system generates approximately 5-6 kW per customer. The Paso Robles DPA peak electrical demand period is between 5-7 PM in the summer. The PVWatts program shows on July 8, 2020, an average residential solar system in Paso Robles would output approximately 5 kW, at noon 0.74 kw at 5pm, 0.15 kW at 6pm, and 0 kW at 7pm. In other words, Table 4 assumes that peak solar output occurs during the peak demand period, which is incorrect. Based on the PVWatts program values, at 5pm the 17,000 assumed BTM adopters with 0.74kW solar output each would generate 12.6 MW total, declining to 0 MW by 7 PM, which is far less than the 88 MW estimated by the BTM Analysis. In addition, the residential solar output would be so low from 5-7 PM that the residential load would likely consume all the solar output, leaving nothing left to export to the grid.

Feeder Capacity Issues Limit BTM Adoption Potential

The BTM Analysis states that Paso Robles Feeder 1107 "has the potential for BTM storage adoption of 9.5MW/18.7MWh under the high scenario, and that Paso Robles Feeder 1102 …" has the potential for adoption of 7.3MW/14.3MWh of BTM storage under the high scenario" (p. 21). In addition, Table 7 provides the following BTM storage adoption propensity regarding three other Paso Robles feeders under the high adoption scenario: Circuit 1104 has 10.9 MW, Circuit 1106 has 18.8 MW, and Circuit 1108 has 14.9MW.

The study overestimates the maximum feeder capacity of these circuits in most instances. The Paso Robles circuits are all 12 kV feeders. The maximum capacity of a 12 kV feeder is roughly 12 MW, assuming that the conductor for the feeder uses PG&E's largest specified distribution conductor, which is a 715 mm all aluminum conductor (AAC). Even assuming that all of the Paso Robles circuits have a 12 MW capacity, the high BTM storage adoption propensity estimated by the study exceeds a 12 kV circuit's possible rating for Paso Robles 1106 and 1108, and between 61-79% in the other cases. Even the low BTM storage adoption scenario for Paso Robles 1106 exceeds the capacity of the highest rated 12kV circuit.

Hosting Capacity Issues Limit Generation Potential

Hosting capacity refers to the ability of circuits to accept new generation. The hosting capacity analysis is flawed because it incorrectly assumes that hosting capacity can be calculated for an entire feeder, whereas actual hosting capacity functions on a segment-by-segment basis for each feeder and must be evaluated that way.

- The BTM Analysis does not specify if or when the combination of solar and storage would be a load or generation on the grid, which would impact hosting capacity needs.
- PG&E compared the BTM Analysis results to PG&E's ICA map, because it is more useful when looking at a specific location rather than a general area, and it is the most conservative and therefore realistic value. The ICA data is calculated at the line section level and cannot be added across line sections or feeders because the results are dependent on each other, so there is no way to sum the total hosting capacity across the entire feeder. This makes it difficult to extrapolate a feeder-level hosting capacity to

compare to the BTM adoption propensity estimates provided in the study, such as Table 7. As a reasonable approach, we took the line section that had the most capacity on a particular feeder to estimate the maximum hosting capacity for the entire circuit (i.e., the value represents the highest estimate in a conservative assumption). We also note that the maximum hosting capacity PG&E ever shows for a line section is 10MW, which is the limit for a standard interconnection.

- The study does not consider PV or battery storage system interconnection or feeder operations issues when estimating BTM adoption storage propensity.
- Paso Robles 1104 has zero hosting capacity for both generic and PV.
- For Paso Robles 1106, ICA map indicates that highest hosting capacity for a line section on that circuit is 810kW of generic or 1010kW of PV.

Battery Storage System Issues

- **Size and Storage**. The study assumes a battery size of 7 kW/13.5 kWh (p. 12), which is described as a "market-ready product" (p. 20). PG&E deduces, based on these specifications, that the CPUC is referring to a Tesla Powerwall 2. Battery sizes are typically reported with the maximum continuous battery power rating, which appears to be the most relevant metric for the context of this study. However, the 7kW is a peak output number and 5kW is the continuous output rating. Also noted on the Tesla web site is that the battery holds 10% in reserve upon discharge so there is only 12.2kWh available for use. To our knowledge, a battery with 13.5 kWh and 7 kW of maximum continuous power is not widely available on the market. It is unclear how sensitive the study's findings are to these particular storage specifications, but the likely result is that the study overestimates the economic value of the batteries and overestimates the number of potential BTM adopters as well.

- **Cost**. The study assumes a residential storage system cost of $9,376 (p. 12). Based on data provided by storage vendors and third-party market research firms, this cost is lower than typical costs reported. For example, Tesla—a residential storage market leader—reports their 5 kW/ 13.5 kWh Powerwall 2 storage systems typically cost $10,100-$12,100, excluding taxes, permit fees, and other soft costs. Thus, the actual cost to purchase and install a residential storage system is higher than assumed by the study. On this basis alone, the study likely overestimates the number of potential BTM adopters.

  In addition, typical 5 kW solar systems in California after current tax incentives cost about $13,200 (see www.solarreviews.com). Together, a residential solar-plus-battery system would likely cost between $23,000 and $25,000. This further emphasizes the point that the study likely overestimated the number of potential BTM adopters.

- **Export Ability**. The BTM Analysis states that: "BTM storage systems function by either directly reducing the customer's own grid consumption, or sending excess stored power back to the grid, often in response to a price or event signal" (p. 10). Based on information provided in Table 3, it appears that the study uses the Tesla Powerwall 2 unit as the residential battery storage unit to base its analysis on (7kW/13.5kWh unit size matches the Tesla Powerwall 2 description). The BTM adoption propensity battery storage values in Table 4 assume each customer battery can output approximately 7 kW to the grid for the entire peak period. This is not possible since PG&E has not approved the Tesla battery, or any other battery, for export to the grid. The actual capacity reduction per customer will be the load that each battery takes off the grid. Estimated customer load for the typical PG&E system residential customer is 2kW (peak) (Figure 1-12, CEC 2014-2024 Preliminary Forecast, Electric Demand by Utility Planning Area). Even assuming that low scenario estimate that 17,000 customers would adopt BTM is correct, this would equate to a reduction of approximately 34 MW instead of the 125 MW listed in Table 4. Tables 5 and 7 are impacted by this same issue.

Master Control System for Home Battery Storage Systems Does Not Exist

The BTM Analysis states that the calculated BTM storage adoption propensity is sufficient to meet the capacity needs PG&E identified in its 2019 DDOR for Paso Robles circuit 1104 and San Miguel Bank 1, assuming that the BTM storage resources "were fully charged at the start of the peak period and could be subsequently discharged in a coordinated fashion (a master control system may be required for this)" (p. 22, text and Table 9). As discussed above, PG&E has not approved the Tesla Powerwall 2 unit or any other BTM battery storage device to export power to the grid. Therefore, the study's determination is incorrect to the extent its analysis is based on exporting power from a battery onto the grid to meet another customer's demand, rather than simply reducing the amount of power from the grid needed by the customers that installed batteries.

Moreover, even if PG&E approved a battery storage system technology, such as the Tesla Powerwall 2, to discharge to the grid, the "master control system" to coordinate the discharge posited by the study does not exist at this time. While it may be technically feasible to control a large number of BTM batteries for deferral in the future, there is no off-the-shelf solution right now. PG&E is working on some of this functionality via EPIC 3.03 and to operationalize DIDF/IDER, but those are currently point solutions and not aggregator solutions.

Attachment 3
Revised Air Quality Analysis

Proposed Project Construction Emissions

	CO	ROG	NO_X	ROG + NO_X	SO_X	Fugitive Dust PM_{10}	PM_{10}	$PM_{2.5}$	DPM
Maximum Daily Emissions (lbs/day)									
CalEEMod Sources (unmitigated)	77.59	11.89	110.48	122.37	0.28	8.47	12.38	7.38	3.91
Helicopter (unmitigated)	11.86	1.60	30.17	30.56	3.58	46.30	48.36	48.36	0.00
Total Maximum Daily (unmitigated)	79.88	11.89	110.48	122.37	3.83	47.78	52.66	51.37	3.91
CalEEMod Sources (mitigated)	77.59	11.89	110.48	122.37	0.28	4.05	7.96	5.28	3.91
Helicopter (mitigated)	11.86	1.60	30.17	30.56	3.58	46.30	48.36	48.36	0.00
Total Maximum Daily (mitigated)	79.88	11.89	110.48	122.37	3.83	47.78	52.66	51.37	3.91
Significance Thresholds	-	-	-	137	-	-	-	-	7
Significant?	-	-	-	No	-	-	-	-	No
Maximum Quarterly Emissions (tons/quarter)									
CalEEMod Sources (unmitigated)	-	-	-	1.18	-	0.04	-	-	0.04
Helicopter (unmitigated)	-			0.09	-	0.12	-	-	-
Total Maximum Quarterly (unmitigated)	-	-	-	1.28	-	0.16	-	-	0.04
CalEEMod Sources (mitigated)	-	-	-	1.18	-	0.03	-	-	0.04
Helicopter (mitigated)	-			0.09	-	0.12	-	-	-
Total Maximum Quarterly (mitigated)	-	-	-	1.28	-	0.14	-	-	0.04
Significance Thresholds	-	-	-	Tier 1 2.5 Tier 2 26.3	-	2.5	-	-	0.13
Significant?	-	-	-	No	-	No	-	-	No

	CO	ROG	NO_X	ROG + NO_X	SO_X	Fugitive Dust PM_{10}	PM_{10}	$PM_{2.5}$	DPM
Total Project Emissions (tons)									
CalEEMod Sources (unmitigated)	6.82	0.97	8.63	9.60	0.02	0.29	0.60	0.38	0.31
Helicopter (unmitigated)	0.04	0.01	0.15	0.16	0.02	0.21	0.22	0.22	-
Total Construction Project (unmitigated)	6.86	0.98	8.78	9.76	0.04	0.50	0.82	0.60	0.31
CalEEMod Sources (mitigated)	6.82	0.97	8.63	9.60	0.02	0.22	0.53	0.35	0.31
Helicopter (mitigated)	0.04	0.01	0.15	0.16	0.02	0.21	0.22	0.22	-
Total Construction Project (mitigated)	6.86	0.98	8.78	9.76	0.04	0.43	0.75	0.57	0.31

Note: Some totals may be off due to rounding.

Proposed Project GHG Emissions

Phase	GHG Emissions (Metric Tons CO_2e)
Ground-Based Construction Emissions (unmitigated)	2,206
Helicopter Emissions (unmitigated)	43.70
Total Construction Emissions (unmitigated)	2,250
Amortized Construction Emissions (unmitigated)	75.0
Ground-Based Construction Emissions (mitigated)	2,206
Helicopter Emissions (mitigated)	43.70
Total Construction Emissions (mitigated)	2,250
Amortized Construction Emissions (mitigated)	75.0
SF_6 Gas Insulated Switches and Equipment	96
Total Annualized Emissions	187

Estimated Weekly Emissions (to determine maximum lb/day)			Total Unmitigated									Total Mitigated								
Start of week	End of Week	Week	CO	ROG	NOX	ROG + NOX	SOX	Fugitive Dust PM10	PM10	PM2.5	DPM	CO	ROG	NOX	ROG + NOX	SOX	Fugitive Dust PM10	PM10	PM2.5	DPM
6/1/2022	6/7/2022	1	4.51	0.63	9.13	9.77	0.02	1.26	1.47	0.41	0.21	4.51	0.63	9.13	9.77	0.02	0.77	0.98	0.35	0.21
6/8/2022	6/14/2022	2	4.51	0.63	9.13	9.77	0.02	1.26	1.47	0.41	0.21	4.51	0.63	9.13	9.77	0.02	0.77	0.98	0.35	0.21
6/15/2022	6/21/2022	3	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67
6/22/2022	6/28/2022	4	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67
6/29/2022	7/5/2022	5	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67
7/6/2022	7/12/2022	6	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67
7/13/2022	7/19/2022	7	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67
7/20/2022	7/26/2022	8	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67	11.94	1.91	18.05	19.97	0.04	0.37	1.05	0.72	0.67
7/27/2022	8/2/2022	9	15.10	2.41	24.31	26.72	0.05	1.39	2.24	1.03	0.85	15.10	2.41	24.31	26.72	0.05	0.91	1.76	0.98	0.85
8/3/2022	8/9/2022	10	15.10	2.41	24.31	26.72	0.05	1.39	2.24	1.03	0.85	15.10	2.41	24.31	26.72	0.05	0.91	1.76	0.98	0.85
8/10/2022	8/16/2022	11	11.40	1.88	18.59	20.46	0.04	0.34	1.00	0.70	0.66	11.40	1.88	18.59	20.46	0.04	0.34	1.00	0.70	0.66
8/17/2022	8/23/2022	12	11.40	1.88	18.59	20.46	0.04	0.34	1.00	0.70	0.66	11.40	1.88	18.59	20.46	0.04	0.34	1.00	0.70	0.66
8/24/2022	8/30/2022	13	11.40	1.88	18.59	20.46	0.04	0.34	1.00	0.70	0.66	11.40	1.88	18.59	20.46	0.04	0.34	1.00	0.70	0.66
8/31/2022	9/6/2022	14	23.80	3.41	32.27	35.68	0.08	0.55	1.69	1.20	1.14	23.80	3.41	32.27	35.68	0.08	0.55	1.69	1.20	1.14
9/7/2022	9/13/2022	15	23.80	3.41	32.27	35.68	0.08	0.55	1.69	1.20	1.14	23.80	3.41	32.27	35.68	0.08	0.55	1.69	1.20	1.14
9/14/2022	9/20/2022	16	55.73	8.79	84.47	93.26	0.20	8.05	11.06	6.43	3.01	55.73	8.79	84.47	93.26	0.20	3.64	6.65	4.33	3.01
9/21/2022	9/27/2022	17	55.73	8.79	84.47	93.26	0.20	8.05	11.06	6.43	3.01	55.73	8.79	84.47	93.26	0.20	3.64	6.65	4.33	3.01
9/28/2022	10/4/2022	18	55.73	8.79	84.47	93.26	0.20	8.05	11.06	6.43	3.01	55.73	8.79	84.47	93.26	0.20	3.64	6.65	4.33	3.01
10/5/2022	10/11/2022	19	77.59	11.89	110.48	122.37	0.28	8.47	12.38	7.38	3.91	77.59	11.89	110.48	122.37	0.28	4.05	7.96	5.28	3.91
10/12/2022	10/18/2022	20	41.54	6.03	57.05	63.07	0.15	1.38	3.32	2.12	1.94	41.54	6.03	57.05	63.07	0.15	1.22	3.15	2.10	1.94
10/19/2022	10/25/2022	21	39.91	5.89	54.52	60.40	0.14	1.24	3.16	2.06	1.92	39.91	5.89	54.52	60.40	0.14	1.08	3.00	2.04	1.92
10/26/2022	11/1/2022	22	49.49	6.89	64.50	71.39	0.17	1.30	3.74	2.61	2.45	49.49	6.89	64.50	71.39	0.17	1.30	3.74	2.61	2.45
11/2/2022	11/8/2022	23	49.49	6.89	64.50	71.39	0.17	1.30	3.74	2.61	2.45	49.49	6.89	64.50	71.39	0.17	1.30	3.74	2.61	2.45
11/9/2022	11/15/2022	24	52.93	7.34	69.69	77.04	0.17	1.41	4.10	2.86	2.69	52.93	7.34	69.69	77.04	0.17	1.41	4.10	2.86	2.69
11/16/2022	11/22/2022	25	52.93	7.34	69.69	77.04	0.17	1.41	4.10	2.86	2.69	52.93	7.34	69.69	77.04	0.17	1.41	4.10	2.86	2.69
11/23/2022	11/29/2022	26	47.19	6.65	61.61	68.26	0.16	1.21	3.66	2.59	2.45	47.19	6.65	61.61	68.26	0.16	1.21	3.66	2.59	2.45
11/30/2022	12/6/2022	27	47.19	6.65	61.61	68.26	0.16	1.21	3.66	2.59	2.45	47.19	6.65	61.61	68.26	0.16	1.21	3.66	2.59	2.45
12/7/2022	12/13/2022	28	48.80	6.85	62.78	69.63	0.17	1.22	3.59	2.51	2.36	48.80	6.85	62.78	69.63	0.17	1.22	3.59	2.51	2.36
12/14/2022	12/20/2022	29	48.80	6.85	62.78	69.63	0.17	1.22	3.59	2.51	2.36	48.80	6.85	62.78	69.63	0.17	1.22	3.59	2.51	2.36
12/21/2022	12/27/2022	30	56.64	7.83	74.14	81.97	0.20	1.71	4.31	2.87	2.61	56.64	7.83	74.14	81.97	0.20	1.71	4.31	2.87	2.61
12/28/2022	1/3/2023	31	65.35	8.89	75.32	84.21	0.25	1.56	4.01	2.69	2.44	65.35	8.89	75.32	84.21	0.25	1.56	4.01	2.69	2.44
1/4/2023	1/10/2023	32	62.17	8.58	72.76	81.34	0.23	1.56	3.98	2.67	2.43	62.17	8.58	72.76	81.34	0.23	1.56	3.98	2.67	2.43
1/11/2023	1/17/2023	33	57.81	8.13	67.39	75.52	0.21	1.17	3.49	2.46	2.32	57.81	8.13	67.39	75.52	0.21	1.17	3.49	2.46	2.32
1/18/2023	1/24/2023	34	67.96	9.43	89.13	98.56	3.78	47.36	51.62	50.68	2.20	67.96	9.43	89.13	98.56	3.78	47.36	51.62	50.68	2.20
1/25/2023	1/31/2023	35	79.88	11.39	106.16	117.55	3.83	47.78	52.66	51.37	2.82	79.88	11.39	106.16	117.55	3.83	47.78	52.66	51.37	2.82
2/1/2023	2/7/2023	36	43.10	6.12	53.44	59.56	0.16	1.40	3.16	2.01	1.77	43.10	6.12	53.44	59.56	0.16	1.40	3.16	2.01	1.77
2/8/2023	2/14/2023	37	49.18	6.82	70.21	77.03	3.73	47.64	51.18	50.10	1.48	49.18	6.82	70.21	77.03	3.73	47.64	51.18	50.10	1.48
2/15/2023	2/21/2023	38	36.74	4.98	52.78	57.75	3.68	47.19	50.13	49.42	0.88	36.74	4.98	52.78	57.75	3.68	47.19	50.13	49.42	0.88
2/22/2023	2/28/2023	39	21.22	2.96	24.03	26.99	0.09	0.75	1.53	0.93	0.78	21.22	2.96	24.03	26.99	0.09	0.75	1.53	0.93	0.78
3/1/2023	3/7/2023	40	31.86	4.26	41.41	45.66	0.12	3.59	4.85	1.81	1.25	31.86	4.26	41.41	45.66	0.12	2.38	3.63	1.68	1.25
3/8/2023	3/14/2023	41	36.17	4.62	46.94	51.56	0.14	3.99	5.37	2.05	1.38	36.17	4.62	46.94	51.56	0.14	2.78	4.16	1.92	1.38
3/15/2023	3/21/2023	42	19.92	2.48	22.21	24.69	0.07	0.89	1.61	0.91	0.72	19.92	2.48	22.21	24.69	0.07	0.89	1.61	0.91	0.72
3/22/2023	3/28/2023	43	19.92	2.48	22.21	24.69	0.07	0.89	1.61	0.91	0.72	19.92	2.48	22.21	24.69	0.07	0.89	1.61	0.91	0.72
3/29/2023	4/4/2023	44	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
4/5/2023	4/11/2023	45	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
4/12/2023	4/18/2023	46	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
4/19/2023	4/25/2023	47	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
4/26/2023	5/2/2023	48	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
5/3/2023	5/9/2023	49	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
5/10/2023	5/16/2023	50	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
5/17/2023	5/23/2023	51	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
5/24/2023	5/30/2023	52	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59	15.72	2.13	16.90	19.03	0.06	0.54	1.12	0.69	0.59
5/31/2023	6/6/2023	53	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
6/7/2023	6/13/2023	54	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
6/14/2023	6/20/2023	55	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
6/21/2023	6/27/2023	56	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
6/28/2023	7/4/2023	57	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
7/5/2023	7/11/2023	58	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
7/12/2023	7/18/2023	59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
7/19/2023	7/25/2023	60	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
7/26/2023	8/1/2023	61	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
8/2/2023	8/8/2023	62	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
8/9/2023	8/15/2023	63	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
8/16/2023	8/22/2023	64	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
8/23/2023	8/29/2023	65	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
8/30/2023	9/5/2023	66	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
9/6/2023	9/12/2023	67	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
9/13/2023	9/19/2023	68	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
9/20/2023	9/26/2023	69	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
9/27/2023	10/3/2023	70	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
10/4/2023	10/10/2023	71	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
10/11/2023	10/17/2023	72	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
10/18/2023	10/24/2023	73	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
10/25/2023	10/31/2023	74	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59	15.42	2.09	16.65	18.74	0.06	0.43	1.02	0.66	0.59
11/1/2023	11/7/2023	75	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46
11/8/2023	11/14/2023	76	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46
11/15/2023	11/21/2023	77	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46
11/22/2023	11/28/2023	78	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46	32.88	4.68	38.90	43.58	0.12	0.76	2.22	1.55	1.46
11/29/2023	12/5/2023	79	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87
12/6/2023	12/12/2023	80	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87
12/13/2023	12/19/2023	81	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87
12/20/2023	12/26/2023	82	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87	17.45	2.59	22.24	24.83	0.06	0.33	1.20	0.89	0.87
12/27/2023	1/2/2024	83	17.14	2.50	20.64	23.14	0.06	0.33	1.12	0.82	0.80	17.14	2.50	20.64	23.14	0.06	0.33	1.12	0.82	0.80
1/3/2024	1/9/2024	84	17.14	2.50	20.64	23.14	0.06	0.33	1.12	0.82	0.80	17.14	2.50	20.64	23.14	0.06	0.33	1.12	0.82	0.80
1/10/2024	1/16/2024	85	17.14	2.50	20.64	23.14	0.06	0.33	1.12	0.82	0.80	17.14	2.50	20.64	23.14	0.06	0.33	1.12	0.82	0.80
1/17/2024	1/23/2024	86	21.10	2.89	50.81	53.70	3.04	33.40	34.53	34.23	0.80	21.10	2.89	50.81	53.70	3.04	33.40	34.53	34.23	0.80
1/24/2024	1/30/2024	87	21.10	2.89	50.81	53.70	3.04	33.40	34.53	34.23	0.80	21.10	2.89	50.81	53.70	3.04	33.40	34.53	34.23	0.80
1/31/2024	2/6/2024	88	6.85	0.80	34.79	35.59	2.99	33.66	34.14	33.63	0.14	6.85	0.80	34.79	35.59	2.99	33.42	33.89	33.60	0.14
2/7/2024	2/13/2024	89	2.90	0.41	4.62	5.03	0.01	0.59	0.73	0.22	0.14	2.90	0.41	4.62	5.03	0.01	0.35	0.49	0.20	0.14
2/14/2024	2/20/2024	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Daily Emissions			**79.88**	**11.89**	**110.48**	**122.37**	**3.83**	**47.78**	**52.66**	**51.37**	**3.91**	**79.88**	**11.89**	**110.48**	**122.37**	**3.83**	**47.78**	**52.66**	**51.37**	**3.91**

Preliminary Construction Activity and Schedule for the Proposed Project

Project Phase	Task	PEA Estimated Work Dates*	Data Request 5 Estimated Work Dates*	Revised Estimated Work Dates*	PEA Estimated Work Months	Data Request 5 Estimated Work Months	Revised Estimated Work Months
Estrella Substation							
Substation Site	Site Work Area Preparation Grading Entrance Road Culverts Mobilization	November–December 2018	--	September–October 2022	Month 1–2 (2 months)	--	Month 4–5 (2 months)
	Access Roads	November 2018	--	September 2022	Month 1 (1 month)	--	Month 4 (1 month)
	Fence and Gate Installation	December 2018	--	October 2022	Month 2 (1 month)	--	Month 5 (1 month)
230 kV Substation	Foundation Construction	December–January 2019	--	October–November 2022	Month 2–3 (2 months)	--	Month 5–6 (2 months)
	Ground Grid / Conduit Installation	January–February 2019	--	November–December 2022	Month 3–4 (2 months)	--	Month 6–7 (2 months)
	Steel / Bus Erection	February 2019	--	December 2022–January 2023	Month 4 (1 month)	--	Month 7–8 (2 months)
	Install Yard Rock	February–March 2019	--	December 2022–January 2023	Month 4–5 (2 months)	--	Month 7–8 (2 months)
	Transformer and Equipment Delivery and Installation	February–March 2019	--	January–February 2023	Month 4–5 (2 months)	--	Month 8–9 (2 months)
	Control Enclosure Delivery and Install	March 2019	--	January 2023	Month 5 (1 month)	--	Month 8 (1 month)

Preliminary Construction Activity and Schedule for the Proposed Project

Project Phase	Task	PEA Estimated Work Dates*	Data Request 5 Estimated Work Dates*	Revised Estimated Work Dates*	PEA Estimated Work Months	Data Request 5 Estimated Work Months	Revised Estimated Work Months
230 kV Substation (cont.)	Equipment Delivery and Install	March–April 2019	--	January–February 2023	Month 5–6 (2 months)	--	Month 8–9 (2 months)
	Cable Installation and Termination	March–April 2019	--	February 2023	Month 5–6 (2 months)	--	Month 9 (1 month)
	Testing and Commissioning	April–May 2019	--	February–March 2023	Month 6–7 (2 months)	--	Month 9–10 (2 months)
	Cable Installation and Termination	March–April 2019	--	February 2023	Month 5–6 (2 months)	--	Month 9 (1 month)
	Testing and Commissioning	April–May 2019	--	February–March 2023	Month 6–7 (2 months)	--	Month 9–10 (2 months)
	Cleanup and Restoration	May 2019	--	March 2023	Month 7 (1 month)	--	Month 10 (1 month)
70 kV Substation	Mobilization	--	--	October 2022	--	--	Month 5 (1 month)
	Foundation Construction	December–January 2019	--	November–December 2022	Month 2–3 (2 months)	--	Month 6–7 (2 months)
	Ground Grid / Conduit Installation	December–January 2019	--	November–December 2022	Month 2–3 (2 months)	--	Month 6–7 (2 months)
	Steel / Bus Erection	January–February 2019	--	January 2023	Month 3–4 (2 months)	--	Month 8 (1 month)

Preliminary Construction Activity and Schedule for the Proposed Project

Project Phase	Task	PEA Estimated Work Dates*	Data Request 5 Estimated Work Dates*	Revised Estimated Work Dates*	PEA Estimated Work Months	Data Request 5 Estimated Work Months	Revised Estimated Work Months
70 kV Substation (cont.)	Control Enclosure Delivery and Install	February 2019	--	February 2023	Month 4 (1 month)	--	Month 9 (1 month)
	Equipment Delivery and Installation	February 2019	--	February 2023	Month 4 (1 month)	--	Month 9 (1 month)
	Cable Installation and Termination	February–March 2019	--	February–March 2023	Month 4–5 (2 months)	--	Month 9–10 (2 months)
	Install Yard Rock	March 2019	--	March 2023	Month 5 (1 month)	--	Month 10 (1 month)
	Cleanup and Restoration	March 2019	--	March 2023	Month 5 (1 month)	--	Month 10 (1 month)
	Testing and Commissioning	April 2019	--	April–May 2023	Month 6 (1 month)	--	Month 11–12 (2 months)
230 kV Transmission Interconnection	Site Work Area Preparation Mobilization	--	--	June 2022	--	--	Month 1 (1 month)
	Foundation Tower Installation / Removal of One Tower	December–January 2019	--	June–August 2022	Month 2–3 (2 months)	--	Month 1–7 (3 months)
	Conductor	February 2019	--	January 2023	Month 4 (1 month)	--	Month 8 (1 month)
	Cleanup and Restoration	March 2019	--	February 2023	Month 5 (1 month)	--	Month 9 (1 month)

Preliminary Construction Activity and Schedule for the Proposed Project

Project Phase	Task	PEA Estimated Work Dates*	Data Request 5 Estimated Work Dates*	Revised Estimated Work Dates*	PEA Estimated Work Months	Data Request 5 Estimated Work Months	Revised Estimated Work Months
Power Line Route							
New 70 kV Power Line Segment	Site Work Area Preparation Mobilization	November 2018	March 2023	March 2023	Month 1 (1 month)	Month 8 (1 month)	Month 10 (1 month)
	Pole Installation / Transfer / Distribution	December–February 2019	April–November 2023	March–November 2023	Month 2–4 (3 months)	Month 9–16 (8 months)	Month 10–18 (9 months)
	Conductor Installation	March–April 2019	December 2023–January 2024	November 2023–January 2024	Month 5–6 (2 months)	Month 17–18 (2 months)	Month 18–20 (3 months)
	Cleanup and Restoration	May 2019	February 2024	February 2024	Month 7 (1 month)	Month 19 (1 month)	Month 21 (1 month)
Reconductoring Segment	Site Work Area Preparation Mobilization	November 2018	August 2022	August 2022	Month 1 (1 month)	Month 1 (1 month)	Month 3 (1 month)
	Pole Installation / Transfer / Distribution / Removal	December–February 2019	September 2022–February 2023	August 2022–February 2023	Month 2–4 (3 months)	Month 2–7 (6 months)	Month 3–9 (7 months)
	Conductor Installation	March–April 2019	October 2022–February 2023	October 2022–February 2023	Month 5–6 (2 months)	Month 3–7 (6 months)	Month 5–9 (5 months)
	Cleanup and Restoration	May 2019	March 2023	March 2023	Month 7 (1 month)	Month 8 (1 month)	Month 10 (1 month)

Notes: This table is preliminary and subject to change based on CPUC requirements, final engineering, and other factors.

* Dates are provided for duration estimates.

Table 1: Helicopter Combustion Emissions

		Activity				Emissions (lb/day)							(tons/project or MT/project)[3]					
Phase	Helicopter Type	Number of Days	Hours Per day (excluding LTOs) [1]	Number of LTOs per day	fuel kg/day	CO	NOX	ROG [2]	$PM_{10}/PM_{2.5}$	SOx	CO2	fuel use per project MT/project	CO	NOX	ROG [2]	PM10/PM2.5	SOx	CO2
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Sikorsky S92A	5	2.1	14	1,385.30	11.86	24.85	1.60	2.06	3.58	9,635.57	6.93	0.03	0.06	0.00	0.01	0.009	21.85
70 kV Power Line Conductor Installation	MD 520N	6	4.0	10	1,153.89	3.96	30.17	0.39	0.34	2.98	8,025.95	6.92	0.01	0.09	0.00	0.0010	0.0089	21.84

[1.] Hours operating per day excluding landing take off (LTOs) was derived by the project's projected total operating time minus the hovering time associated with planned activities. To be conservative, the climb out operating time is based on the total LTO mode operation times from FOCA data which is more in line with AEDT defaults.

[2] ROG is based on AEDT VOC emission factors.

[3] Criteria pollutants are in terms of tons per project (CO, NOX, ROG, PM10 and PM2.5 and GHG pollutants (CO2 are in metric tons (MT)

Table 2: Helicopter Fuel Consumption and Emission Factors

Helicopter Type	Engine Name	Engine Max SHP	Number of Engines	Takoff shaft HP per engine [1]	Climbout Engine Power Percentage	Climb Out Operating Time (seconds)[2]	Climbout Fuel Consumption (kg/second)[1]	Climbout Emission Factors (g/pollutant per kg fuel) [3]						Cruising Fuel Consumption [3]	Cruising Emission Factors g/hour [3]					
								CO EF	NOX EF	VOC EF	PM EF	SOx	CO2 EF	kg/hr	CO EF	NOX EF	VOC EF	PM EF	SOx [4]	CO2 EF
Sikorsky S92A	GE CT7-8A	2740	2	2329	85	810	0.07	3.91	8.10	0.52	0.40	1.17	3,155.00	263.09	1,009.53	2,157.52	139.08	290.88	308.14	830,061.26
Total LTO Cycle Values							60.11	235.13	486.75	31.41	23.83	70.40	189,654.40							
Helicopter Type	Engine Name	Engine Max SHP	Number of Engines	Takoff shaft HP per engine [1]	Climbout Engine Power Percentage	Climb Out Operating Time (seconds)[2]	Climbout Fuel Consumption (kg/second)[1]	Climbout Emission Factors (g/pollutant per kg fuel) [3]						Cruising Fuel Consumption [3]	Cruising Emission Factors g/hour [3]					
								CO EF	NOX EF	VOC EF	PM EF	SOx	CO2 EF	kg/hr	CO EF	NOX EF	VOC EF	PM EF	SOx [4]	CO2 EF
MD 520N	DDA250-C20	400	1	340	85	810	0.05	1.59	11.76	0.15	0.18	1.17	3,155.00	184.12	283.47	2,193.89	28.31	19.31	215.64	580,888.41
Total LTO Cycle Values							41.74	66.20	490.79	6.35	7.53	48.88	131,695.50							

[1] Takeoff shaft hp per engine is based on Takeoff% power equal to 85% to be consistent with AEDT default. Fuel consumption is based on FOCA data for TO_FF per engine in order to be consistent with AEDT guidance to use climbout emission factors based on 85% engine power.

[2] Based on the FOCA data for time in LTO modes (summed). This estimate is in line with AEDT default climbout operating time of 887 seconds.

[3] Based on either AEDT results where available or the available FOCA data for the specific make/model of units. Note that the MD 520N Arrival/Departure profile is not available in AEDT 3c for Paso Robles Airport, so a similar sized, single-engine aircraft was modeled. PM10 emission factors are taken from FOCA data since AEDT results are zero.

Table 3: Fugitive Dust Emissions From Helicopters

Phase	Helicopter Type	Number of Days	Number of LTOs per day	PM Emission Factor (kg/LTO) [1]	Daily PM (lb/day)	Total Project PM (ton/yr)
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Sikorsky S92A	5	14	1.5	46.30	0.12
70 kV Power Line Conductor Installation	MD 520N	6	10	1.5	33.07	0.10

[1] Emission factor for fugitive dust for helicopters is based on Gillies et al. 2007 which states that fugitive dust during LTOs include 0.5 kg per take off and 1 kg per landing.

AEDT Methodology

The AEDT version 3c model metric results for air quality are based on running 14 arrivals and 14 takeoff operations by a Sikorsky S-92A model aircraft and 10 arrivals and 10 takeoffs by an Aerospatiale SA-350D Astar (AS-350). The Aerospatiale model was modeled in lieu of the MD-520 model aircraft since AEDT does not have an operational arrival and departure profiles for the MD520. The Aerospatial SA-350D is of similar size and weight and is also a one-engine aircraft. The model inputs are based on departure/arrival at the helipad at the Paso Robles Airport as the landing/takeoff site based on default airport characteristics. This is used as a proxy for a landing zone site associated with the project.

The results of the model include total fuel use and emissions for each operation group (e.g., 14 arrivals/14 departures from Sikorsky S-92A and 10 arrivals/10 departures for the Aerospatial SA-350D). In order to populate the emissions for the landing take offs (LTOs), the fuel use in kilograms (kg) per second (kg/s) is derived from the climb ground phase of operation. To determine fuel usage during full flight, the full flight fuel use in kg/s was derived from the AEDT results. Similarly, each emission factor is derived for the LTOs and full flight from the grams of emissions per kilogram of fuel from the AEDT results based on the total emissions from each operation group divided by the fuel use during the appropriate phase of operation.

The total emissions per day are based on the AEDT fuel use during “Ground climb phase” in kg/second multiplied by an assumed climb out operating time of 810 seconds (from FOCA data). The fuel use per LTO is then multiplied by the g/pollutant per kilogram fuel emission factor during “ground climb”. Note that particulate matter (PM) emissions in AEDT were zero, thus the FOCA emission factors for PM were substituted to be conservative. This result is added to the full flight fuel consumption in kg/hour (calculated from AEDT’s “full flight” fuel use) multiplied by the grams pollutant/kg fuel during full flight for each pollutant.

Essentially, to calculate emissions, the most recent AEDT version 3c model fuel use and emission results for arrivals and departures for the modeled units were applied to the Proposed Project specific LTO and cruising details from Attachment 4 (Helicopter Noise Analysis).

Estrella Substation and Paso Robles Area Reinforcement Project

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	7,144.00	1000sqft	164.00	7,144,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The total area in power line the easement widths, substation temp disturbance, areas for temporary staging and access roads outside of the easement equals approximately 164 acres or a 7,144,000 square feet area

Construction Phase - Based on project schedule and description

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

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Off-road Equipment - Based on construction schedule

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Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on equipment roster for the project.

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

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Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Trips and VMT - Based on equipment roster and schedule provided

On-road Fugitive Dust - Per the user guide 9.3% silt content should be used for the San Luis Obispo region

Grading - Based on grading and material movement for the project.

Vehicle Trips - Unmanned operation

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - No consumer product utilization was assumed for the project

Area Coating - No architectural coating is assumed for the project

Energy Use - Energy intensity factors scaled down to match the area occupied by the 230kV Substation Control Enclosure approximately 14 feet wide, 48 feet long, and the 70 kV Substation Control Enclosure approximately 16 feet wide and 64 feet long.

Water And Wastewater - Unmanned facility - No water use is expected

Solid Waste - No solid waste generation is expected

Construction Off-road Equipment Mitigation - At a minimum, the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year and ensure that quarterly DPM emissions are less than the SLOCAPCD significance thresholds.

Operational Off-Road Equipment - Assumes monthly inspections and an annual maintenance on the substation components. Helicopter emissions are represented as Other general industrial equipment with hp increased to 400

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

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tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization
tblOffRoadEquipment	PhaseName		230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization
tblOffRoadEquipment	PhaseName		230-kV Substation Install Yard Rock
tblOffRoadEquipment	PhaseName		70-kV Substation Install Yard Rock

tblOffRoadEquipment	PhaseName		230-kV Substation Fence and Gate Installation
tblOffRoadEquipment	PhaseName		70-kV Substation Foundation Construction
tblOffRoadEquipment	PhaseName		70-kV Substation Ground Grid Conduit Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Ground Grid Conduit Installation
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	5.30
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	2.60
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	0.50
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOnRoadDust	MaterialMoistureContent	0.50	0.10
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tblOnRoadDust	MaterialMoistureContent	0.50	0.10
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tblOnRoadDust	MeanVehicleSpeed	40.00	32.40

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tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
tblOnRoadDust	MeanVehicleSpeed	40.00	32.40

tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	13.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	2.00
tblOperationalOffRoadEquipment	OperHorsePower	88.00	400.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblSolidWaste	SolidWasteGenerationRate	8,858.56	0.00
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	0.91
tblTripsAndVMT	VendorTripLength	5.00	1.20
tblTripsAndVMT	VendorTripLength	5.00	8.68
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	1.15
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	1.34
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	13.00

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tblTripsAndVMT	VendorTripLength	5.00	13.00
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tblTripsAndVMT	VendorTripLength	5.00	1.20
tblTripsAndVMT	VendorTripLength	5.00	1.85
tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	1.85
tblTripsAndVMT	VendorTripNumber	0.00	11.00
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tblTripsAndVMT	VendorTripNumber	1,171.00	29.00
tblTripsAndVMT	VendorTripNumber	1,171.00	30.00

tblTripsAndVMT	VendorTripNumber	1,171.00	45.00
tblTripsAndVMT	VendorTripNumber	1,171.00	9.00
tblTripsAndVMT	VendorTripNumber	1,171.00	30.00
tblTripsAndVMT	VendorTripNumber	1,171.00	2.00
tblTripsAndVMT	VendorTripNumber	1,171.00	28.00
tblTripsAndVMT	VendorTripNumber	1,171.00	12.00
tblTripsAndVMT	VendorTripNumber	1,171.00	11.00
tblTripsAndVMT	VendorTripNumber	1,171.00	12.00
tblTripsAndVMT	VendorTripNumber	1,171.00	2.00
tblTripsAndVMT	VendorTripNumber	1,171.00	9.00
tblTripsAndVMT	VendorTripNumber	1,171.00	3.00
tblTripsAndVMT	VendorTripNumber	1,171.00	26.00
tblTripsAndVMT	VendorTripNumber	1,171.00	3.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	1,171.00	15.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
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tblTripsAndVMT	VendorTripNumber	0.00	29.00
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tblTripsAndVMT	VendorTripNumber	0.00	7.00
tblTripsAndVMT	VendorTripNumber	1,171.00	13.00
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tblTripsAndVMT	VendorTripNumber	0.00	30.00
tblTripsAndVMT	VendorTripNumber	1,171.00	30.00
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tblTripsAndVMT	WorkerTripLength	13.00	7.68
tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	9.15
tblTripsAndVMT	WorkerTripLength	13.00	9.56
tblTripsAndVMT	WorkerTripLength	13.00	8.97
tblTripsAndVMT	WorkerTripLength	13.00	7.34
tblTripsAndVMT	WorkerTripLength	13.00	8.52
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	7.68
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tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	6.79
tblTripsAndVMT	WorkerTripLength	13.00	6.72
tblTripsAndVMT	WorkerTripLength	13.00	8.68
tblTripsAndVMT	WorkerTripLength	13.00	8.25
tblTripsAndVMT	WorkerTripLength	13.00	8.15
tblTripsAndVMT	WorkerTripLength	13.00	7.67
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	7.68
tblTripsAndVMT	WorkerTripLength	13.00	8.14

tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	8.56
tblTripsAndVMT	WorkerTripLength	13.00	9.18
tblTripsAndVMT	WorkerTripLength	13.00	6.32
tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	7.85
tblTripsAndVMT	WorkerTripLength	13.00	5.87
tblTripsAndVMT	WorkerTripLength	13.00	7.50
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tblTripsAndVMT	WorkerTripNumber	5.00	22.00
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tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
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tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	9.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	30.00
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tblTripsAndVMT	WorkerTripNumber	3,000.00	14.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	10.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00

tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	41.00
tblTripsAndVMT	WorkerTripNumber	5.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	32.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	38.00
tblTripsAndVMT	WorkerTripNumber	10.00	24.00
tblTripsAndVMT	WorkerTripNumber	30.00	26.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	28.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	22.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	1,652,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.8422	110.4933	77.2514	0.2800	8.4664	3.9120	12.3784	3.7790	3.6004	7.3794	0.0000	27,421.4854	27,421.4854	7.9074	0.0000	27,619.1696
2023	9.7336	81.3116	67.7871	0.2547	3.9882	2.8194	5.3724	0.7733	2.6007	3.0068	0.0000	24,904.6116	24,904.6116	7.0316	0.0000	25,080.4017
2024	2.4896	20.6289	17.1270	0.0597	0.5937	0.7958	1.1246	0.0968	0.7322	0.8221	0.0000	5,829.9182	5,829.9182	1.7066	0.0000	5,872.5819
Maximum	**11.8422**	**110.4933**	**77.2514**	**0.2800**	**8.4664**	**3.9120**	**12.3784**	**3.7790**	**3.6004**	**7.3794**	**0.0000**	**27,421.4854**	**27,421.4854**	**7.9074**	**0.0000**	**27,619.1696**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.8422	110.4933	77.2514	0.2800	4.0505	3.9120	7.9625	1.6790	3.6004	5.2794	0.0000	27,421.4854	27,421.4854	7.9074	0.0000	27,619.1696
2023	9.7336	81.3116	67.7871	0.2547	2.7752	2.8194	4.3000	0.6423	2.6007	3.0068	0.0000	24,904.6116	24,904.6116	7.0316	0.0000	25,080.4017
2024	2.4896	20.6289	17.1270	0.0597	0.3511	0.7958	1.1246	0.0899	0.7322	0.8221	0.0000	5,829.9182	5,829.9182	1.7066	0.0000	5,872.5818
Maximum	**11.8422**	**110.4933**	**77.2514**	**0.2800**	**4.0505**	**3.9120**	**7.9625**	**1.6790**	**3.6004**	**5.2794**	**0.0000**	**27,421.4854**	**27,421.4854**	**7.9074**	**0.0000**	**27,619.1696**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.00**	**0.00**	**29.08**	**48.14**	**0.00**	**18.74**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Energy	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	0.8750	6.0932	5.9132	0.0250		0.2146	0.2146		0.1974	0.1974		2,414.7318	2,414.7318	0.7810		2,434.2562
Total	**153.8280**	**6.1382**	**6.6737**	**0.0252**	**0.0000**	**0.2201**	**0.2201**	**0.0000**	**0.2029**	**0.2029**		**2,462.3485**	**2,462.3485**	**0.7859**	**8.4000e-004**	**2,482.2486**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Energy	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	0.8750	6.0932	5.9132	0.0250		0.2146	0.2146		0.1974	0.1974		2,414.7318	2,414.7318	0.7810		2,434.2562
Total	**153.8280**	**6.1382**	**6.6737**	**0.0252**	**0.0000**	**0.2201**	**0.2201**	**0.0000**	**0.2029**	**0.2029**		**2,462.3485**	**2,462.3485**	**0.7859**	**8.4000e-004**	**2,482.2486**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	230-kV Transmission Site Work Area Preparation Mobilization	Site Preparation	6/1/2022	6/14/2022	6	12	
2	230-kV Transmission Foundation Tower Installation Remove two towers	Building Construction	6/15/2022	8/9/2022	6	48	
3	Reconductoring Segment Site Development Mobilization	Site Preparation	8/1/2022	8/13/2022	6	12	

4	Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Building Construction	8/15/2022	2/18/2023	6	144	
5	230-kV Substation Access Roads	Site Preparation	9/1/2022	9/14/2022	6	12	
6	230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Grading	9/15/2022	10/12/2022	6	24	
7	230-kV Substation Fence and Gate Installation	Building Construction	10/8/2022	10/21/2022	6	12	
8	Reconductoring Segment Conductor Installation	Building Construction	10/10/2022	2/28/2023	6	120	
9	230-kV Substation Foundation Construction	Building Construction	10/15/2022	11/25/2022	6	36	
10	70-kV Substation Mobilization	Site Preparation	10/18/2022	10/30/2022	6	12	
11	70-kV Substation Foundation Construction	Building Construction	11/1/2022	12/31/2022	6	48	
12	70-kV Substation Ground Grid Conduit Installation	Building Construction	11/1/2022	12/31/2022	6	48	
13	230-kV Substation Ground Grid Conduit Installation	Building Construction	11/15/2022	12/12/2022	6	24	
14	230-kV Substation Steel Bus Erection	Building Construction	12/9/2022	1/5/2023	6	24	
15	230-kV Substation Install Yard Rock	Building Construction	12/23/2022	1/12/2023	6	18	
16	70-kV Substation Steel Bus Erection	Building Construction	1/1/2023	1/31/2023	6	24	
17	230-kV Substation Transformer & Equip Delivery & Installation	Building Construction	1/2/2023	2/4/2023	6	30	
18	230-kV Substation Control Enclosure Delivery and Install	Building Construction	1/6/2023	1/19/2023	6	12	
19	230-kV Substation Remaining Equipment Delivery and Install	Building Construction	1/13/2023	2/11/2023	6	24	
20	230-kV Transmission Conductor	Building Construction	1/25/2023	1/31/2023	6	6	
21	70-kV Substation Equip Delivery & Installation	Building Construction	2/1/2023	2/21/2023	6	18	
22	70-kV Substation Control Enclosure Delivery and Install	Building Construction	2/1/2023	2/7/2023	6	6	
23	230-kV Transmission Site Clean-up and Restoration	Building Construction	2/1/2023	2/7/2023	6	6	
24	230-kV Substation Cable Installation and Termination	Building Construction	2/1/2023	2/14/2023	6	12	

25	230-kV Substation Testing and Commissioning	Building Construction	2/11/2023	3/17/2023	6	30	
26	70-kV Substation Cable Installation and Termination	Building Construction	2/22/2023	3/14/2023	6	18	
27	70-kV Power Line Site Development Mobilization	Site Preparation	3/1/2023	3/14/2023	6	12	
28	Reconductoring Segment Clean-up and Restoration	Site Preparation	3/1/2023	3/14/2023	6	12	
29	70-kV Power Line Pole Tower Installation	Building Construction	3/1/2023	11/30/2023	6	216	
30	70-kV Substation Install Yard Rock	Building Construction	3/1/2023	3/14/2023	6	12	
31	230-kV Substation Cleanup and Restoration	Site Preparation	3/11/2023	3/31/2023	6	18	
32	70-kV Cleanup and Restoration	Site Preparation	3/15/2023	3/28/2023	6	12	
33	70-kV Substation Testing and Commissioning	Building Construction	4/1/2023	5/31/2023	6	48	
34	70-kV Power Line Conductor Installation	Building Construction	11/1/2023	1/31/2024	6	72	
35	70-kV Power Line Clean-up and Restoration	Site Preparation	2/1/2024	2/14/2024	6	12	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
230-kV Transmission Site Work Area Preparation Mobilization	Graders	1	6.00	187	0.41
230-kV Transmission Site Work Area Preparation Mobilization	Tractors/Loaders/Backhoes	1	6.00	97	0.37
230-kV Transmission Foundation Tower Installation Remove two towers	Bore/Drill Rigs	1	1.00	221	0.50
230-kV Transmission Foundation Tower Installation Remove two towers	Cranes	3	5.30	231	0.29

230-kV Transmission Foundation Tower Installation Remove two towers	Forklifts	3	2.60	89	0.20
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	2	3.50	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	1	0.80	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	2	2.60	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Tractors/Loaders/Backhoes	1	0.50	97	0.37
Reconductoring Segment Site Development Mobilization	Graders	1	6.00	187	0.41
Reconductoring Segment Site Development Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Bore/Drill Rigs	1	6.00	221	0.50
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Cranes	3	6.00	231	0.29
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Cranes	1	1.00	231	0.29
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Off-Highway Trucks	2	3.00	402	0.38
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Off-Highway Trucks	2	2.00	402	0.38
230-kV Substation Access Roads	Off-Highway Trucks	2	8.00	402	0.38
230-kV Substation Access Roads	Tractors/Loaders/Backhoes	2	8.00	97	0.37
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Graders	1	8.00	187	0.41
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Off-Highway Trucks	4	10.00	402	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Off-Highway Trucks	2	10.00	402	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rollers	2	8.00	80	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rubber Tired Dozers	1	8.00	247	0.40
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rubber Tired Loaders	1	8.00	203	0.36

230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Scrapers	1	8.00	367	0.48
230-kV Substation Fence and Gate Installation	Skid Steer Loaders	1	4.00	65	0.37
Reconductoring Segment Conductor Installation	Forklifts	1	3.00	89	0.20
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	6.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	6.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	4.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	1	6.00	402	0.38
Reconductoring Segment Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
Reconductoring Segment Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
230-kV Substation Foundation Construction	Bore/Drill Rigs	1	8.00	221	0.50
230-kV Substation Foundation Construction	Cranes	1	5.00	231	0.29
230-kV Substation Foundation Construction	Tractors/Loaders/Backhoes	1	5.00	97	0.37
70-kV Substation Mobilization	Graders	1	4.00	187	0.41
70-kV Substation Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Substation Foundation Construction	Bore/Drill Rigs	1	8.00	221	0.50
70-kV Substation Foundation Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
70-kV Substation Foundation Construction	Trenchers	1	8.00	78	0.50
70-kV Substation Ground Grid Conduit Installation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
70-kV Substation Ground Grid Conduit Installation	Trenchers	1	6.00	78	0.50
230-kV Substation Ground Grid Conduit Installation	Trenchers	1	8.00	78	0.50
230-kV Substation Steel Bus Erection	Aerial Lifts	1	6.00	62	0.31
230-kV Substation Steel Bus Erection	Off-Highway Trucks	1	8.00	402	0.38
230-kV Substation Install Yard Rock	Off-Highway Trucks	1	10.00	402	0.38

230-kV Substation Install Yard Rock	Skid Steer Loaders	1	10.00	65	0.37
70-kV Substation Steel Bus Erection	Aerial Lifts	2	8.00	62	0.31
70-kV Substation Steel Bus Erection	Off-Highway Trucks	2	6.00	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Generator Sets	1	5.00	84	0.74
230-kV Substation Transformer & Equip Delivery & Installation	Off-Highway Trucks	2	10.00	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Off-Highway Trucks	1	4.80	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
230-kV Substation Control Enclosure Delivery and Install	Cranes	1	6.00	231	0.29
230-kV Substation Remaining Equipment Delivery and Install	Off-Highway Trucks	1	6.00	402	0.38
230-kV Transmission Conductor	Cranes	3	6.00	231	0.29
230-kV Transmission Conductor	Off-Highway Trucks	2	4.00	402	0.38
230-kV Transmission Conductor	Off-Highway Trucks	2	4.00	402	0.38
70-kV Substation Equip Delivery & Installation	Aerial Lifts	2	4.00	62	0.31
70-kV Substation Equip Delivery & Installation	Off-Highway Trucks	1	5.30	402	0.38
70-kV Substation Control Enclosure Delivery and Install	Off-Highway Trucks	0	0.00	402	0.38
230-kV Transmission Site Clean-up and Restoration	Graders	1	8.00	187	0.41
230-kV Transmission Site Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
230-kV Substation Cable Installation and Termination	Aerial Lifts	1	8.00	62	0.31
230-kV Substation Testing and Commissioning	Off-Highway Trucks	0	0.00	402	0.38
70-kV Substation Cable Installation and Termination	Off-Highway Trucks	0	0.00	402	0.38
70-kV Power Line Site Development Mobilization	Graders	2	6.00	187	0.41
70-kV Power Line Site Development Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Reconductoring Segment Clean-up and Restoration	Graders	1	6.00	187	0.41

Reconductoring Segment Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Power Line Pole Tower Installation	Cranes	1	4.00	231	0.29
70-kV Power Line Pole Tower Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Pole Tower Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Pole Tower Installation	Tractors/Loaders/Backhoes	2	4.00	97	0.37
70-kV Power Line Pole Tower Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Substation Install Yard Rock	Off-Highway Trucks	1	8.00	402	0.38
70-kV Substation Install Yard Rock	Skid Steer Loaders	1	8.00	65	0.37
70-kV Substation Install Yard Rock	Tractors/Loaders/Backhoes	1	8.00	97	0.37
230-kV Substation Cleanup and Restoration	Other General Industrial Equipment	1	6.00	88	0.34
230-kV Substation Cleanup and Restoration	Tractors/Loaders/Backhoes	1	6.00	97	0.37
70-kV Cleanup and Restoration	Off-Highway Trucks	0	0.00	402	0.38
70-kV Substation Testing and Commissioning	Off-Highway Trucks	0	0.00	402	0.38
70-kV Power Line Conductor Installation	Cranes	3	6.00	231	0.29
70-kV Power Line Conductor Installation	Forklifts	1	3.00	89	0.20
70-kV Power Line Conductor Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Conductor Installation	Off-Highway Trucks	1	6.00	402	0.38
70-kV Power Line Conductor Installation	Off-Highway Trucks	2	2.00	402	0.38
70-kV Power Line Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
70-kV Power Line Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
70-kV Power Line Clean-up and Restoration	Graders	1	6.00	187	0.41
70-kV Power Line Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Estrella Substation and Paso Robles Area Reinforcement Project - San Luis Obispo County, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
230-kV Transmission Site Work Area Prepar	2	22.00	11.00	104.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Foundation Tower Insta	13	30.00	12.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Site Develop	2	18.00	10.00	0.00	7.67	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Pole Installati	9	38.00	13.00	0.00	6.32	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Access Roads	4	24.00	33.00	0.00	8.45	1.90	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Site Prep Grading Entrance	12	26.00	30.00	393.00	7.85	1.20	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Fence and Gate Install	1	18.00	30.00	0.00	5.87	1.85	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Conductor In	10	28.00	10.00	0.00	7.50	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Foundation Constructio	3	22.00	31.00	0.00	8.38	1.85	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Mobilization	2	16.00	6.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Foundation Constructio	3	22.00	13.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Ground Grid Conduit In	2	12.00	9.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Ground Grid Conduit In	1	12.00	29.00	0.00	9.15	0.91	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Steel Bus Erection	2	12.00	30.00	0.00	9.56	1.20	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Install Yard Rock	2	18.00	45.00	0.00	8.97	8.68	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Steel Bus Erection	4	14.00	9.00	0.00	7.34	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Transformer & Equip D	5	18.00	30.00	0.00	8.52	1.15	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Control Enclosure Deliv	1	12.00	2.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Remaining Equipment	1	9.00	28.00	0.00	10.00	1.34	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Conductor	7	38.00	11.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Equip Delivery & Install	3	16.00	12.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Control Enclosure Deliv	0	12.00	2.00	0.00	9.23	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Site Clean-up and Rest	2	14.00	9.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Cable Installation and T	1	10.00	3.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Testing and Commissi	0	12.00	26.00	0.00	6.79	13.00	20.00	LD_Mix	HDT_Mix	HHDT

70-kV Substation Cable Installation and T	0	12.00	3.00	0.00	6.72	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Site Development Mobilizati	3	20.00	10.00	0.00	8.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Clean-up and	2	16.00	5.00	0.00	8.25	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Pole Tower Installation	10	41.00	15.00	0.00	8.15	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Install Yard Rock	3	12.00	16.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Cleanup and Restoratio	2	8.00	29.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Cleanup and Restoration	0	10.00	0.00	0.00	8.14	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Testing and Commissi	0	12.00	2.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Conductor Installation	12	32.00	10.00	0.00	8.56	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Clean-up and Restorati	2	16.00	7.00	0.00	9.18	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8081	0.0000	0.8081	0.0878	0.0000	0.0878			0.0000			0.0000
Off-Road	0.4348	5.1999	2.9698	7.3000e-003		0.1930	0.1930		0.1776	0.1776		706.8884	706.8884	0.2286		712.6040
Total	**0.4348**	**5.1999**	**2.9698**	**7.3000e-003**	**0.8081**	**0.1930**	**1.0011**	**0.0878**	**0.1776**	**0.2654**		**706.8884**	**706.8884**	**0.2286**		**712.6040**

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0650	2.2878	0.5415	6.6800e-003	0.1514	9.0900e-003	0.1604	0.0415	8.7000e-003	0.0502		722.6477	722.6477	0.0421		723.6996
Vendor	0.0533	1.5702	0.4231	4.8000e-003	0.1324	5.9200e-003	0.1383	0.0381	5.6700e-003	0.0437		512.0216	512.0216	0.0218		512.5671
Worker	0.0683	0.0503	0.5220	1.4700e-003	0.1674	1.0400e-003	0.1684	0.0444	9.6000e-004	0.0454		146.7023	146.7023	4.1800e-003		146.8069
Total	**0.1866**	**3.9083**	**1.4867**	**0.0130**	**0.4511**	**0.0161**	**0.4671**	**0.1239**	**0.0153**	**0.1393**		**1,381.3716**	**1,381.3716**	**0.0681**		**1,383.0736**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3152	0.0000	0.3152	0.0342	0.0000	0.0342			0.0000			0.0000
Off-Road	0.4348	5.1999	2.9698	7.3000e-003		0.1930	0.1930		0.1776	0.1776	0.0000	706.8884	706.8884	0.2286		712.6040
Total	**0.4348**	**5.1999**	**2.9698**	**7.3000e-003**	**0.3152**	**0.1930**	**0.5081**	**0.0342**	**0.1776**	**0.2118**	**0.0000**	**706.8884**	**706.8884**	**0.2286**		**712.6040**

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0650	2.2878	0.5415	6.6800e-003	0.1514	9.0900e-003	0.1604	0.0415	8.7000e-003	0.0502		722.6477	722.6477	0.0421		723.6996
Vendor	0.0533	1.5702	0.4231	4.8000e-003	0.1324	5.9200e-003	0.1383	0.0381	5.6700e-003	0.0437		512.0216	512.0216	0.0218		512.5671
Worker	0.0683	0.0503	0.5220	1.4700e-003	0.1674	1.0400e-003	0.1684	0.0444	9.6000e-004	0.0454		146.7023	146.7023	4.1800e-003		146.8069
Total	**0.1866**	**3.9083**	**1.4867**	**0.0130**	**0.4511**	**0.0161**	**0.4671**	**0.1239**	**0.0153**	**0.1393**		**1,381.3716**	**1,381.3716**	**0.0681**		**1,383.0736**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7490	16.2551	10.7389	0.0358		0.6653	0.6653		0.6121	0.6121		3,466.3790	3,466.3790	1.1211		3,494.4065
Total	**1.7490**	**16.2551**	**10.7389**	**0.0358**		**0.6653**	**0.6653**		**0.6121**	**0.6121**		**3,466.3790**	**3,466.3790**	**1.1211**		**3,494.4065**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0581	1.7130	0.4616	5.2400e-003	0.1444	6.4600e-003	0.1508	0.0415	6.1800e-003	0.0477		558.5690	558.5690	0.0238		559.1641
Worker	0.0932	0.0686	0.7118	2.0100e-003	0.2282	1.4200e-003	0.2296	0.0605	1.3000e-003	0.0618		200.0486	200.0486	5.7100e-003		200.1912
Total	**0.1513**	**1.7815**	**1.1734**	**7.2500e-003**	**0.3726**	**7.8800e-003**	**0.3805**	**0.1021**	**7.4800e-003**	**0.1096**		**758.6176**	**758.6176**	**0.0295**		**759.3553**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7490	16.2551	10.7389	0.0358		0.6653	0.6653		0.6121	0.6121	0.0000	3,466.3790	3,466.3790	1.1211		3,494.4065
Total	**1.7490**	**16.2551**	**10.7389**	**0.0358**		**0.6653**	**0.6653**		**0.6121**	**0.6121**	**0.0000**	**3,466.3790**	**3,466.3790**	**1.1211**		**3,494.4065**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0581	1.7130	0.4616	5.2400e-003	0.1444	6.4600e-003	0.1508	0.0415	6.1800e-003	0.0477		558.5690	558.5690	0.0238		559.1641
Worker	0.0932	0.0686	0.7118	2.0100e-003	0.2282	1.4200e-003	0.2296	0.0605	1.3000e-003	0.0618		200.0486	200.0486	5.7100e-003		200.1912
Total	**0.1513**	**1.7815**	**1.1734**	**7.2500e-003**	**0.3726**	**7.8800e-003**	**0.3805**	**0.1021**	**7.4800e-003**	**0.1096**		**758.6176**	**758.6176**	**0.0295**		**759.3553**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7954	0.0000	0.7954	0.0859	0.0000	0.0859			0.0000			0.0000
Off-Road	0.3936	4.7810	2.4103	6.5200e-003		0.1705	0.1705		0.1568	0.1568		631.5787	631.5787	0.2043		636.6853
Total	**0.3936**	**4.7810**	**2.4103**	**6.5200e-003**	**0.7954**	**0.1705**	**0.9658**	**0.0859**	**0.1568**	**0.2427**		**631.5787**	**631.5787**	**0.2043**		**636.6853**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0484	1.4275	0.3847	4.3700e-003	0.1203	5.3900e-003	0.1257	0.0346	5.1500e-003	0.0398		465.4742	465.4742	0.0198		465.9701
Worker	0.0471	0.0330	0.3453	9.3000e-004	0.1051	6.8000e-004	0.1057	0.0279	6.2000e-004	0.0285		92.9548	92.9548	2.7200e-003		93.0228
Total	**0.0955**	**1.4604**	**0.7300**	**5.3000e-003**	**0.2254**	**6.0700e-003**	**0.2314**	**0.0625**	**5.7700e-003**	**0.0683**		**558.4290**	**558.4290**	**0.0226**		**558.9929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3102	0.0000	0.3102	0.0335	0.0000	0.0335			0.0000			0.0000
Off-Road	0.3936	4.7810	2.4103	6.5200e-003		0.1705	0.1705		0.1568	0.1568	0.0000	631.5787	631.5787	0.2043		636.6853
Total	**0.3936**	**4.7810**	**2.4103**	**6.5200e-003**	**0.3102**	**0.1705**	**0.4807**	**0.0335**	**0.1568**	**0.1903**	**0.0000**	**631.5787**	**631.5787**	**0.2043**		**636.6853**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0484	1.4275	0.3847	4.3700e-003	0.1203	5.3900e-003	0.1257	0.0346	5.1500e-003	0.0398		465.4742	465.4742	0.0198		465.9701
Worker	0.0471	0.0330	0.3453	9.3000e-004	0.1051	6.8000e-004	0.1057	0.0279	6.2000e-004	0.0285		92.9548	92.9548	2.7200e-003		93.0228
Total	**0.0955**	**1.4604**	**0.7300**	**5.3000e-003**	**0.2254**	**6.0700e-003**	**0.2314**	**0.0625**	**5.7700e-003**	**0.0683**		**558.4290**	**558.4290**	**0.0226**		**558.9929**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7144	16.6546	10.2236	0.0373		0.6496	0.6496		0.5977	0.5977		3,611.1243	3,611.1243	1.1679		3,640.3221
Total	**1.7144**	**16.6546**	**10.2236**	**0.0373**		**0.6496**	**0.6496**		**0.5977**	**0.5977**		**3,611.1243**	**3,611.1243**	**1.1679**		**3,640.3221**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0630	1.8557	0.5001	5.6800e-003	0.1564	7.0000e-003	0.1634	0.0450	6.7000e-003	0.0517		605.1165	605.1165	0.0258		605.7611
Worker	0.0886	0.0596	0.6289	1.6400e-003	0.1828	1.2200e-003	0.1841	0.0485	1.1200e-003	0.0496		163.1212	163.1212	4.8800e-003		163.2433
Total	**0.1516**	**1.9153**	**1.1289**	**7.3200e-003**	**0.3392**	**8.2200e-003**	**0.3475**	**0.0935**	**7.8200e-003**	**0.1013**		**768.2377**	**768.2377**	**0.0307**		**769.0044**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7144	16.6546	10.2236	0.0373		0.6496	0.6496		0.5977	0.5977	0.0000	3,611.1243	3,611.1243	1.1679		3,640.3221
Total	**1.7144**	**16.6546**	**10.2236**	**0.0373**		**0.6496**	**0.6496**		**0.5977**	**0.5977**	**0.0000**	**3,611.1243**	**3,611.1243**	**1.1679**		**3,640.3221**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0630	1.8557	0.5001	5.6800e-003	0.1564	7.0000e-003	0.1634	0.0450	6.7000e-003	0.0517		605.1165	605.1165	0.0258		605.7611
Worker	0.0886	0.0596	0.6289	1.6400e-003	0.1828	1.2200e-003	0.1841	0.0485	1.1200e-003	0.0496		163.1212	163.1212	4.8800e-003		163.2433
Total	**0.1516**	**1.9153**	**1.1289**	**7.3200e-003**	**0.3392**	**8.2200e-003**	**0.3475**	**0.0935**	**7.8200e-003**	**0.1013**		**768.2377**	**768.2377**	**0.0307**		**769.0044**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6258	15.0514	9.9920	0.0373		0.5892	0.5892		0.5421	0.5421		3,613.6088	3,613.6088	1.1687		3,642.8266
Total	**1.6258**	**15.0514**	**9.9920**	**0.0373**		**0.5892**	**0.5892**		**0.5421**	**0.5421**		**3,613.6088**	**3,613.6088**	**1.1687**		**3,642.8266**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0474	1.4333	0.4421	5.5600e-003	0.1564	3.3100e-003	0.1598	0.0450	3.1700e-003	0.0482		593.7102	593.7102	0.0239		594.3085
Worker	0.0829	0.0536	0.5744	1.5800e-003	0.1828	1.1900e-003	0.1840	0.0485	1.0900e-003	0.0496		157.0149	157.0149	4.3600e-003		157.1240
Total	**0.1302**	**1.4868**	**1.0165**	**7.1400e-003**	**0.3393**	**4.5000e-003**	**0.3438**	**0.0935**	**4.2600e-003**	**0.0978**		**750.7251**	**750.7251**	**0.0283**		**751.4325**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6258	15.0514	9.9920	0.0373		0.5892	0.5892		0.5421	0.5421	0.0000	3,613.6088	3,613.6088	1.1687		3,642.8266
Total	**1.6258**	**15.0514**	**9.9920**	**0.0373**		**0.5892**	**0.5892**		**0.5421**	**0.5421**	**0.0000**	**3,613.6088**	**3,613.6088**	**1.1687**		**3,642.8266**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0474	1.4333	0.4421	5.5600e-003	0.1564	3.3100e-003	0.1598	0.0450	3.1700e-003	0.0482		593.7102	593.7102	0.0239		594.3085
Worker	0.0829	0.0536	0.5744	1.5800e-003	0.1828	1.1900e-003	0.1840	0.0485	1.0900e-003	0.0496		157.0149	157.0149	4.3600e-003		157.1240
Total	**0.1302**	**1.4868**	**1.0165**	**7.1400e-003**	**0.3393**	**4.5000e-003**	**0.3438**	**0.0935**	**4.2600e-003**	**0.0978**		**750.7251**	**750.7251**	**0.0283**		**751.4325**

3.6 230-kV Substation Access Roads - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3863	11.3787	11.1933	0.0327		0.4721	0.4721		0.4344	0.4344		3,160.4485	3,160.4485	1.0222		3,186.0023
Total	**1.3863**	**11.3787**	**11.1933**	**0.0327**	**0.0000**	**0.4721**	**0.4721**	**0.0000**	**0.4344**	**0.4344**		**3,160.4485**	**3,160.4485**	**1.0222**		**3,186.0023**

3.6 230-kV Substation Access Roads - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0635	2.2904	0.6095	3.5200e-003	0.0588	3.7800e-003	0.0625	0.0170	3.6100e-003	0.0206		376.1312	376.1312	0.0291		376.8573
Worker	0.0667	0.0476	0.4969	1.3700e-003	0.1543	9.8000e-004	0.1553	0.0409	9.0000e-004	0.0418		136.0244	136.0244	3.9400e-003		136.1229
Total	**0.1303**	**2.3380**	**1.1063**	**4.8900e-003**	**0.2131**	**4.7600e-003**	**0.2178**	**0.0579**	**4.5100e-003**	**0.0624**		**512.1556**	**512.1556**	**0.0330**		**512.9802**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3863	11.3787	11.1933	0.0327		0.4721	0.4721		0.4344	0.4344	0.0000	3,160.4485	3,160.4485	1.0222		3,186.0023
Total	**1.3863**	**11.3787**	**11.1933**	**0.0327**	**0.0000**	**0.4721**	**0.4721**	**0.0000**	**0.4344**	**0.4344**	**0.0000**	**3,160.4485**	**3,160.4485**	**1.0222**		**3,186.0023**

3.6 230-kV Substation Access Roads - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0635	2.2904	0.6095	3.5200e-003	0.0588	3.7800e-003	0.0625	0.0170	3.6100e-003	0.0206		376.1312	376.1312	0.0291		376.8573
Worker	0.0667	0.0476	0.4969	1.3700e-003	0.1543	9.8000e-004	0.1553	0.0409	9.0000e-004	0.0418		136.0244	136.0244	3.9400e-003		136.1229
Total	**0.1303**	**2.3380**	**1.1063**	**4.8900e-003**	**0.2131**	**4.7600e-003**	**0.2178**	**0.0579**	**4.5100e-003**	**0.0624**		**512.1556**	**512.1556**	**0.0330**		**512.9802**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2392	0.0000	7.2392	3.4427	0.0000	3.4427			0.0000			0.0000
Off-Road	6.6584	59.5744	42.1219	0.1410		2.3287	2.3287		2.1424	2.1424		13,644.8698	13,644.8698	4.4130		13,755.1955
Total	**6.6584**	**59.5744**	**42.1219**	**0.1410**	**7.2392**	**2.3287**	**9.5680**	**3.4427**	**2.1424**	**5.5851**		**13,644.8698**	**13,644.8698**	**4.4130**		**13,755.1955**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1228	4.3226	1.0232	0.0126	0.2860	0.0172	0.3031	0.0784	0.0164	0.0948		1,365.3872	1,365.3872	0.0795		1,367.3747
Vendor	0.0523	1.9434	0.5162	2.5800e-003	0.0340	2.6300e-003	0.0367	9.8700e-003	2.5100e-003	0.0124		275.4384	275.4384	0.0243		276.0463
Worker	0.0690	0.0486	0.5079	1.3800e-003	0.1553	1.0000e-003	0.1563	0.0412	9.2000e-004	0.0421		137.2892	137.2892	4.0100e-003		137.3894
Total	**0.2440**	**6.3146**	**2.0473**	**0.0166**	**0.4753**	**0.0208**	**0.4961**	**0.1294**	**0.0199**	**0.1493**		**1,778.1148**	**1,778.1148**	**0.1078**		**1,780.8104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8233	0.0000	2.8233	1.3427	0.0000	1.3427			0.0000			0.0000
Off-Road	6.6584	59.5744	42.1219	0.1410		2.3287	2.3287		2.1424	2.1424	0.0000	13,644.8698	13,644.8698	4.4130		13,755.1955
Total	**6.6584**	**59.5744**	**42.1219**	**0.1410**	**2.8233**	**2.3287**	**5.1520**	**1.3427**	**2.1424**	**3.4851**	**0.0000**	**13,644.8698**	**13,644.8698**	**4.4130**		**13,755.1955**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1228	4.3226	1.0232	0.0126	0.2860	0.0172	0.3031	0.0784	0.0164	0.0948		1,365.3872	1,365.3872	0.0795		1,367.3747
Vendor	0.0523	1.9434	0.5162	2.5800e-003	0.0340	2.6300e-003	0.0367	9.8700e-003	2.5100e-003	0.0124		275.4384	275.4384	0.0243		276.0463
Worker	0.0690	0.0486	0.5079	1.3800e-003	0.1553	1.0000e-003	0.1563	0.0412	9.2000e-004	0.0421		137.2892	137.2892	4.0100e-003		137.3894
Total	**0.2440**	**6.3146**	**2.0473**	**0.0166**	**0.4753**	**0.0208**	**0.4961**	**0.1294**	**0.0199**	**0.1493**		**1,778.1148**	**1,778.1148**	**0.1078**		**1,780.8104**

3.8 230-kV Substation Fence and Gate Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0348	0.4643	0.6936	1.0400e-003		0.0173	0.0173		0.0159	0.0159		100.1956	100.1956	0.0324		101.0058
Total	**0.0348**	**0.4643**	**0.6936**	**1.0400e-003**		**0.0173**	**0.0173**		**0.0159**	**0.0159**		**100.1956**	**100.1956**	**0.0324**		**101.0058**

3.8 230-kV Substation Fence and Gate Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0574	2.0722	0.5513	3.1600e-003	0.0520	3.3700e-003	0.0554	0.0150	3.2300e-003	0.0183		337.1875	337.1875	0.0263		337.8439
Worker	0.0403	0.0267	0.2821	7.2000e-004	0.0805	5.4000e-004	0.0810	0.0214	5.0000e-004	0.0219		72.0390	72.0390	2.1800e-003		72.0934
Total	**0.0976**	**2.0989**	**0.8334**	**3.8800e-003**	**0.1325**	**3.9100e-003**	**0.1364**	**0.0364**	**3.7300e-003**	**0.0401**		**409.2265**	**409.2265**	**0.0284**		**409.9373**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0348	0.4643	0.6936	1.0400e-003		0.0173	0.0173		0.0159	0.0159	0.0000	100.1956	100.1956	0.0324		101.0058
Total	**0.0348**	**0.4643**	**0.6936**	**1.0400e-003**		**0.0173**	**0.0173**		**0.0159**	**0.0159**	**0.0000**	**100.1956**	**100.1956**	**0.0324**		**101.0058**

3.8 230-kV Substation Fence and Gate Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0574	2.0722	0.5513	3.1600e-003	0.0520	3.3700e-003	0.0554	0.0150	3.2300e-003	0.0183		337.1875	337.1875	0.0263		337.8439
Worker	0.0403	0.0267	0.2821	7.2000e-004	0.0805	5.4000e-004	0.0810	0.0214	5.0000e-004	0.0219		72.0390	72.0390	2.1800e-003		72.0934
Total	**0.0976**	**2.0989**	**0.8334**	**3.8800e-003**	**0.1325**	**3.9100e-003**	**0.1364**	**0.0364**	**3.7300e-003**	**0.0401**		**409.2265**	**409.2265**	**0.0284**		**409.9373**

3.9 Reconductoring Segment Conductor Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8207	21.9934	19.2902	0.0672		0.8771	0.8771		0.8069	0.8069		6,502.7190	6,502.7190	2.1031		6,555.2967
Total	**2.8207**	**21.9934**	**19.2902**	**0.0672**		**0.8771**	**0.8771**		**0.8069**	**0.8069**		**6,502.7190**	**6,502.7190**	**2.1031**		**6,555.2967**

3.9 Reconductoring Segment Conductor Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0484	1.4275	0.3847	4.3700e-003	0.1203	5.3900e-003	0.1257	0.0346	5.1500e-003	0.0398		465.4742	465.4742	0.0198		465.9701
Worker	0.0722	0.0504	0.5278	1.4200e-003	0.1598	1.0300e-003	0.1609	0.0424	9.5000e-004	0.0434		141.5235	141.5235	4.1500e-003		141.6273
Total	**0.1207**	**1.4778**	**0.9125**	**5.7900e-003**	**0.2801**	**6.4200e-003**	**0.2866**	**0.0770**	**6.1000e-003**	**0.0831**		**606.9977**	**606.9977**	**0.0240**		**607.5974**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8207	21.9934	19.2902	0.0672		0.8771	0.8771		0.8069	0.8069	0.0000	6,502.7189	6,502.7189	2.1031		6,555.2967
Total	**2.8207**	**21.9934**	**19.2902**	**0.0672**		**0.8771**	**0.8771**		**0.8069**	**0.8069**	**0.0000**	**6,502.7189**	**6,502.7189**	**2.1031**		**6,555.2967**

3.9 Reconductoring Segment Conductor Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0484	1.4275	0.3847	4.3700e-003	0.1203	5.3900e-003	0.1257	0.0346	5.1500e-003	0.0398		465.4742	465.4742	0.0198		465.9701
Worker	0.0722	0.0504	0.5278	1.4200e-003	0.1598	1.0300e-003	0.1609	0.0424	9.5000e-004	0.0434		141.5235	141.5235	4.1500e-003		141.6273
Total	**0.1207**	**1.4778**	**0.9125**	**5.7900e-003**	**0.2801**	**6.4200e-003**	**0.2866**	**0.0770**	**6.1000e-003**	**0.0831**		**606.9977**	**606.9977**	**0.0240**		**607.5974**

3.9 Reconductoring Segment Conductor Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6753	19.6218	18.9364	0.0672		0.7684	0.7684		0.7069	0.7069		6,507.0092	6,507.0092	2.1045		6,559.6217
Total	**2.6753**	**19.6218**	**18.9364**	**0.0672**		**0.7684**	**0.7684**		**0.7069**	**0.7069**		**6,507.0092**	**6,507.0092**	**2.1045**		**6,559.6217**

3.9 Reconductoring Segment Conductor Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0364	1.1025	0.3401	4.2800e-003	0.1203	2.5500e-003	0.1229	0.0346	2.4400e-003	0.0371		456.7001	456.7001	0.0184		457.1604
Worker	0.0676	0.0453	0.4824	1.3700e-003	0.1598	1.0100e-003	0.1608	0.0424	9.3000e-004	0.0433		136.2222	136.2222	3.7100e-003		136.3150
Total	**0.1040**	**1.1478**	**0.8224**	**5.6500e-003**	**0.2802**	**3.5600e-003**	**0.2837**	**0.0770**	**3.3700e-003**	**0.0804**		**592.9224**	**592.9224**	**0.0221**		**593.4753**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6753	19.6218	18.9364	0.0672		0.7684	0.7684		0.7069	0.7069	0.0000	6,507.0092	6,507.0092	2.1045		6,559.6216
Total	**2.6753**	**19.6218**	**18.9364**	**0.0672**		**0.7684**	**0.7684**		**0.7069**	**0.7069**	**0.0000**	**6,507.0092**	**6,507.0092**	**2.1045**		**6,559.6216**

3.9 Reconductoring Segment Conductor Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0364	1.1025	0.3401	4.2800e-003	0.1203	2.5500e-003	0.1229	0.0346	2.4400e-003	0.0371		456.7001	456.7001	0.0184		457.1604
Worker	0.0676	0.0453	0.4824	1.3700e-003	0.1598	1.0100e-003	0.1608	0.0424	9.3000e-004	0.0433		136.2222	136.2222	3.7100e-003		136.3150
Total	**0.1040**	**1.1478**	**0.8224**	**5.6500e-003**	**0.2802**	**3.5600e-003**	**0.2837**	**0.0770**	**3.3700e-003**	**0.0804**		**592.9224**	**592.9224**	**0.0221**		**593.4753**

3.10 230-kV Substation Foundation Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5602	5.9289	4.6226	0.0150		0.2377	0.2377		0.2187	0.2187		1,451.1041	1,451.1041	0.4693		1,462.8371
Total	**0.5602**	**5.9289**	**4.6226**	**0.0150**		**0.2377**	**0.2377**		**0.2187**	**0.2187**		**1,451.1041**	**1,451.1041**	**0.4693**		**1,462.8371**

3.10 230-kV Substation Foundation Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0593	2.1413	0.5697	3.2600e-003	0.0538	3.4900e-003	0.0573	0.0155	3.3300e-003	0.0189		348.4271	348.4271	0.0271		349.1053
Worker	0.0608	0.0434	0.4525	1.2400e-003	0.1403	8.9000e-004	0.1412	0.0372	8.2000e-004	0.0380		123.6949	123.6949	3.5900e-003		123.7846
Total	**0.1201**	**2.1847**	**1.0222**	**4.5000e-003**	**0.1941**	**4.3800e-003**	**0.1984**	**0.0528**	**4.1500e-003**	**0.0569**		**472.1220**	**472.1220**	**0.0307**		**472.8899**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5602	5.9289	4.6226	0.0150		0.2377	0.2377		0.2187	0.2187	0.0000	1,451.1041	1,451.1041	0.4693		1,462.8371
Total	**0.5602**	**5.9289**	**4.6226**	**0.0150**		**0.2377**	**0.2377**		**0.2187**	**0.2187**	**0.0000**	**1,451.1041**	**1,451.1041**	**0.4693**		**1,462.8371**

3.10 230-kV Substation Foundation Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0593	2.1413	0.5697	3.2600e-003	0.0538	3.4900e-003	0.0573	0.0155	3.3300e-003	0.0189		348.4271	348.4271	0.0271		349.1053
Worker	0.0608	0.0434	0.4525	1.2400e-003	0.1403	8.9000e-004	0.1412	0.0372	8.2000e-004	0.0380		123.6949	123.6949	3.5900e-003		123.7846
Total	**0.1201**	**2.1847**	**1.0222**	**4.5000e-003**	**0.1941**	**4.3800e-003**	**0.1984**	**0.0528**	**4.1500e-003**	**0.0569**		**472.1220**	**472.1220**	**0.0307**		**472.8899**

3.11 70-kV Substation Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2651	0.0000	0.2651	0.0286	0.0000	0.0286			0.0000			0.0000
Off-Road	0.2899	3.4666	1.9799	4.8700e-003		0.1287	0.1287		0.1184	0.1184		471.2589	471.2589	0.1524		475.0693
Total	**0.2899**	**3.4666**	**1.9799**	**4.8700e-003**	**0.2651**	**0.1287**	**0.3938**	**0.0286**	**0.1184**	**0.1470**		**471.2589**	**471.2589**	**0.1524**		**475.0693**

3.11 70-kV Substation Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0291	0.8565	0.2308	2.6200e-003	0.0722	3.2300e-003	0.0754	0.0208	3.0900e-003	0.0239		279.2845	279.2845	0.0119		279.5820
Worker	0.0419	0.0294	0.3072	8.3000e-004	0.0935	6.0000e-004	0.0941	0.0248	5.6000e-004	0.0254		82.7298	82.7298	2.4200e-003		82.7903
Total	**0.0709**	**0.8858**	**0.5380**	**3.4500e-003**	**0.1657**	**3.8300e-003**	**0.1695**	**0.0456**	**3.6500e-003**	**0.0492**		**362.0143**	**362.0143**	**0.0143**		**362.3723**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Fugitive Dust					0.1034	0.0000	0.1034	0.0112	0.0000	0.0112			0.0000			0.0000
Off-Road	0.2899	3.4666	1.9799	4.8700e-003		0.1287	0.1287		0.1184	0.1184	0.0000	471.2589	471.2589	0.1524		475.0693
Total	**0.2899**	**3.4666**	**1.9799**	**4.8700e-003**	**0.1034**	**0.1287**	**0.2321**	**0.0112**	**0.1184**	**0.1295**	**0.0000**	**471.2589**	**471.2589**	**0.1524**		**475.0693**

3.11 70-kV Substation Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0291	0.8565	0.2308	2.6200e-003	0.0722	3.2300e-003	0.0754	0.0208	3.0900e-003	0.0239		279.2845	279.2845	0.0119		279.5820
Worker	0.0419	0.0294	0.3072	8.3000e-004	0.0935	6.0000e-004	0.0941	0.0248	5.6000e-004	0.0254		82.7298	82.7298	2.4200e-003		82.7903
Total	**0.0709**	**0.8858**	**0.5380**	**3.4500e-003**	**0.1657**	**3.8300e-003**	**0.1695**	**0.0456**	**3.6500e-003**	**0.0492**		**362.0143**	**362.0143**	**0.0143**		**362.3723**

3.12 70-kV Substation Foundation Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7527	7.3217	6.8781	0.0159		0.4023	0.4023		0.3702	0.3702		1,541.7492	1,541.7492	0.4986		1,554.2150
Total	**0.7527**	**7.3217**	**6.8781**	**0.0159**		**0.4023**	**0.4023**		**0.3702**	**0.3702**		**1,541.7492**	**1,541.7492**	**0.4986**		**1,554.2150**

3.12 70-kV Substation Foundation Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0630	1.8557	0.5001	5.6800e-003	0.1564	7.0000e-003	0.1634	0.0450	6.7000e-003	0.0517		605.1165	605.1165	0.0258		605.7611
Worker	0.0612	0.0437	0.4555	1.2500e-003	0.1415	9.0000e-004	0.1424	0.0375	8.3000e-004	0.0384		124.6891	124.6891	3.6100e-003		124.7794
Total	**0.1241**	**1.8994**	**0.9556**	**6.9300e-003**	**0.2979**	**7.9000e-003**	**0.3058**	**0.0825**	**7.5300e-003**	**0.0900**		**729.8055**	**729.8055**	**0.0294**		**730.5405**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7527	7.3217	6.8781	0.0159		0.4023	0.4023		0.3702	0.3702	0.0000	1,541.7492	1,541.7492	0.4986		1,554.2150
Total	**0.7527**	**7.3217**	**6.8781**	**0.0159**		**0.4023**	**0.4023**		**0.3702**	**0.3702**	**0.0000**	**1,541.7492**	**1,541.7492**	**0.4986**		**1,554.2150**

3.12 70-kV Substation Foundation Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0630	1.8557	0.5001	5.6800e-003	0.1564	7.0000e-003	0.1634	0.0450	6.7000e-003	0.0517		605.1165	605.1165	0.0258		605.7611
Worker	0.0612	0.0437	0.4555	1.2500e-003	0.1415	9.0000e-004	0.1424	0.0375	8.3000e-004	0.0384		124.6891	124.6891	3.6100e-003		124.7794
Total	**0.1241**	**1.8994**	**0.9556**	**6.9300e-003**	**0.2979**	**7.9000e-003**	**0.3058**	**0.0825**	**7.5300e-003**	**0.0900**		**729.8055**	**729.8055**	**0.0294**		**730.5405**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3964	3.7915	3.6277	4.8600e-003		0.2472	0.2472		0.2274	0.2274		471.1413	471.1413	0.1524		474.9507
Total	**0.3964**	**3.7915**	**3.6277**	**4.8600e-003**		**0.2472**	**0.2472**		**0.2274**	**0.2274**		**471.1413**	**471.1413**	**0.1524**		**474.9507**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0436	1.2847	0.3462	3.9300e-003	0.1083	4.8500e-003	0.1131	0.0312	4.6400e-003	0.0358		418.9268	418.9268	0.0179		419.3731
Worker	0.0334	0.0238	0.2485	6.8000e-004	0.0772	4.9000e-004	0.0776	0.0205	4.5000e-004	0.0209		68.0122	68.0122	1.9700e-003		68.0615
Total	**0.0770**	**1.3085**	**0.5947**	**4.6100e-003**	**0.1854**	**5.3400e-003**	**0.1908**	**0.0516**	**5.0900e-003**	**0.0567**		**486.9390**	**486.9390**	**0.0198**		**487.4345**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3964	3.7915	3.6277	4.8600e-003		0.2472	0.2472		0.2274	0.2274	0.0000	471.1413	471.1413	0.1524		474.9507
Total	**0.3964**	**3.7915**	**3.6277**	**4.8600e-003**		**0.2472**	**0.2472**		**0.2274**	**0.2274**	**0.0000**	**471.1413**	**471.1413**	**0.1524**		**474.9507**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0436	1.2847	0.3462	3.9300e-003	0.1083	4.8500e-003	0.1131	0.0312	4.6400e-003	0.0358		418.9268	418.9268	0.0179		419.3731
Worker	0.0334	0.0238	0.2485	6.8000e-004	0.0772	4.9000e-004	0.0776	0.0205	4.5000e-004	0.0209		68.0122	68.0122	1.9700e-003		68.0615
Total	**0.0770**	**1.3085**	**0.5947**	**4.6100e-003**	**0.1854**	**5.3400e-003**	**0.1908**	**0.0516**	**5.0900e-003**	**0.0567**		**486.9390**	**486.9390**	**0.0198**		**487.4345**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3639	3.3797	2.5990	3.3700e-003		0.2395	0.2395		0.2203	0.2203		326.9494	326.9494	0.1057		329.5930
Total	**0.3639**	**3.3797**	**2.5990**	**3.3700e-003**		**0.2395**	**0.2395**		**0.2203**	**0.2203**		**326.9494**	**326.9494**	**0.1057**		**329.5930**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0483	1.8230	0.4839	2.2400e-003	0.0251	2.2200e-003	0.0274	7.3000e-003	2.1200e-003	9.4300e-003		239.6258	239.6258	0.0227		240.1926
Worker	0.0351	0.0254	0.2648	7.4000e-004	0.0835	5.2000e-004	0.0841	0.0222	4.8000e-004	0.0226		73.4348	73.4348	2.1100e-003		73.4876
Total	**0.0834**	**1.8485**	**0.7487**	**2.9800e-003**	**0.1087**	**2.7400e-003**	**0.1114**	**0.0295**	**2.6000e-003**	**0.0321**		**313.0606**	**313.0606**	**0.0248**		**313.6802**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3639	3.3797	2.5990	3.3700e-003		0.2395	0.2395		0.2203	0.2203	0.0000	326.9494	326.9494	0.1057		329.5930
Total	**0.3639**	**3.3797**	**2.5990**	**3.3700e-003**		**0.2395**	**0.2395**		**0.2203**	**0.2203**	**0.0000**	**326.9494**	**326.9494**	**0.1057**		**329.5930**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0483	1.8230	0.4839	2.2400e-003	0.0251	2.2200e-003	0.0274	7.3000e-003	2.1200e-003	9.4300e-003		239.6258	239.6258	0.0227		240.1926
Worker	0.0351	0.0254	0.2648	7.4000e-004	0.0835	5.2000e-004	0.0841	0.0222	4.8000e-004	0.0226		73.4348	73.4348	2.1100e-003		73.4876
Total	**0.0834**	**1.8485**	**0.7487**	**2.9800e-003**	**0.1087**	**2.7400e-003**	**0.1114**	**0.0295**	**2.6000e-003**	**0.0321**		**313.0606**	**313.0606**	**0.0248**		**313.6802**

3.15 230-kV Substation Steel Bus Erection - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5550	4.4273	4.1662	0.0145		0.1536	0.1536		0.1413	0.1413		1,399.0142	1,399.0142	0.4525		1,410.3260
Total	**0.5550**	**4.4273**	**4.1662**	**0.0145**		**0.1536**	**0.1536**		**0.1413**	**0.1413**		**1,399.0142**	**1,399.0142**	**0.4525**		**1,410.3260**

3.15 230-kV Substation Steel Bus Erection - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0523	1.9434	0.5162	2.5800e-003	0.0340	2.6300e-003	0.0367	9.8700e-003	2.5100e-003	0.0124		275.4384	275.4384	0.0243		276.0463
Worker	0.0362	0.0264	0.2744	7.7000e-004	0.0873	5.4000e-004	0.0878	0.0232	5.0000e-004	0.0237		76.6109	76.6109	2.1900e-003		76.6658
Total	**0.0884**	**1.9698**	**0.7906**	**3.3500e-003**	**0.1213**	**3.1700e-003**	**0.1245**	**0.0330**	**3.0100e-003**	**0.0360**		**352.0493**	**352.0493**	**0.0265**		**352.7121**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5550	4.4273	4.1662	0.0145		0.1536	0.1536		0.1413	0.1413	0.0000	1,399.0142	1,399.0142	0.4525		1,410.3260
Total	**0.5550**	**4.4273**	**4.1662**	**0.0145**		**0.1536**	**0.1536**		**0.1413**	**0.1413**	**0.0000**	**1,399.0142**	**1,399.0142**	**0.4525**		**1,410.3260**

3.15 230-kV Substation Steel Bus Erection - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0523	1.9434	0.5162	2.5800e-003	0.0340	2.6300e-003	0.0367	9.8700e-003	2.5100e-003	0.0124		275.4384	275.4384	0.0243		276.0463
Worker	0.0362	0.0264	0.2744	7.7000e-004	0.0873	5.4000e-004	0.0878	0.0232	5.0000e-004	0.0237		76.6109	76.6109	2.1900e-003		76.6658
Total	**0.0884**	**1.9698**	**0.7906**	**3.3500e-003**	**0.1213**	**3.1700e-003**	**0.1245**	**0.0330**	**3.0100e-003**	**0.0360**		**352.0493**	**352.0493**	**0.0265**		**352.7121**

3.15 230-kV Substation Steel Bus Erection - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5294	3.9615	4.0945	0.0145		0.1358	0.1358		0.1250	0.1250		1,399.9174	1,399.9174	0.4528		1,411.2365
Total	**0.5294**	**3.9615**	**4.0945**	**0.0145**		**0.1358**	**0.1358**		**0.1250**	**0.1250**		**1,399.9174**	**1,399.9174**	**0.4528**		**1,411.2365**

3.15 230-kV Substation Steel Bus Erection - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0406	1.7137	0.4549	2.5500e-003	0.0340	1.1600e-003	0.0352	9.8700e-003	1.1100e-003	0.0110		272.7425	272.7425	0.0206		273.2586
Worker	0.0339	0.0237	0.2510	7.4000e-004	0.0873	5.3000e-004	0.0878	0.0232	4.9000e-004	0.0236		73.7389	73.7389	1.9600e-003		73.7879
Total	**0.0745**	**1.7375**	**0.7059**	**3.2900e-003**	**0.1213**	**1.6900e-003**	**0.1230**	**0.0330**	**1.6000e-003**	**0.0346**		**346.4814**	**346.4814**	**0.0226**		**347.0465**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5294	3.9615	4.0945	0.0145		0.1358	0.1358		0.1250	0.1250	0.0000	1,399.9174	1,399.9174	0.4528		1,411.2365
Total	**0.5294**	**3.9615**	**4.0945**	**0.0145**		**0.1358**	**0.1358**		**0.1250**	**0.1250**	**0.0000**	**1,399.9174**	**1,399.9174**	**0.4528**		**1,411.2365**

3.15 230-kV Substation Steel Bus Erection - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0406	1.7137	0.4549	2.5500e-003	0.0340	1.1600e-003	0.0352	9.8700e-003	1.1100e-003	0.0110		272.7425	272.7425	0.0206		273.2586
Worker	0.0339	0.0237	0.2510	7.4000e-004	0.0873	5.3000e-004	0.0878	0.0232	4.9000e-004	0.0236		73.7389	73.7389	1.9600e-003		73.7879
Total	**0.0745**	**1.7375**	**0.7059**	**3.2900e-003**	**0.1213**	**1.6900e-003**	**0.1230**	**0.0330**	**1.6000e-003**	**0.0346**		**346.4814**	**346.4814**	**0.0226**		**347.0465**

3.16 230-kV Substation Install Yard Rock - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7475	6.1779	5.9324	0.0191		0.2256	0.2256		0.2075	0.2075		1,849.2207	1,849.2207	0.5981		1,864.1726
Total	**0.7475**	**6.1779**	**5.9324**	**0.0191**		**0.2256**	**0.2256**		**0.2075**	**0.2075**		**1,849.2207**	**1,849.2207**	**0.5981**		**1,864.1726**

3.16 230-kV Substation Install Yard Rock - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1668	5.1391	1.3808	0.0139	0.3619	0.0168	0.3787	0.1042	0.0161	0.1202		1,479.0425	1,479.0425	0.0699		1,480.7909
Worker	0.0520	0.0375	0.3909	1.0800e-003	0.1228	7.7000e-004	0.1236	0.0326	7.1000e-004	0.0333		108.0607	108.0607	3.1100e-003		108.1385
Total	**0.2188**	**5.1766**	**1.7717**	**0.0150**	**0.4847**	**0.0176**	**0.5023**	**0.1367**	**0.0168**	**0.1535**		**1,587.1032**	**1,587.1032**	**0.0730**		**1,588.9294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7475	6.1779	5.9324	0.0191		0.2256	0.2256		0.2075	0.2075	0.0000	1,849.2207	1,849.2207	0.5981		1,864.1726
Total	**0.7475**	**6.1779**	**5.9324**	**0.0191**		**0.2256**	**0.2256**		**0.2075**	**0.2075**	**0.0000**	**1,849.2207**	**1,849.2207**	**0.5981**		**1,864.1726**

3.16 230-kV Substation Install Yard Rock - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1668	5.1391	1.3808	0.0139	0.3619	0.0168	0.3787	0.1042	0.0161	0.1202		1,479.0425	1,479.0425	0.0699		1,480.7909
Worker	0.0520	0.0375	0.3909	1.0800e-003	0.1228	7.7000e-004	0.1236	0.0326	7.1000e-004	0.0333		108.0607	108.0607	3.1100e-003		108.1385
Total	**0.2188**	**5.1766**	**1.7717**	**0.0150**	**0.4847**	**0.0176**	**0.5023**	**0.1367**	**0.0168**	**0.1535**		**1,587.1032**	**1,587.1032**	**0.0730**		**1,588.9294**

3.16 230-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7112	5.5407	5.8424	0.0191		0.1978	0.1978		0.1820	0.1820		1,850.4684	1,850.4684	0.5985		1,865.4304
Total	**0.7112**	**5.5407**	**5.8424**	**0.0191**		**0.1978**	**0.1978**		**0.1820**	**0.1820**		**1,850.4684**	**1,850.4684**	**0.5985**		**1,865.4304**

3.16 230-kV Substation Install Yard Rock - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1262	4.0860	1.2198	0.0136	0.3620	7.9100e-003	0.3699	0.1042	7.5600e-003	0.1117		1,452.5337	1,452.5337	0.0639		1,454.1300
Worker	0.0487	0.0337	0.3574	1.0400e-003	0.1228	7.5000e-004	0.1236	0.0326	6.9000e-004	0.0333		104.0104	104.0104	2.7800e-003		104.0800
Total	**0.1750**	**4.1198**	**1.5773**	**0.0146**	**0.4848**	**8.6600e-003**	**0.4935**	**0.1368**	**8.2500e-003**	**0.1450**		**1,556.5442**	**1,556.5442**	**0.0666**		**1,558.2099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7112	5.5407	5.8424	0.0191		0.1978	0.1978		0.1820	0.1820	0.0000	1,850.4684	1,850.4684	0.5985		1,865.4304
Total	**0.7112**	**5.5407**	**5.8424**	**0.0191**		**0.1978**	**0.1978**		**0.1820**	**0.1820**	**0.0000**	**1,850.4684**	**1,850.4684**	**0.5985**		**1,865.4304**

3.16 230-kV Substation Install Yard Rock - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1262	4.0860	1.2198	0.0136	0.3620	7.9100e-003	0.3699	0.1042	7.5600e-003	0.1117		1,452.5337	1,452.5337	0.0639		1,454.1300
Worker	0.0487	0.0337	0.3574	1.0400e-003	0.1228	7.5000e-004	0.1236	0.0326	6.9000e-004	0.0333		104.0104	104.0104	2.7800e-003		104.0800
Total	**0.1750**	**4.1198**	**1.5773**	**0.0146**	**0.4848**	**8.6600e-003**	**0.4935**	**0.1368**	**8.2500e-003**	**0.1450**		**1,556.5442**	**1,556.5442**	**0.0666**		**1,558.2099**

3.17 70-kV Substation Steel Bus Erection - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8239	6.4014	7.0821	0.0231		0.2117	0.2117		0.1947	0.1947		2,239.9099	2,239.9099	0.7244		2,258.0207
Total	**0.8239**	**6.4014**	**7.0821**	**0.0231**		**0.2117**	**0.2117**		**0.1947**	**0.1947**		**2,239.9099**	**2,239.9099**	**0.7244**		**2,258.0207**

3.17 70-kV Substation Steel Bus Erection - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0328	0.9923	0.3061	3.8500e-003	0.1083	2.2900e-003	0.1106	0.0312	2.1900e-003	0.0334		411.0301	411.0301	0.0166		411.4443
Worker	0.0334	0.0222	0.2372	6.7000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.6000e-004	0.0212		66.7194	66.7194	1.8200e-003		66.7650
Total	**0.0662**	**1.0145**	**0.5432**	**4.5200e-003**	**0.1865**	**2.7800e-003**	**0.1893**	**0.0519**	**2.6500e-003**	**0.0546**		**477.7496**	**477.7496**	**0.0184**		**478.2093**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8239	6.4014	7.0821	0.0231		0.2117	0.2117		0.1947	0.1947	0.0000	2,239.9099	2,239.9099	0.7244		2,258.0207
Total	**0.8239**	**6.4014**	**7.0821**	**0.0231**		**0.2117**	**0.2117**		**0.1947**	**0.1947**	**0.0000**	**2,239.9099**	**2,239.9099**	**0.7244**		**2,258.0207**

3.17 70-kV Substation Steel Bus Erection - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0328	0.9923	0.3061	3.8500e-003	0.1083	2.2900e-003	0.1106	0.0312	2.1900e-003	0.0334		411.0301	411.0301	0.0166		411.4443
Worker	0.0334	0.0222	0.2372	6.7000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.6000e-004	0.0212		66.7194	66.7194	1.8200e-003		66.7650
Total	**0.0662**	**1.0145**	**0.5432**	**4.5200e-003**	**0.1865**	**2.7800e-003**	**0.1893**	**0.0519**	**2.6500e-003**	**0.0546**		**477.7496**	**477.7496**	**0.0184**		**478.2093**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8288	13.5256	13.6033	0.0467		0.5180	0.5180		0.4830	0.4830		4,507.8392	4,507.8392	1.3491		4,541.5672
Total	**1.8288**	**13.5256**	**13.6033**	**0.0467**		**0.5180**	**0.5180**		**0.4830**	**0.4830**		**4,507.8392**	**4,507.8392**	**1.3491**		**4,541.5672**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0403	1.7070	0.4525	2.5000e-003	0.0327	1.1400e-003	0.0338	9.4700e-003	1.0900e-003	0.0106		268.0927	268.0927	0.0205		268.6051
Worker	0.0471	0.0323	0.3429	9.9000e-004	0.1167	7.2000e-004	0.1174	0.0310	6.6000e-004	0.0316		98.9781	98.9781	2.6600e-003		99.0446
Total	**0.0874**	**1.7393**	**0.7955**	**3.4900e-003**	**0.1493**	**1.8600e-003**	**0.1512**	**0.0404**	**1.7500e-003**	**0.0422**		**367.0708**	**367.0708**	**0.0232**		**367.6497**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8288	13.5256	13.6033	0.0467		0.5180	0.5180		0.4830	0.4830	0.0000	4,507.8392	4,507.8392	1.3491		4,541.5671
Total	**1.8288**	**13.5256**	**13.6033**	**0.0467**		**0.5180**	**0.5180**		**0.4830**	**0.4830**	**0.0000**	**4,507.8392**	**4,507.8392**	**1.3491**		**4,541.5671**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0403	1.7070	0.4525	2.5000e-003	0.0327	1.1400e-003	0.0338	9.4700e-003	1.0900e-003	0.0106		268.0927	268.0927	0.0205		268.6051
Worker	0.0471	0.0323	0.3429	9.9000e-004	0.1167	7.2000e-004	0.1174	0.0310	6.6000e-004	0.0316		98.9781	98.9781	2.6600e-003		99.0446
Total	**0.0874**	**1.7393**	**0.7955**	**3.4900e-003**	**0.1493**	**1.8600e-003**	**0.1512**	**0.0404**	**1.7500e-003**	**0.0422**		**367.0708**	**367.0708**	**0.0232**		**367.6497**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2636	2.8616	1.3758	4.3300e-003		0.1195	0.1195		0.1099	0.1099		419.1144	419.1144	0.1356		422.5032
Total	**0.2636**	**2.8616**	**1.3758**	**4.3300e-003**		**0.1195**	**0.1195**		**0.1099**	**0.1099**		**419.1144**	**419.1144**	**0.1356**		**422.5032**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0349	0.0247	0.2604	7.7000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		77.0193	77.0193	2.0400e-003		77.0703
Total	**0.0422**	**0.2452**	**0.3284**	**1.6300e-003**	**0.1154**	**1.0600e-003**	**0.1164**	**0.0311**	**1.0000e-003**	**0.0321**		**168.3593**	**168.3593**	**5.7200e-003**		**168.5023**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2636	2.8616	1.3758	4.3300e-003		0.1195	0.1195		0.1099	0.1099	0.0000	419.1144	419.1144	0.1356		422.5032
Total	**0.2636**	**2.8616**	**1.3758**	**4.3300e-003**		**0.1195**	**0.1195**		**0.1099**	**0.1099**	**0.0000**	**419.1144**	**419.1144**	**0.1356**		**422.5032**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0349	0.0247	0.2604	7.7000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		77.0193	77.0193	2.0400e-003		77.0703
Total	**0.0422**	**0.2452**	**0.3284**	**1.6300e-003**	**0.1154**	**1.0600e-003**	**0.1164**	**0.0311**	**1.0000e-003**	**0.0321**		**168.3593**	**168.3593**	**5.7200e-003**		**168.5023**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3779	2.6759	2.4664	9.9200e-003		0.0968	0.0968		0.0890	0.0890		959.9164	959.9164	0.3105		967.6778
Total	**0.3779**	**2.6759**	**2.4664**	**9.9200e-003**		**0.0968**	**0.0968**		**0.0890**	**0.0890**		**959.9164**	**959.9164**	**0.3105**		**967.6778**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0387	1.6171	0.4309	2.4900e-003	0.0354	1.1600e-003	0.0366	0.0103	1.1100e-003	0.0114		266.7112	266.7112	0.0197		267.2025
Worker	0.0262	0.0185	0.1953	5.8000e-004	0.0685	4.1000e-004	0.0689	0.0182	3.8000e-004	0.0185		57.7645	57.7645	1.5300e-003		57.8027
Total	**0.0649**	**1.6356**	**0.6262**	**3.0700e-003**	**0.1039**	**1.5700e-003**	**0.1054**	**0.0284**	**1.4900e-003**	**0.0299**		**324.4757**	**324.4757**	**0.0212**		**325.0051**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3779	2.6759	2.4664	9.9200e-003		0.0968	0.0968		0.0890	0.0890	0.0000	959.9164	959.9164	0.3105		967.6778
Total	**0.3779**	**2.6759**	**2.4664**	**9.9200e-003**		**0.0968**	**0.0968**		**0.0890**	**0.0890**	**0.0000**	**959.9164**	**959.9164**	**0.3105**		**967.6778**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0387	1.6171	0.4309	2.4900e-003	0.0354	1.1600e-003	0.0366	0.0103	1.1100e-003	0.0114		266.7112	266.7112	0.0197		267.2025
Worker	0.0262	0.0185	0.1953	5.8000e-004	0.0685	4.1000e-004	0.0689	0.0182	3.8000e-004	0.0185		57.7645	57.7645	1.5300e-003		57.8027
Total	**0.0649**	**1.6356**	**0.6262**	**3.0700e-003**	**0.1039**	**1.5700e-003**	**0.1054**	**0.0284**	**1.4900e-003**	**0.0299**		**324.4757**	**324.4757**	**0.0212**		**325.0051**

3.21 230-kV Transmission Conductor - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7984	15.7207	10.7044	0.0394		0.6165	0.6165		0.5672	0.5672		3,817.1203	3,817.1203	1.2345		3,847.9837
Total	**1.7984**	**15.7207**	**10.7044**	**0.0394**		**0.6165**	**0.6165**		**0.5672**	**0.5672**		**3,817.1203**	**3,817.1203**	**1.2345**		**3,847.9837**

3.21 230-kV Transmission Conductor - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0401	1.2128	0.3741	4.7100e-003	0.1324	2.8000e-003	0.1352	0.0381	2.6800e-003	0.0408		502.3702	502.3702	0.0203		502.8764
Worker	0.1106	0.0781	0.8246	2.4500e-003	0.2891	1.7500e-003	0.2908	0.0767	1.6100e-003	0.0783		243.8943	243.8943	6.4600e-003		244.0558
Total	**0.1507**	**1.2908**	**1.1986**	**7.1600e-003**	**0.4214**	**4.5500e-003**	**0.4260**	**0.1148**	**4.2900e-003**	**0.1191**		**746.2645**	**746.2645**	**0.0267**		**746.9322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7984	15.7207	10.7044	0.0394		0.6165	0.6165		0.5672	0.5672	0.0000	3,817.1203	3,817.1203	1.2345		3,847.9837
Total	**1.7984**	**15.7207**	**10.7044**	**0.0394**		**0.6165**	**0.6165**		**0.5672**	**0.5672**	**0.0000**	**3,817.1203**	**3,817.1203**	**1.2345**		**3,847.9837**

3.21 230-kV Transmission Conductor - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0401	1.2128	0.3741	4.7100e-003	0.1324	2.8000e-003	0.1352	0.0381	2.6800e-003	0.0408		502.3702	502.3702	0.0203		502.8764
Worker	0.1106	0.0781	0.8246	2.4500e-003	0.2891	1.7500e-003	0.2908	0.0767	1.6100e-003	0.0783		243.8943	243.8943	6.4600e-003		244.0558
Total	**0.1507**	**1.2908**	**1.1986**	**7.1600e-003**	**0.4214**	**4.5500e-003**	**0.4260**	**0.1148**	**4.2900e-003**	**0.1191**		**746.2645**	**746.2645**	**0.0267**		**746.9322**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3679	2.8885	3.2533	0.0104		0.0945	0.0945		0.0870	0.0870		1,007.9647	1,007.9647	0.3260		1,016.1146
Total	**0.3679**	**2.8885**	**3.2533**	**0.0104**		**0.0945**	**0.0945**		**0.0870**	**0.0870**		**1,007.9647**	**1,007.9647**	**0.3260**		**1,016.1146**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0437	1.3230	0.4081	5.1300e-003	0.1444	3.0600e-003	0.1475	0.0415	2.9200e-003	0.0445		548.0402	548.0402	0.0221		548.5924
Worker	0.0392	0.0264	0.2808	8.0000e-004	0.0935	5.9000e-004	0.0941	0.0248	5.4000e-004	0.0254		79.6305	79.6305	2.1600e-003		79.6846
Total	**0.0829**	**1.3494**	**0.6888**	**5.9300e-003**	**0.2379**	**3.6500e-003**	**0.2416**	**0.0664**	**3.4600e-003**	**0.0698**		**627.6707**	**627.6707**	**0.0243**		**628.2771**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3679	2.8885	3.2533	0.0104		0.0945	0.0945		0.0870	0.0870	0.0000	1,007.9647	1,007.9647	0.3260		1,016.1146
Total	**0.3679**	**2.8885**	**3.2533**	**0.0104**		**0.0945**	**0.0945**		**0.0870**	**0.0870**	**0.0000**	**1,007.9647**	**1,007.9647**	**0.3260**		**1,016.1146**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0437	1.3230	0.4081	5.1300e-003	0.1444	3.0600e-003	0.1475	0.0415	2.9200e-003	0.0445		548.0402	548.0402	0.0221		548.5924
Worker	0.0392	0.0264	0.2808	8.0000e-004	0.0935	5.9000e-004	0.0941	0.0248	5.4000e-004	0.0254		79.6305	79.6305	2.1600e-003		79.6846
Total	**0.0829**	**1.3494**	**0.6888**	**5.9300e-003**	**0.2379**	**3.6500e-003**	**0.2416**	**0.0664**	**3.4600e-003**	**0.0698**		**627.6707**	**627.6707**	**0.0243**		**628.2771**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0331	0.0230	0.2439	7.2000e-004	0.0843	5.1000e-004	0.0848	0.0224	4.7000e-004	0.0228		71.2787	71.2787	1.9000e-003		71.3262
Total	**0.0404**	**0.2435**	**0.3119**	**1.5800e-003**	**0.1083**	**1.0200e-003**	**0.1094**	**0.0293**	**9.6000e-004**	**0.0302**		**162.6187**	**162.6187**	**5.5800e-003**		**162.7583**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0331	0.0230	0.2439	7.2000e-004	0.0843	5.1000e-004	0.0848	0.0224	4.7000e-004	0.0228		71.2787	71.2787	1.9000e-003		71.3262
Total	**0.0404**	**0.2435**	**0.3119**	**1.5800e-003**	**0.1083**	**1.0200e-003**	**0.1094**	**0.0293**	**9.6000e-004**	**0.0302**		**162.6187**	**162.6187**	**5.5800e-003**		**162.7583**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4591	5.4209	2.8083	8.1800e-003		0.1887	0.1887		0.1736	0.1736		791.6434	791.6434	0.2560		798.0443
Total	**0.4591**	**5.4209**	**2.8083**	**8.1800e-003**		**0.1887**	**0.1887**		**0.1736**	**0.1736**		**791.6434**	**791.6434**	**0.2560**		**798.0443**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0328	0.9923	0.3061	3.8500e-003	0.1083	2.2900e-003	0.1106	0.0312	2.1900e-003	0.0334		411.0301	411.0301	0.0166		411.4443
Worker	0.0408	0.0288	0.3038	9.0000e-004	0.1065	6.4000e-004	0.1071	0.0283	5.9000e-004	0.0288		89.8558	89.8558	2.3800e-003		89.9153
Total	**0.0736**	**1.0210**	**0.6098**	**4.7500e-003**	**0.2148**	**2.9300e-003**	**0.2177**	**0.0594**	**2.7800e-003**	**0.0622**		**500.8859**	**500.8859**	**0.0190**		**501.3596**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4591	5.4209	2.8083	8.1800e-003		0.1887	0.1887		0.1736	0.1736	0.0000	791.6434	791.6434	0.2560		798.0443
Total	**0.4591**	**5.4209**	**2.8083**	**8.1800e-003**		**0.1887**	**0.1887**		**0.1736**	**0.1736**	**0.0000**	**791.6434**	**791.6434**	**0.2560**		**798.0443**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0328	0.9923	0.3061	3.8500e-003	0.1083	2.2900e-003	0.1106	0.0312	2.1900e-003	0.0334		411.0301	411.0301	0.0166		411.4443
Worker	0.0408	0.0288	0.3038	9.0000e-004	0.1065	6.4000e-004	0.1071	0.0283	5.9000e-004	0.0288		89.8558	89.8558	2.3800e-003		89.9153
Total	**0.0736**	**1.0210**	**0.6098**	**4.7500e-003**	**0.2148**	**2.9300e-003**	**0.2177**	**0.0594**	**2.7800e-003**	**0.0622**		**500.8859**	**500.8859**	**0.0190**		**501.3596**

3.25 230-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0341	0.5248	1.0747	1.6500e-003		9.0700e-003	9.0700e-003		8.3400e-003	8.3400e-003		160.0386	160.0386	0.0518		161.3326
Total	**0.0341**	**0.5248**	**1.0747**	**1.6500e-003**		**9.0700e-003**	**9.0700e-003**		**8.3400e-003**	**8.3400e-003**		**160.0386**	**160.0386**	**0.0518**		**161.3326**

3.25 230-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0109	0.3308	0.1020	1.2800e-003	0.0361	7.6000e-004	0.0369	0.0104	7.3000e-004	0.0111		137.0100	137.0100	5.5200e-003		137.1481
Worker	0.0291	0.0205	0.2170	6.4000e-004	0.0761	4.6000e-004	0.0765	0.0202	4.2000e-004	0.0206		64.1827	64.1827	1.7000e-003		64.2252
Total	**0.0400**	**0.3513**	**0.3190**	**1.9200e-003**	**0.1122**	**1.2200e-003**	**0.1134**	**0.0306**	**1.1500e-003**	**0.0317**		**201.1928**	**201.1928**	**7.2200e-003**		**201.3733**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0341	0.5248	1.0747	1.6500e-003		9.0700e-003	9.0700e-003		8.3400e-003	8.3400e-003	0.0000	160.0386	160.0386	0.0518		161.3326
Total	**0.0341**	**0.5248**	**1.0747**	**1.6500e-003**		**9.0700e-003**	**9.0700e-003**		**8.3400e-003**	**8.3400e-003**	**0.0000**	**160.0386**	**160.0386**	**0.0518**		**161.3326**

3.25 230-kV Substation Cable Installation and Termination - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0109	0.3308	0.1020	1.2800e-003	0.0361	7.6000e-004	0.0369	0.0104	7.3000e-004	0.0111		137.0100	137.0100	5.5200e-003		137.1481
Worker	0.0291	0.0205	0.2170	6.4000e-004	0.0761	4.6000e-004	0.0765	0.0202	4.2000e-004	0.0206		64.1827	64.1827	1.7000e-003		64.2252
Total	**0.0400**	**0.3513**	**0.3190**	**1.9200e-003**	**0.1122**	**1.2200e-003**	**0.1134**	**0.0306**	**1.1500e-003**	**0.0317**		**201.1928**	**201.1928**	**7.2200e-003**		**201.3733**

3.26 230-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.26 230-kV Substation Testing and Commissioning - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0947	2.8665	0.8841	0.0111	0.3129	6.6200e-003	0.3195	0.0900	6.3400e-003	0.0963		1,187.4204	1,187.4204	0.0479		1,188.6170
Worker	0.0273	0.0179	0.1915	5.3000e-004	0.0620	4.0000e-004	0.0624	0.0165	3.7000e-004	0.0168		53.0877	53.0877	1.4600e-003		53.1242
Total	**0.1220**	**2.8844**	**1.0756**	**0.0117**	**0.3749**	**7.0200e-003**	**0.3819**	**0.1065**	**6.7100e-003**	**0.1132**		**1,240.5080**	**1,240.5080**	**0.0493**		**1,241.7412**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.26 230-kV Substation Testing and Commissioning - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0947	2.8665	0.8841	0.0111	0.3129	6.6200e-003	0.3195	0.0900	6.3400e-003	0.0963		1,187.4204	1,187.4204	0.0479		1,188.6170
Worker	0.0273	0.0179	0.1915	5.3000e-004	0.0620	4.0000e-004	0.0624	0.0165	3.7000e-004	0.0168		53.0877	53.0877	1.4600e-003		53.1242
Total	**0.1220**	**2.8844**	**1.0756**	**0.0117**	**0.3749**	**7.0200e-003**	**0.3819**	**0.1065**	**6.7100e-003**	**0.1132**		**1,240.5080**	**1,240.5080**	**0.0493**		**1,241.7412**

3.27 70-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.27 70-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0109	0.3308	0.1020	1.2800e-003	0.0361	7.6000e-004	0.0369	0.0104	7.3000e-004	0.0111		137.0100	137.0100	5.5200e-003		137.1481
Worker	0.0271	0.0178	0.1900	5.3000e-004	0.0614	3.9000e-004	0.0618	0.0163	3.6000e-004	0.0167		52.5658	52.5658	1.4500e-003		52.6020
Total	**0.0381**	**0.3485**	**0.2920**	**1.8100e-003**	**0.0975**	**1.1500e-003**	**0.0987**	**0.0267**	**1.0900e-003**	**0.0278**		**189.5758**	**189.5758**	**6.9700e-003**		**189.7501**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.27 70-kV Substation Cable Installation and Termination - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0109	0.3308	0.1020	1.2800e-003	0.0361	7.6000e-004	0.0369	0.0104	7.3000e-004	0.0111		137.0100	137.0100	5.5200e-003		137.1481
Worker	0.0271	0.0178	0.1900	5.3000e-004	0.0614	3.9000e-004	0.0618	0.0163	3.6000e-004	0.0167		52.5658	52.5658	1.4500e-003		52.6020
Total	**0.0381**	**0.3485**	**0.2920**	**1.8100e-003**	**0.0975**	**1.1500e-003**	**0.0987**	**0.0267**	**1.0900e-003**	**0.0278**		**189.5758**	**189.5758**	**6.9700e-003**		**189.7501**

3.28 70-kV Power Line Site Development Mobilization - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	0.6509	7.7474	3.6546	0.0115		0.2640	0.2640		0.2429	0.2429		1,112.0710	1,112.0710	0.3597		1,121.0627
Total	**0.6509**	**7.7474**	**3.6546**	**0.0115**	**1.5908**	**0.2640**	**1.8548**	**0.1718**	**0.2429**	**0.4147**		**1,112.0710**	**1,112.0710**	**0.3597**		**1,121.0627**

3.28 70-kV Power Line Site Development Mobilization - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0364	1.1025	0.3401	4.2800e-003	0.1203	2.5500e-003	0.1229	0.0346	2.4400e-003	0.0371		456.7001	456.7001	0.0184		457.1604
Worker	0.0530	0.0365	0.3868	1.1200e-003	0.1321	8.1000e-004	0.1329	0.0350	7.5000e-004	0.0358		111.9637	111.9637	3.0000e-003		112.0388
Total	**0.0894**	**1.1390**	**0.7268**	**5.4000e-003**	**0.2524**	**3.3600e-003**	**0.2558**	**0.0697**	**3.1900e-003**	**0.0729**		**568.6639**	**568.6639**	**0.0214**		**569.1992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	0.6509	7.7474	3.6546	0.0115		0.2640	0.2640		0.2429	0.2429	0.0000	1,112.0710	1,112.0710	0.3597		1,121.0626
Total	**0.6509**	**7.7474**	**3.6546**	**0.0115**	**0.6204**	**0.2640**	**0.8844**	**0.0670**	**0.2429**	**0.3099**	**0.0000**	**1,112.0710**	**1,112.0710**	**0.3597**		**1,121.0626**

3.28 70-kV Power Line Site Development Mobilization - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0364	1.1025	0.3401	4.2800e-003	0.1203	2.5500e-003	0.1229	0.0346	2.4400e-003	0.0371		456.7001	456.7001	0.0184		457.1604
Worker	0.0530	0.0365	0.3868	1.1200e-003	0.1321	8.1000e-004	0.1329	0.0350	7.5000e-004	0.0358		111.9637	111.9637	3.0000e-003		112.0388
Total	**0.0894**	**1.1390**	**0.7268**	**5.4000e-003**	**0.2524**	**3.3600e-003**	**0.2558**	**0.0697**	**3.1900e-003**	**0.0729**		**568.6639**	**568.6639**	**0.0214**		**569.1992**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3977	0.0000	0.3977	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.3633	4.2576	2.3851	6.5200e-003		0.1510	0.1510		0.1389	0.1389		631.4296	631.4296	0.2042		636.5351
Total	**0.3633**	**4.2576**	**2.3851**	**6.5200e-003**	**0.3977**	**0.1510**	**0.5487**	**0.0429**	**0.1389**	**0.1818**		**631.4296**	**631.4296**	**0.2042**		**636.5351**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0182	0.5513	0.1700	2.1400e-003	0.0602	1.2700e-003	0.0614	0.0173	1.2200e-003	0.0185		228.3501	228.3501	9.2000e-003		228.5802
Worker	0.0410	0.0280	0.2971	8.6000e-004	0.1004	6.2000e-004	0.1011	0.0267	5.7000e-004	0.0272		85.2966	85.2966	2.3000e-003		85.3541
Total	**0.0592**	**0.5792**	**0.4671**	**3.0000e-003**	**0.1606**	**1.8900e-003**	**0.1625**	**0.0440**	**1.7900e-003**	**0.0458**		**313.6467**	**313.6467**	**0.0115**		**313.9343**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1551	0.0000	0.1551	0.0168	0.0000	0.0168			0.0000			0.0000
Off-Road	0.3633	4.2576	2.3851	6.5200e-003		0.1510	0.1510		0.1389	0.1389	0.0000	631.4296	631.4296	0.2042		636.5351
Total	**0.3633**	**4.2576**	**2.3851**	**6.5200e-003**	**0.1551**	**0.1510**	**0.3061**	**0.0168**	**0.1389**	**0.1556**	**0.0000**	**631.4296**	**631.4296**	**0.2042**		**636.5351**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0182	0.5513	0.1700	2.1400e-003	0.0602	1.2700e-003	0.0614	0.0173	1.2200e-003	0.0185		228.3501	228.3501	9.2000e-003		228.5802
Worker	0.0410	0.0280	0.2971	8.6000e-004	0.1004	6.2000e-004	0.1011	0.0267	5.7000e-004	0.0272		85.2966	85.2966	2.3000e-003		85.3541
Total	**0.0592**	**0.5792**	**0.4671**	**3.0000e-003**	**0.1606**	**1.8900e-003**	**0.1625**	**0.0440**	**1.7900e-003**	**0.0458**		**313.6467**	**313.6467**	**0.0115**		**313.9343**

3.30 70-kV Power Line Pole Tower Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9144	14.9150	14.1297	0.0472		0.5804	0.5804		0.5340	0.5340		4,571.4399	4,571.4399	1.4785		4,608.4023
Total	**1.9144**	**14.9150**	**14.1297**	**0.0472**		**0.5804**	**0.5804**		**0.5340**	**0.5340**		**4,571.4399**	**4,571.4399**	**1.4785**		**4,608.4023**

3.30 70-kV Power Line Pole Tower Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0547	1.6538	0.5101	6.4200e-003	0.1805	3.8200e-003	0.1843	0.0519	3.6500e-003	0.0556		685.0502	685.0502	0.0276		685.7406
Worker	0.1043	0.0709	0.7540	2.1700e-003	0.2543	1.5800e-003	0.2558	0.0675	1.4600e-003	0.0689		216.0253	216.0253	5.8300e-003		216.1711
Total	**0.1590**	**1.7247**	**1.2641**	**8.5900e-003**	**0.4348**	**5.4000e-003**	**0.4402**	**0.1194**	**5.1100e-003**	**0.1245**		**901.0755**	**901.0755**	**0.0334**		**901.9116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9144	14.9150	14.1297	0.0472		0.5804	0.5804		0.5340	0.5340	0.0000	4,571.4399	4,571.4399	1.4785		4,608.4023
Total	**1.9144**	**14.9150**	**14.1297**	**0.0472**		**0.5804**	**0.5804**		**0.5340**	**0.5340**	**0.0000**	**4,571.4399**	**4,571.4399**	**1.4785**		**4,608.4023**

3.30 70-kV Power Line Pole Tower Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0547	1.6538	0.5101	6.4200e-003	0.1805	3.8200e-003	0.1843	0.0519	3.6500e-003	0.0556		685.0502	685.0502	0.0276		685.7406
Worker	0.1043	0.0709	0.7540	2.1700e-003	0.2543	1.5800e-003	0.2558	0.0675	1.4600e-003	0.0689		216.0253	216.0253	5.8300e-003		216.1711
Total	**0.1590**	**1.7247**	**1.2641**	**8.5900e-003**	**0.4348**	**5.4000e-003**	**0.4402**	**0.1194**	**5.1100e-003**	**0.1245**		**901.0755**	**901.0755**	**0.0334**		**901.9116**

3.31 70-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7203	5.9683	6.9052	0.0184		0.2341	0.2341		0.2154	0.2154		1,781.9512	1,781.9512	0.5763		1,796.3592
Total	**0.7203**	**5.9683**	**6.9052**	**0.0184**		**0.2341**	**0.2341**		**0.2154**	**0.2154**		**1,781.9512**	**1,781.9512**	**0.5763**		**1,796.3592**

3.31 70-kV Substation Install Yard Rock - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0583	1.7640	0.5441	6.8500e-003	0.1925	4.0800e-003	0.1966	0.0554	3.9000e-003	0.0593		730.7202	730.7202	0.0295		731.4566
Worker	0.0349	0.0247	0.2604	7.7000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		77.0193	77.0193	2.0400e-003		77.0703
Total	**0.0932**	**1.7887**	**0.8045**	**7.6200e-003**	**0.2838**	**4.6300e-003**	**0.2885**	**0.0796**	**4.4100e-003**	**0.0840**		**807.7395**	**807.7395**	**0.0315**		**808.5269**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7203	5.9683	6.9052	0.0184		0.2341	0.2341		0.2154	0.2154	0.0000	1,781.9512	1,781.9512	0.5763		1,796.3592
Total	**0.7203**	**5.9683**	**6.9052**	**0.0184**		**0.2341**	**0.2341**		**0.2154**	**0.2154**	**0.0000**	**1,781.9512**	**1,781.9512**	**0.5763**		**1,796.3592**

3.31 70-kV Substation Install Yard Rock - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0583	1.7640	0.5441	6.8500e-003	0.1925	4.0800e-003	0.1966	0.0554	3.9000e-003	0.0593		730.7202	730.7202	0.0295		731.4566
Worker	0.0349	0.0247	0.2604	7.7000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		77.0193	77.0193	2.0400e-003		77.0703
Total	**0.0932**	**1.7887**	**0.8045**	**7.6200e-003**	**0.2838**	**4.6300e-003**	**0.2885**	**0.0796**	**4.4100e-003**	**0.0840**		**807.7395**	**807.7395**	**0.0315**		**808.5269**

3.32 230-kV Substation Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2353	2.3090	3.1169	4.2600e-003		0.1235	0.1235		0.1137	0.1137		412.1960	412.1960	0.1333		415.5288
Total	**0.2353**	**2.3090**	**3.1169**	**4.2600e-003**	**0.0000**	**0.1235**	**0.1235**	**0.0000**	**0.1137**	**0.1137**		**412.1960**	**412.1960**	**0.1333**		**415.5288**

3.32 230-kV Substation Cleanup and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1057	3.1972	0.9862	0.0124	0.3490	7.3900e-003	0.3564	0.1004	7.0700e-003	0.1075		1,324.4304	1,324.4304	0.0534		1,325.7651
Worker	0.0196	0.0132	0.1404	4.0000e-004	0.0468	2.9000e-004	0.0471	0.0124	2.7000e-004	0.0127		39.8153	39.8153	1.0800e-003		39.8423
Total	**0.1253**	**3.2104**	**1.1265**	**0.0128**	**0.3957**	**7.6800e-003**	**0.4034**	**0.1128**	**7.3400e-003**	**0.1201**		**1,364.2457**	**1,364.2457**	**0.0545**		**1,365.6074**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2353	2.3090	3.1169	4.2600e-003		0.1235	0.1235		0.1137	0.1137	0.0000	412.1960	412.1960	0.1333		415.5288
Total	**0.2353**	**2.3090**	**3.1169**	**4.2600e-003**	**0.0000**	**0.1235**	**0.1235**	**0.0000**	**0.1137**	**0.1137**	**0.0000**	**412.1960**	**412.1960**	**0.1333**		**415.5288**

3.32 230-kV Substation Cleanup and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1057	3.1972	0.9862	0.0124	0.3490	7.3900e-003	0.3564	0.1004	7.0700e-003	0.1075		1,324.4304	1,324.4304	0.0534		1,325.7651
Worker	0.0196	0.0132	0.1404	4.0000e-004	0.0468	2.9000e-004	0.0471	0.0124	2.7000e-004	0.0127		39.8153	39.8153	1.0800e-003		39.8423
Total	**0.1253**	**3.2104**	**1.1265**	**0.0128**	**0.3957**	**7.6800e-003**	**0.4034**	**0.1128**	**7.3400e-003**	**0.1201**		**1,364.2457**	**1,364.2457**	**0.0545**		**1,365.6074**

3.33 70-kV Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.33 70-kV Cleanup and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0254	0.0173	0.1837	5.3000e-004	0.0619	3.9000e-004	0.0623	0.0164	3.6000e-004	0.0168		52.6270	52.6270	1.4200e-003		52.6625
Total	**0.0254**	**0.0173**	**0.1837**	**5.3000e-004**	**0.0619**	**3.9000e-004**	**0.0623**	**0.0164**	**3.6000e-004**	**0.0168**		**52.6270**	**52.6270**	**1.4200e-003**		**52.6625**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.33 70-kV Cleanup and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0254	0.0173	0.1837	5.3000e-004	0.0619	3.9000e-004	0.0623	0.0164	3.6000e-004	0.0168		52.6270	52.6270	1.4200e-003		52.6625
Total	**0.0254**	**0.0173**	**0.1837**	**5.3000e-004**	**0.0619**	**3.9000e-004**	**0.0623**	**0.0164**	**3.6000e-004**	**0.0168**		**52.6270**	**52.6270**	**1.4200e-003**		**52.6625**

3.34 70-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.34 70-kV Substation Testing and Commissioning - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0312	0.0214	0.2271	6.6000e-004	0.0772	4.8000e-004	0.0776	0.0205	4.4000e-004	0.0209		65.4635	65.4635	1.7600e-003		65.5075
Total	**0.0385**	**0.2419**	**0.2951**	**1.5200e-003**	**0.1012**	**9.9000e-004**	**0.1022**	**0.0274**	**9.3000e-004**	**0.0283**		**156.8035**	**156.8035**	**5.4400e-003**		**156.9396**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.34 70-kV Substation Testing and Commissioning - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2900e-003	0.2205	0.0680	8.6000e-004	0.0241	5.1000e-004	0.0246	6.9200e-003	4.9000e-004	7.4100e-003		91.3400	91.3400	3.6800e-003		91.4321
Worker	0.0312	0.0214	0.2271	6.6000e-004	0.0772	4.8000e-004	0.0776	0.0205	4.4000e-004	0.0209		65.4635	65.4635	1.7600e-003		65.5075
Total	**0.0385**	**0.2419**	**0.2951**	**1.5200e-003**	**0.1012**	**9.9000e-004**	**0.1022**	**0.0274**	**9.3000e-004**	**0.0283**		**156.8035**	**156.8035**	**5.4400e-003**		**156.9396**

3.35 70-kV Power Line Conductor Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4583	21.0710	16.4869	0.0538		0.8689	0.8689		0.7994	0.7994		5,204.5755	5,204.5755	1.6833		5,246.6571
Total	**2.4583**	**21.0710**	**16.4869**	**0.0538**		**0.8689**	**0.8689**		**0.7994**	**0.7994**		**5,204.5755**	**5,204.5755**	**1.6833**		**5,246.6571**

3.35 70-kV Power Line Conductor Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0364	1.1025	0.3401	4.2800e-003	0.1203	2.5500e-003	0.1229	0.0346	2.4400e-003	0.0371		456.7001	456.7001	0.0184		457.1604
Worker	0.0840	0.0577	0.6119	1.7700e-003	0.2084	1.2900e-003	0.2097	0.0553	1.1900e-003	0.0565		176.7562	176.7562	4.7500e-003		176.8750
Total	**0.1204**	**1.1602**	**0.9520**	**6.0500e-003**	**0.3288**	**3.8400e-003**	**0.3326**	**0.0899**	**3.6300e-003**	**0.0935**		**633.4564**	**633.4564**	**0.0232**		**634.0353**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4583	21.0710	16.4869	0.0538		0.8689	0.8689		0.7994	0.7994	0.0000	5,204.5755	5,204.5755	1.6833		5,246.6571
Total	**2.4583**	**21.0710**	**16.4869**	**0.0538**		**0.8689**	**0.8689**		**0.7994**	**0.7994**	**0.0000**	**5,204.5755**	**5,204.5755**	**1.6833**		**5,246.6571**

3.35 70-kV Power Line Conductor Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0364	1.1025	0.3401	4.2800e-003	0.1203	2.5500e-003	0.1229	0.0346	2.4400e-003	0.0371		456.7001	456.7001	0.0184		457.1604
Worker	0.0840	0.0577	0.6119	1.7700e-003	0.2084	1.2900e-003	0.2097	0.0553	1.1900e-003	0.0565		176.7562	176.7562	4.7500e-003		176.8750
Total	**0.1204**	**1.1602**	**0.9520**	**6.0500e-003**	**0.3288**	**3.8400e-003**	**0.3326**	**0.0899**	**3.6300e-003**	**0.0935**		**633.4564**	**633.4564**	**0.0232**		**634.0353**

3.35 70-kV Power Line Conductor Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3759	19.5109	16.2391	0.0538		0.7922	0.7922		0.7288	0.7288		5,205.8190	5,205.8190	1.6837		5,247.9107
Total	**2.3759**	**19.5109**	**16.2391**	**0.0538**		**0.7922**	**0.7922**		**0.7288**	**0.7288**		**5,205.8190**	**5,205.8190**	**1.6837**		**5,247.9107**

3.35 70-kV Power Line Conductor Installation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0348	1.0660	0.3235	4.2500e-003	0.1204	2.3600e-003	0.1227	0.0346	2.2600e-003	0.0369		454.2105	454.2105	0.0186		454.6759
Worker	0.0790	0.0520	0.5644	1.7000e-003	0.2084	1.2600e-003	0.2097	0.0553	1.1600e-003	0.0565		169.8887	169.8887	4.2600e-003		169.9953
Total	**0.1138**	**1.1180**	**0.8879**	**5.9500e-003**	**0.3288**	**3.6200e-003**	**0.3324**	**0.0899**	**3.4200e-003**	**0.0933**		**624.0992**	**624.0992**	**0.0229**		**624.6712**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3759	19.5109	16.2391	0.0538		0.7922	0.7922		0.7288	0.7288	0.0000	5,205.8190	5,205.8190	1.6837		5,247.9107
Total	**2.3759**	**19.5109**	**16.2391**	**0.0538**		**0.7922**	**0.7922**		**0.7288**	**0.7288**	**0.0000**	**5,205.8190**	**5,205.8190**	**1.6837**		**5,247.9107**

3.35 70-kV Power Line Conductor Installation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0348	1.0660	0.3235	4.2500e-003	0.1204	2.3600e-003	0.1227	0.0346	2.2600e-003	0.0369		454.2105	454.2105	0.0186		454.6759
Worker	0.0790	0.0520	0.5644	1.7000e-003	0.2084	1.2600e-003	0.2097	0.0553	1.1600e-003	0.0565		169.8887	169.8887	4.2600e-003		169.9953
Total	**0.1138**	**1.1180**	**0.8879**	**5.9500e-003**	**0.3288**	**3.6200e-003**	**0.3324**	**0.0899**	**3.4200e-003**	**0.0933**		**624.0992**	**624.0992**	**0.0229**		**624.6712**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3977	0.0000	0.3977	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.3379	3.8409	2.3601	6.5200e-003		0.1343	0.1343		0.1236	0.1236		631.2640	631.2640	0.2042		636.3681
Total	**0.3379**	**3.8409**	**2.3601**	**6.5200e-003**	**0.3977**	**0.1343**	**0.5320**	**0.0429**	**0.1236**	**0.1665**		**631.2640**	**631.2640**	**0.2042**		**636.3681**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0244	0.7462	0.2265	2.9800e-003	0.0843	1.6500e-003	0.0859	0.0242	1.5800e-003	0.0258		317.9474	317.9474	0.0130		318.2731
Worker	0.0413	0.0276	0.2986	9.1000e-004	0.1117	6.7000e-004	0.1124	0.0296	6.1000e-004	0.0303		90.8673	90.8673	2.2700e-003		90.9239
Total	**0.0657**	**0.7737**	**0.5251**	**3.8900e-003**	**0.1960**	**2.3200e-003**	**0.1983**	**0.0539**	**2.1900e-003**	**0.0561**		**408.8146**	**408.8146**	**0.0153**		**409.1970**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1551	0.0000	0.1551	0.0168	0.0000	0.0168			0.0000			0.0000
Off-Road	0.3379	3.8409	2.3601	6.5200e-003		0.1343	0.1343		0.1236	0.1236	0.0000	631.2640	631.2640	0.2042		636.3681
Total	**0.3379**	**3.8409**	**2.3601**	**6.5200e-003**	**0.1551**	**0.1343**	**0.2894**	**0.0168**	**0.1236**	**0.1403**	**0.0000**	**631.2640**	**631.2640**	**0.2042**		**636.3681**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0244	0.7462	0.2265	2.9800e-003	0.0843	1.6500e-003	0.0859	0.0242	1.5800e-003	0.0258		317.9474	317.9474	0.0130		318.2731
Worker	0.0413	0.0276	0.2986	9.1000e-004	0.1117	6.7000e-004	0.1124	0.0296	6.1000e-004	0.0303		90.8673	90.8673	2.2700e-003		90.9239
Total	**0.0657**	**0.7737**	**0.5251**	**3.8900e-003**	**0.1960**	**2.3200e-003**	**0.1983**	**0.0539**	**2.1900e-003**	**0.0561**		**408.8146**	**408.8146**	**0.0153**		**409.1970**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	13.00	5.00	5.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.588806	0.027737	0.198305	0.114471	0.022249	0.005748	0.012759	0.019721	0.002316	0.001163	0.004776	0.000758	0.001192

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
NaturalGas Unmitigated	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	391.452	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Total		**4.2200e-003**	**0.0384**	**0.0322**	**2.3000e-004**		**2.9200e-003**	**2.9200e-003**		**2.9200e-003**	**2.9200e-003**		**46.0532**	**46.0532**	**8.8000e-004**	**8.4000e-004**	**46.3269**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.391452	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Total		**4.2200e-003**	**0.0384**	**0.0322**	**2.3000e-004**		**2.9200e-003**	**2.9200e-003**		**2.9200e-003**	**2.9200e-003**		**46.0532**	**46.0532**	**8.8000e-004**	**8.4000e-004**	**46.3269**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Unmitigated	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	152.8816					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0672	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Total	**152.9488**	**6.6100e-003**	**0.7282**	**5.0000e-005**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**		**1.5635**	**1.5635**	**4.0800e-003**		**1.6655**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	152.8816					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0672	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Total	**152.9488**	**6.6100e-003**	**0.7282**	**5.0000e-005**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**		**1.5635**	**1.5635**	**4.0800e-003**		**1.6655**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	4.00	13	402	0.38	Diesel
Off-Highway Trucks	1	4.00	12	402	0.38	Diesel
Other General Industrial Equipment	1	8.00	2	400	0.34	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Off-Highway Trucks	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102		1,280.3504	1,280.3504	0.4141		1,290.7027
Other General Industrial Equipment	0.3779	2.7653	2.6630	0.0117		0.0948	0.0948		0.0872	0.0872		1,134.3814	1,134.3814	0.3669		1,143.5535
Total	**0.8750**	**6.0932**	**5.9132**	**0.0250**		**0.2146**	**0.2146**		**0.1974**	**0.1974**		**2,414.7318**	**2,414.7318**	**0.7810**		**2,434.2562**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Estrella Substation and Paso Robles Area Reinforcement Project

San Luis Obispo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	7,144.00	1000sqft	164.00	7,144,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The total area in power line the easement widths, substation temp disturbance, areas for temporary staging and access roads outside of the easement equals approximately 164 acres or a 7,144,000 square feet area

Construction Phase - Based on project schedule and description

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule
Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on equipment roster for the project.

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

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Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Trips and VMT - Based on equipment roster and schedule provided

On-road Fugitive Dust - Per the user guide 9.3% silt content should be used for the San Luis Obispo region

Grading - Based on grading and material movement for the project.

Vehicle Trips - Unmanned operation

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - No consumer product utilization was assumed for the project

Area Coating - No architectural coating is assumed for the project

Energy Use - Energy intensity factors scaled down to match the area occupied by the 230kV Substation Control Enclosure approximately 14 feet wide, 48 feet long, and the 70 kV Substation Control Enclosure approximately 16 feet wide and 64 feet long.

Water And Wastewater - Unmanned facility - No water use is expected

Solid Waste - No solid waste generation is expected

Construction Off-road Equipment Mitigation - At a minimum, the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year and ensure that quarterly DPM emissions are less than the SLOCAPCD significance thresholds.

Operational Off-Road Equipment - Assumes monthly inspections and an annual maintenance on the substation components. Helicopter emissions are represented as Other general industrial equipment with hp increased to 400

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	3572000	0
tblAreaCoating	Area_Nonresidential_Interior	10716000	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	50.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	19.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstructionPhase	NumDays	3,100.00	48.00
tblConstructionPhase	NumDays	3,100.00	24.00
tblConstructionPhase	NumDays	3,100.00	24.00
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tblConstructionPhase	NumDays	3,100.00	24.00
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tblConstructionPhase	NumDays	3,100.00	12.00
tblConstructionPhase	NumDays	3,100.00	24.00
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tblConstructionPhase	NumDays	3,100.00	6.00
tblConstructionPhase	NumDays	3,100.00	18.00
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tblConstructionPhase	NumDays	3,100.00	6.00
tblConstructionPhase	NumDays	3,100.00	12.00

tblConstructionPhase	NumDays	3,100.00	30.00
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tblConstructionPhase	NumDays	3,100.00	216.00
tblConstructionPhase	NumDays	3,100.00	12.00
tblConstructionPhase	NumDays	3,100.00	48.00
tblConstructionPhase	NumDays	3,100.00	72.00
tblConstructionPhase	NumDays	3,100.00	144.00
tblConstructionPhase	NumDays	3,100.00	12.00
tblConstructionPhase	NumDays	3,100.00	120.00
tblConstructionPhase	NumDays	3,100.00	36.00
tblConstructionPhase	NumDays	310.00	24.00
tblConstructionPhase	NumDays	120.00	12.00
tblConstructionPhase	NumDays	120.00	12.00
tblConstructionPhase	NumDays	120.00	12.00
tblConstructionPhase	NumDays	120.00	12.00
tblConstructionPhase	NumDays	120.00	12.00
tblConstructionPhase	NumDays	120.00	18.00
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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
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tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	LightingElect	3.08	0.01
tblEnergyUse	NT24E	3.70	0.01
tblEnergyUse	NT24NG	6.67	0.01
tblEnergyUse	T24E	1.48	0.01
tblEnergyUse	T24NG	19.71	0.01
tblGrading	AcresOfGrading	36.00	27.00
tblGrading	AcresOfGrading	4.50	9.00
tblGrading	AcresOfGrading	9.00	18.00
tblGrading	AcresOfGrading	4.50	9.00
tblGrading	MaterialExported	0.00	828.00
tblGrading	MaterialImported	0.00	3,140.00
tblOffRoadEquipment	HorsePower	63.00	62.00
tblOffRoadEquipment	HorsePower	63.00	62.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
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tblOffRoadEquipment	PhaseName		70-kV Substation Steel Bus Erection
tblOffRoadEquipment	PhaseName		70-kV Substation Equip Delivery & Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Cable Installation and Termination
tblOffRoadEquipment	PhaseName		70-kV Substation Foundation Construction
tblOffRoadEquipment	PhaseName		230-kV Transmission Foundation Tower Installation Remove two towers
tblOffRoadEquipment	PhaseName		Reconductoring Segment Pole Installation Transfer Distribution Pole Removal
tblOffRoadEquipment	PhaseName		230-kV Substation Foundation Construction
tblOffRoadEquipment	PhaseName		70-kV Substation Mobilization
tblOffRoadEquipment	PhaseName		230-kV Transmission Site Clean-up and Restoration
tblOffRoadEquipment	PhaseName		70-kV Power Line Site Development Mobilization

tblOffRoadEquipment	PhaseName		Reconductoring Segment Clean-up and Restoration
tblOffRoadEquipment	PhaseName		Reconductoring Segment Site Development Mobilization
tblOffRoadEquipment	PhaseName		70-kV Power Line Clean-up and Restoration
tblOffRoadEquipment	PhaseName		230-kV Substation Steel Bus Erection
tblOffRoadEquipment	PhaseName		230-kV Substation Install Yard Rock
tblOffRoadEquipment	PhaseName		70-kV Substation Steel Bus Erection
tblOffRoadEquipment	PhaseName		230-kV Substation Transformer & Equip Delivery & Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Transformer & Equip Delivery & Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Remaining Equipment Delivery and Install
tblOffRoadEquipment	PhaseName		230-kV Transmission Foundation Tower Installation Remove two towers
tblOffRoadEquipment	PhaseName		230-kV Transmission Foundation Tower Installation Remove two towers
tblOffRoadEquipment	PhaseName		230-kV Transmission Foundation Tower Installation Remove two towers
tblOffRoadEquipment	PhaseName		230-kV Transmission Conductor
tblOffRoadEquipment	PhaseName		230-kV Transmission Conductor
tblOffRoadEquipment	PhaseName		70-kV Substation Equip Delivery & Installation
tblOffRoadEquipment	PhaseName		70-kV Substation Control Enclosure Delivery and Install
tblOffRoadEquipment	PhaseName		230-kV Substation Testing and Commissioning
tblOffRoadEquipment	PhaseName		70-kV Substation Cable Installation and Termination
tblOffRoadEquipment	PhaseName		70-kV Power Line Pole Tower Installation
tblOffRoadEquipment	PhaseName		70-kV Power Line Pole Tower Installation
tblOffRoadEquipment	PhaseName		70-kV Substation Install Yard Rock
tblOffRoadEquipment	PhaseName		70-kV Cleanup and Restoration
tblOffRoadEquipment	PhaseName		70-kV Substation Testing and Commissioning

tblOffRoadEquipment	PhaseName		70-kV Power Line Conductor Installation
tblOffRoadEquipment	PhaseName		70-kV Power Line Conductor Installation
tblOffRoadEquipment	PhaseName		70-kV Power Line Conductor Installation
tblOffRoadEquipment	PhaseName		Reconductoring Segment Pole Installation Transfer Distribution Pole Removal
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tblOffRoadEquipment	PhaseName		230-kV Substation Access Roads
tblOffRoadEquipment	PhaseName		230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization
tblOffRoadEquipment	PhaseName		230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization
tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Cleanup and Restoration
tblOffRoadEquipment	PhaseName		70-kV Power Line Conductor Installation
tblOffRoadEquipment	PhaseName		70-kV Power Line Conductor Installation
tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		Reconductoring Segment Conductor Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization
tblOffRoadEquipment	PhaseName		230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization
tblOffRoadEquipment	PhaseName		230-kV Substation Install Yard Rock
tblOffRoadEquipment	PhaseName		70-kV Substation Install Yard Rock

tblOffRoadEquipment	PhaseName		230-kV Substation Fence and Gate Installation
tblOffRoadEquipment	PhaseName		70-kV Substation Foundation Construction
tblOffRoadEquipment	PhaseName		70-kV Substation Ground Grid Conduit Installation
tblOffRoadEquipment	PhaseName		230-kV Substation Ground Grid Conduit Installation
tblOffRoadEquipment	UsageHours	7.00	6.00
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tblOffRoadEquipment	UsageHours	7.00	6.00
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tblOffRoadEquipment	UsageHours	7.00	4.00
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tblOffRoadEquipment	UsageHours	7.00	8.00
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tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	2.00
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tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
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tblSolidWaste	SolidWasteGenerationRate	8,858.56	0.00
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tblTripsAndVMT	VendorTripNumber	1,171.00	29.00
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tblTripsAndVMT	VendorTripNumber	1,171.00	13.00
tblTripsAndVMT	VendorTripNumber	0.00	33.00
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tblTripsAndVMT	WorkerTripLength	13.00	7.68
tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	9.15
tblTripsAndVMT	WorkerTripLength	13.00	9.56
tblTripsAndVMT	WorkerTripLength	13.00	8.97
tblTripsAndVMT	WorkerTripLength	13.00	7.34
tblTripsAndVMT	WorkerTripLength	13.00	8.52
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	7.68
tblTripsAndVMT	WorkerTripLength	13.00	9.23
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	6.79
tblTripsAndVMT	WorkerTripLength	13.00	6.72
tblTripsAndVMT	WorkerTripLength	13.00	8.68
tblTripsAndVMT	WorkerTripLength	13.00	8.25
tblTripsAndVMT	WorkerTripLength	13.00	8.15
tblTripsAndVMT	WorkerTripLength	13.00	7.67
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	7.68
tblTripsAndVMT	WorkerTripLength	13.00	8.14

tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	8.56
tblTripsAndVMT	WorkerTripLength	13.00	9.18
tblTripsAndVMT	WorkerTripLength	13.00	6.32
tblTripsAndVMT	WorkerTripLength	13.00	8.45
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tblTripsAndVMT	WorkerTripLength	13.00	7.50
tblTripsAndVMT	WorkerTripLength	13.00	8.38
tblTripsAndVMT	WorkerTripNumber	5.00	22.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	22.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
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tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	14.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	9.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	30.00
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tblTripsAndVMT	WorkerTripNumber	3,000.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	14.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	10.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00

tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
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tblTripsAndVMT	WorkerTripNumber	5.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	32.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	38.00
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tblTripsAndVMT	WorkerTripNumber	30.00	26.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	28.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	22.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	1,652,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.8864	110.4815	77.5908	0.2791	8.4664	3.9137	12.3801	3.7790	3.6020	7.3810	0.0000	27,322.0062	27,322.0062	7.9167	0.0000	27,519.9224
2023	9.7896	81.3027	68.0185	0.2538	3.9882	2.8200	5.3730	0.7733	2.6013	3.0073	0.0000	24,802.4598	24,802.4598	7.0381	0.0000	24,978.4115
2024	2.5008	20.6390	17.1411	0.0596	0.5937	0.7958	1.1246	0.0968	0.7323	0.8222	0.0000	5,815.4442	5,815.4442	1.7071	0.0000	5,858.1217
Maximum	**11.8864**	**110.4815**	**77.5908**	**0.2791**	**8.4664**	**3.9137**	**12.3801**	**3.7790**	**3.6020**	**7.3810**	**0.0000**	**27,322.0062**	**27,322.0062**	**7.9167**	**0.0000**	**27,519.9224**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.8864	110.4815	77.5908	0.2791	4.0505	3.9137	7.9642	1.6790	3.6020	5.2810	0.0000	27,322.0062	27,322.0062	7.9167	0.0000	27,519.9224
2023	9.7896	81.3027	68.0185	0.2538	2.7752	2.8200	4.3005	0.6423	2.6013	3.0073	0.0000	24,802.4598	24,802.4598	7.0381	0.0000	24,978.4115
2024	2.5008	20.6390	17.1411	0.0596	0.3511	0.7958	1.1246	0.0899	0.7323	0.8222	0.0000	5,815.4442	5,815.4442	1.7071	0.0000	5,858.1217
Maximum	**11.8864**	**110.4815**	**77.5908**	**0.2791**	**4.0505**	**3.9137**	**7.9642**	**1.6790**	**3.6020**	**5.2810**	**0.0000**	**27,322.0062**	**27,322.0062**	**7.9167**	**0.0000**	**27,519.9224**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.00**	**0.00**	**29.07**	**48.14**	**0.00**	**18.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Energy	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	0.8750	6.0932	5.9132	0.0250		0.2146	0.2146		0.1974	0.1974		2,414.7318	2,414.7318	0.7810		2,434.2562
Total	**153.8280**	**6.1382**	**6.6737**	**0.0252**	**0.0000**	**0.2201**	**0.2201**	**0.0000**	**0.2029**	**0.2029**		**2,462.3485**	**2,462.3485**	**0.7859**	**8.4000e-004**	**2,482.2486**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Energy	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	0.8750	6.0932	5.9132	0.0250		0.2146	0.2146		0.1974	0.1974		2,414.7318	2,414.7318	0.7810		2,434.2562
Total	**153.8280**	**6.1382**	**6.6737**	**0.0252**	**0.0000**	**0.2201**	**0.2201**	**0.0000**	**0.2029**	**0.2029**		**2,462.3485**	**2,462.3485**	**0.7859**	**8.4000e-004**	**2,482.2486**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	230-kV Transmission Site Work Area Preparation Mobilization	Site Preparation	6/1/2022	6/14/2022	6	12	
2	230-kV Transmission Foundation Tower Installation Remove two towers	Building Construction	6/15/2022	8/9/2022	6	48	
3	Reconductoring Segment Site Development Mobilization	Site Preparation	8/1/2022	8/13/2022	6	12	

4	Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Building Construction	8/15/2022	2/18/2023	6	144	
5	230-kV Substation Access Roads	Site Preparation	9/1/2022	9/14/2022	6	12	
6	230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Grading	9/15/2022	10/12/2022	6	24	
7	230-kV Substation Fence and Gate Installation	Building Construction	10/8/2022	10/21/2022	6	12	
8	Reconductoring Segment Conductor Installation	Building Construction	10/10/2022	2/28/2023	6	120	
9	230-kV Substation Foundation Construction	Building Construction	10/15/2022	11/25/2022	6	36	
10	70-kV Substation Mobilization	Site Preparation	10/18/2022	10/30/2022	6	12	
11	70-kV Substation Foundation Construction	Building Construction	11/1/2022	12/31/2022	6	48	
12	70-kV Substation Ground Grid Conduit Installation	Building Construction	11/1/2022	12/31/2022	6	48	
13	230-kV Substation Ground Grid Conduit Installation	Building Construction	11/15/2022	12/12/2022	6	24	
14	230-kV Substation Steel Bus Erection	Building Construction	12/9/2022	1/5/2023	6	24	
15	230-kV Substation Install Yard Rock	Building Construction	12/23/2022	1/12/2023	6	18	
16	70-kV Substation Steel Bus Erection	Building Construction	1/1/2023	1/31/2023	6	24	
17	230-kV Substation Transformer & Equip Delivery & Installation	Building Construction	1/2/2023	2/4/2023	6	30	
18	230-kV Substation Control Enclosure Delivery and Install	Building Construction	1/6/2023	1/19/2023	6	12	
19	230-kV Substation Remaining Equipment Delivery and Install	Building Construction	1/13/2023	2/11/2023	6	24	
20	230-kV Transmission Conductor	Building Construction	1/25/2023	1/31/2023	6	6	
21	70-kV Substation Equip Delivery & Installation	Building Construction	2/1/2023	2/21/2023	6	18	
22	70-kV Substation Control Enclosure Delivery and Install	Building Construction	2/1/2023	2/7/2023	6	6	
23	230-kV Transmission Site Clean-up and Restoration	Building Construction	2/1/2023	2/7/2023	6	6	
24	230-kV Substation Cable Installation and Termination	Building Construction	2/1/2023	2/14/2023	6	12	

25	230-kV Substation Testing and Commissioning	Building Construction	2/11/2023	3/17/2023	6	30	
26	70-kV Substation Cable Installation and Termination	Building Construction	2/22/2023	3/14/2023	6	18	
27	70-kV Power Line Site Development Mobilization	Site Preparation	3/1/2023	3/14/2023	6	12	
28	Reconductoring Segment Clean-up and Restoration	Site Preparation	3/1/2023	3/14/2023	6	12	
29	70-kV Power Line Pole Tower Installation	Building Construction	3/1/2023	11/30/2023	6	216	
30	70-kV Substation Install Yard Rock	Building Construction	3/1/2023	3/14/2023	6	12	
31	230-kV Substation Cleanup and Restoration	Site Preparation	3/11/2023	3/31/2023	6	18	
32	70-kV Cleanup and Restoration	Site Preparation	3/15/2023	3/28/2023	6	12	
33	70-kV Substation Testing and Commissioning	Building Construction	4/1/2023	5/31/2023	6	48	
34	70-kV Power Line Conductor Installation	Building Construction	11/1/2023	1/31/2024	6	72	
35	70-kV Power Line Clean-up and Restoration	Site Preparation	2/1/2024	2/14/2024	6	12	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
230-kV Transmission Site Work Area Preparation Mobilization	Graders	1	6.00	187	0.41
230-kV Transmission Site Work Area Preparation Mobilization	Tractors/Loaders/Backhoes	1	6.00	97	0.37
230-kV Transmission Foundation Tower Installation Remove two towers	Bore/Drill Rigs	1	1.00	221	0.50
230-kV Transmission Foundation Tower Installation Remove two towers	Cranes	3	5.30	231	0.29

230-kV Transmission Foundation Tower Installation Remove two towers	Forklifts	3	2.60	89	0.20
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	2	3.50	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	1	0.80	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	2	2.60	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Tractors/Loaders/Backhoes	1	0.50	97	0.37
Reconductoring Segment Site Development Mobilization	Graders	1	6.00	187	0.41
Reconductoring Segment Site Development Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Bore/Drill Rigs	1	6.00	221	0.50
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Cranes	3	6.00	231	0.29
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Cranes	1	1.00	231	0.29
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Off-Highway Trucks	2	3.00	402	0.38
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Off-Highway Trucks	2	2.00	402	0.38
230-kV Substation Access Roads	Off-Highway Trucks	2	8.00	402	0.38
230-kV Substation Access Roads	Tractors/Loaders/Backhoes	2	8.00	97	0.37
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Graders	1	8.00	187	0.41
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Off-Highway Trucks	4	10.00	402	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Off-Highway Trucks	2	10.00	402	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rollers	2	8.00	80	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rubber Tired Dozers	1	8.00	247	0.40
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rubber Tired Loaders	1	8.00	203	0.36

230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Scrapers	1	8.00	367	0.48
230-kV Substation Fence and Gate Installation	Skid Steer Loaders	1	4.00	65	0.37
Reconductoring Segment Conductor Installation	Forklifts	1	3.00	89	0.20
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	6.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	6.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	4.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	1	6.00	402	0.38
Reconductoring Segment Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
Reconductoring Segment Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
230-kV Substation Foundation Construction	Bore/Drill Rigs	1	8.00	221	0.50
230-kV Substation Foundation Construction	Cranes	1	5.00	231	0.29
230-kV Substation Foundation Construction	Tractors/Loaders/Backhoes	1	5.00	97	0.37
70-kV Substation Mobilization	Graders	1	4.00	187	0.41
70-kV Substation Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Substation Foundation Construction	Bore/Drill Rigs	1	8.00	221	0.50
70-kV Substation Foundation Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
70-kV Substation Foundation Construction	Trenchers	1	8.00	78	0.50
70-kV Substation Ground Grid Conduit Installation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
70-kV Substation Ground Grid Conduit Installation	Trenchers	1	6.00	78	0.50
230-kV Substation Ground Grid Conduit Installation	Trenchers	1	8.00	78	0.50
230-kV Substation Steel Bus Erection	Aerial Lifts	1	6.00	62	0.31
230-kV Substation Steel Bus Erection	Off-Highway Trucks	1	8.00	402	0.38
230-kV Substation Install Yard Rock	Off-Highway Trucks	1	10.00	402	0.38

230-kV Substation Install Yard Rock	Skid Steer Loaders	1	10.00	65	0.37
70-kV Substation Steel Bus Erection	Aerial Lifts	2	8.00	62	0.31
70-kV Substation Steel Bus Erection	Off-Highway Trucks	2	6.00	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Generator Sets	1	5.00	84	0.74
230-kV Substation Transformer & Equip Delivery & Installation	Off-Highway Trucks	2	10.00	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Off-Highway Trucks	1	4.80	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
230-kV Substation Control Enclosure Delivery and Install	Cranes	1	6.00	231	0.29
230-kV Substation Remaining Equipment Delivery and Install	Off-Highway Trucks	1	6.00	402	0.38
230-kV Transmission Conductor	Cranes	3	6.00	231	0.29
230-kV Transmission Conductor	Off-Highway Trucks	2	4.00	402	0.38
230-kV Transmission Conductor	Off-Highway Trucks	2	4.00	402	0.38
70-kV Substation Equip Delivery & Installation	Aerial Lifts	2	4.00	62	0.31
70-kV Substation Equip Delivery & Installation	Off-Highway Trucks	1	5.30	402	0.38
70-kV Substation Control Enclosure Delivery and Install	Off-Highway Trucks	0	0.00	402	0.38
230-kV Transmission Site Clean-up and Restoration	Graders	1	8.00	187	0.41
230-kV Transmission Site Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
230-kV Substation Cable Installation and Termination	Aerial Lifts	1	8.00	62	0.31
230-kV Substation Testing and Commissioning	Off-Highway Trucks	0	0.00	402	0.38
70-kV Substation Cable Installation and Termination	Off-Highway Trucks	0	0.00	402	0.38
70-kV Power Line Site Development Mobilization	Graders	2	6.00	187	0.41
70-kV Power Line Site Development Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Reconductoring Segment Clean-up and Restoration	Graders	1	6.00	187	0.41

Reconductoring Segment Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Power Line Pole Tower Installation	Cranes	1	4.00	231	0.29
70-kV Power Line Pole Tower Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Pole Tower Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Pole Tower Installation	Tractors/Loaders/Backhoes	2	4.00	97	0.37
70-kV Power Line Pole Tower Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Substation Install Yard Rock	Off-Highway Trucks	1	8.00	402	0.38
70-kV Substation Install Yard Rock	Skid Steer Loaders	1	8.00	65	0.37
70-kV Substation Install Yard Rock	Tractors/Loaders/Backhoes	1	8.00	97	0.37
230-kV Substation Cleanup and Restoration	Other General Industrial Equipment	1	6.00	88	0.34
230-kV Substation Cleanup and Restoration	Tractors/Loaders/Backhoes	1	6.00	97	0.37
70-kV Cleanup and Restoration	Off-Highway Trucks	0	0.00	402	0.38
70-kV Substation Testing and Commissioning	Off-Highway Trucks	0	0.00	402	0.38
70-kV Power Line Conductor Installation	Cranes	3	6.00	231	0.29
70-kV Power Line Conductor Installation	Forklifts	1	3.00	89	0.20
70-kV Power Line Conductor Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Conductor Installation	Off-Highway Trucks	1	6.00	402	0.38
70-kV Power Line Conductor Installation	Off-Highway Trucks	2	2.00	402	0.38
70-kV Power Line Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
70-kV Power Line Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
70-kV Power Line Clean-up and Restoration	Graders	1	6.00	187	0.41
70-kV Power Line Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Estrella Substation and Paso Robles Area Reinforcement Project - San Luis Obispo County, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
230-kV Transmission Site Work Area Prepar	2	22.00	11.00	104.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Foundation Tower Insta	13	30.00	12.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Site Develop	2	18.00	10.00	0.00	7.67	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Pole Installati	9	38.00	13.00	0.00	6.32	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Access Roads	4	24.00	33.00	0.00	8.45	1.90	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Site Prep Grading Entrance	12	26.00	30.00	393.00	7.85	1.20	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Fence and Gate Install	1	18.00	30.00	0.00	5.87	1.85	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Conductor In	10	28.00	10.00	0.00	7.50	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Foundation Constructio	3	22.00	31.00	0.00	8.38	1.85	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Mobilization	2	16.00	6.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Foundation Constructio	3	22.00	13.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Ground Grid Conduit In	2	12.00	9.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Ground Grid Conduit In	1	12.00	29.00	0.00	9.15	0.91	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Steel Bus Erection	2	12.00	30.00	0.00	9.56	1.20	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Install Yard Rock	2	18.00	45.00	0.00	8.97	8.68	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Steel Bus Erection	4	14.00	9.00	0.00	7.34	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Transformer & Equip D	5	18.00	30.00	0.00	8.52	1.15	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Control Enclosure Deliv	1	12.00	2.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Remaining Equipment	1	9.00	28.00	0.00	10.00	1.34	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Conductor	7	38.00	11.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Equip Delivery & Install	3	16.00	12.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Control Enclosure Deliv	0	12.00	2.00	0.00	9.23	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Site Clean-up and Rest	2	14.00	9.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Cable Installation and T	1	10.00	3.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Testing and Commissi	0	12.00	26.00	0.00	6.79	13.00	20.00	LD_Mix	HDT_Mix	HHDT

70-kV Substation Cable Installation and T	0	12.00	3.00	0.00	6.72	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Site Development Mobilizati	3	20.00	10.00	0.00	8.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Clean up and	2	16.00	5.00	0.00	8.25	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Pole Tower Installation	10	41.00	15.00	0.00	8.15	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Install Yard Rock	3	12.00	16.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Cleanup and Restoratio	2	8.00	29.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Cleanup and Restoration	0	10.00	0.00	0.00	8.14	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Testing and Commissi	0	12.00	2.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Conductor Installation	12	32.00	10.00	0.00	8.56	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Clean up and Restorati	2	16.00	7.00	0.00	9.18	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8081	0.0000	0.8081	0.0878	0.0000	0.0878			0.0000			0.0000
Off-Road	0.4348	5.1999	2.9698	7.3000e-003		0.1930	0.1930		0.1776	0.1776		706.8884	706.8884	0.2286		712.6040
Total	**0.4348**	**5.1999**	**2.9698**	**7.3000e-003**	**0.8081**	**0.1930**	**1.0011**	**0.0878**	**0.1776**	**0.2654**		**706.8884**	**706.8884**	**0.2286**		**712.6040**

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0668	2.2991	0.5746	6.5800e-003	0.1514	9.3300e-003	0.1607	0.0415	8.9200e-003	0.0504		711.5809	711.5809	0.0434		712.6659
Vendor	0.0557	1.5780	0.4564	4.7400e-003	0.1324	6.0900e-003	0.1384	0.0381	5.8200e-003	0.0439		504.7505	504.7505	0.0227		505.3186
Worker	0.0769	0.0571	0.5121	1.4000e-003	0.1674	1.0400e-003	0.1684	0.0444	9.6000e-004	0.0454		139.8697	139.8697	4.0600e-003		139.9711
Total	**0.1994**	**3.9342**	**1.5431**	**0.0127**	**0.4511**	**0.0165**	**0.4675**	**0.1239**	**0.0157**	**0.1396**		**1,356.2012**	**1,356.2012**	**0.0702**		**1,357.9557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3152	0.0000	0.3152	0.0342	0.0000	0.0342			0.0000			0.0000
Off-Road	0.4348	5.1999	2.9698	7.3000e-003		0.1930	0.1930		0.1776	0.1776	0.0000	706.8884	706.8884	0.2286		712.6040
Total	**0.4348**	**5.1999**	**2.9698**	**7.3000e-003**	**0.3152**	**0.1930**	**0.5081**	**0.0342**	**0.1776**	**0.2118**	**0.0000**	**706.8884**	**706.8884**	**0.2286**		**712.6040**

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0668	2.2991	0.5746	6.5800e-003	0.1514	9.3300e-003	0.1607	0.0415	8.9200e-003	0.0504		711.5809	711.5809	0.0434		712.6659
Vendor	0.0557	1.5780	0.4564	4.7400e-003	0.1324	6.0900e-003	0.1384	0.0381	5.8200e-003	0.0439		504.7505	504.7505	0.0227		505.3186
Worker	0.0769	0.0571	0.5121	1.4000e-003	0.1674	1.0400e-003	0.1684	0.0444	9.6000e-004	0.0454		139.8697	139.8697	4.0600e-003		139.9711
Total	**0.1994**	**3.9342**	**1.5431**	**0.0127**	**0.4511**	**0.0165**	**0.4675**	**0.1239**	**0.0157**	**0.1396**		**1,356.2012**	**1,356.2012**	**0.0702**		**1,357.9557**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7490	16.2551	10.7389	0.0358		0.6653	0.6653		0.6121	0.6121		3,466.3790	3,466.3790	1.1211		3,494.4065
Total	**1.7490**	**16.2551**	**10.7389**	**0.0358**		**0.6653**	**0.6653**		**0.6121**	**0.6121**		**3,466.3790**	**3,466.3790**	**1.1211**		**3,494.4065**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0608	1.7215	0.4979	5.1700e-003	0.1444	6.6400e-003	0.1510	0.0415	6.3500e-003	0.0479		550.6369	550.6369	0.0248		551.2566
Worker	0.1049	0.0778	0.6983	1.9200e-003	0.2282	1.4200e-003	0.2296	0.0605	1.3000e-003	0.0618		190.7314	190.7314	5.5300e-003		190.8697
Total	**0.1657**	**1.7993**	**1.1962**	**7.0900e-003**	**0.3726**	**8.0600e-003**	**0.3806**	**0.1021**	**7.6500e-003**	**0.1097**		**741.3683**	**741.3683**	**0.0303**		**742.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7490	16.2551	10.7389	0.0358		0.6653	0.6653		0.6121	0.6121	0.0000	3,466.3790	3,466.3790	1.1211		3,494.4065
Total	**1.7490**	**16.2551**	**10.7389**	**0.0358**		**0.6653**	**0.6653**		**0.6121**	**0.6121**	**0.0000**	**3,466.3790**	**3,466.3790**	**1.1211**		**3,494.4065**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0608	1.7215	0.4979	5.1700e-003	0.1444	6.6400e-003	0.1510	0.0415	6.3500e-003	0.0479		550.6369	550.6369	0.0248		551.2566
Worker	0.1049	0.0778	0.6983	1.9200e-003	0.2282	1.4200e-003	0.2296	0.0605	1.3000e-003	0.0618		190.7314	190.7314	5.5300e-003		190.8697
Total	**0.1657**	**1.7993**	**1.1962**	**7.0900e-003**	**0.3726**	**8.0600e-003**	**0.3806**	**0.1021**	**7.6500e-003**	**0.1097**		**741.3683**	**741.3683**	**0.0303**		**742.1264**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7954	0.0000	0.7954	0.0859	0.0000	0.0859			0.0000			0.0000
Off-Road	0.3936	4.7810	2.4103	6.5200e-003		0.1705	0.1705		0.1568	0.1568		631.5787	631.5787	0.2043		636.6853
Total	**0.3936**	**4.7810**	**2.4103**	**6.5200e-003**	**0.7954**	**0.1705**	**0.9658**	**0.0859**	**0.1568**	**0.2427**		**631.5787**	**631.5787**	**0.2043**		**636.6853**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0506	1.4345	0.4149	4.3100e-003	0.1203	5.5300e-003	0.1259	0.0346	5.2900e-003	0.0399		458.8641	458.8641	0.0207		459.3805
Worker	0.0520	0.0375	0.3441	8.9000e-004	0.1051	6.8000e-004	0.1057	0.0279	6.2000e-004	0.0285		88.6542	88.6542	2.6600e-003		88.7207
Total	**0.1027**	**1.4720**	**0.7590**	**5.2000e-003**	**0.2254**	**6.2100e-003**	**0.2316**	**0.0625**	**5.9100e-003**	**0.0684**		**547.5182**	**547.5182**	**0.0233**		**548.1012**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3102	0.0000	0.3102	0.0335	0.0000	0.0335			0.0000			0.0000
Off-Road	0.3936	4.7810	2.4103	6.5200e-003		0.1705	0.1705		0.1568	0.1568	0.0000	631.5787	631.5787	0.2043		636.6853
Total	**0.3936**	**4.7810**	**2.4103**	**6.5200e-003**	**0.3102**	**0.1705**	**0.4807**	**0.0335**	**0.1568**	**0.1903**	**0.0000**	**631.5787**	**631.5787**	**0.2043**		**636.6853**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0506	1.4345	0.4149	4.3100e-003	0.1203	5.5300e-003	0.1259	0.0346	5.2900e-003	0.0399		458.8641	458.8641	0.0207		459.3805
Worker	0.0520	0.0375	0.3441	8.9000e-004	0.1051	6.8000e-004	0.1057	0.0279	6.2000e-004	0.0285		88.6542	88.6542	2.6600e-003		88.7207
Total	**0.1027**	**1.4720**	**0.7590**	**5.2000e-003**	**0.2254**	**6.2100e-003**	**0.2316**	**0.0625**	**5.9100e-003**	**0.0684**		**547.5182**	**547.5182**	**0.0233**		**548.1012**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7144	16.6546	10.2236	0.0373		0.6496	0.6496		0.5977	0.5977		3,611.1243	3,611.1243	1.1679		3,640.3221
Total	**1.7144**	**16.6546**	**10.2236**	**0.0373**		**0.6496**	**0.6496**		**0.5977**	**0.5977**		**3,611.1243**	**3,611.1243**	**1.1679**		**3,640.3221**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0658	1.8649	0.5394	5.6000e-003	0.1564	7.1900e-003	0.1636	0.0450	6.8800e-003	0.0519		596.5233	596.5233	0.0269		597.1947
Worker	0.0965	0.0678	0.6349	1.5600e-003	0.1828	1.2200e-003	0.1841	0.0485	1.1200e-003	0.0496		155.6195	155.6195	4.8100e-003		155.7398
Total	**0.1623**	**1.9327**	**1.1743**	**7.1600e-003**	**0.3392**	**8.4100e-003**	**0.3477**	**0.0935**	**8.0000e-003**	**0.1015**		**752.1429**	**752.1429**	**0.0317**		**752.9345**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7144	16.6546	10.2236	0.0373		0.6496	0.6496		0.5977	0.5977	0.0000	3,611.1243	3,611.1243	1.1679		3,640.3221
Total	**1.7144**	**16.6546**	**10.2236**	**0.0373**		**0.6496**	**0.6496**		**0.5977**	**0.5977**	**0.0000**	**3,611.1243**	**3,611.1243**	**1.1679**		**3,640.3221**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0658	1.8649	0.5394	5.6000e-003	0.1564	7.1900e-003	0.1636	0.0450	6.8800e-003	0.0519		596.5233	596.5233	0.0269		597.1947
Worker	0.0965	0.0678	0.6349	1.5600e-003	0.1828	1.2200e-003	0.1841	0.0485	1.1200e-003	0.0496		155.6195	155.6195	4.8100e-003		155.7398
Total	**0.1623**	**1.9327**	**1.1743**	**7.1600e-003**	**0.3392**	**8.4100e-003**	**0.3477**	**0.0935**	**8.0000e-003**	**0.1015**		**752.1429**	**752.1429**	**0.0317**		**752.9345**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6258	15.0514	9.9920	0.0373		0.5892	0.5892		0.5421	0.5421		3,613.6088	3,613.6088	1.1687		3,642.8266
Total	**1.6258**	**15.0514**	**9.9920**	**0.0373**		**0.5892**	**0.5892**		**0.5421**	**0.5421**		**3,613.6088**	**3,613.6088**	**1.1687**		**3,642.8266**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0497	1.4382	0.4732	5.4800e-003	0.1564	3.3900e-003	0.1598	0.0450	3.2400e-003	0.0482		585.0967	585.0967	0.0248		585.7170
Worker	0.0904	0.0608	0.5781	1.5000e-003	0.1828	1.1900e-003	0.1840	0.0485	1.0900e-003	0.0496		149.7969	149.7969	4.2800e-003		149.9040
Total	**0.1401**	**1.4990**	**1.0513**	**6.9800e-003**	**0.3393**	**4.5800e-003**	**0.3438**	**0.0935**	**4.3300e-003**	**0.0979**		**734.8936**	**734.8936**	**0.0291**		**735.6210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6258	15.0514	9.9920	0.0373		0.5892	0.5892		0.5421	0.5421	0.0000	3,613.6088	3,613.6088	1.1687		3,642.8266
Total	**1.6258**	**15.0514**	**9.9920**	**0.0373**		**0.5892**	**0.5892**		**0.5421**	**0.5421**	**0.0000**	**3,613.6088**	**3,613.6088**	**1.1687**		**3,642.8266**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0497	1.4382	0.4732	5.4800e-003	0.1564	3.3900e-003	0.1598	0.0450	3.2400e-003	0.0482		585.0967	585.0967	0.0248		585.7170
Worker	0.0904	0.0608	0.5781	1.5000e-003	0.1828	1.1900e-003	0.1840	0.0485	1.0900e-003	0.0496		149.7969	149.7969	4.2800e-003		149.9040
Total	**0.1401**	**1.4990**	**1.0513**	**6.9800e-003**	**0.3393**	**4.5800e-003**	**0.3438**	**0.0935**	**4.3300e-003**	**0.0979**		**734.8936**	**734.8936**	**0.0291**		**735.6210**

3.6 230-kV Substation Access Roads - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3863	11.3787	11.1933	0.0327		0.4721	0.4721		0.4344	0.4344		3,160.4485	3,160.4485	1.0222		3,186.0023
Total	**1.3863**	**11.3787**	**11.1933**	**0.0327**	**0.0000**	**0.4721**	**0.4721**	**0.0000**	**0.4344**	**0.4344**		**3,160.4485**	**3,160.4485**	**1.0222**		**3,186.0023**

3.6 230-kV Substation Access Roads - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0689	2.2514	0.7194	3.3200e-003	0.0588	4.2600e-003	0.0630	0.0170	4.0700e-003	0.0211		354.3178	354.3178	0.0319		355.1149
Worker	0.0743	0.0541	0.4922	1.3000e-003	0.1543	9.8000e-004	0.1553	0.0409	9.0000e-004	0.0418		129.7146	129.7146	3.8400e-003		129.8106
Total	**0.1432**	**2.3054**	**1.2117**	**4.6200e-003**	**0.2131**	**5.2400e-003**	**0.2183**	**0.0579**	**4.9700e-003**	**0.0629**		**484.0324**	**484.0324**	**0.0357**		**484.9255**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3863	11.3787	11.1933	0.0327		0.4721	0.4721		0.4344	0.4344	0.0000	3,160.4485	3,160.4485	1.0222		3,186.0023
Total	**1.3863**	**11.3787**	**11.1933**	**0.0327**	**0.0000**	**0.4721**	**0.4721**	**0.0000**	**0.4344**	**0.4344**	**0.0000**	**3,160.4485**	**3,160.4485**	**1.0222**		**3,186.0023**

3.6 230-kV Substation Access Roads - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0689	2.2514	0.7194	3.3200e-003	0.0588	4.2600e-003	0.0630	0.0170	4.0700e-003	0.0211		354.3178	354.3178	0.0319		355.1149
Worker	0.0743	0.0541	0.4922	1.3000e-003	0.1543	9.8000e-004	0.1553	0.0409	9.0000e-004	0.0418		129.7146	129.7146	3.8400e-003		129.8106
Total	**0.1432**	**2.3054**	**1.2117**	**4.6200e-003**	**0.2131**	**5.2400e-003**	**0.2183**	**0.0579**	**4.9700e-003**	**0.0629**		**484.0324**	**484.0324**	**0.0357**		**484.9255**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2392	0.0000	7.2392	3.4427	0.0000	3.4427			0.0000			0.0000
Off-Road	6.6584	59.5744	42.1219	0.1410		2.3287	2.3287		2.1424	2.1424		13,644.8698	13,644.8698	4.4130		13,755.1955
Total	**6.6584**	**59.5744**	**42.1219**	**0.1410**	**7.2392**	**2.3287**	**9.5680**	**3.4427**	**2.1424**	**5.5851**		**13,644.8698**	**13,644.8698**	**4.4130**		**13,755.1955**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1262	4.3441	1.0857	0.0124	0.2860	0.0176	0.3036	0.0784	0.0169	0.0952		1,344.4775	1,344.4775	0.0820		1,346.5275
Vendor	0.0570	1.9044	0.6168	2.3900e-003	0.0340	3.0700e-003	0.0371	9.8700e-003	2.9300e-003	0.0128		255.6080	255.6080	0.0269		256.2806
Worker	0.0764	0.0551	0.5054	1.3200e-003	0.1553	1.0000e-003	0.1563	0.0412	9.2000e-004	0.0421		130.9333	130.9333	3.9200e-003		131.0312
Total	**0.2596**	**6.3035**	**2.2079**	**0.0161**	**0.4753**	**0.0217**	**0.4970**	**0.1294**	**0.0207**	**0.1501**		**1,731.0187**	**1,731.0187**	**0.1128**		**1,733.8393**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8233	0.0000	2.8233	1.3427	0.0000	1.3427			0.0000			0.0000
Off-Road	6.6584	59.5744	42.1219	0.1410		2.3287	2.3287		2.1424	2.1424	0.0000	13,644.8698	13,644.8698	4.4130		13,755.1955
Total	**6.6584**	**59.5744**	**42.1219**	**0.1410**	**2.8233**	**2.3287**	**5.1520**	**1.3427**	**2.1424**	**3.4851**	**0.0000**	**13,644.8698**	**13,644.8698**	**4.4130**		**13,755.1955**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1262	4.3441	1.0857	0.0124	0.2860	0.0176	0.3036	0.0784	0.0169	0.0952		1,344.4775	1,344.4775	0.0820		1,346.5275
Vendor	0.0570	1.9044	0.6168	2.3900e-003	0.0340	3.0700e-003	0.0371	9.8700e-003	2.9300e-003	0.0128		255.6080	255.6080	0.0269		256.2806
Worker	0.0764	0.0551	0.5054	1.3200e-003	0.1553	1.0000e-003	0.1563	0.0412	9.2000e-004	0.0421		130.9333	130.9333	3.9200e-003		131.0312
Total	**0.2596**	**6.3035**	**2.2079**	**0.0161**	**0.4753**	**0.0217**	**0.4970**	**0.1294**	**0.0207**	**0.1501**		**1,731.0187**	**1,731.0187**	**0.1128**		**1,733.8393**

3.8 230-kV Substation Fence and Gate Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0348	0.4643	0.6936	1.0400e-003		0.0173	0.0173		0.0159	0.0159		100.1956	100.1956	0.0324		101.0058
Total	**0.0348**	**0.4643**	**0.6936**	**1.0400e-003**		**0.0173**	**0.0173**		**0.0159**	**0.0159**		**100.1956**	**100.1956**	**0.0324**		**101.0058**

3.8 230-kV Substation Fence and Gate Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0623	2.0365	0.6514	2.9700e-003	0.0520	3.8100e-003	0.0559	0.0150	3.6500e-003	0.0187		317.3571	317.3571	0.0288		318.0781
Worker	0.0436	0.0303	0.2863	6.9000e-004	0.0805	5.4000e-004	0.0810	0.0214	5.0000e-004	0.0219		68.7346	68.7346	2.1500e-003		68.7884
Total	**0.1059**	**2.0668**	**0.9377**	**3.6600e-003**	**0.1325**	**4.3500e-003**	**0.1368**	**0.0364**	**4.1500e-003**	**0.0405**		**386.0918**	**386.0918**	**0.0310**		**386.8665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0348	0.4643	0.6936	1.0400e-003		0.0173	0.0173		0.0159	0.0159	0.0000	100.1956	100.1956	0.0324		101.0058
Total	**0.0348**	**0.4643**	**0.6936**	**1.0400e-003**		**0.0173**	**0.0173**		**0.0159**	**0.0159**	**0.0000**	**100.1956**	**100.1956**	**0.0324**		**101.0058**

3.8 230-kV Substation Fence and Gate Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0623	2.0365	0.6514	2.9700e-003	0.0520	3.8100e-003	0.0559	0.0150	3.6500e-003	0.0187		317.3571	317.3571	0.0288		318.0781
Worker	0.0436	0.0303	0.2863	6.9000e-004	0.0805	5.4000e-004	0.0810	0.0214	5.0000e-004	0.0219		68.7346	68.7346	2.1500e-003		68.7884
Total	**0.1059**	**2.0668**	**0.9377**	**3.6600e-003**	**0.1325**	**4.3500e-003**	**0.1368**	**0.0364**	**4.1500e-003**	**0.0405**		**386.0918**	**386.0918**	**0.0310**		**386.8665**

3.9 Reconductoring Segment Conductor Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8207	21.9934	19.2902	0.0672		0.8771	0.8771		0.8069	0.8069		6,502.7190	6,502.7190	2.1031		6,555.2967
Total	**2.8207**	**21.9934**	**19.2902**	**0.0672**		**0.8771**	**0.8771**		**0.8069**	**0.8069**		**6,502.7190**	**6,502.7190**	**2.1031**		**6,555.2967**

3.9 Reconductoring Segment Conductor Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0506	1.4345	0.4149	4.3100e-003	0.1203	5.5300e-003	0.1259	0.0346	5.2900e-003	0.0399		458.8641	458.8641	0.0207		459.3805
Worker	0.0797	0.0572	0.5268	1.3600e-003	0.1598	1.0300e-003	0.1609	0.0424	9.5000e-004	0.0434		134.9800	134.9800	4.0600e-003		135.0816
Total	**0.1303**	**1.4918**	**0.9417**	**5.6700e-003**	**0.2801**	**6.5600e-003**	**0.2867**	**0.0770**	**6.2400e-003**	**0.0833**		**593.8441**	**593.8441**	**0.0247**		**594.4621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8207	21.9934	19.2902	0.0672		0.8771	0.8771		0.8069	0.8069	0.0000	6,502.7189	6,502.7189	2.1031		6,555.2967
Total	**2.8207**	**21.9934**	**19.2902**	**0.0672**		**0.8771**	**0.8771**		**0.8069**	**0.8069**	**0.0000**	**6,502.7189**	**6,502.7189**	**2.1031**		**6,555.2967**

3.9 Reconductoring Segment Conductor Installation - 2022

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0506	1.4345	0.4149	4.3100e-003	0.1203	5.5300e-003	0.1259	0.0346	5.2900e-003	0.0399		458.8641	458.8641	0.0207		459.3805
Worker	0.0797	0.0572	0.5268	1.3600e-003	0.1598	1.0300e-003	0.1609	0.0424	9.5000e-004	0.0434		134.9800	134.9800	4.0600e-003		135.0816
Total	**0.1303**	**1.4918**	**0.9417**	**5.6700e-003**	**0.2801**	**6.5600e-003**	**0.2867**	**0.0770**	**6.2400e-003**	**0.0833**		**593.8441**	**593.8441**	**0.0247**		**594.4621**

3.9 Reconductoring Segment Conductor Installation - 2023

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.6753	19.6218	18.9364	0.0672		0.7684	0.7684		0.7069	0.7069		6,507.0092	6,507.0092	2.1045		6,559.6217
Total	**2.6753**	**19.6218**	**18.9364**	**0.0672**		**0.7684**	**0.7684**		**0.7069**	**0.7069**		**6,507.0092**	**6,507.0092**	**2.1045**		**6,559.6217**

3.9 Reconductoring Segment Conductor Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0382	1.1063	0.3640	4.2200e-003	0.1203	2.6000e-003	0.1229	0.0346	2.4900e-003	0.0371		450.0744	450.0744	0.0191		450.5515
Worker	0.0748	0.0514	0.4799	1.3000e-003	0.1598	1.0100e-003	0.1608	0.0424	9.3000e-004	0.0433		129.9261	129.9261	3.6200e-003		130.0166
Total	**0.1130**	**1.1577**	**0.8439**	**5.5200e-003**	**0.2802**	**3.6100e-003**	**0.2838**	**0.0770**	**3.4200e-003**	**0.0804**		**580.0005**	**580.0005**	**0.0227**		**580.5681**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6753	19.6218	18.9364	0.0672		0.7684	0.7684		0.7069	0.7069	0.0000	6,507.0092	6,507.0092	2.1045		6,559.6216
Total	**2.6753**	**19.6218**	**18.9364**	**0.0672**		**0.7684**	**0.7684**		**0.7069**	**0.7069**	**0.0000**	**6,507.0092**	**6,507.0092**	**2.1045**		**6,559.6216**

3.9 Reconductoring Segment Conductor Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0382	1.1063	0.3640	4.2200e-003	0.1203	2.6000e-003	0.1229	0.0346	2.4900e-003	0.0371		450.0744	450.0744	0.0191		450.5515
Worker	0.0748	0.0514	0.4799	1.3000e-003	0.1598	1.0100e-003	0.1608	0.0424	9.3000e-004	0.0433		129.9261	129.9261	3.6200e-003		130.0166
Total	**0.1130**	**1.1577**	**0.8439**	**5.5200e-003**	**0.2802**	**3.6100e-003**	**0.2838**	**0.0770**	**3.4200e-003**	**0.0804**		**580.0005**	**580.0005**	**0.0227**		**580.5681**

3.10 230-kV Substation Foundation Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5602	5.9289	4.6226	0.0150		0.2377	0.2377		0.2187	0.2187		1,451.1041	1,451.1041	0.4693		1,462.8371
Total	**0.5602**	**5.9289**	**4.6226**	**0.0150**		**0.2377**	**0.2377**		**0.2187**	**0.2187**		**1,451.1041**	**1,451.1041**	**0.4693**		**1,462.8371**

3.10 230-kV Substation Foundation Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0643	2.1044	0.6731	3.0700e-003	0.0538	3.9400e-003	0.0577	0.0155	3.7700e-003	0.0193		327.9357	327.9357	0.0298		328.6807
Worker	0.0677	0.0492	0.4485	1.1800e-003	0.1403	8.9000e-004	0.1412	0.0372	8.2000e-004	0.0380		117.9583	117.9583	3.5000e-003		118.0457
Total	**0.1320**	**2.1536**	**1.1216**	**4.2500e-003**	**0.1941**	**4.8300e-003**	**0.1989**	**0.0528**	**4.5900e-003**	**0.0574**		**445.8940**	**445.8940**	**0.0333**		**446.7263**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5602	5.9289	4.6226	0.0150		0.2377	0.2377		0.2187	0.2187	0.0000	1,451.1041	1,451.1041	0.4693		1,462.8371
Total	**0.5602**	**5.9289**	**4.6226**	**0.0150**		**0.2377**	**0.2377**		**0.2187**	**0.2187**	**0.0000**	**1,451.1041**	**1,451.1041**	**0.4693**		**1,462.8371**

3.10 230-kV Substation Foundation Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0643	2.1044	0.6731	3.0700e-003	0.0538	3.9400e-003	0.0577	0.0155	3.7700e-003	0.0193		327.9357	327.9357	0.0298		328.6807
Worker	0.0677	0.0492	0.4485	1.1800e-003	0.1403	8.9000e-004	0.1412	0.0372	8.2000e-004	0.0380		117.9583	117.9583	3.5000e-003		118.0457
Total	**0.1320**	**2.1536**	**1.1216**	**4.2500e-003**	**0.1941**	**4.8300e-003**	**0.1989**	**0.0528**	**4.5900e-003**	**0.0574**		**445.8940**	**445.8940**	**0.0333**		**446.7263**

3.11 70-kV Substation Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2651	0.0000	0.2651	0.0286	0.0000	0.0286			0.0000			0.0000
Off-Road	0.2899	3.4666	1.9799	4.8700e-003		0.1287	0.1287		0.1184	0.1184		471.2589	471.2589	0.1524		475.0693
Total	**0.2899**	**3.4666**	**1.9799**	**4.8700e-003**	**0.2651**	**0.1287**	**0.3938**	**0.0286**	**0.1184**	**0.1470**		**471.2589**	**471.2589**	**0.1524**		**475.0693**

3.11 70-kV Substation Mobilization - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0304	0.8607	0.2489	2.5800e-003	0.0722	3.3200e-003	0.0755	0.0208	3.1800e-003	0.0239		275.3185	275.3185	0.0124		275.6283
Worker	0.0463	0.0333	0.3062	7.9000e-004	0.0935	6.0000e-004	0.0941	0.0248	5.6000e-004	0.0254		78.9021	78.9021	2.3700e-003		78.9612
Total	**0.0767**	**0.8941**	**0.5551**	**3.3700e-003**	**0.1657**	**3.9200e-003**	**0.1696**	**0.0456**	**3.7400e-003**	**0.0493**		**354.2205**	**354.2205**	**0.0148**		**354.5896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1034	0.0000	0.1034	0.0112	0.0000	0.0112			0.0000			0.0000
Off-Road	0.2899	3.4666	1.9799	4.8700e-003		0.1287	0.1287		0.1184	0.1184	0.0000	471.2589	471.2589	0.1524		475.0693
Total	**0.2899**	**3.4666**	**1.9799**	**4.8700e-003**	**0.1034**	**0.1287**	**0.2321**	**0.0112**	**0.1184**	**0.1295**	**0.0000**	**471.2589**	**471.2589**	**0.1524**		**475.0693**

3.11 70-kV Substation Mobilization - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0304	0.8607	0.2489	2.5800e-003	0.0722	3.3200e-003	0.0755	0.0208	3.1800e-003	0.0239		275.3185	275.3185	0.0124		275.6283
Worker	0.0463	0.0333	0.3062	7.9000e-004	0.0935	6.0000e-004	0.0941	0.0248	5.6000e-004	0.0254		78.9021	78.9021	2.3700e-003		78.9612
Total	**0.0767**	**0.8941**	**0.5551**	**3.3700e-003**	**0.1657**	**3.9200e-003**	**0.1696**	**0.0456**	**3.7400e-003**	**0.0493**		**354.2205**	**354.2205**	**0.0148**		**354.5896**

3.12 70-kV Substation Foundation Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7527	7.3217	6.8781	0.0159		0.4023	0.4023		0.3702	0.3702		1,541.7492	1,541.7492	0.4986		1,554.2150
Total	**0.7527**	**7.3217**	**6.8781**	**0.0159**		**0.4023**	**0.4023**		**0.3702**	**0.3702**		**1,541.7492**	**1,541.7492**	**0.4986**		**1,554.2150**

3.12 70-kV Substation Foundation Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0658	1.8649	0.5394	5.6000e-003	0.1564	7.1900e-003	0.1636	0.0450	6.8800e-003	0.0519		596.5233	596.5233	0.0269		597.1947
Worker	0.0681	0.0496	0.4512	1.1900e-003	0.1415	9.0000e-004	0.1424	0.0375	8.3000e-004	0.0384		118.9051	118.9051	3.5200e-003		118.9931
Total	**0.1339**	**1.9145**	**0.9906**	**6.7900e-003**	**0.2979**	**8.0900e-003**	**0.3060**	**0.0825**	**7.7100e-003**	**0.0902**		**715.4284**	**715.4284**	**0.0304**		**716.1877**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7527	7.3217	6.8781	0.0159		0.4023	0.4023		0.3702	0.3702	0.0000	1,541.7492	1,541.7492	0.4986		1,554.2150
Total	**0.7527**	**7.3217**	**6.8781**	**0.0159**		**0.4023**	**0.4023**		**0.3702**	**0.3702**	**0.0000**	**1,541.7492**	**1,541.7492**	**0.4986**		**1,554.2150**

3.12 70-kV Substation Foundation Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0658	1.8649	0.5394	5.6000e-003	0.1564	7.1900e-003	0.1636	0.0450	6.8800e-003	0.0519		596.5233	596.5233	0.0269		597.1947
Worker	0.0681	0.0496	0.4512	1.1900e-003	0.1415	9.0000e-004	0.1424	0.0375	8.3000e-004	0.0384		118.9051	118.9051	3.5200e-003		118.9931
Total	**0.1339**	**1.9145**	**0.9906**	**6.7900e-003**	**0.2979**	**8.0900e-003**	**0.3060**	**0.0825**	**7.7100e-003**	**0.0902**		**715.4284**	**715.4284**	**0.0304**		**716.1877**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3964	3.7915	3.6277	4.8600e-003		0.2472	0.2472		0.2274	0.2274		471.1413	471.1413	0.1524		474.9507
Total	**0.3964**	**3.7915**	**3.6277**	**4.8600e-003**		**0.2472**	**0.2472**		**0.2274**	**0.2274**		**471.1413**	**471.1413**	**0.1524**		**474.9507**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0456	1.2911	0.3734	3.8700e-003	0.1083	4.9800e-003	0.1133	0.0312	4.7600e-003	0.0359		412.9777	412.9777	0.0186		413.4425
Worker	0.0371	0.0270	0.2461	6.5000e-004	0.0772	4.9000e-004	0.0776	0.0205	4.5000e-004	0.0209		64.8573	64.8573	1.9200e-003		64.9053
Total	**0.0827**	**1.3181**	**0.6195**	**4.5200e-003**	**0.1854**	**5.4700e-003**	**0.1909**	**0.0516**	**5.2100e-003**	**0.0568**		**477.8350**	**477.8350**	**0.0205**		**478.3478**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3964	3.7915	3.6277	4.8600e-003		0.2472	0.2472		0.2274	0.2274	0.0000	471.1413	471.1413	0.1524		474.9507
Total	**0.3964**	**3.7915**	**3.6277**	**4.8600e-003**		**0.2472**	**0.2472**		**0.2274**	**0.2274**	**0.0000**	**471.1413**	**471.1413**	**0.1524**		**474.9507**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0456	1.2911	0.3734	3.8700e-003	0.1083	4.9800e-003	0.1133	0.0312	4.7600e-003	0.0359		412.9777	412.9777	0.0186		413.4425
Worker	0.0371	0.0270	0.2461	6.5000e-004	0.0772	4.9000e-004	0.0776	0.0205	4.5000e-004	0.0209		64.8573	64.8573	1.9200e-003		64.9053
Total	**0.0827**	**1.3181**	**0.6195**	**4.5200e-003**	**0.1854**	**5.4700e-003**	**0.1909**	**0.0516**	**5.2100e-003**	**0.0568**		**477.8350**	**477.8350**	**0.0205**		**478.3478**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3639	3.3797	2.5990	3.3700e-003		0.2395	0.2395		0.2203	0.2203		326.9494	326.9494	0.1057		329.5930
Total	**0.3639**	**3.3797**	**2.5990**	**3.3700e-003**		**0.2395**	**0.2395**		**0.2203**	**0.2203**		**326.9494**	**326.9494**	**0.1057**		**329.5930**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0529	1.7839	0.5813	2.0600e-003	0.0251	2.6400e-003	0.0278	7.3000e-003	2.5300e-003	9.8300e-003		220.4565	220.4565	0.0252		221.0858
Worker	0.0393	0.0289	0.2611	7.0000e-004	0.0835	5.2000e-004	0.0841	0.0222	4.8000e-004	0.0226		70.0216	70.0216	2.0500e-003		70.0729
Total	**0.0922**	**1.8128**	**0.8424**	**2.7600e-003**	**0.1087**	**3.1600e-003**	**0.1118**	**0.0295**	**3.0100e-003**	**0.0325**		**290.4781**	**290.4781**	**0.0272**		**291.1588**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3639	3.3797	2.5990	3.3700e-003		0.2395	0.2395		0.2203	0.2203	0.0000	326.9494	326.9494	0.1057		329.5930
Total	**0.3639**	**3.3797**	**2.5990**	**3.3700e-003**		**0.2395**	**0.2395**		**0.2203**	**0.2203**	**0.0000**	**326.9494**	**326.9494**	**0.1057**		**329.5930**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0529	1.7839	0.5813	2.0600e-003	0.0251	2.6400e-003	0.0278	7.3000e-003	2.5300e-003	9.8300e-003		220.4565	220.4565	0.0252		221.0858
Worker	0.0393	0.0289	0.2611	7.0000e-004	0.0835	5.2000e-004	0.0841	0.0222	4.8000e-004	0.0226		70.0216	70.0216	2.0500e-003		70.0729
Total	**0.0922**	**1.8128**	**0.8424**	**2.7600e-003**	**0.1087**	**3.1600e-003**	**0.1118**	**0.0295**	**3.0100e-003**	**0.0325**		**290.4781**	**290.4781**	**0.0272**		**291.1588**

3.15 230-kV Substation Steel Bus Erection - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5550	4.4273	4.1662	0.0145		0.1536	0.1536		0.1413	0.1413		1,399.0142	1,399.0142	0.4525		1,410.3260
Total	**0.5550**	**4.4273**	**4.1662**	**0.0145**		**0.1536**	**0.1536**		**0.1413**	**0.1413**		**1,399.0142**	**1,399.0142**	**0.4525**		**1,410.3260**

3.15 230-kV Substation Steel Bus Erection - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0570	1.9044	0.6168	2.3900e-003	0.0340	3.0700e-003	0.0371	9.8700e-003	2.9300e-003	0.0128		255.6080	255.6080	0.0269		256.2806
Worker	0.0406	0.0300	0.2699	7.3000e-004	0.0873	5.4000e-004	0.0878	0.0232	5.0000e-004	0.0237		73.0464	73.0464	2.1300e-003		73.0997
Total	**0.0976**	**1.9343**	**0.8867**	**3.1200e-003**	**0.1213**	**3.6100e-003**	**0.1249**	**0.0330**	**3.4300e-003**	**0.0365**		**328.6544**	**328.6544**	**0.0290**		**329.3803**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5550	4.4273	4.1662	0.0145		0.1536	0.1536		0.1413	0.1413	0.0000	1,399.0142	1,399.0142	0.4525		1,410.3260
Total	**0.5550**	**4.4273**	**4.1662**	**0.0145**		**0.1536**	**0.1536**		**0.1413**	**0.1413**	**0.0000**	**1,399.0142**	**1,399.0142**	**0.4525**		**1,410.3260**

3.15 230-kV Substation Steel Bus Erection - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0570	1.9044	0.6168	2.3900e-003	0.0340	3.0700e-003	0.0371	9.8700e-003	2.9300e-003	0.0128		255.6080	255.6080	0.0269		256.2806
Worker	0.0406	0.0300	0.2699	7.3000e-004	0.0873	5.4000e-004	0.0878	0.0232	5.0000e-004	0.0237		73.0464	73.0464	2.1300e-003		73.0997
Total	**0.0976**	**1.9343**	**0.8867**	**3.1200e-003**	**0.1213**	**3.6100e-003**	**0.1249**	**0.0330**	**3.4300e-003**	**0.0365**		**328.6544**	**328.6544**	**0.0290**		**329.3803**

3.15 230-kV Substation Steel Bus Erection - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5294	3.9615	4.0945	0.0145		0.1358	0.1358		0.1250	0.1250		1,399.9174	1,399.9174	0.4528		1,411.2365
Total	**0.5294**	**3.9615**	**4.0945**	**0.0145**		**0.1358**	**0.1358**		**0.1250**	**0.1250**		**1,399.9174**	**1,399.9174**	**0.4528**		**1,411.2365**

3.15 230-kV Substation Steel Bus Erection - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0443	1.6831	0.5351	2.3600e-003	0.0340	1.3300e-003	0.0354	9.8700e-003	1.2700e-003	0.0111		252.8652	252.8652	0.0228		253.4344
Worker	0.0381	0.0269	0.2461	7.1000e-004	0.0873	5.3000e-004	0.0878	0.0232	4.9000e-004	0.0236		70.3092	70.3092	1.9000e-003		70.3567
Total	**0.0824**	**1.7100**	**0.7812**	**3.0700e-003**	**0.1213**	**1.8600e-003**	**0.1232**	**0.0330**	**1.7600e-003**	**0.0348**		**323.1744**	**323.1744**	**0.0247**		**323.7910**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5294	3.9615	4.0945	0.0145		0.1358	0.1358		0.1250	0.1250	0.0000	1,399.9174	1,399.9174	0.4528		1,411.2365
Total	**0.5294**	**3.9615**	**4.0945**	**0.0145**		**0.1358**	**0.1358**		**0.1250**	**0.1250**	**0.0000**	**1,399.9174**	**1,399.9174**	**0.4528**		**1,411.2365**

3.15 230-kV Substation Steel Bus Erection - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0443	1.6831	0.5351	2.3600e-003	0.0340	1.3300e-003	0.0354	9.8700e-003	1.2700e-003	0.0111		252.8652	252.8652	0.0228		253.4344
Worker	0.0381	0.0269	0.2461	7.1000e-004	0.0873	5.3000e-004	0.0878	0.0232	4.9000e-004	0.0236		70.3092	70.3092	1.9000e-003		70.3567
Total	**0.0824**	**1.7100**	**0.7812**	**3.0700e-003**	**0.1213**	**1.8600e-003**	**0.1232**	**0.0330**	**1.7600e-003**	**0.0348**		**323.1744**	**323.1744**	**0.0247**		**323.7910**

3.16 230-kV Substation Install Yard Rock - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7475	6.1779	5.9324	0.0191		0.2256	0.2256		0.2075	0.2075		1,849.2207	1,849.2207	0.5981		1,864.1726
Total	**0.7475**	**6.1779**	**5.9324**	**0.0191**		**0.2256**	**0.2256**		**0.2075**	**0.2075**		**1,849.2207**	**1,849.2207**	**0.5981**		**1,864.1726**

3.16 230-kV Substation Install Yard Rock - 2022

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1758	5.1379	1.5222	0.0136	0.3619	0.0175	0.3794	0.1042	0.0167	0.1209		1,449.2970	1,449.2970	0.0737		1,451.1396
Worker	0.0581	0.0426	0.3859	1.0300e-003	0.1228	7.7000e-004	0.1236	0.0326	7.1000e-004	0.0333		103.0405	103.0405	3.0300e-003		103.1162
Total	**0.2339**	**5.1805**	**1.9081**	**0.0146**	**0.4847**	**0.0182**	**0.5030**	**0.1367**	**0.0174**	**0.1542**		**1,552.3375**	**1,552.3375**	**0.0767**		**1,554.2557**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	0.7475	6.1779	5.9324	0.0191		0.2256	0.2256		0.2075	0.2075	0.0000	1,849.2207	1,849.2207	0.5981		1,864.1726
Total	**0.7475**	**6.1779**	**5.9324**	**0.0191**		**0.2256**	**0.2256**		**0.2075**	**0.2075**	**0.0000**	**1,849.2207**	**1,849.2207**	**0.5981**		**1,864.1726**

3.16 230-kV Substation Install Yard Rock - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1758	5.1379	1.5222	0.0136	0.3619	0.0175	0.3794	0.1042	0.0167	0.1209		1,449.2970	1,449.2970	0.0737		1,451.1396
Worker	0.0581	0.0426	0.3859	1.0300e-003	0.1228	7.7000e-004	0.1236	0.0326	7.1000e-004	0.0333		103.0405	103.0405	3.0300e-003		103.1162
Total	**0.2339**	**5.1805**	**1.9081**	**0.0146**	**0.4847**	**0.0182**	**0.5030**	**0.1367**	**0.0174**	**0.1542**		**1,552.3375**	**1,552.3375**	**0.0767**		**1,554.2557**

3.16 230-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7112	5.5407	5.8424	0.0191		0.1978	0.1978		0.1820	0.1820		1,850.4684	1,850.4684	0.5985		1,865.4304
Total	**0.7112**	**5.5407**	**5.8424**	**0.0191**		**0.1978**	**0.1978**		**0.1820**	**0.1820**		**1,850.4684**	**1,850.4684**	**0.5985**		**1,865.4304**

3.16 230-kV Substation Install Yard Rock - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.0800	1.3321	0.0133	0.3620	8.1600e-003	0.3701	0.1042	7.8000e-003	0.1120		1,422.7178	1,422.7178	0.0669		1,424.3914
Worker	0.0546	0.0383	0.3517	1.0000e-003	0.1228	7.5000e-004	0.1236	0.0326	6.9000e-004	0.0333		99.1801	99.1801	2.7000e-003		99.2475
Total	**0.1879**	**4.1183**	**1.6838**	**0.0143**	**0.4848**	**8.9100e-003**	**0.4937**	**0.1368**	**8.4900e-003**	**0.1453**		**1,521.8978**	**1,521.8978**	**0.0696**		**1,523.6389**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7112	5.5407	5.8424	0.0191		0.1978	0.1978		0.1820	0.1820	0.0000	1,850.4684	1,850.4684	0.5985		1,865.4304
Total	**0.7112**	**5.5407**	**5.8424**	**0.0191**		**0.1978**	**0.1978**		**0.1820**	**0.1820**	**0.0000**	**1,850.4684**	**1,850.4684**	**0.5985**		**1,865.4304**

3.16 230-kV Substation Install Yard Rock - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1333	4.0800	1.3321	0.0133	0.3620	8.1600e-003	0.3701	0.1042	7.8000e-003	0.1120		1,422.7178	1,422.7178	0.0669		1,424.3914
Worker	0.0546	0.0383	0.3517	1.0000e-003	0.1228	7.5000e-004	0.1236	0.0326	6.9000e-004	0.0333		99.1801	99.1801	2.7000e-003		99.2475
Total	**0.1879**	**4.1183**	**1.6838**	**0.0143**	**0.4848**	**8.9100e-003**	**0.4937**	**0.1368**	**8.4900e-003**	**0.1453**		**1,521.8978**	**1,521.8978**	**0.0696**		**1,523.6389**

3.17 70-kV Substation Steel Bus Erection - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8239	6.4014	7.0821	0.0231		0.2117	0.2117		0.1947	0.1947		2,239.9099	2,239.9099	0.7244		2,258.0207
Total	**0.8239**	**6.4014**	**7.0821**	**0.0231**		**0.2117**	**0.2117**		**0.1947**	**0.1947**		**2,239.9099**	**2,239.9099**	**0.7244**		**2,258.0207**

3.17 70-kV Substation Steel Bus Erection - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0344	0.9957	0.3276	3.8000e-003	0.1083	2.3400e-003	0.1107	0.0312	2.2400e-003	0.0334		405.0669	405.0669	0.0172		405.4964
Worker	0.0368	0.0252	0.2363	6.4000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.6000e-004	0.0212		63.6377	63.6377	1.7800e-003		63.6821
Total	**0.0712**	**1.0209**	**0.5639**	**4.4400e-003**	**0.1865**	**2.8300e-003**	**0.1894**	**0.0519**	**2.7000e-003**	**0.0546**		**468.7046**	**468.7046**	**0.0190**		**469.1785**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8239	6.4014	7.0821	0.0231		0.2117	0.2117		0.1947	0.1947	0.0000	2,239.9099	2,239.9099	0.7244		2,258.0207
Total	**0.8239**	**6.4014**	**7.0821**	**0.0231**		**0.2117**	**0.2117**		**0.1947**	**0.1947**	**0.0000**	**2,239.9099**	**2,239.9099**	**0.7244**		**2,258.0207**

3.17 70-kV Substation Steel Bus Erection - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0344	0.9957	0.3276	3.8000e-003	0.1083	2.3400e-003	0.1107	0.0312	2.2400e-003	0.0334		405.0669	405.0669	0.0172		405.4964
Worker	0.0368	0.0252	0.2363	6.4000e-004	0.0782	4.9000e-004	0.0787	0.0208	4.6000e-004	0.0212		63.6377	63.6377	1.7800e-003		63.6821
Total	**0.0712**	**1.0209**	**0.5639**	**4.4400e-003**	**0.1865**	**2.8300e-003**	**0.1894**	**0.0519**	**2.7000e-003**	**0.0546**		**468.7046**	**468.7046**	**0.0190**		**469.1785**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8288	13.5256	13.6033	0.0467		0.5180	0.5180		0.4830	0.4830		4,507.8392	4,507.8392	1.3491		4,541.5672
Total	**1.8288**	**13.5256**	**13.6033**	**0.0467**		**0.5180**	**0.5180**		**0.4830**	**0.4830**		**4,507.8392**	**4,507.8392**	**1.3491**		**4,541.5672**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0440	1.6762	0.5328	2.3200e-003	0.0327	1.3000e-003	0.0340	9.4700e-003	1.2500e-003	0.0107		248.2154	248.2154	0.0226		248.7809
Worker	0.0526	0.0367	0.3385	9.5000e-004	0.1167	7.2000e-004	0.1174	0.0310	6.6000e-004	0.0316		94.3874	94.3874	2.5900e-003		94.4520
Total	**0.0965**	**1.7129**	**0.8713**	**3.2700e-003**	**0.1493**	**2.0200e-003**	**0.1514**	**0.0404**	**1.9100e-003**	**0.0423**		**342.6027**	**342.6027**	**0.0252**		**343.2329**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8288	13.5256	13.6033	0.0467		0.5180	0.5180		0.4830	0.4830	0.0000	4,507.8392	4,507.8392	1.3491		4,541.5671
Total	**1.8288**	**13.5256**	**13.6033**	**0.0467**		**0.5180**	**0.5180**		**0.4830**	**0.4830**	**0.0000**	**4,507.8392**	**4,507.8392**	**1.3491**		**4,541.5671**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0440	1.6762	0.5328	2.3200e-003	0.0327	1.3000e-003	0.0340	9.4700e-003	1.2500e-003	0.0107		248.2154	248.2154	0.0226		248.7809
Worker	0.0526	0.0367	0.3385	9.5000e-004	0.1167	7.2000e-004	0.1174	0.0310	6.6000e-004	0.0316		94.3874	94.3874	2.5900e-003		94.4520
Total	**0.0965**	**1.7129**	**0.8713**	**3.2700e-003**	**0.1493**	**2.0200e-003**	**0.1514**	**0.0404**	**1.9100e-003**	**0.0423**		**342.6027**	**342.6027**	**0.0252**		**343.2329**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2636	2.8616	1.3758	4.3300e-003		0.1195	0.1195		0.1099	0.1099		419.1144	419.1144	0.1356		422.5032
Total	**0.2636**	**2.8616**	**1.3758**	**4.3300e-003**		**0.1195**	**0.1195**		**0.1099**	**0.1099**		**419.1144**	**419.1144**	**0.1356**		**422.5032**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0394	0.0280	0.2547	7.4000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		73.4333	73.4333	1.9700e-003		73.4826
Total	**0.0471**	**0.2492**	**0.3275**	**1.5800e-003**	**0.1154**	**1.0700e-003**	**0.1164**	**0.0311**	**1.0100e-003**	**0.0321**		**163.4482**	**163.4482**	**5.7900e-003**		**163.5929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2636	2.8616	1.3758	4.3300e-003		0.1195	0.1195		0.1099	0.1099	0.0000	419.1144	419.1144	0.1356		422.5032
Total	**0.2636**	**2.8616**	**1.3758**	**4.3300e-003**		**0.1195**	**0.1195**		**0.1099**	**0.1099**	**0.0000**	**419.1144**	**419.1144**	**0.1356**		**422.5032**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0394	0.0280	0.2547	7.4000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		73.4333	73.4333	1.9700e-003		73.4826
Total	**0.0471**	**0.2492**	**0.3275**	**1.5800e-003**	**0.1154**	**1.0700e-003**	**0.1164**	**0.0311**	**1.0100e-003**	**0.0321**		**163.4482**	**163.4482**	**5.7900e-003**		**163.5929**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3779	2.6759	2.4664	9.9200e-003		0.0968	0.0968		0.0890	0.0890		959.9164	959.9164	0.3105		967.6778
Total	**0.3779**	**2.6759**	**2.4664**	**9.9200e-003**		**0.0968**	**0.0968**		**0.0890**	**0.0890**		**959.9164**	**959.9164**	**0.3105**		**967.6778**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	1.5890	0.5056	2.3200e-003	0.0354	1.3100e-003	0.0367	0.0103	1.2600e-003	0.0115		248.1591	248.1591	0.0216		248.6998
Worker	0.0296	0.0210	0.1910	5.5000e-004	0.0685	4.1000e-004	0.0689	0.0182	3.8000e-004	0.0185		55.0750	55.0750	1.4800e-003		55.1120
Total	**0.0717**	**1.6100**	**0.6966**	**2.8700e-003**	**0.1039**	**1.7200e-003**	**0.1056**	**0.0284**	**1.6400e-003**	**0.0301**		**303.2341**	**303.2341**	**0.0231**		**303.8118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3779	2.6759	2.4664	9.9200e-003		0.0968	0.0968		0.0890	0.0890	0.0000	959.9164	959.9164	0.3105		967.6778
Total	**0.3779**	**2.6759**	**2.4664**	**9.9200e-003**		**0.0968**	**0.0968**		**0.0890**	**0.0890**	**0.0000**	**959.9164**	**959.9164**	**0.3105**		**967.6778**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	1.5890	0.5056	2.3200e-003	0.0354	1.3100e-003	0.0367	0.0103	1.2600e-003	0.0115		248.1591	248.1591	0.0216		248.6998
Worker	0.0296	0.0210	0.1910	5.5000e-004	0.0685	4.1000e-004	0.0689	0.0182	3.8000e-004	0.0185		55.0750	55.0750	1.4800e-003		55.1120
Total	**0.0717**	**1.6100**	**0.6966**	**2.8700e-003**	**0.1039**	**1.7200e-003**	**0.1056**	**0.0284**	**1.6400e-003**	**0.0301**		**303.2341**	**303.2341**	**0.0231**		**303.8118**

3.21 230-kV Transmission Conductor - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7984	15.7207	10.7044	0.0394		0.6165	0.6165		0.5672	0.5672		3,817.1203	3,817.1203	1.2345		3,847.9837
Total	**1.7984**	**15.7207**	**10.7044**	**0.0394**		**0.6165**	**0.6165**		**0.5672**	**0.5672**		**3,817.1203**	**3,817.1203**	**1.2345**		**3,847.9837**

3.21 230-kV Transmission Conductor - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	1.2169	0.4004	4.6400e-003	0.1324	2.8600e-003	0.1352	0.0381	2.7400e-003	0.0408		495.0818	495.0818	0.0210		495.6067
Worker	0.1249	0.0886	0.8065	2.3300e-003	0.2891	1.7500e-003	0.2908	0.0767	1.6100e-003	0.0783		232.5389	232.5389	6.2500e-003		232.6950
Total	**0.1670**	**1.3055**	**1.2069**	**6.9700e-003**	**0.4214**	**4.6100e-003**	**0.4261**	**0.1148**	**4.3500e-003**	**0.1191**		**727.6207**	**727.6207**	**0.0272**		**728.3017**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7984	15.7207	10.7044	0.0394		0.6165	0.6165		0.5672	0.5672	0.0000	3,817.1203	3,817.1203	1.2345		3,847.9837
Total	**1.7984**	**15.7207**	**10.7044**	**0.0394**		**0.6165**	**0.6165**		**0.5672**	**0.5672**	**0.0000**	**3,817.1203**	**3,817.1203**	**1.2345**		**3,847.9837**

3.21 230-kV Transmission Conductor - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0421	1.2169	0.4004	4.6400e-003	0.1324	2.8600e-003	0.1352	0.0381	2.7400e-003	0.0408		495.0818	495.0818	0.0210		495.6067
Worker	0.1249	0.0886	0.8065	2.3300e-003	0.2891	1.7500e-003	0.2908	0.0767	1.6100e-003	0.0783		232.5389	232.5389	6.2500e-003		232.6950
Total	**0.1670**	**1.3055**	**1.2069**	**6.9700e-003**	**0.4214**	**4.6100e-003**	**0.4261**	**0.1148**	**4.3500e-003**	**0.1191**		**727.6207**	**727.6207**	**0.0272**		**728.3017**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3679	2.8885	3.2533	0.0104		0.0945	0.0945		0.0870	0.0870		1,007.9647	1,007.9647	0.3260		1,016.1146
Total	**0.3679**	**2.8885**	**3.2533**	**0.0104**		**0.0945**	**0.0945**		**0.0870**	**0.0870**		**1,007.9647**	**1,007.9647**	**0.3260**		**1,016.1146**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0459	1.3275	0.4368	5.0600e-003	0.1444	3.1200e-003	0.1475	0.0415	2.9900e-003	0.0445		540.0893	540.0893	0.0229		540.6618
Worker	0.0434	0.0299	0.2790	7.6000e-004	0.0935	5.9000e-004	0.0941	0.0248	5.4000e-004	0.0254		75.9476	75.9476	2.1100e-003		76.0003
Total	**0.0893**	**1.3575**	**0.7157**	**5.8200e-003**	**0.2379**	**3.7100e-003**	**0.2416**	**0.0664**	**3.5300e-003**	**0.0699**		**616.0368**	**616.0368**	**0.0250**		**616.6621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3679	2.8885	3.2533	0.0104		0.0945	0.0945		0.0870	0.0870	0.0000	1,007.9647	1,007.9647	0.3260		1,016.1146
Total	**0.3679**	**2.8885**	**3.2533**	**0.0104**		**0.0945**	**0.0945**		**0.0870**	**0.0870**	**0.0000**	**1,007.9647**	**1,007.9647**	**0.3260**		**1,016.1146**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0459	1.3275	0.4368	5.0600e-003	0.1444	3.1200e-003	0.1475	0.0415	2.9900e-003	0.0445		540.0893	540.0893	0.0229		540.6618
Worker	0.0434	0.0299	0.2790	7.6000e-004	0.0935	5.9000e-004	0.0941	0.0248	5.4000e-004	0.0254		75.9476	75.9476	2.1100e-003		76.0003
Total	**0.0893**	**1.3575**	**0.7157**	**5.8200e-003**	**0.2379**	**3.7100e-003**	**0.2416**	**0.0664**	**3.5300e-003**	**0.0699**		**616.0368**	**616.0368**	**0.0250**		**616.6621**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0372	0.0261	0.2396	6.8000e-004	0.0843	5.1000e-004	0.0848	0.0224	4.7000e-004	0.0228		67.9661	67.9661	1.8400e-003		68.0122
Total	**0.0448**	**0.2474**	**0.3124**	**1.5200e-003**	**0.1083**	**1.0300e-003**	**0.1094**	**0.0293**	**9.7000e-004**	**0.0303**		**157.9810**	**157.9810**	**5.6600e-003**		**158.1225**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0372	0.0261	0.2396	6.8000e-004	0.0843	5.1000e-004	0.0848	0.0224	4.7000e-004	0.0228		67.9661	67.9661	1.8400e-003		68.0122
Total	**0.0448**	**0.2474**	**0.3124**	**1.5200e-003**	**0.1083**	**1.0300e-003**	**0.1094**	**0.0293**	**9.7000e-004**	**0.0303**		**157.9810**	**157.9810**	**5.6600e-003**		**158.1225**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4591	5.4209	2.8083	8.1800e-003		0.1887	0.1887		0.1736	0.1736		791.6434	791.6434	0.2560		798.0443
Total	**0.4591**	**5.4209**	**2.8083**	**8.1800e-003**		**0.1887**	**0.1887**		**0.1736**	**0.1736**		**791.6434**	**791.6434**	**0.2560**		**798.0443**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0344	0.9957	0.3276	3.8000e-003	0.1083	2.3400e-003	0.1107	0.0312	2.2400e-003	0.0334		405.0669	405.0669	0.0172		405.4964
Worker	0.0460	0.0326	0.2971	8.6000e-004	0.1065	6.4000e-004	0.1071	0.0283	5.9000e-004	0.0288		85.6722	85.6722	2.3000e-003		85.7297
Total	**0.0804**	**1.0283**	**0.6247**	**4.6600e-003**	**0.2148**	**2.9800e-003**	**0.2178**	**0.0594**	**2.8300e-003**	**0.0622**		**490.7392**	**490.7392**	**0.0195**		**491.2261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4591	5.4209	2.8083	8.1800e-003		0.1887	0.1887		0.1736	0.1736	0.0000	791.6434	791.6434	0.2560		798.0443
Total	**0.4591**	**5.4209**	**2.8083**	**8.1800e-003**		**0.1887**	**0.1887**		**0.1736**	**0.1736**	**0.0000**	**791.6434**	**791.6434**	**0.2560**		**798.0443**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0344	0.9957	0.3276	3.8000e-003	0.1083	2.3400e-003	0.1107	0.0312	2.2400e-003	0.0334		405.0669	405.0669	0.0172		405.4964
Worker	0.0460	0.0326	0.2971	8.6000e-004	0.1065	6.4000e-004	0.1071	0.0283	5.9000e-004	0.0288		85.6722	85.6722	2.3000e-003		85.7297
Total	**0.0804**	**1.0283**	**0.6247**	**4.6600e-003**	**0.2148**	**2.9800e-003**	**0.2178**	**0.0594**	**2.8300e-003**	**0.0622**		**490.7392**	**490.7392**	**0.0195**		**491.2261**

3.25 230-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0341	0.5248	1.0747	1.6500e-003		9.0700e-003	9.0700e-003		8.3400e-003	8.3400e-003		160.0386	160.0386	0.0518		161.3326
Total	**0.0341**	**0.5248**	**1.0747**	**1.6500e-003**		**9.0700e-003**	**9.0700e-003**		**8.3400e-003**	**8.3400e-003**		**160.0386**	**160.0386**	**0.0518**		**161.3326**

3.25 230-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0115	0.3319	0.1092	1.2700e-003	0.0361	7.8000e-004	0.0369	0.0104	7.5000e-004	0.0111		135.0223	135.0223	5.7300e-003		135.1655
Worker	0.0329	0.0233	0.2122	6.1000e-004	0.0761	4.6000e-004	0.0765	0.0202	4.2000e-004	0.0206		61.1944	61.1944	1.6400e-003		61.2355
Total	**0.0443**	**0.3552**	**0.3214**	**1.8800e-003**	**0.1122**	**1.2400e-003**	**0.1134**	**0.0306**	**1.1700e-003**	**0.0317**		**196.2167**	**196.2167**	**7.3700e-003**		**196.4010**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0341	0.5248	1.0747	1.6500e-003		9.0700e-003	9.0700e-003		8.3400e-003	8.3400e-003	0.0000	160.0386	160.0386	0.0518		161.3326
Total	**0.0341**	**0.5248**	**1.0747**	**1.6500e-003**		**9.0700e-003**	**9.0700e-003**		**8.3400e-003**	**8.3400e-003**	**0.0000**	**160.0386**	**160.0386**	**0.0518**		**161.3326**

3.25 230-kV Substation Cable Installation and Termination - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0115	0.3319	0.1092	1.2700e-003	0.0361	7.8000e-004	0.0369	0.0104	7.5000e-004	0.0111		135.0223	135.0223	5.7300e-003		135.1655
Worker	0.0329	0.0233	0.2122	6.1000e-004	0.0761	4.6000e-004	0.0765	0.0202	4.2000e-004	0.0206		61.1944	61.1944	1.6400e-003		61.2355
Total	**0.0443**	**0.3552**	**0.3214**	**1.8800e-003**	**0.1122**	**1.2400e-003**	**0.1134**	**0.0306**	**1.1700e-003**	**0.0317**		**196.2167**	**196.2167**	**7.3700e-003**		**196.4010**

3.26 230-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.26 230-kV Substation Testing and Commissioning - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0994	2.8763	0.9463	0.0110	0.3129	6.7700e-003	0.3197	0.0900	6.4700e-003	0.0965		1,170.1934	1,170.1934	0.0496		1,171.4339
Worker	0.0299	0.0203	0.1918	5.1000e-004	0.0620	4.0000e-004	0.0624	0.0165	3.7000e-004	0.0168		50.6414	50.6414	1.4300e-003		50.6772
Total	**0.1293**	**2.8967**	**1.1381**	**0.0115**	**0.3749**	**7.1700e-003**	**0.3821**	**0.1065**	**6.8400e-003**	**0.1133**		**1,220.8348**	**1,220.8348**	**0.0511**		**1,222.1111**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.26 230-kV Substation Testing and Commissioning - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0994	2.8763	0.9463	0.0110	0.3129	6.7700e-003	0.3197	0.0900	6.4700e-003	0.0965		1,170.1934	1,170.1934	0.0496		1,171.4339
Worker	0.0299	0.0203	0.1918	5.1000e-004	0.0620	4.0000e-004	0.0624	0.0165	3.7000e-004	0.0168		50.6414	50.6414	1.4300e-003		50.6772
Total	**0.1293**	**2.8967**	**1.1381**	**0.0115**	**0.3749**	**7.1700e-003**	**0.3821**	**0.1065**	**6.8400e-003**	**0.1133**		**1,220.8348**	**1,220.8348**	**0.0511**		**1,222.1111**

3.27 70-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.27 70-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0115	0.3319	0.1092	1.2700e-003	0.0361	7.8000e-004	0.0369	0.0104	7.5000e-004	0.0111		135.0223	135.0223	5.7300e-003		135.1655
Worker	0.0297	0.0202	0.1904	5.0000e-004	0.0614	3.9000e-004	0.0618	0.0163	3.6000e-004	0.0167		50.1444	50.1444	1.4200e-003		50.1799
Total	**0.0412**	**0.3520**	**0.2996**	**1.7700e-003**	**0.0975**	**1.1700e-003**	**0.0987**	**0.0267**	**1.1100e-003**	**0.0278**		**185.1667**	**185.1667**	**7.1500e-003**		**185.3454**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.27 70-kV Substation Cable Installation and Termination - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0115	0.3319	0.1092	1.2700e-003	0.0361	7.8000e-004	0.0369	0.0104	7.5000e-004	0.0111		135.0223	135.0223	5.7300e-003		135.1655
Worker	0.0297	0.0202	0.1904	5.0000e-004	0.0614	3.9000e-004	0.0618	0.0163	3.6000e-004	0.0167		50.1444	50.1444	1.4200e-003		50.1799
Total	**0.0412**	**0.3520**	**0.2996**	**1.7700e-003**	**0.0975**	**1.1700e-003**	**0.0987**	**0.0267**	**1.1100e-003**	**0.0278**		**185.1667**	**185.1667**	**7.1500e-003**		**185.3454**

3.28 70-kV Power Line Site Development Mobilization - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	0.6509	7.7474	3.6546	0.0115		0.2640	0.2640		0.2429	0.2429		1,112.0710	1,112.0710	0.3597		1,121.0627
Total	**0.6509**	**7.7474**	**3.6546**	**0.0115**	**1.5908**	**0.2640**	**1.8548**	**0.1718**	**0.2429**	**0.4147**		**1,112.0710**	**1,112.0710**	**0.3597**		**1,121.0627**

3.28 70-kV Power Line Site Development Mobilization - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0382	1.1063	0.3640	4.2200e-003	0.1203	2.6000e-003	0.1229	0.0346	2.4900e-003	0.0371		450.0744	450.0744	0.0191		450.5515
Worker	0.0592	0.0414	0.3814	1.0700e-003	0.1321	8.1000e-004	0.1329	0.0350	7.5000e-004	0.0358		106.7683	106.7683	2.9200e-003		106.8412
Total	**0.0975**	**1.1477**	**0.7453**	**5.2900e-003**	**0.2524**	**3.4100e-003**	**0.2558**	**0.0697**	**3.2400e-003**	**0.0729**		**556.8426**	**556.8426**	**0.0220**		**557.3927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6204	0.0000	0.6204	0.0670	0.0000	0.0670			0.0000			0.0000
Off-Road	0.6509	7.7474	3.6546	0.0115		0.2640	0.2640		0.2429	0.2429	0.0000	1,112.0710	1,112.0710	0.3597		1,121.0626
Total	**0.6509**	**7.7474**	**3.6546**	**0.0115**	**0.6204**	**0.2640**	**0.8844**	**0.0670**	**0.2429**	**0.3099**	**0.0000**	**1,112.0710**	**1,112.0710**	**0.3597**		**1,121.0626**

3.28 70-kV Power Line Site Development Mobilization - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0382	1.1063	0.3640	4.2200e-003	0.1203	2.6000e-003	0.1229	0.0346	2.4900e-003	0.0371		450.0744	450.0744	0.0191		450.5515
Worker	0.0592	0.0414	0.3814	1.0700e-003	0.1321	8.1000e-004	0.1329	0.0350	7.5000e-004	0.0358		106.7683	106.7683	2.9200e-003		106.8412
Total	**0.0975**	**1.1477**	**0.7453**	**5.2900e-003**	**0.2524**	**3.4100e-003**	**0.2558**	**0.0697**	**3.2400e-003**	**0.0729**		**556.8426**	**556.8426**	**0.0220**		**557.3927**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3977	0.0000	0.3977	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.3633	4.2576	2.3851	6.5200e-003		0.1510	0.1510		0.1389	0.1389		631.4296	631.4296	0.2042		636.5351
Total	**0.3633**	**4.2576**	**2.3851**	**6.5200e-003**	**0.3977**	**0.1510**	**0.5487**	**0.0429**	**0.1389**	**0.1818**		**631.4296**	**631.4296**	**0.2042**		**636.5351**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0191	0.5531	0.1820	2.1100e-003	0.0602	1.3000e-003	0.0615	0.0173	1.2500e-003	0.0186		225.0372	225.0372	9.5400e-003		225.2758
Worker	0.0457	0.0317	0.2938	8.2000e-004	0.1004	6.2000e-004	0.1011	0.0267	5.7000e-004	0.0272		81.3438	81.3438	2.2400e-003		81.3997
Total	**0.0648**	**0.5849**	**0.4758**	**2.9300e-003**	**0.1606**	**1.9200e-003**	**0.1625**	**0.0440**	**1.8200e-003**	**0.0458**		**306.3810**	**306.3810**	**0.0118**		**306.6755**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1551	0.0000	0.1551	0.0168	0.0000	0.0168			0.0000			0.0000
Off-Road	0.3633	4.2576	2.3851	6.5200e-003		0.1510	0.1510		0.1389	0.1389	0.0000	631.4296	631.4296	0.2042		636.5351
Total	**0.3633**	**4.2576**	**2.3851**	**6.5200e-003**	**0.1551**	**0.1510**	**0.3061**	**0.0168**	**0.1389**	**0.1556**	**0.0000**	**631.4296**	**631.4296**	**0.2042**		**636.5351**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0191	0.5531	0.1820	2.1100e-003	0.0602	1.3000e-003	0.0615	0.0173	1.2500e-003	0.0186		225.0372	225.0372	9.5400e-003		225.2758
Worker	0.0457	0.0317	0.2938	8.2000e-004	0.1004	6.2000e-004	0.1011	0.0267	5.7000e-004	0.0272		81.3438	81.3438	2.2400e-003		81.3997
Total	**0.0648**	**0.5849**	**0.4758**	**2.9300e-003**	**0.1606**	**1.9200e-003**	**0.1625**	**0.0440**	**1.8200e-003**	**0.0458**		**306.3810**	**306.3810**	**0.0118**		**306.6755**

3.30 70-kV Power Line Pole Tower Installation - 2023

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.9144	14.9150	14.1297	0.0472		0.5804	0.5804		0.5340	0.5340		4,571.4399	4,571.4399	1.4785		4,608.4023
Total	**1.9144**	**14.9150**	**14.1297**	**0.0472**		**0.5804**	**0.5804**		**0.5340**	**0.5340**		**4,571.4399**	**4,571.4399**	**1.4785**		**4,608.4023**

3.30 70-kV Power Line Pole Tower Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0573	1.6594	0.5460	6.3300e-003	0.1805	3.9100e-003	0.1844	0.0519	3.7400e-003	0.0557		675.1116	675.1116	0.0286		675.8273
Worker	0.1161	0.0805	0.7463	2.0700e-003	0.2543	1.5800e-003	0.2558	0.0675	1.4600e-003	0.0689		206.0175	206.0175	5.6800e-003		206.1594
Total	**0.1734**	**1.7399**	**1.2922**	**8.4000e-003**	**0.4348**	**5.4900e-003**	**0.4403**	**0.1194**	**5.2000e-003**	**0.1246**		**881.1290**	**881.1290**	**0.0343**		**881.9866**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9144	14.9150	14.1297	0.0472		0.5804	0.5804		0.5340	0.5340	0.0000	4,571.4399	4,571.4399	1.4785		4,608.4023
Total	**1.9144**	**14.9150**	**14.1297**	**0.0472**		**0.5804**	**0.5804**		**0.5340**	**0.5340**	**0.0000**	**4,571.4399**	**4,571.4399**	**1.4785**		**4,608.4023**

3.30 70-kV Power Line Pole Tower Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0573	1.6594	0.5460	6.3300e-003	0.1805	3.9100e-003	0.1844	0.0519	3.7400e-003	0.0557		675.1116	675.1116	0.0286		675.8273
Worker	0.1161	0.0805	0.7463	2.0700e-003	0.2543	1.5800e-003	0.2558	0.0675	1.4600e-003	0.0689		206.0175	206.0175	5.6800e-003		206.1594
Total	**0.1734**	**1.7399**	**1.2922**	**8.4000e-003**	**0.4348**	**5.4900e-003**	**0.4403**	**0.1194**	**5.2000e-003**	**0.1246**		**881.1290**	**881.1290**	**0.0343**		**881.9866**

3.31 70-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7203	5.9683	6.9052	0.0184		0.2341	0.2341		0.2154	0.2154		1,781.9512	1,781.9512	0.5763		1,796.3592
Total	**0.7203**	**5.9683**	**6.9052**	**0.0184**		**0.2341**	**0.2341**		**0.2154**	**0.2154**		**1,781.9512**	**1,781.9512**	**0.5763**		**1,796.3592**

3.31 70-kV Substation Install Yard Rock - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0612	1.7700	0.5824	6.7500e-003	0.1925	4.1700e-003	0.1967	0.0554	3.9800e-003	0.0594		720.1190	720.1190	0.0305		720.8824
Worker	0.0394	0.0280	0.2547	7.4000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		73.4333	73.4333	1.9700e-003		73.4826
Total	**0.1006**	**1.7980**	**0.8370**	**7.4900e-003**	**0.2838**	**4.7200e-003**	**0.2886**	**0.0796**	**4.4900e-003**	**0.0841**		**793.5523**	**793.5523**	**0.0325**		**794.3650**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7203	5.9683	6.9052	0.0184		0.2341	0.2341		0.2154	0.2154	0.0000	1,781.9512	1,781.9512	0.5763		1,796.3592
Total	**0.7203**	**5.9683**	**6.9052**	**0.0184**		**0.2341**	**0.2341**		**0.2154**	**0.2154**	**0.0000**	**1,781.9512**	**1,781.9512**	**0.5763**		**1,796.3592**

3.31 70-kV Substation Install Yard Rock - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0612	1.7700	0.5824	6.7500e-003	0.1925	4.1700e-003	0.1967	0.0554	3.9800e-003	0.0594		720.1190	720.1190	0.0305		720.8824
Worker	0.0394	0.0280	0.2547	7.4000e-004	0.0913	5.5000e-004	0.0918	0.0242	5.1000e-004	0.0247		73.4333	73.4333	1.9700e-003		73.4826
Total	**0.1006**	**1.7980**	**0.8370**	**7.4900e-003**	**0.2838**	**4.7200e-003**	**0.2886**	**0.0796**	**4.4900e-003**	**0.0841**		**793.5523**	**793.5523**	**0.0325**		**794.3650**

3.32 230-kV Substation Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2353	2.3090	3.1169	4.2600e-003		0.1235	0.1235		0.1137	0.1137		412.1960	412.1960	0.1333		415.5288
Total	**0.2353**	**2.3090**	**3.1169**	**4.2600e-003**	**0.0000**	**0.1235**	**0.1235**	**0.0000**	**0.1137**	**0.1137**		**412.1960**	**412.1960**	**0.1333**		**415.5288**

3.32 230-kV Substation Cleanup and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1109	3.2082	1.0555	0.0122	0.3490	7.5500e-003	0.3565	0.1004	7.2200e-003	0.1076		1,305.2157	1,305.2157	0.0554		1,306.5994
Worker	0.0217	0.0150	0.1395	3.8000e-004	0.0468	2.9000e-004	0.0471	0.0124	2.7000e-004	0.0127		37.9738	37.9738	1.0500e-003		38.0001
Total	**0.1326**	**3.2232**	**1.1950**	**0.0126**	**0.3957**	**7.8400e-003**	**0.4036**	**0.1128**	**7.4900e-003**	**0.1203**		**1,343.1895**	**1,343.1895**	**0.0564**		**1,344.5995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.2353	2.3090	3.1169	4.2600e-003		0.1235	0.1235		0.1137	0.1137	0.0000	412.1960	412.1960	0.1333		415.5288
Total	**0.2353**	**2.3090**	**3.1169**	**4.2600e-003**	**0.0000**	**0.1235**	**0.1235**	**0.0000**	**0.1137**	**0.1137**	**0.0000**	**412.1960**	**412.1960**	**0.1333**		**415.5288**

3.32 230-kV Substation Cleanup and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1109	3.2082	1.0555	0.0122	0.3490	7.5500e-003	0.3565	0.1004	7.2200e-003	0.1076		1,305.2157	1,305.2157	0.0554		1,306.5994
Worker	0.0217	0.0150	0.1395	3.8000e-004	0.0468	2.9000e-004	0.0471	0.0124	2.7000e-004	0.0127		37.9738	37.9738	1.0500e-003		38.0001
Total	**0.1326**	**3.2232**	**1.1950**	**0.0126**	**0.3957**	**7.8400e-003**	**0.4036**	**0.1128**	**7.4900e-003**	**0.1203**		**1,343.1895**	**1,343.1895**	**0.0564**		**1,344.5995**

3.33 70-kV Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.33 70-kV Cleanup and Restoration - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0283	0.0196	0.1819	5.0000e-004	0.0619	3.9000e-004	0.0623	0.0164	3.6000e-004	0.0168		50.1890	50.1890	1.3800e-003		50.2236
Total	**0.0283**	**0.0196**	**0.1819**	**5.0000e-004**	**0.0619**	**3.9000e-004**	**0.0623**	**0.0164**	**3.6000e-004**	**0.0168**		**50.1890**	**50.1890**	**1.3800e-003**		**50.2236**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.33 70-kV Cleanup and Restoration - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0283	0.0196	0.1819	5.0000e-004	0.0619	3.9000e-004	0.0623	0.0164	3.6000e-004	0.0168		50.1890	50.1890	1.3800e-003		50.2236
Total	**0.0283**	**0.0196**	**0.1819**	**5.0000e-004**	**0.0619**	**3.9000e-004**	**0.0623**	**0.0164**	**3.6000e-004**	**0.0168**		**50.1890**	**50.1890**	**1.3800e-003**		**50.2236**

3.34 70-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.34 70-kV Substation Testing and Commissioning - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0349	0.0243	0.2243	6.3000e-004	0.0772	4.8000e-004	0.0776	0.0205	4.4000e-004	0.0209		62.4279	62.4279	1.7100e-003		62.4707
Total	**0.0425**	**0.2455**	**0.2971**	**1.4700e-003**	**0.1012**	**1.0000e-003**	**0.1022**	**0.0274**	**9.4000e-004**	**0.0283**		**152.4428**	**152.4428**	**5.5300e-003**		**152.5810**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.34 70-kV Substation Testing and Commissioning - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.6500e-003	0.2213	0.0728	8.4000e-004	0.0241	5.2000e-004	0.0246	6.9200e-003	5.0000e-004	7.4200e-003		90.0149	90.0149	3.8200e-003		90.1103
Worker	0.0349	0.0243	0.2243	6.3000e-004	0.0772	4.8000e-004	0.0776	0.0205	4.4000e-004	0.0209		62.4279	62.4279	1.7100e-003		62.4707
Total	**0.0425**	**0.2455**	**0.2971**	**1.4700e-003**	**0.1012**	**1.0000e-003**	**0.1022**	**0.0274**	**9.4000e-004**	**0.0283**		**152.4428**	**152.4428**	**5.5300e-003**		**152.5810**

3.35 70-kV Power Line Conductor Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4583	21.0710	16.4869	0.0538		0.8689	0.8689		0.7994	0.7994		5,204.5755	5,204.5755	1.6833		5,246.6571
Total	**2.4583**	**21.0710**	**16.4869**	**0.0538**		**0.8689**	**0.8689**		**0.7994**	**0.7994**		**5,204.5755**	**5,204.5755**	**1.6833**		**5,246.6571**

3.35 70-kV Power Line Conductor Installation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0382	1.1063	0.3640	4.2200e-003	0.1203	2.6000e-003	0.1229	0.0346	2.4900e-003	0.0371		450.0744	450.0744	0.0191		450.5515
Worker	0.0938	0.0654	0.6039	1.6900e-003	0.2084	1.2900e-003	0.2097	0.0553	1.1900e-003	0.0565		168.5571	168.5571	4.6100e-003		168.6724
Total	**0.1320**	**1.1717**	**0.9679**	**5.9100e-003**	**0.3288**	**3.8900e-003**	**0.3326**	**0.0899**	**3.6800e-003**	**0.0936**		**618.6315**	**618.6315**	**0.0237**		**619.2240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4583	21.0710	16.4869	0.0538		0.8689	0.8689		0.7994	0.7994	0.0000	5,204.5755	5,204.5755	1.6833		5,246.6571
Total	**2.4583**	**21.0710**	**16.4869**	**0.0538**		**0.8689**	**0.8689**		**0.7994**	**0.7994**	**0.0000**	**5,204.5755**	**5,204.5755**	**1.6833**		**5,246.6571**

3.35 70-kV Power Line Conductor Installation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0382	1.1063	0.3640	4.2200e-003	0.1203	2.6000e-003	0.1229	0.0346	2.4900e-003	0.0371		450.0744	450.0744	0.0191		450.5515
Worker	0.0938	0.0654	0.6039	1.6900e-003	0.2084	1.2900e-003	0.2097	0.0553	1.1900e-003	0.0565		168.5571	168.5571	4.6100e-003		168.6724
Total	**0.1320**	**1.1717**	**0.9679**	**5.9100e-003**	**0.3288**	**3.8900e-003**	**0.3326**	**0.0899**	**3.6800e-003**	**0.0936**		**618.6315**	**618.6315**	**0.0237**		**619.2240**

3.35 70-kV Power Line Conductor Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3759	19.5109	16.2391	0.0538		0.7922	0.7922		0.7288	0.7288		5,205.8190	5,205.8190	1.6837		5,247.9107
Total	**2.3759**	**19.5109**	**16.2391**	**0.0538**		**0.7922**	**0.7922**		**0.7288**	**0.7288**		**5,205.8190**	**5,205.8190**	**1.6837**		**5,247.9107**

3.35 70-kV Power Line Conductor Installation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0365	1.0691	0.3463	4.1900e-003	0.1204	2.4100e-003	0.1228	0.0346	2.3000e-003	0.0369		447.6140	447.6140	0.0193		448.0965
Worker	0.0884	0.0590	0.5556	1.6300e-003	0.2084	1.2600e-003	0.2097	0.0553	1.1600e-003	0.0565		162.0112	162.0112	4.1300e-003		162.1145
Total	**0.1249**	**1.1281**	**0.9020**	**5.8200e-003**	**0.3288**	**3.6700e-003**	**0.3324**	**0.0899**	**3.4600e-003**	**0.0934**		**609.6252**	**609.6252**	**0.0234**		**610.2111**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3759	19.5109	16.2391	0.0538		0.7922	0.7922		0.7288	0.7288	0.0000	5,205.8190	5,205.8190	1.6837		5,247.9107
Total	**2.3759**	**19.5109**	**16.2391**	**0.0538**		**0.7922**	**0.7922**		**0.7288**	**0.7288**	**0.0000**	**5,205.8190**	**5,205.8190**	**1.6837**		**5,247.9107**

3.35 70-kV Power Line Conductor Installation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0365	1.0691	0.3463	4.1900e-003	0.1204	2.4100e-003	0.1228	0.0346	2.3000e-003	0.0369		447.6140	447.6140	0.0193		448.0965
Worker	0.0884	0.0590	0.5556	1.6300e-003	0.2084	1.2600e-003	0.2097	0.0553	1.1600e-003	0.0565		162.0112	162.0112	4.1300e-003		162.1145
Total	**0.1249**	**1.1281**	**0.9020**	**5.8200e-003**	**0.3288**	**3.6700e-003**	**0.3324**	**0.0899**	**3.4600e-003**	**0.0934**		**609.6252**	**609.6252**	**0.0234**		**610.2111**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3977	0.0000	0.3977	0.0429	0.0000	0.0429			0.0000			0.0000
Off-Road	0.3379	3.8409	2.3601	6.5200e-003		0.1343	0.1343		0.1236	0.1236		631.2640	631.2640	0.2042		636.3681
Total	**0.3379**	**3.8409**	**2.3601**	**6.5200e-003**	**0.3977**	**0.1343**	**0.5320**	**0.0429**	**0.1236**	**0.1665**		**631.2640**	**631.2640**	**0.2042**		**636.3681**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0255	0.7484	0.2424	2.9300e-003	0.0843	1.6900e-003	0.0859	0.0242	1.6100e-003	0.0259		313.3298	313.3298	0.0135		313.6676
Worker	0.0465	0.0313	0.2928	8.7000e-004	0.1117	6.7000e-004	0.1124	0.0296	6.1000e-004	0.0303		86.6465	86.6465	2.1900e-003		86.7013
Total	**0.0721**	**0.7796**	**0.5352**	**3.8000e-003**	**0.1960**	**2.3600e-003**	**0.1984**	**0.0539**	**2.2200e-003**	**0.0561**		**399.9763**	**399.9763**	**0.0157**		**400.3689**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1551	0.0000	0.1551	0.0168	0.0000	0.0168			0.0000			0.0000
Off-Road	0.3379	3.8409	2.3601	6.5200e-003		0.1343	0.1343		0.1236	0.1236	0.0000	631.2640	631.2640	0.2042		636.3681
Total	**0.3379**	**3.8409**	**2.3601**	**6.5200e-003**	**0.1551**	**0.1343**	**0.2894**	**0.0168**	**0.1236**	**0.1403**	**0.0000**	**631.2640**	**631.2640**	**0.2042**		**636.3681**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0255	0.7484	0.2424	2.9300e-003	0.0843	1.6900e-003	0.0859	0.0242	1.6100e-003	0.0259		313.3298	313.3298	0.0135		313.6676
Worker	0.0465	0.0313	0.2928	8.7000e-004	0.1117	6.7000e-004	0.1124	0.0296	6.1000e-004	0.0303		86.6465	86.6465	2.1900e-003		86.7013
Total	**0.0721**	**0.7796**	**0.5352**	**3.8000e-003**	**0.1960**	**2.3600e-003**	**0.1984**	**0.0539**	**2.2200e-003**	**0.0561**		**399.9763**	**399.9763**	**0.0157**		**400.3689**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	13.00	5.00	5.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.588806	0.027737	0.198305	0.114471	0.022249	0.005748	0.012759	0.019721	0.002316	0.001163	0.004776	0.000758	0.001192

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
NaturalGas Unmitigated	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	391.452	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Total		**4.2200e-003**	**0.0384**	**0.0322**	**2.3000e-004**		**2.9200e-003**	**2.9200e-003**		**2.9200e-003**	**2.9200e-003**		**46.0532**	**46.0532**	**8.8000e-004**	**8.4000e-004**	**46.3269**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.391452	4.2200e-003	0.0384	0.0322	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003		46.0532	46.0532	8.8000e-004	8.4000e-004	46.3269
Total		**4.2200e-003**	**0.0384**	**0.0322**	**2.3000e-004**		**2.9200e-003**	**2.9200e-003**		**2.9200e-003**	**2.9200e-003**		**46.0532**	**46.0532**	**8.8000e-004**	**8.4000e-004**	**46.3269**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Unmitigated	152.9488	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	152.8816					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0672	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Total	**152.9488**	**6.6100e-003**	**0.7282**	**5.0000e-005**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**		**1.5635**	**1.5635**	**4.0800e-003**		**1.6655**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	152.8816					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0672	6.6100e-003	0.7282	5.0000e-005		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003		1.5635	1.5635	4.0800e-003		1.6655
Total	**152.9488**	**6.6100e-003**	**0.7282**	**5.0000e-005**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**		**1.5635**	**1.5635**	**4.0800e-003**		**1.6655**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	4.00	13	402	0.38	Diesel
Off-Highway Trucks	1	4.00	12	402	0.38	Diesel
Other General Industrial Equipment	1	8.00	2	400	0.34	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Off-Highway Trucks	0.4970	3.3279	3.2502	0.0132		0.1198	0.1198		0.1102	0.1102		1,280.3504	1,280.3504	0.4141		1,290.7027
Other General Industrial Equipment	0.3779	2.7653	2.6630	0.0117		0.0948	0.0948		0.0872	0.0872		1,134.3814	1,134.3814	0.3669		1,143.5535
Total	**0.8750**	**6.0932**	**5.9132**	**0.0250**		**0.2146**	**0.2146**		**0.1974**	**0.1974**		**2,414.7318**	**2,414.7318**	**0.7810**		**2,434.2562**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Estrella Substation and Paso Robles Area Reinforcement Project

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	7,144.00	1000sqft	164.00	7,144,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The total area in power line the easement widths, substation temp disturbance, areas for temporary staging and access roads outside of the easement equals approximately 164 acres or a 7,144,000 square feet area

Construction Phase - Based on project schedule and description

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule
Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on equipment roster for the project.

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

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Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Off-road Equipment - Based on construction schedule

Trips and VMT - Based on equipment roster and schedule provided

On-road Fugitive Dust - Per the user guide 9.3% silt content should be used for the San Luis Obispo region

Grading - Based on grading and material movement for the project.

Vehicle Trips - Unmanned operation

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Consumer Products - No consumer product utilization was assumed for the project

Area Coating - No architectural coating is assumed for the project

Energy Use - Energy intensity factors scaled down to match the area occupied by the 230kV Substation Control Enclosure approximately 14 feet wide, 48 feet long, and the 70 kV Substation Control Enclosure approximately 16 feet wide and 64 feet long.

Water And Wastewater - Unmanned facility - No water use is expected

Solid Waste - No solid waste generation is expected

Construction Off-road Equipment Mitigation - At a minimum, the off-road equipment fleet shall meet the CARB off-road emissions average for that calendar year and ensure that quarterly DPM emissions are less than the SLOCAPCD significance thresholds.

Operational Off-Road Equipment - Assumes monthly inspections and an annual maintenance on the substation components. Helicopter emissions are represented as Other general industrial equipment with hp increased to 400

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

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tblAreaCoating	Area_Nonresidential_Interior	10716000	0
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00

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tblOnRoadDust	MaterialMoistureContent	0.50	0.10
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tblOnRoadDust	MaterialMoistureContent	0.50	0.10
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tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30

tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
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tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
tblOnRoadDust	MaterialSiltContent	8.50	9.30
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tblOnRoadDust	MeanVehicleSpeed	40.00	32.40
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tblTripsAndVMT	VendorTripLength	5.00	13.00
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tblTripsAndVMT	VendorTripLength	5.00	0.91
tblTripsAndVMT	VendorTripLength	5.00	1.20
tblTripsAndVMT	VendorTripLength	5.00	8.68
tblTripsAndVMT	VendorTripLength	5.00	13.00
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tblTripsAndVMT	VendorTripLength	5.00	13.00
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tblTripsAndVMT	VendorTripLength	5.00	13.00
tblTripsAndVMT	VendorTripLength	5.00	13.00

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tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	9.15
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tblTripsAndVMT	WorkerTripLength	13.00	8.97
tblTripsAndVMT	WorkerTripLength	13.00	7.34
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tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	10.00
tblTripsAndVMT	WorkerTripLength	13.00	7.68
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tblTripsAndVMT	WorkerTripLength	13.00	10.00
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tblTripsAndVMT	WorkerTripLength	13.00	6.72
tblTripsAndVMT	WorkerTripLength	13.00	8.68
tblTripsAndVMT	WorkerTripLength	13.00	8.25
tblTripsAndVMT	WorkerTripLength	13.00	8.15
tblTripsAndVMT	WorkerTripLength	13.00	7.67
tblTripsAndVMT	WorkerTripLength	13.00	10.00
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tblTripsAndVMT	WorkerTripLength	13.00	8.14

tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	8.56
tblTripsAndVMT	WorkerTripLength	13.00	9.18
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tblTripsAndVMT	WorkerTripLength	13.00	8.45
tblTripsAndVMT	WorkerTripLength	13.00	7.85
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tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	14.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	9.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	30.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	38.00
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tblTripsAndVMT	WorkerTripNumber	3,000.00	14.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	10.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00

tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	41.00
tblTripsAndVMT	WorkerTripNumber	5.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	12.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	32.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	38.00
tblTripsAndVMT	WorkerTripNumber	10.00	24.00
tblTripsAndVMT	WorkerTripNumber	30.00	26.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	18.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	28.00
tblTripsAndVMT	WorkerTripNumber	3,000.00	22.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	1,652,050,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.4289	4.1016	2.9141	0.0103	0.1691	0.1491	0.3181	0.0621	0.1372	0.1993	0.0000	917.1974	917.1974	0.2521	0.0000	923.4994
2023	0.5026	4.2215	3.6566	0.0134	0.1150	0.1462	0.2612	0.0298	0.1346	0.1644	0.0000	1,197.1108	1,197.1108	0.3256	0.0000	1,205.2501
2024	0.0361	0.3065	0.2485	8.7000e-004	7.8600e-003	0.0116	0.0194	1.7600e-003	0.0106	0.0124	0.0000	76.9161	76.9161	0.0221	0.0000	77.4685
Maximum	**0.5026**	**4.2215**	**3.6566**	**0.0134**	**0.1691**	**0.1491**	**0.3181**	**0.0621**	**0.1372**	**0.1993**	**0.0000**	**1,197.1108**	**1,197.1108**	**0.3256**	**0.0000**	**1,205.2501**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.4289	4.1016	2.9141	0.0103	0.1093	0.1491	0.2584	0.0362	0.1372	0.1734	0.0000	917.1965	917.1965	0.2521	0.0000	923.4985
2023	0.5026	4.2215	3.6566	0.0134	0.1078	0.1462	0.2539	0.0290	0.1346	0.1636	0.0000	1,197.1096	1,197.1096	0.3256	0.0000	1,205.2489
2024	0.0361	0.3065	0.2485	8.7000e-004	6.4100e-003	0.0116	0.0180	1.6000e-003	0.0106	0.0122	0.0000	76.9160	76.9160	0.0221	0.0000	77.4685
Maximum	**0.5026**	**4.2215**	**3.6566**	**0.0134**	**0.1093**	**0.1491**	**0.2584**	**0.0362**	**0.1372**	**0.1734**	**0.0000**	**1,197.1096**	**1,197.1096**	**0.3256**	**0.0000**	**1,205.2489**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.45**	**0.00**	**11.44**	**28.69**	**0.00**	**7.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-1-2022**	**8-31-2022**	0.7233	0.7233
2	**9-1-2022**	**11-30-2022**	2.7929	2.7929
3	**12-1-2022**	**2-28-2023**	2.6194	2.6194
4	**3-1-2023**	**5-31-2023**	0.9644	0.9644
5	**6-1-2023**	**8-31-2023**	0.7378	0.7378
6	**9-1-2023**	**11-30-2023**	1.0499	1.0499
7	**12-1-2023**	**2-29-2024**	0.6675	0.6675
		Highest	2.7929	2.7929

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493
Energy	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	69.9728	69.9728	2.9700e-003	7.2000e-004	70.2624
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offroad	3.4800e-003	0.0236	0.0230	9.0000e-005		8.4000e-004	8.4000e-004		7.8000e-004	7.8000e-004	0.0000	8.2886	8.2886	2.6800e-003	0.0000	8.3556
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**27.9162**	**0.0317**	**0.1490**	**1.4000e-004**	**0.0000**	**1.8000e-003**	**1.8000e-003**	**0.0000**	**1.7400e-003**	**1.7400e-003**	**0.0000**	**78.4954**	**78.4954**	**6.2600e-003**	**7.2000e-004**	**78.8673**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493
Energy	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	69.9728	69.9728	2.9700e-003	7.2000e-004	70.2624
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Offroad	3.4800e-003	0.0236	0.0230	9.0000e-005		8.4000e-004	8.4000e-004		7.8000e-004	7.8000e-004	0.0000	8.2886	8.2886	2.6800e-003	0.0000	8.3556
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**27.9162**	**0.0317**	**0.1490**	**1.4000e-004**	**0.0000**	**1.8000e-003**	**1.8000e-003**	**0.0000**	**1.7400e-003**	**1.7400e-003**	**0.0000**	**78.4954**	**78.4954**	**6.2600e-003**	**7.2000e-004**	**78.8673**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	230-kV Transmission Site Work Area Preparation Mobilization	Site Preparation	6/1/2022	6/14/2022	6	12	

2	230-kV Transmission Foundation Tower Installation Remove two towers	Building Construction	6/15/2022	8/9/2022	6	48	
3	Reconductoring Segment Site Development Mobilization	Site Preparation	8/1/2022	8/13/2022	6	12	
4	Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Building Construction	8/15/2022	2/18/2023	6	144	
5	230-kV Substation Access Roads	Site Preparation	9/1/2022	9/14/2022	6	12	
6	230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Grading	9/15/2022	10/12/2022	6	24	
7	230-kV Substation Fence and Gate Installation	Building Construction	10/8/2022	10/21/2022	6	12	
8	Reconductoring Segment Conductor Installation	Building Construction	10/10/2022	2/28/2023	6	120	
9	230-kV Substation Foundation Construction	Building Construction	10/15/2022	11/25/2022	6	36	
10	70-kV Substation Mobilization	Site Preparation	10/18/2022	10/30/2022	6	12	
11	70-kV Substation Foundation Construction	Building Construction	11/1/2022	12/31/2022	6	48	
12	70-kV Substation Ground Grid Conduit Installation	Building Construction	11/1/2022	12/31/2022	6	48	
13	230-kV Substation Ground Grid Conduit Installation	Building Construction	11/15/2022	12/12/2022	6	24	
14	230-kV Substation Steel Bus Erection	Building Construction	12/9/2022	1/5/2023	6	24	
15	230-kV Substation Install Yard Rock	Building Construction	12/23/2022	1/12/2023	6	18	
16	70-kV Substation Steel Bus Erection	Building Construction	1/1/2023	1/31/2023	6	24	
17	230-kV Substation Transformer & Equip Delivery & Installation	Building Construction	1/2/2023	2/4/2023	6	30	
18	230-kV Substation Control Enclosure Delivery and Install	Building Construction	1/6/2023	1/19/2023	6	12	
19	230-kV Substation Remaining Equipment Delivery and Install	Building Construction	1/13/2023	2/11/2023	6	24	
20	230-kV Transmission Conductor	Building Construction	1/25/2023	1/31/2023	6	6	
21	70-kV Substation Equip Delivery & Installation	Building Construction	2/1/2023	2/21/2023	6	18	
22	70-kV Substation Control Enclosure Delivery and Install	Building Construction	2/1/2023	2/7/2023	6	6	

23	230-kV Transmission Site Clean-up and Restoration	Building Construction	2/1/2023	2/7/2023	6	6	
24	230-kV Substation Cable Installation and Termination	Building Construction	2/1/2023	2/14/2023	6	12	
25	230-kV Substation Testing and Commissioning	Building Construction	2/11/2023	3/17/2023	6	30	
26	70-kV Substation Cable Installation and Termination	Building Construction	2/22/2023	3/14/2023	6	18	
27	70-kV Power Line Site Development Mobilization	Site Preparation	3/1/2023	3/14/2023	6	12	
28	Reconductoring Segment Clean-up and Restoration	Site Preparation	3/1/2023	3/14/2023	6	12	
29	70-kV Power Line Pole Tower Installation	Building Construction	3/1/2023	11/30/2023	6	216	
30	70-kV Substation Install Yard Rock	Building Construction	3/1/2023	3/14/2023	6	12	
31	230-kV Substation Cleanup and Restoration	Site Preparation	3/11/2023	3/31/2023	6	18	
32	70-kV Cleanup and Restoration	Site Preparation	3/15/2023	3/28/2023	6	12	
33	70-kV Substation Testing and Commissioning	Building Construction	4/1/2023	5/31/2023	6	48	
34	70-kV Power Line Conductor Installation	Building Construction	11/1/2023	1/31/2024	6	72	
35	70-kV Power Line Clean-up and Restoration	Site Preparation	2/1/2024	2/14/2024	6	12	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
230-kV Transmission Site Work Area Preparation Mobilization	Graders	1	6.00	187	0.41
230-kV Transmission Site Work Area Preparation Mobilization	Tractors/Loaders/Backhoes	1	6.00	97	0.37

230-kV Transmission Foundation Tower Installation Remove two towers	Bore/Drill Rigs	1	1.00	221	0.50
230-kV Transmission Foundation Tower Installation Remove two towers	Cranes	3	5.30	231	0.29
230-kV Transmission Foundation Tower Installation Remove two towers	Forklifts	3	2.60	89	0.20
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	2	3.50	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	1	0.80	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Off-Highway Trucks	2	2.60	402	0.38
230-kV Transmission Foundation Tower Installation Remove two towers	Tractors/Loaders/Backhoes	1	0.50	97	0.37
Reconductoring Segment Site Development Mobilization	Graders	1	6.00	187	0.41
Reconductoring Segment Site Development Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Bore/Drill Rigs	1	6.00	221	0.50
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Cranes	3	6.00	231	0.29
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Cranes	1	1.00	231	0.29
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Off-Highway Trucks	2	3.00	402	0.38
Reconductoring Segment Pole Installation Transfer Distribution Pole Removal	Off-Highway Trucks	2	2.00	402	0.38
230-kV Substation Access Roads	Off-Highway Trucks	2	8.00	402	0.38
230-kV Substation Access Roads	Tractors/Loaders/Backhoes	2	8.00	97	0.37
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Graders	1	8.00	187	0.41
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Off-Highway Trucks	4	10.00	402	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Off-Highway Trucks	2	10.00	402	0.38
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rollers	2	8.00	80	0.38

230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rubber Tired Dozers	1	8.00	247	0.40
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Rubber Tired Loaders	1	8.00	203	0.36
230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization	Scrapers	1	8.00	367	0.48
230-kV Substation Fence and Gate Installation	Skid Steer Loaders	1	4.00	65	0.37
Reconductoring Segment Conductor Installation	Forklifts	1	3.00	89	0.20
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	6.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	6.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	2	4.00	402	0.38
Reconductoring Segment Conductor Installation	Off-Highway Trucks	1	6.00	402	0.38
Reconductoring Segment Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
Reconductoring Segment Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
230-kV Substation Foundation Construction	Bore/Drill Rigs	1	8.00	221	0.50
230-kV Substation Foundation Construction	Cranes	1	5.00	231	0.29
230-kV Substation Foundation Construction	Tractors/Loaders/Backhoes	1	5.00	97	0.37
70-kV Substation Mobilization	Graders	1	4.00	187	0.41
70-kV Substation Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Substation Foundation Construction	Bore/Drill Rigs	1	8.00	221	0.50
70-kV Substation Foundation Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
70-kV Substation Foundation Construction	Trenchers	1	8.00	78	0.50
70-kV Substation Ground Grid Conduit Installation	Tractors/Loaders/Backhoes	1	6.00	97	0.37
70-kV Substation Ground Grid Conduit Installation	Trenchers	1	6.00	78	0.50
230-kV Substation Ground Grid Conduit Installation	Trenchers	1	8.00	78	0.50

230-kV Substation Steel Bus Erection	Aerial Lifts	1	6.00	62	0.31
230-kV Substation Steel Bus Erection	Off-Highway Trucks	1	8.00	402	0.38
230-kV Substation Install Yard Rock	Off-Highway Trucks	1	10.00	402	0.38
230-kV Substation Install Yard Rock	Skid Steer Loaders	1	10.00	65	0.37
70-kV Substation Steel Bus Erection	Aerial Lifts	2	8.00	62	0.31
70-kV Substation Steel Bus Erection	Off-Highway Trucks	2	6.00	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Generator Sets	1	5.00	84	0.74
230-kV Substation Transformer & Equip Delivery & Installation	Off-Highway Trucks	2	10.00	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Off-Highway Trucks	1	4.80	402	0.38
230-kV Substation Transformer & Equip Delivery & Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
230-kV Substation Control Enclosure Delivery and Install	Cranes	1	6.00	231	0.29
230-kV Substation Remaining Equipment Delivery and Install	Off-Highway Trucks	1	6.00	402	0.38
230-kV Transmission Conductor	Cranes	3	6.00	231	0.29
230-kV Transmission Conductor	Off-Highway Trucks	2	4.00	402	0.38
230-kV Transmission Conductor	Off-Highway Trucks	2	4.00	402	0.38
70-kV Substation Equip Delivery & Installation	Aerial Lifts	2	4.00	62	0.31
70-kV Substation Equip Delivery & Installation	Off-Highway Trucks	1	5.30	402	0.38
70-kV Substation Control Enclosure Delivery and Install	Off-Highway Trucks	0	0.00	402	0.38
230-kV Transmission Site Clean-up and Restoration	Graders	1	8.00	187	0.41
230-kV Transmission Site Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
230-kV Substation Cable Installation and Termination	Aerial Lifts	1	8.00	62	0.31
230-kV Substation Testing and Commissioning	Off-Highway Trucks	0	0.00	402	0.38
70-kV Substation Cable Installation and Termination	Off-Highway Trucks	0	0.00	402	0.38

70-kV Power Line Site Development Mobilization	Graders	2	6.00	187	0.41
70-kV Power Line Site Development Mobilization	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Reconductoring Segment Clean-up and Restoration	Graders	1	6.00	187	0.41
Reconductoring Segment Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Power Line Pole Tower Installation	Cranes	1	4.00	231	0.29
70-kV Power Line Pole Tower Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Pole Tower Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Pole Tower Installation	Tractors/Loaders/Backhoes	2	4.00	97	0.37
70-kV Power Line Pole Tower Installation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
70-kV Substation Install Yard Rock	Off-Highway Trucks	1	8.00	402	0.38
70-kV Substation Install Yard Rock	Skid Steer Loaders	1	8.00	65	0.37
70-kV Substation Install Yard Rock	Tractors/Loaders/Backhoes	1	8.00	97	0.37
230-kV Substation Cleanup and Restoration	Other General Industrial Equipment	1	6.00	88	0.34
230-kV Substation Cleanup and Restoration	Tractors/Loaders/Backhoes	1	6.00	97	0.37
70-kV Cleanup and Restoration	Off-Highway Trucks	0	0.00	402	0.38
70-kV Substation Testing and Commissioning	Off-Highway Trucks	0	0.00	402	0.38
70-kV Power Line Conductor Installation	Cranes	3	6.00	231	0.29
70-kV Power Line Conductor Installation	Forklifts	1	3.00	89	0.20
70-kV Power Line Conductor Installation	Off-Highway Trucks	3	4.00	402	0.38
70-kV Power Line Conductor Installation	Off-Highway Trucks	1	6.00	402	0.38
70-kV Power Line Conductor Installation	Off-Highway Trucks	2	2.00	402	0.38
70-kV Power Line Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
70-kV Power Line Conductor Installation	Other General Industrial Equipment	1	6.00	88	0.34
70-kV Power Line Clean-up and Restoration	Graders	1	6.00	187	0.41
70-kV Power Line Clean-up and Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
230-kV Transmission Site Work Area Prepar	2	22.00	11.00	104.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Foundation Tower Insta	13	30.00	12.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Site Develop	2	18.00	10.00	0.00	7.67	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Pole Installati	9	38.00	13.00	0.00	6.32	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Access Roads	4	24.00	33.00	0.00	8.45	1.90	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Site Prep Grading Entrance	12	26.00	30.00	393.00	7.85	1.20	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Fence and Gate Install	1	18.00	30.00	0.00	5.87	1.85	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Conductor In	10	28.00	10.00	0.00	7.50	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Foundation Constructio	3	22.00	31.00	0.00	8.38	1.85	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Mobilization	2	16.00	6.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Foundation Constructio	3	22.00	13.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Ground Grid Conduit In	2	12.00	9.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Ground Grid Conduit In	1	12.00	29.00	0.00	9.15	0.91	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Steel Bus Erection	2	12.00	30.00	0.00	9.56	1.20	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Install Yard Rock	2	18.00	45.00	0.00	8.97	8.68	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Steel Bus Erection	4	14.00	9.00	0.00	7.34	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Transformer & Equip D	5	18.00	30.00	0.00	8.52	1.15	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Control Enclosure Deliv	1	12.00	2.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Remaining Equipment	1	9.00	28.00	0.00	10.00	1.34	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Conductor	7	38.00	11.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Equip Delivery & Install	3	16.00	12.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Control Enclosure Deliv	0	12.00	2.00	0.00	9.23	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Transmission Site Clean-up and Rest	2	14.00	9.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

230-kV Substation Cable Installation and T	1	10.00	3.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Testing and Commissi	0	12.00	26.00	0.00	6.79	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Cable Installation and T	0	12.00	3.00	0.00	6.72	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Site Development Mobilizati	3	20.00	10.00	0.00	8.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Reconductoring Segment Clean-up and	2	16.00	5.00	0.00	8.25	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Pole Tower Installation	10	41.00	15.00	0.00	8.15	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Install Yard Rock	3	12.00	16.00	0.00	10.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
230-kV Substation Cleanup and Restoratio	2	8.00	29.00	0.00	7.68	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Cleanup and Restoration	0	10.00	0.00	0.00	8.14	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Substation Testing and Commissi	0	12.00	2.00	0.00	8.45	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Conductor Installation	12	32.00	10.00	0.00	8.56	13.00	20.00	LD_Mix	HDT_Mix	HHDT
70-kV Power Line Clean-up and Restorati	2	16.00	7.00	0.00	9.18	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8500e-003	0.0000	4.8500e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6100e-003	0.0312	0.0178	4.0000e-005		1.1600e-003	1.1600e-003		1.0700e-003	1.0700e-003	0.0000	3.8477	3.8477	1.2400e-003	0.0000	3.8788
Total	**2.6100e-003**	**0.0312**	**0.0178**	**4.0000e-005**	**4.8500e-003**	**1.1600e-003**	**6.0100e-003**	**5.3000e-004**	**1.0700e-003**	**1.6000e-003**	**0.0000**	**3.8477**	**3.8477**	**1.2400e-003**	**0.0000**	**3.8788**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9000e-004	0.0140	3.3400e-003	4.0000e-005	8.9000e-004	6.0000e-005	9.4000e-004	2.4000e-004	5.0000e-005	3.0000e-004	0.0000	3.9082	3.9082	2.3000e-004	0.0000	3.9140
Vendor	3.3000e-004	9.5800e-003	2.6400e-003	3.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7704	2.7704	1.2000e-004	0.0000	2.7734
Worker	4.2000e-004	3.4000e-004	3.0500e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7675	0.7675	2.0000e-005	0.0000	0.7681
Total	**1.1400e-003**	**0.0239**	**9.0300e-003**	**8.0000e-005**	**2.6500e-003**	**1.1000e-004**	**2.7300e-003**	**7.2000e-004**	**9.0000e-005**	**8.3000e-004**	**0.0000**	**7.4460**	**7.4460**	**3.7000e-004**	**0.0000**	**7.4554**

3.2 230-kV Transmission Site Work Area Preparation Mobilization - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8900e-003	0.0000	1.8900e-003	2.1000e-004	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6100e-003	0.0312	0.0178	4.0000e-005		1.1600e-003	1.1600e-003		1.0700e-003	1.0700e-003	0.0000	3.8477	3.8477	1.2400e-003	0.0000	3.8788
Total	**2.6100e-003**	**0.0312**	**0.0178**	**4.0000e-005**	**1.8900e-003**	**1.1600e-003**	**3.0500e-003**	**2.1000e-004**	**1.0700e-003**	**1.2800e-003**	**0.0000**	**3.8477**	**3.8477**	**1.2400e-003**	**0.0000**	**3.8788**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.9000e-004	0.0140	3.3400e-003	4.0000e-005	8.9000e-004	6.0000e-005	9.4000e-004	2.4000e-004	5.0000e-005	3.0000e-004	0.0000	3.9082	3.9082	2.3000e-004	0.0000	3.9140
Vendor	3.3000e-004	9.5800e-003	2.6400e-003	3.0000e-005	7.8000e-004	4.0000e-005	8.1000e-004	2.2000e-004	3.0000e-005	2.6000e-004	0.0000	2.7704	2.7704	1.2000e-004	0.0000	2.7734
Worker	4.2000e-004	3.4000e-004	3.0500e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7675	0.7675	2.0000e-005	0.0000	0.7681
Total	**1.1400e-003**	**0.0239**	**9.0300e-003**	**8.0000e-005**	**2.6500e-003**	**1.1000e-004**	**2.7300e-003**	**7.2000e-004**	**9.0000e-005**	**8.3000e-004**	**0.0000**	**7.4460**	**7.4460**	**3.7000e-004**	**0.0000**	**7.4554**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0420	0.3901	0.2577	8.6000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	75.4715	75.4715	0.0244	0.0000	76.0817
Total	**0.0420**	**0.3901**	**0.2577**	**8.6000e-004**		**0.0160**	**0.0160**		**0.0147**	**0.0147**	**0.0000**	**75.4715**	**75.4715**	**0.0244**	**0.0000**	**76.0817**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4200e-003	0.0418	0.0115	1.3000e-004	3.3900e-003	1.6000e-004	3.5500e-003	9.8000e-004	1.5000e-004	1.1300e-003	0.0000	12.0888	12.0888	5.3000e-004	0.0000	12.1020
Worker	2.2700e-003	1.8300e-003	0.0167	5.0000e-005	5.3300e-003	3.0000e-005	5.3700e-003	1.4200e-003	3.0000e-005	1.4500e-003	0.0000	4.1864	4.1864	1.2000e-004	0.0000	4.1894
Total	**3.6900e-003**	**0.0436**	**0.0282**	**1.8000e-004**	**8.7200e-003**	**1.9000e-004**	**8.9200e-003**	**2.4000e-003**	**1.8000e-004**	**2.5800e-003**	**0.0000**	**16.2752**	**16.2752**	**6.5000e-004**	**0.0000**	**16.2914**

3.3 230-kV Transmission Foundation Tower Installation Remove two towers - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0420	0.3901	0.2577	8.6000e-004		0.0160	0.0160		0.0147	0.0147	0.0000	75.4714	75.4714	0.0244	0.0000	76.0816
Total	**0.0420**	**0.3901**	**0.2577**	**8.6000e-004**		**0.0160**	**0.0160**		**0.0147**	**0.0147**	**0.0000**	**75.4714**	**75.4714**	**0.0244**	**0.0000**	**76.0816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4200e-003	0.0418	0.0115	1.3000e-004	3.3900e-003	1.6000e-004	3.5500e-003	9.8000e-004	1.5000e-004	1.1300e-003	0.0000	12.0888	12.0888	5.3000e-004	0.0000	12.1020
Worker	2.2700e-003	1.8300e-003	0.0167	5.0000e-005	5.3300e-003	3.0000e-005	5.3700e-003	1.4200e-003	3.0000e-005	1.4500e-003	0.0000	4.1864	4.1864	1.2000e-004	0.0000	4.1894
Total	**3.6900e-003**	**0.0436**	**0.0282**	**1.8000e-004**	**8.7200e-003**	**1.9000e-004**	**8.9200e-003**	**2.4000e-003**	**1.8000e-004**	**2.5800e-003**	**0.0000**	**16.2752**	**16.2752**	**6.5000e-004**	**0.0000**	**16.2914**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.7700e-003	0.0000	4.7700e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3600e-003	0.0287	0.0145	4.0000e-005		1.0200e-003	1.0200e-003		9.4000e-004	9.4000e-004	0.0000	3.4378	3.4378	1.1100e-003	0.0000	3.4656
Total	**2.3600e-003**	**0.0287**	**0.0145**	**4.0000e-005**	**4.7700e-003**	**1.0200e-003**	**5.7900e-003**	**5.2000e-004**	**9.4000e-004**	**1.4600e-003**	**0.0000**	**3.4378**	**3.4378**	**1.1100e-003**	**0.0000**	**3.4656**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-004	8.7100e-003	2.4000e-003	3.0000e-005	7.1000e-004	3.0000e-005	7.4000e-004	2.0000e-004	3.0000e-005	2.4000e-004	0.0000	2.5185	2.5185	1.1000e-004	0.0000	2.5213
Worker	2.8000e-004	2.2000e-004	2.0400e-003	1.0000e-005	6.1000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4864	0.4864	1.0000e-005	0.0000	0.4868
Total	**5.8000e-004**	**8.9300e-003**	**4.4400e-003**	**4.0000e-005**	**1.3200e-003**	**3.0000e-005**	**1.3600e-003**	**3.6000e-004**	**3.0000e-005**	**4.1000e-004**	**0.0000**	**3.0049**	**3.0049**	**1.2000e-004**	**0.0000**	**3.0081**

3.4 Reconductoring Segment Site Development Mobilization - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8600e-003	0.0000	1.8600e-003	2.0000e-004	0.0000	2.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3600e-003	0.0287	0.0145	4.0000e-005		1.0200e-003	1.0200e-003		9.4000e-004	9.4000e-004	0.0000	3.4378	3.4378	1.1100e-003	0.0000	3.4655
Total	**2.3600e-003**	**0.0287**	**0.0145**	**4.0000e-005**	**1.8600e-003**	**1.0200e-003**	**2.8800e-003**	**2.0000e-004**	**9.4000e-004**	**1.1400e-003**	**0.0000**	**3.4378**	**3.4378**	**1.1100e-003**	**0.0000**	**3.4655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-004	8.7100e-003	2.4000e-003	3.0000e-005	7.1000e-004	3.0000e-005	7.4000e-004	2.0000e-004	3.0000e-005	2.4000e-004	0.0000	2.5185	2.5185	1.1000e-004	0.0000	2.5213
Worker	2.8000e-004	2.2000e-004	2.0400e-003	1.0000e-005	6.1000e-004	0.0000	6.2000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.4864	0.4864	1.0000e-005	0.0000	0.4868
Total	**5.8000e-004**	**8.9300e-003**	**4.4400e-003**	**4.0000e-005**	**1.3200e-003**	**3.0000e-005**	**1.3600e-003**	**3.6000e-004**	**3.0000e-005**	**4.1000e-004**	**0.0000**	**3.0049**	**3.0049**	**1.2000e-004**	**0.0000**	**3.0081**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.1029	0.9993	0.6134	2.2400e-003		0.0390	0.0390		0.0359	0.0359	0.0000	196.5574	196.5574	0.0636	0.0000	198.1467
Total	**0.1029**	**0.9993**	**0.6134**	**2.2400e-003**		**0.0390**	**0.0390**		**0.0359**	**0.0359**	**0.0000**	**196.5574**	**196.5574**	**0.0636**	**0.0000**	**198.1467**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8500e-003	0.1132	0.0312	3.4000e-004	9.1800e-003	4.2000e-004	9.6100e-003	2.6500e-003	4.1000e-004	3.0600e-003	0.0000	32.7405	32.7405	1.4300e-003	0.0000	32.7762
Worker	5.2800e-003	3.9800e-003	0.0376	9.0000e-005	0.0107	7.0000e-005	0.0108	2.8400e-003	7.0000e-005	2.9100e-003	0.0000	8.5383	8.5383	2.6000e-004	0.0000	8.5449
Total	**9.1300e-003**	**0.1172**	**0.0688**	**4.3000e-004**	**0.0199**	**4.9000e-004**	**0.0204**	**5.4900e-003**	**4.8000e-004**	**5.9700e-003**	**0.0000**	**41.2788**	**41.2788**	**1.6900e-003**	**0.0000**	**41.3211**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1029	0.9993	0.6134	2.2400e-003		0.0390	0.0390		0.0359	0.0359	0.0000	196.5572	196.5572	0.0636	0.0000	198.1464
Total	**0.1029**	**0.9993**	**0.6134**	**2.2400e-003**		**0.0390**	**0.0390**		**0.0359**	**0.0359**	**0.0000**	**196.5572**	**196.5572**	**0.0636**	**0.0000**	**198.1464**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8500e-003	0.1132	0.0312	3.4000e-004	9.1800e-003	4.2000e-004	9.6100e-003	2.6500e-003	4.1000e-004	3.0600e-003	0.0000	32.7405	32.7405	1.4300e-003	0.0000	32.7762
Worker	5.2800e-003	3.9800e-003	0.0376	9.0000e-005	0.0107	7.0000e-005	0.0108	2.8400e-003	7.0000e-005	2.9100e-003	0.0000	8.5383	8.5383	2.6000e-004	0.0000	8.5449
Total	**9.1300e-003**	**0.1172**	**0.0688**	**4.3000e-004**	**0.0199**	**4.9000e-004**	**0.0204**	**5.4900e-003**	**4.8000e-004**	**5.9700e-003**	**0.0000**	**41.2788**	**41.2788**	**1.6900e-003**	**0.0000**	**41.3211**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0341	0.3161	0.2098	7.8000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	68.8424	68.8424	0.0223	0.0000	69.3991
Total	**0.0341**	**0.3161**	**0.2098**	**7.8000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**68.8424**	**68.8424**	**0.0223**	**0.0000**	**69.3991**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0100e-003	0.0305	9.6300e-003	1.2000e-004	3.2100e-003	7.0000e-005	3.2800e-003	9.3000e-004	7.0000e-005	9.9000e-004	0.0000	11.2417	11.2417	4.6000e-004	0.0000	11.2533
Worker	1.7300e-003	1.2500e-003	0.0120	3.0000e-005	3.7400e-003	2.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0200e-003	0.0000	2.8766	2.8766	8.0000e-005	0.0000	2.8786
Total	**2.7400e-003**	**0.0318**	**0.0216**	**1.5000e-004**	**6.9500e-003**	**9.0000e-005**	**7.0400e-003**	**1.9200e-003**	**9.0000e-005**	**2.0100e-003**	**0.0000**	**14.1183**	**14.1183**	**5.4000e-004**	**0.0000**	**14.1319**

3.5 Reconductoring Segment Pole Installation Transfer Distribution Pole Removal - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0341	0.3161	0.2098	7.8000e-004		0.0124	0.0124		0.0114	0.0114	0.0000	68.8423	68.8423	0.0223	0.0000	69.3990
Total	**0.0341**	**0.3161**	**0.2098**	**7.8000e-004**		**0.0124**	**0.0124**		**0.0114**	**0.0114**	**0.0000**	**68.8423**	**68.8423**	**0.0223**	**0.0000**	**69.3990**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0100e-003	0.0305	9.6300e-003	1.2000e-004	3.2100e-003	7.0000e-005	3.2800e-003	9.3000e-004	7.0000e-005	9.9000e-004	0.0000	11.2417	11.2417	4.6000e-004	0.0000	11.2533
Worker	1.7300e-003	1.2500e-003	0.0120	3.0000e-005	3.7400e-003	2.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0200e-003	0.0000	2.8766	2.8766	8.0000e-005	0.0000	2.8786
Total	**2.7400e-003**	**0.0318**	**0.0216**	**1.5000e-004**	**6.9500e-003**	**9.0000e-005**	**7.0400e-003**	**1.9200e-003**	**9.0000e-005**	**2.0100e-003**	**0.0000**	**14.1183**	**14.1183**	**5.4000e-004**	**0.0000**	**14.1319**

3.6 230-kV Substation Access Roads - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3200e-003	0.0683	0.0672	2.0000e-004		2.8300e-003	2.8300e-003		2.6100e-003	2.6100e-003	0.0000	17.2027	17.2027	5.5600e-003	0.0000	17.3418
Total	**8.3200e-003**	**0.0683**	**0.0672**	**2.0000e-004**	**0.0000**	**2.8300e-003**	**2.8300e-003**	**0.0000**	**2.6100e-003**	**2.6100e-003**	**0.0000**	**17.2027**	**17.2027**	**5.5600e-003**	**0.0000**	**17.3418**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0137	4.0000e-003	2.0000e-005	3.5000e-004	2.0000e-005	3.7000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.9974	1.9974	1.7000e-004	0.0000	2.0015
Worker	4.0000e-004	3.2000e-004	2.9300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7118	0.7118	2.0000e-005	0.0000	0.7123
Total	**8.0000e-004**	**0.0140**	**6.9300e-003**	**3.0000e-005**	**1.2500e-003**	**3.0000e-005**	**1.2800e-003**	**3.4000e-004**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**2.7091**	**2.7091**	**1.9000e-004**	**0.0000**	**2.7138**

3.6 230-kV Substation Access Roads - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3200e-003	0.0683	0.0672	2.0000e-004		2.8300e-003	2.8300e-003		2.6100e-003	2.6100e-003	0.0000	17.2026	17.2026	5.5600e-003	0.0000	17.3417
Total	**8.3200e-003**	**0.0683**	**0.0672**	**2.0000e-004**	**0.0000**	**2.8300e-003**	**2.8300e-003**	**0.0000**	**2.6100e-003**	**2.6100e-003**	**0.0000**	**17.2026**	**17.2026**	**5.5600e-003**	**0.0000**	**17.3417**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0137	4.0000e-003	2.0000e-005	3.5000e-004	2.0000e-005	3.7000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.9974	1.9974	1.7000e-004	0.0000	2.0015
Worker	4.0000e-004	3.2000e-004	2.9300e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7118	0.7118	2.0000e-005	0.0000	0.7123
Total	**8.0000e-004**	**0.0140**	**6.9300e-003**	**3.0000e-005**	**1.2500e-003**	**3.0000e-005**	**1.2800e-003**	**3.4000e-004**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**2.7091**	**2.7091**	**1.9000e-004**	**0.0000**	**2.7138**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0869	0.0000	0.0869	0.0413	0.0000	0.0413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0799	0.7149	0.5055	1.6900e-003		0.0279	0.0279		0.0257	0.0257	0.0000	148.5410	148.5410	0.0480	0.0000	149.7420
Total	**0.0799**	**0.7149**	**0.5055**	**1.6900e-003**	**0.0869**	**0.0279**	**0.1148**	**0.0413**	**0.0257**	**0.0670**	**0.0000**	**148.5410**	**148.5410**	**0.0480**	**0.0000**	**149.7420**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0528	0.0126	1.5000e-004	3.3500e-003	2.1000e-004	3.5600e-003	9.2000e-004	2.0000e-004	1.1200e-003	0.0000	14.7683	14.7683	8.8000e-004	0.0000	14.7902
Vendor	6.5000e-004	0.0232	6.8300e-003	3.0000e-005	4.0000e-004	3.0000e-005	4.3000e-004	1.2000e-004	3.0000e-005	1.5000e-004	0.0000	2.9077	2.9077	2.8000e-004	0.0000	2.9147
Worker	8.3000e-004	6.5000e-004	6.0000e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4369	1.4369	4.0000e-005	0.0000	1.4379
Total	**2.9700e-003**	**0.0767**	**0.0254**	**2.0000e-004**	**5.5600e-003**	**2.5000e-004**	**5.8200e-003**	**1.5200e-003**	**2.4000e-004**	**1.7600e-003**	**0.0000**	**19.1129**	**19.1129**	**1.2000e-003**	**0.0000**	**19.1428**

3.7 230-kV Substation Site Prep Grading Entrance Road Culverts Mobilization - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0339	0.0000	0.0339	0.0161	0.0000	0.0161	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0799	0.7149	0.5055	1.6900e-003		0.0279	0.0279		0.0257	0.0257	0.0000	148.5408	148.5408	0.0480	0.0000	149.7419
Total	**0.0799**	**0.7149**	**0.5055**	**1.6900e-003**	**0.0339**	**0.0279**	**0.0618**	**0.0161**	**0.0257**	**0.0418**	**0.0000**	**148.5408**	**148.5408**	**0.0480**	**0.0000**	**149.7419**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0528	0.0126	1.5000e-004	3.3500e-003	2.1000e-004	3.5600e-003	9.2000e-004	2.0000e-004	1.1200e-003	0.0000	14.7683	14.7683	8.8000e-004	0.0000	14.7902
Vendor	6.5000e-004	0.0232	6.8300e-003	3.0000e-005	4.0000e-004	3.0000e-005	4.3000e-004	1.2000e-004	3.0000e-005	1.5000e-004	0.0000	2.9077	2.9077	2.8000e-004	0.0000	2.9147
Worker	8.3000e-004	6.5000e-004	6.0000e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4369	1.4369	4.0000e-005	0.0000	1.4379
Total	**2.9700e-003**	**0.0767**	**0.0254**	**2.0000e-004**	**5.5600e-003**	**2.5000e-004**	**5.8200e-003**	**1.5200e-003**	**2.4000e-004**	**1.7600e-003**	**0.0000**	**19.1129**	**19.1129**	**1.2000e-003**	**0.0000**	**19.1428**

3.8 230-kV Substation Fence and Gate Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.1000e-004	2.7900e-003	4.1600e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.5454	0.5454	1.8000e-004	0.0000	0.5498
Total	**2.1000e-004**	**2.7900e-003**	**4.1600e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.5454**	**0.5454**	**1.8000e-004**	**0.0000**	**0.5498**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0124	3.6200e-003	2.0000e-005	3.1000e-004	2.0000e-005	3.3000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.7900	1.7900	1.5000e-004	0.0000	1.7937
Worker	2.4000e-004	1.8000e-004	1.6900e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.3771	0.3771	1.0000e-005	0.0000	0.3774
Total	**6.0000e-004**	**0.0126**	**5.3100e-003**	**2.0000e-005**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**2.1000e-004**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**2.1671**	**2.1671**	**1.6000e-004**	**0.0000**	**2.1711**

3.8 230-kV Substation Fence and Gate Installation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.1000e-004	2.7900e-003	4.1600e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.5454	0.5454	1.8000e-004	0.0000	0.5498
Total	**2.1000e-004**	**2.7900e-003**	**4.1600e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.5454**	**0.5454**	**1.8000e-004**	**0.0000**	**0.5498**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0124	3.6200e-003	2.0000e-005	3.1000e-004	2.0000e-005	3.3000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.7900	1.7900	1.5000e-004	0.0000	1.7937
Worker	2.4000e-004	1.8000e-004	1.6900e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.3771	0.3771	1.0000e-005	0.0000	0.3774
Total	**6.0000e-004**	**0.0126**	**5.3100e-003**	**2.0000e-005**	**7.8000e-004**	**2.0000e-005**	**8.0000e-004**	**2.1000e-004**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**2.1671**	**2.1671**	**1.6000e-004**	**0.0000**	**2.1711**

3.9 Reconductoring Segment Conductor Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1015	0.7918	0.6945	2.4200e-003		0.0316	0.0316		0.0291	0.0291	0.0000	212.3700	212.3700	0.0687	0.0000	214.0872
Total	**0.1015**	**0.7918**	**0.6945**	**2.4200e-003**		**0.0316**	**0.0316**		**0.0291**	**0.0291**	**0.0000**	**212.3700**	**212.3700**	**0.0687**	**0.0000**	**214.0872**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7800e-003	0.0523	0.0144	1.6000e-004	4.2400e-003	2.0000e-004	4.4300e-003	1.2200e-003	1.9000e-004	1.4100e-003	0.0000	15.1110	15.1110	6.6000e-004	0.0000	15.1275
Worker	2.6000e-003	2.0200e-003	0.0188	5.0000e-005	5.6000e-003	4.0000e-005	5.6400e-003	1.4900e-003	3.0000e-005	1.5200e-003	0.0000	4.4438	4.4438	1.3000e-004	0.0000	4.4471
Total	**4.3800e-003**	**0.0543**	**0.0332**	**2.1000e-004**	**9.8400e-003**	**2.4000e-004**	**0.0101**	**2.7100e-003**	**2.2000e-004**	**2.9300e-003**	**0.0000**	**19.5547**	**19.5547**	**7.9000e-004**	**0.0000**	**19.5746**

3.9 Reconductoring Segment Conductor Installation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1015	0.7918	0.6945	2.4200e-003		0.0316	0.0316		0.0291	0.0291	0.0000	212.3698	212.3698	0.0687	0.0000	214.0869
Total	**0.1015**	**0.7918**	**0.6945**	**2.4200e-003**		**0.0316**	**0.0316**		**0.0291**	**0.0291**	**0.0000**	**212.3698**	**212.3698**	**0.0687**	**0.0000**	**214.0869**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7800e-003	0.0523	0.0144	1.6000e-004	4.2400e-003	2.0000e-004	4.4300e-003	1.2200e-003	1.9000e-004	1.4100e-003	0.0000	15.1110	15.1110	6.6000e-004	0.0000	15.1275
Worker	2.6000e-003	2.0200e-003	0.0188	5.0000e-005	5.6000e-003	4.0000e-005	5.6400e-003	1.4900e-003	3.0000e-005	1.5200e-003	0.0000	4.4438	4.4438	1.3000e-004	0.0000	4.4471
Total	**4.3800e-003**	**0.0543**	**0.0332**	**2.1000e-004**	**9.8400e-003**	**2.4000e-004**	**0.0101**	**2.7100e-003**	**2.2000e-004**	**2.9300e-003**	**0.0000**	**19.5547**	**19.5547**	**7.9000e-004**	**0.0000**	**19.5746**

3.9 Reconductoring Segment Conductor Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0669	0.4906	0.4734	1.6800e-003		0.0192	0.0192		0.0177	0.0177	0.0000	147.5765	147.5765	0.0477	0.0000	148.7697
Total	**0.0669**	**0.4906**	**0.4734**	**1.6800e-003**		**0.0192**	**0.0192**		**0.0177**	**0.0177**	**0.0000**	**147.5765**	**147.5765**	**0.0477**	**0.0000**	**148.7697**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3000e-004	0.0280	8.8200e-003	1.1000e-004	2.9400e-003	6.0000e-005	3.0100e-003	8.5000e-004	6.0000e-005	9.1000e-004	0.0000	10.2946	10.2946	4.2000e-004	0.0000	10.3052
Worker	1.6900e-003	1.2600e-003	0.0119	3.0000e-005	3.8900e-003	3.0000e-005	3.9200e-003	1.0300e-003	2.0000e-005	1.0600e-003	0.0000	2.9704	2.9704	8.0000e-005	0.0000	2.9724
Total	**2.6200e-003**	**0.0292**	**0.0207**	**1.4000e-004**	**6.8300e-003**	**9.0000e-005**	**6.9300e-003**	**1.8800e-003**	**8.0000e-005**	**1.9700e-003**	**0.0000**	**13.2650**	**13.2650**	**5.0000e-004**	**0.0000**	**13.2777**

3.9 Reconductoring Segment Conductor Installation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0669	0.4906	0.4734	1.6800e-003		0.0192	0.0192		0.0177	0.0177	0.0000	147.5763	147.5763	0.0477	0.0000	148.7695
Total	**0.0669**	**0.4906**	**0.4734**	**1.6800e-003**		**0.0192**	**0.0192**		**0.0177**	**0.0177**	**0.0000**	**147.5763**	**147.5763**	**0.0477**	**0.0000**	**148.7695**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3000e-004	0.0280	8.8200e-003	1.1000e-004	2.9400e-003	6.0000e-005	3.0100e-003	8.5000e-004	6.0000e-005	9.1000e-004	0.0000	10.2946	10.2946	4.2000e-004	0.0000	10.3052
Worker	1.6900e-003	1.2600e-003	0.0119	3.0000e-005	3.8900e-003	3.0000e-005	3.9200e-003	1.0300e-003	2.0000e-005	1.0600e-003	0.0000	2.9704	2.9704	8.0000e-005	0.0000	2.9724
Total	**2.6200e-003**	**0.0292**	**0.0207**	**1.4000e-004**	**6.8300e-003**	**9.0000e-005**	**6.9300e-003**	**1.8800e-003**	**8.0000e-005**	**1.9700e-003**	**0.0000**	**13.2650**	**13.2650**	**5.0000e-004**	**0.0000**	**13.2777**

3.10 230-kV Substation Foundation Construction - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0101	0.1067	0.0832	2.7000e-004		4.2800e-003	4.2800e-003		3.9400e-003	3.9400e-003	0.0000	23.6956	23.6956	7.6600e-003	0.0000	23.8871
Total	**0.0101**	**0.1067**	**0.0832**	**2.7000e-004**		**4.2800e-003**	**4.2800e-003**		**3.9400e-003**	**3.9400e-003**	**0.0000**	**23.6956**	**23.6956**	**7.6600e-003**	**0.0000**	**23.8871**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1100e-003	0.0385	0.0112	6.0000e-005	9.5000e-004	7.0000e-005	1.0100e-003	2.7000e-004	6.0000e-005	3.4000e-004	0.0000	5.5489	5.5489	4.6000e-004	0.0000	5.5605
Worker	1.1000e-003	8.7000e-004	8.0000e-003	2.0000e-005	2.4600e-003	2.0000e-005	2.4700e-003	6.5000e-004	1.0000e-005	6.7000e-004	0.0000	1.9417	1.9417	6.0000e-005	0.0000	1.9432
Total	**2.2100e-003**	**0.0393**	**0.0192**	**8.0000e-005**	**3.4100e-003**	**9.0000e-005**	**3.4800e-003**	**9.2000e-004**	**7.0000e-005**	**1.0100e-003**	**0.0000**	**7.4906**	**7.4906**	**5.2000e-004**	**0.0000**	**7.5036**

3.10 230-kV Substation Foundation Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0101	0.1067	0.0832	2.7000e-004		4.2800e-003	4.2800e-003		3.9400e-003	3.9400e-003	0.0000	23.6955	23.6955	7.6600e-003	0.0000	23.8871
Total	**0.0101**	**0.1067**	**0.0832**	**2.7000e-004**		**4.2800e-003**	**4.2800e-003**		**3.9400e-003**	**3.9400e-003**	**0.0000**	**23.6955**	**23.6955**	**7.6600e-003**	**0.0000**	**23.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1100e-003	0.0385	0.0112	6.0000e-005	9.5000e-004	7.0000e-005	1.0100e-003	2.7000e-004	6.0000e-005	3.4000e-004	0.0000	5.5489	5.5489	4.6000e-004	0.0000	5.5605
Worker	1.1000e-003	8.7000e-004	8.0000e-003	2.0000e-005	2.4600e-003	2.0000e-005	2.4700e-003	6.5000e-004	1.0000e-005	6.7000e-004	0.0000	1.9417	1.9417	6.0000e-005	0.0000	1.9432
Total	**2.2100e-003**	**0.0393**	**0.0192**	**8.0000e-005**	**3.4100e-003**	**9.0000e-005**	**3.4800e-003**	**9.2000e-004**	**7.0000e-005**	**1.0100e-003**	**0.0000**	**7.4906**	**7.4906**	**5.2000e-004**	**0.0000**	**7.5036**

3.11 70-kV Substation Mobilization - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4600e-003	0.0000	1.4600e-003	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0191	0.0109	3.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004	0.0000	2.3514	2.3514	7.6000e-004	0.0000	2.3704
Total	**1.5900e-003**	**0.0191**	**0.0109**	**3.0000e-005**	**1.4600e-003**	**7.1000e-004**	**2.1700e-003**	**1.6000e-004**	**6.5000e-004**	**8.1000e-004**	**0.0000**	**2.3514**	**2.3514**	**7.6000e-004**	**0.0000**	**2.3704**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	4.7900e-003	1.3200e-003	1.0000e-005	3.9000e-004	2.0000e-005	4.1000e-004	1.1000e-004	2.0000e-005	1.3000e-004	0.0000	1.3852	1.3852	6.0000e-005	0.0000	1.3867
Worker	2.3000e-004	1.8000e-004	1.6700e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.3969	0.3969	1.0000e-005	0.0000	0.3972
Total	**3.9000e-004**	**4.9700e-003**	**2.9900e-003**	**1.0000e-005**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**2.4000e-004**	**2.0000e-005**	**2.7000e-004**	**0.0000**	**1.7820**	**1.7820**	**7.0000e-005**	**0.0000**	**1.7838**

3.11 70-kV Substation Mobilization - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.7000e-004	0.0000	5.7000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0191	0.0109	3.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004	0.0000	2.3514	2.3514	7.6000e-004	0.0000	2.3704
Total	**1.5900e-003**	**0.0191**	**0.0109**	**3.0000e-005**	**5.7000e-004**	**7.1000e-004**	**1.2800e-003**	**6.0000e-005**	**6.5000e-004**	**7.1000e-004**	**0.0000**	**2.3514**	**2.3514**	**7.6000e-004**	**0.0000**	**2.3704**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	4.7900e-003	1.3200e-003	1.0000e-005	3.9000e-004	2.0000e-005	4.1000e-004	1.1000e-004	2.0000e-005	1.3000e-004	0.0000	1.3852	1.3852	6.0000e-005	0.0000	1.3867
Worker	2.3000e-004	1.8000e-004	1.6700e-003	0.0000	5.0000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.3969	0.3969	1.0000e-005	0.0000	0.3972
Total	**3.9000e-004**	**4.9700e-003**	**2.9900e-003**	**1.0000e-005**	**8.9000e-004**	**2.0000e-005**	**9.1000e-004**	**2.4000e-004**	**2.0000e-005**	**2.7000e-004**	**0.0000**	**1.7820**	**1.7820**	**7.0000e-005**	**0.0000**	**1.7838**

3.12 70-kV Substation Foundation Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0200	0.1940	0.1823	4.2000e-004		0.0107	0.0107		9.8100e-003	9.8100e-003	0.0000	37.0643	37.0643	0.0120	0.0000	37.3639
Total	**0.0200**	**0.1940**	**0.1823**	**4.2000e-004**		**0.0107**	**0.0107**		**9.8100e-003**	**9.8100e-003**	**0.0000**	**37.0643**	**37.0643**	**0.0120**	**0.0000**	**37.3639**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-003	0.0500	0.0138	1.5000e-004	4.0600e-003	1.9000e-004	4.2400e-003	1.1700e-003	1.8000e-004	1.3500e-003	0.0000	14.4604	14.4604	6.3000e-004	0.0000	14.4762
Worker	1.6300e-003	1.2900e-003	0.0119	3.0000e-005	3.6500e-003	2.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.8816	2.8816	8.0000e-005	0.0000	2.8837
Total	**3.3300e-003**	**0.0513**	**0.0256**	**1.8000e-004**	**7.7100e-003**	**2.1000e-004**	**7.9100e-003**	**2.1400e-003**	**2.0000e-004**	**2.3400e-003**	**0.0000**	**17.3420**	**17.3420**	**7.1000e-004**	**0.0000**	**17.3599**

3.12 70-kV Substation Foundation Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0200	0.1940	0.1823	4.2000e-004		0.0107	0.0107		9.8100e-003	9.8100e-003	0.0000	37.0642	37.0642	0.0120	0.0000	37.3639
Total	**0.0200**	**0.1940**	**0.1823**	**4.2000e-004**		**0.0107**	**0.0107**		**9.8100e-003**	**9.8100e-003**	**0.0000**	**37.0642**	**37.0642**	**0.0120**	**0.0000**	**37.3639**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-003	0.0500	0.0138	1.5000e-004	4.0600e-003	1.9000e-004	4.2400e-003	1.1700e-003	1.8000e-004	1.3500e-003	0.0000	14.4604	14.4604	6.3000e-004	0.0000	14.4762
Worker	1.6300e-003	1.2900e-003	0.0119	3.0000e-005	3.6500e-003	2.0000e-005	3.6700e-003	9.7000e-004	2.0000e-005	9.9000e-004	0.0000	2.8816	2.8816	8.0000e-005	0.0000	2.8837
Total	**3.3300e-003**	**0.0513**	**0.0256**	**1.8000e-004**	**7.7100e-003**	**2.1000e-004**	**7.9100e-003**	**2.1400e-003**	**2.0000e-004**	**2.3400e-003**	**0.0000**	**17.3420**	**17.3420**	**7.1000e-004**	**0.0000**	**17.3599**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1005	0.0961	1.3000e-004		6.5500e-003	6.5500e-003		6.0300e-003	6.0300e-003	0.0000	11.3264	11.3264	3.6600e-003	0.0000	11.4180
Total	**0.0105**	**0.1005**	**0.0961**	**1.3000e-004**		**6.5500e-003**	**6.5500e-003**		**6.0300e-003**	**6.0300e-003**	**0.0000**	**11.3264**	**11.3264**	**3.6600e-003**	**0.0000**	**11.4180**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1800e-003	0.0346	9.5400e-003	1.0000e-004	2.8100e-003	1.3000e-004	2.9400e-003	8.1000e-004	1.2000e-004	9.3000e-004	0.0000	10.0110	10.0110	4.4000e-004	0.0000	10.0220
Worker	8.9000e-004	7.0000e-004	6.4600e-003	2.0000e-005	1.9900e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5718	1.5718	5.0000e-005	0.0000	1.5730
Total	**2.0700e-003**	**0.0353**	**0.0160**	**1.2000e-004**	**4.8000e-003**	**1.4000e-004**	**4.9400e-003**	**1.3400e-003**	**1.3000e-004**	**1.4700e-003**	**0.0000**	**11.5828**	**11.5828**	**4.9000e-004**	**0.0000**	**11.5949**

3.13 70-kV Substation Ground Grid Conduit Installation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0105	0.1005	0.0961	1.3000e-004		6.5500e-003	6.5500e-003		6.0300e-003	6.0300e-003	0.0000	11.3264	11.3264	3.6600e-003	0.0000	11.4180
Total	**0.0105**	**0.1005**	**0.0961**	**1.3000e-004**		**6.5500e-003**	**6.5500e-003**		**6.0300e-003**	**6.0300e-003**	**0.0000**	**11.3264**	**11.3264**	**3.6600e-003**	**0.0000**	**11.4180**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1800e-003	0.0346	9.5400e-003	1.0000e-004	2.8100e-003	1.3000e-004	2.9400e-003	8.1000e-004	1.2000e-004	9.3000e-004	0.0000	10.0110	10.0110	4.4000e-004	0.0000	10.0220
Worker	8.9000e-004	7.0000e-004	6.4600e-003	2.0000e-005	1.9900e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5718	1.5718	5.0000e-005	0.0000	1.5730
Total	**2.0700e-003**	**0.0353**	**0.0160**	**1.2000e-004**	**4.8000e-003**	**1.4000e-004**	**4.9400e-003**	**1.3400e-003**	**1.3000e-004**	**1.4700e-003**	**0.0000**	**11.5828**	**11.5828**	**4.9000e-004**	**0.0000**	**11.5949**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3700e-003	0.0406	0.0312	4.0000e-005		2.8700e-003	2.8700e-003		2.6400e-003	2.6400e-003	0.0000	3.5592	3.5592	1.1500e-003	0.0000	3.5880
Total	**4.3700e-003**	**0.0406**	**0.0312**	**4.0000e-005**		**2.8700e-003**	**2.8700e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**3.5592**	**3.5592**	**1.1500e-003**	**0.0000**	**3.5880**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1000e-004	0.0218	6.4200e-003	3.0000e-005	3.0000e-004	3.0000e-005	3.2000e-004	9.0000e-005	3.0000e-005	1.1000e-004	0.0000	2.5209	2.5209	2.6000e-004	0.0000	2.5274
Worker	4.3000e-004	3.4000e-004	3.1100e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7684	0.7684	2.0000e-005	0.0000	0.7690
Total	**1.0400e-003**	**0.0221**	**9.5300e-003**	**4.0000e-005**	**1.2800e-003**	**4.0000e-005**	**1.3000e-003**	**3.5000e-004**	**4.0000e-005**	**3.8000e-004**	**0.0000**	**3.2893**	**3.2893**	**2.8000e-004**	**0.0000**	**3.2964**

3.14 230-kV Substation Ground Grid Conduit Installation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3700e-003	0.0406	0.0312	4.0000e-005		2.8700e-003	2.8700e-003		2.6400e-003	2.6400e-003	0.0000	3.5592	3.5592	1.1500e-003	0.0000	3.5880
Total	**4.3700e-003**	**0.0406**	**0.0312**	**4.0000e-005**		**2.8700e-003**	**2.8700e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**3.5592**	**3.5592**	**1.1500e-003**	**0.0000**	**3.5880**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.1000e-004	0.0218	6.4200e-003	3.0000e-005	3.0000e-004	3.0000e-005	3.2000e-004	9.0000e-005	3.0000e-005	1.1000e-004	0.0000	2.5209	2.5209	2.6000e-004	0.0000	2.5274
Worker	4.3000e-004	3.4000e-004	3.1100e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7684	0.7684	2.0000e-005	0.0000	0.7690
Total	**1.0400e-003**	**0.0221**	**9.5300e-003**	**4.0000e-005**	**1.2800e-003**	**4.0000e-005**	**1.3000e-003**	**3.5000e-004**	**4.0000e-005**	**3.8000e-004**	**0.0000**	**3.2893**	**3.2893**	**2.8000e-004**	**0.0000**	**3.2964**

3.15 230-kV Substation Steel Bus Erection - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5500e-003	0.0443	0.0417	1.4000e-004		1.5400e-003	1.5400e-003		1.4100e-003	1.4100e-003	0.0000	12.6916	12.6916	4.1000e-003	0.0000	12.7943
Total	**5.5500e-003**	**0.0443**	**0.0417**	**1.4000e-004**		**1.5400e-003**	**1.5400e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**12.6916**	**12.6916**	**4.1000e-003**	**0.0000**	**12.7943**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4000e-004	0.0193	5.6900e-003	3.0000e-005	3.3000e-004	3.0000e-005	3.6000e-004	1.0000e-004	3.0000e-005	1.2000e-004	0.0000	2.4231	2.4231	2.3000e-004	0.0000	2.4289
Worker	3.7000e-004	2.9000e-004	2.6800e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.3000e-004	0.0000	0.6680	0.6680	2.0000e-005	0.0000	0.6685
Total	**9.1000e-004**	**0.0196**	**8.3700e-003**	**4.0000e-005**	**1.1800e-003**	**4.0000e-005**	**1.2200e-003**	**3.3000e-004**	**4.0000e-005**	**3.5000e-004**	**0.0000**	**3.0911**	**3.0911**	**2.5000e-004**	**0.0000**	**3.0974**

3.15 230-kV Substation Steel Bus Erection - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5500e-003	0.0443	0.0417	1.4000e-004		1.5400e-003	1.5400e-003		1.4100e-003	1.4100e-003	0.0000	12.6916	12.6916	4.1000e-003	0.0000	12.7943
Total	**5.5500e-003**	**0.0443**	**0.0417**	**1.4000e-004**		**1.5400e-003**	**1.5400e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**12.6916**	**12.6916**	**4.1000e-003**	**0.0000**	**12.7943**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4000e-004	0.0193	5.6900e-003	3.0000e-005	3.3000e-004	3.0000e-005	3.6000e-004	1.0000e-004	3.0000e-005	1.2000e-004	0.0000	2.4231	2.4231	2.3000e-004	0.0000	2.4289
Worker	3.7000e-004	2.9000e-004	2.6800e-003	1.0000e-005	8.5000e-004	1.0000e-005	8.6000e-004	2.3000e-004	1.0000e-005	2.3000e-004	0.0000	0.6680	0.6680	2.0000e-005	0.0000	0.6685
Total	**9.1000e-004**	**0.0196**	**8.3700e-003**	**4.0000e-005**	**1.1800e-003**	**4.0000e-005**	**1.2200e-003**	**3.3000e-004**	**4.0000e-005**	**3.5000e-004**	**0.0000**	**3.0911**	**3.0911**	**2.5000e-004**	**0.0000**	**3.0974**

3.15 230-kV Substation Steel Bus Erection - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0600e-003	7.9200e-003	8.1900e-003	3.0000e-005		2.7000e-004	2.7000e-004		2.5000e-004	2.5000e-004	0.0000	2.5400	2.5400	8.2000e-004	0.0000	2.5605
Total	**1.0600e-003**	**7.9200e-003**	**8.1900e-003**	**3.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**2.5400**	**2.5400**	**8.2000e-004**	**0.0000**	**2.5605**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	3.4100e-003	1.0000e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.4797	0.4797	4.0000e-005	0.0000	0.4807
Worker	7.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1286	0.1286	0.0000	0.0000	0.1287
Total	**1.5000e-004**	**3.4600e-003**	**1.4900e-003**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.6083**	**0.6083**	**4.0000e-005**	**0.0000**	**0.6094**

3.15 230-kV Substation Steel Bus Erection - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0600e-003	7.9200e-003	8.1900e-003	3.0000e-005		2.7000e-004	2.7000e-004		2.5000e-004	2.5000e-004	0.0000	2.5400	2.5400	8.2000e-004	0.0000	2.5605
Total	**1.0600e-003**	**7.9200e-003**	**8.1900e-003**	**3.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**2.5400**	**2.5400**	**8.2000e-004**	**0.0000**	**2.5605**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	3.4100e-003	1.0000e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.4797	0.4797	4.0000e-005	0.0000	0.4807
Worker	7.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1286	0.1286	0.0000	0.0000	0.1287
Total	**1.5000e-004**	**3.4600e-003**	**1.4900e-003**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.6083**	**0.6083**	**4.0000e-005**	**0.0000**	**0.6094**

3.16 230-kV Substation Install Yard Rock - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9900e-003	0.0247	0.0237	8.0000e-005		9.0000e-004	9.0000e-004		8.3000e-004	8.3000e-004	0.0000	6.7103	6.7103	2.1700e-003	0.0000	6.7646
Total	**2.9900e-003**	**0.0247**	**0.0237**	**8.0000e-005**		**9.0000e-004**	**9.0000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**6.7103**	**6.7103**	**2.1700e-003**	**0.0000**	**6.7646**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8000e-004	0.0208	5.8200e-003	6.0000e-005	1.4200e-003	7.0000e-005	1.4800e-003	4.1000e-004	7.0000e-005	4.7000e-004	0.0000	5.3217	5.3217	2.6000e-004	0.0000	5.3282
Worker	2.1000e-004	1.7000e-004	1.5300e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3769	0.3769	1.0000e-005	0.0000	0.3772
Total	**8.9000e-004**	**0.0210**	**7.3500e-003**	**6.0000e-005**	**1.9000e-003**	**7.0000e-005**	**1.9600e-003**	**5.4000e-004**	**7.0000e-005**	**6.0000e-004**	**0.0000**	**5.6986**	**5.6986**	**2.7000e-004**	**0.0000**	**5.7054**

3.16 230-kV Substation Install Yard Rock - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9900e-003	0.0247	0.0237	8.0000e-005		9.0000e-004	9.0000e-004		8.3000e-004	8.3000e-004	0.0000	6.7103	6.7103	2.1700e-003	0.0000	6.7646
Total	**2.9900e-003**	**0.0247**	**0.0237**	**8.0000e-005**		**9.0000e-004**	**9.0000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**6.7103**	**6.7103**	**2.1700e-003**	**0.0000**	**6.7646**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8000e-004	0.0208	5.8200e-003	6.0000e-005	1.4200e-003	7.0000e-005	1.4800e-003	4.1000e-004	7.0000e-005	4.7000e-004	0.0000	5.3217	5.3217	2.6000e-004	0.0000	5.3282
Worker	2.1000e-004	1.7000e-004	1.5300e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3769	0.3769	1.0000e-005	0.0000	0.3772
Total	**8.9000e-004**	**0.0210**	**7.3500e-003**	**6.0000e-005**	**1.9000e-003**	**7.0000e-005**	**1.9600e-003**	**5.4000e-004**	**7.0000e-005**	**6.0000e-004**	**0.0000**	**5.6986**	**5.6986**	**2.7000e-004**	**0.0000**	**5.7054**

3.16 230-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5600e-003	0.0277	0.0292	1.0000e-004		9.9000e-004	9.9000e-004		9.1000e-004	9.1000e-004	0.0000	8.3936	8.3936	2.7100e-003	0.0000	8.4615
Total	**3.5600e-003**	**0.0277**	**0.0292**	**1.0000e-004**		**9.9000e-004**	**9.9000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**8.3936**	**8.3936**	**2.7100e-003**	**0.0000**	**8.4615**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5000e-004	0.0206	6.4000e-003	7.0000e-005	1.7700e-003	4.0000e-005	1.8100e-003	5.1000e-004	4.0000e-005	5.5000e-004	0.0000	6.5317	6.5317	3.0000e-004	0.0000	6.5391
Worker	2.5000e-004	1.9000e-004	1.7500e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4535	0.4535	1.0000e-005	0.0000	0.4538
Total	**9.0000e-004**	**0.0208**	**8.1500e-003**	**8.0000e-005**	**2.3700e-003**	**4.0000e-005**	**2.4100e-003**	**6.7000e-004**	**4.0000e-005**	**7.1000e-004**	**0.0000**	**6.9852**	**6.9852**	**3.1000e-004**	**0.0000**	**6.9929**

3.16 230-kV Substation Install Yard Rock - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5600e-003	0.0277	0.0292	1.0000e-004		9.9000e-004	9.9000e-004		9.1000e-004	9.1000e-004	0.0000	8.3936	8.3936	2.7100e-003	0.0000	8.4614
Total	**3.5600e-003**	**0.0277**	**0.0292**	**1.0000e-004**		**9.9000e-004**	**9.9000e-004**		**9.1000e-004**	**9.1000e-004**	**0.0000**	**8.3936**	**8.3936**	**2.7100e-003**	**0.0000**	**8.4614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5000e-004	0.0206	6.4000e-003	7.0000e-005	1.7700e-003	4.0000e-005	1.8100e-003	5.1000e-004	4.0000e-005	5.5000e-004	0.0000	6.5317	6.5317	3.0000e-004	0.0000	6.5391
Worker	2.5000e-004	1.9000e-004	1.7500e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4535	0.4535	1.0000e-005	0.0000	0.4538
Total	**9.0000e-004**	**0.0208**	**8.1500e-003**	**8.0000e-005**	**2.3700e-003**	**4.0000e-005**	**2.4100e-003**	**6.7000e-004**	**4.0000e-005**	**7.1000e-004**	**0.0000**	**6.9852**	**6.9852**	**3.1000e-004**	**0.0000**	**6.9929**

3.17 70-kV Substation Steel Bus Erection - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.0832	0.0921	3.0000e-004		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	26.4162	26.4162	8.5400e-003	0.0000	26.6298
Total	**0.0107**	**0.0832**	**0.0921**	**3.0000e-004**		**2.7500e-003**	**2.7500e-003**		**2.5300e-003**	**2.5300e-003**	**0.0000**	**26.4162**	**26.4162**	**8.5400e-003**	**0.0000**	**26.6298**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0131	4.1300e-003	5.0000e-005	1.3800e-003	3.0000e-005	1.4100e-003	4.0000e-004	3.0000e-005	4.3000e-004	0.0000	4.8179	4.8179	2.0000e-004	0.0000	4.8228
Worker	4.3000e-004	3.2000e-004	3.0400e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7565	0.7565	2.0000e-005	0.0000	0.7571
Total	**8.6000e-004**	**0.0134**	**7.1700e-003**	**6.0000e-005**	**2.3700e-003**	**4.0000e-005**	**2.4100e-003**	**6.6000e-004**	**4.0000e-005**	**7.0000e-004**	**0.0000**	**5.5744**	**5.5744**	**2.2000e-004**	**0.0000**	**5.5799**

3.17 70-kV Substation Steel Bus Erection - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.0832	0.0921	3.0000e-004		2.7500e-003	2.7500e-003		2.5300e-003	2.5300e-003	0.0000	26.4161	26.4161	8.5400e-003	0.0000	26.6297
Total	**0.0107**	**0.0832**	**0.0921**	**3.0000e-004**		**2.7500e-003**	**2.7500e-003**		**2.5300e-003**	**2.5300e-003**	**0.0000**	**26.4161**	**26.4161**	**8.5400e-003**	**0.0000**	**26.6297**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0131	4.1300e-003	5.0000e-005	1.3800e-003	3.0000e-005	1.4100e-003	4.0000e-004	3.0000e-005	4.3000e-004	0.0000	4.8179	4.8179	2.0000e-004	0.0000	4.8228
Worker	4.3000e-004	3.2000e-004	3.0400e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7565	0.7565	2.0000e-005	0.0000	0.7571
Total	**8.6000e-004**	**0.0134**	**7.1700e-003**	**6.0000e-005**	**2.3700e-003**	**4.0000e-005**	**2.4100e-003**	**6.6000e-004**	**4.0000e-005**	**7.0000e-004**	**0.0000**	**5.5744**	**5.5744**	**2.2000e-004**	**0.0000**	**5.5799**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0274	0.2029	0.2041	7.0000e-004		7.7700e-003	7.7700e-003		7.2400e-003	7.2400e-003	0.0000	61.3416	61.3416	0.0184	0.0000	61.8006
Total	**0.0274**	**0.2029**	**0.2041**	**7.0000e-004**		**7.7700e-003**	**7.7700e-003**		**7.2400e-003**	**7.2400e-003**	**0.0000**	**61.3416**	**61.3416**	**0.0184**	**0.0000**	**61.8006**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.3000e-004	0.0255	7.4400e-003	4.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	3.5344	3.5344	2.9000e-004	0.0000	3.5417
Worker	7.1000e-004	5.4000e-004	5.0400e-003	1.0000e-005	1.7000e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.2948	1.2948	4.0000e-005	0.0000	1.2957
Total	**1.3400e-003**	**0.0260**	**0.0125**	**5.0000e-005**	**2.1800e-003**	**3.0000e-005**	**2.2200e-003**	**5.9000e-004**	**3.0000e-005**	**6.2000e-004**	**0.0000**	**4.8292**	**4.8292**	**3.3000e-004**	**0.0000**	**4.8374**

3.18 230-kV Substation Transformer & Equip Delivery & Installation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0274	0.2029	0.2041	7.0000e-004		7.7700e-003	7.7700e-003		7.2400e-003	7.2400e-003	0.0000	61.3416	61.3416	0.0184	0.0000	61.8005
Total	**0.0274**	**0.2029**	**0.2041**	**7.0000e-004**		**7.7700e-003**	**7.7700e-003**		**7.2400e-003**	**7.2400e-003**	**0.0000**	**61.3416**	**61.3416**	**0.0184**	**0.0000**	**61.8005**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.3000e-004	0.0255	7.4400e-003	4.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	3.5344	3.5344	2.9000e-004	0.0000	3.5417
Worker	7.1000e-004	5.4000e-004	5.0400e-003	1.0000e-005	1.7000e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.2948	1.2948	4.0000e-005	0.0000	1.2957
Total	**1.3400e-003**	**0.0260**	**0.0125**	**5.0000e-005**	**2.1800e-003**	**3.0000e-005**	**2.2200e-003**	**5.9000e-004**	**3.0000e-005**	**6.2000e-004**	**0.0000**	**4.8292**	**4.8292**	**3.3000e-004**	**0.0000**	**4.8374**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5800e-003	0.0172	8.2500e-003	3.0000e-005		7.2000e-004	7.2000e-004		6.6000e-004	6.6000e-004	0.0000	2.2813	2.2813	7.4000e-004	0.0000	2.2997
Total	**1.5800e-003**	**0.0172**	**8.2500e-003**	**3.0000e-005**		**7.2000e-004**	**7.2000e-004**		**6.6000e-004**	**6.6000e-004**	**0.0000**	**2.2813**	**2.2813**	**7.4000e-004**	**0.0000**	**2.2997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.3400e-003	4.2000e-004	1.0000e-005	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4941	0.4941	2.0000e-005	0.0000	0.4947
Worker	2.1000e-004	1.6000e-004	1.5200e-003	0.0000	5.3000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4030	0.4030	1.0000e-005	0.0000	0.4032
Total	**2.5000e-004**	**1.5000e-003**	**1.9400e-003**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**6.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.8971**	**0.8971**	**3.0000e-005**	**0.0000**	**0.8979**

3.19 230-kV Substation Control Enclosure Delivery and Install - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5800e-003	0.0172	8.2500e-003	3.0000e-005		7.2000e-004	7.2000e-004		6.6000e-004	6.6000e-004	0.0000	2.2813	2.2813	7.4000e-004	0.0000	2.2997
Total	**1.5800e-003**	**0.0172**	**8.2500e-003**	**3.0000e-005**		**7.2000e-004**	**7.2000e-004**		**6.6000e-004**	**6.6000e-004**	**0.0000**	**2.2813**	**2.2813**	**7.4000e-004**	**0.0000**	**2.2997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.3400e-003	4.2000e-004	1.0000e-005	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4941	0.4941	2.0000e-005	0.0000	0.4947
Worker	2.1000e-004	1.6000e-004	1.5200e-003	0.0000	5.3000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4030	0.4030	1.0000e-005	0.0000	0.4032
Total	**2.5000e-004**	**1.5000e-003**	**1.9400e-003**	**1.0000e-005**	**6.7000e-004**	**0.0000**	**6.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.8971**	**0.8971**	**3.0000e-005**	**0.0000**	**0.8979**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9100e-003	0.0348	0.0321	1.3000e-004		1.2600e-003	1.2600e-003		1.1600e-003	1.1600e-003	0.0000	11.3207	11.3207	3.6600e-003	0.0000	11.4122
Total	**4.9100e-003**	**0.0348**	**0.0321**	**1.3000e-004**		**1.2600e-003**	**1.2600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**11.3207**	**11.3207**	**3.6600e-003**	**0.0000**	**11.4122**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0209	6.1300e-003	3.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	3.0534	3.0534	2.4000e-004	0.0000	3.0595
Worker	3.5000e-004	2.7000e-004	2.4700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.7000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6548	0.6548	2.0000e-005	0.0000	0.6552
Total	**8.7000e-004**	**0.0212**	**8.6000e-003**	**4.0000e-005**	**1.3200e-003**	**3.0000e-005**	**1.3400e-003**	**3.6000e-004**	**2.0000e-005**	**3.9000e-004**	**0.0000**	**3.7082**	**3.7082**	**2.6000e-004**	**0.0000**	**3.7147**

3.20 230-kV Substation Remaining Equipment Delivery and Install - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9100e-003	0.0348	0.0321	1.3000e-004		1.2600e-003	1.2600e-003		1.1600e-003	1.1600e-003	0.0000	11.3207	11.3207	3.6600e-003	0.0000	11.4122
Total	**4.9100e-003**	**0.0348**	**0.0321**	**1.3000e-004**		**1.2600e-003**	**1.2600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**11.3207**	**11.3207**	**3.6600e-003**	**0.0000**	**11.4122**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0209	6.1300e-003	3.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	3.0534	3.0534	2.4000e-004	0.0000	3.0595
Worker	3.5000e-004	2.7000e-004	2.4700e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.7000e-004	2.3000e-004	0.0000	2.4000e-004	0.0000	0.6548	0.6548	2.0000e-005	0.0000	0.6552
Total	**8.7000e-004**	**0.0212**	**8.6000e-003**	**4.0000e-005**	**1.3200e-003**	**3.0000e-005**	**1.3400e-003**	**3.6000e-004**	**2.0000e-005**	**3.9000e-004**	**0.0000**	**3.7082**	**3.7082**	**2.6000e-004**	**0.0000**	**3.7147**

3.21 230-kV Transmission Conductor - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4000e-003	0.0472	0.0321	1.2000e-004		1.8500e-003	1.8500e-003		1.7000e-003	1.7000e-003	0.0000	10.3885	10.3885	3.3600e-003	0.0000	10.4725
Total	**5.4000e-003**	**0.0472**	**0.0321**	**1.2000e-004**		**1.8500e-003**	**1.8500e-003**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**10.3885**	**10.3885**	**3.3600e-003**	**0.0000**	**10.4725**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2000e-004	3.6900e-003	1.1600e-003	1.0000e-005	3.9000e-004	1.0000e-005	4.0000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.3589	1.3589	6.0000e-005	0.0000	1.3603
Worker	3.4000e-004	2.6000e-004	2.4100e-003	1.0000e-005	8.4000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6380	0.6380	2.0000e-005	0.0000	0.6384
Total	**4.6000e-004**	**3.9500e-003**	**3.5700e-003**	**2.0000e-005**	**1.2300e-003**	**2.0000e-005**	**1.2500e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.9969**	**1.9969**	**8.0000e-005**	**0.0000**	**1.9987**

3.21 230-kV Transmission Conductor - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4000e-003	0.0472	0.0321	1.2000e-004		1.8500e-003	1.8500e-003		1.7000e-003	1.7000e-003	0.0000	10.3885	10.3885	3.3600e-003	0.0000	10.4725
Total	**5.4000e-003**	**0.0472**	**0.0321**	**1.2000e-004**		**1.8500e-003**	**1.8500e-003**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**10.3885**	**10.3885**	**3.3600e-003**	**0.0000**	**10.4725**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2000e-004	3.6900e-003	1.1600e-003	1.0000e-005	3.9000e-004	1.0000e-005	4.0000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.3589	1.3589	6.0000e-005	0.0000	1.3603
Worker	3.4000e-004	2.6000e-004	2.4100e-003	1.0000e-005	8.4000e-004	1.0000e-005	8.5000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.6380	0.6380	2.0000e-005	0.0000	0.6384
Total	**4.6000e-004**	**3.9500e-003**	**3.5700e-003**	**2.0000e-005**	**1.2300e-003**	**2.0000e-005**	**1.2500e-003**	**3.3000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.9969**	**1.9969**	**8.0000e-005**	**0.0000**	**1.9987**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.3100e-003	0.0260	0.0293	9.0000e-005		8.5000e-004	8.5000e-004		7.8000e-004	7.8000e-004	0.0000	8.2297	8.2297	2.6600e-003	0.0000	8.2962
Total	**3.3100e-003**	**0.0260**	**0.0293**	**9.0000e-005**		**8.5000e-004**	**8.5000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**8.2297**	**8.2297**	**2.6600e-003**	**0.0000**	**8.2962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0121	3.8100e-003	5.0000e-005	1.2700e-003	3.0000e-005	1.3000e-003	3.7000e-004	3.0000e-005	3.9000e-004	0.0000	4.4473	4.4473	1.8000e-004	0.0000	4.4519
Worker	3.5000e-004	2.6000e-004	2.4900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.2000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6251	0.6251	2.0000e-005	0.0000	0.6255
Total	**7.5000e-004**	**0.0123**	**6.3000e-003**	**6.0000e-005**	**2.0900e-003**	**4.0000e-005**	**2.1200e-003**	**5.9000e-004**	**3.0000e-005**	**6.1000e-004**	**0.0000**	**5.0724**	**5.0724**	**2.0000e-004**	**0.0000**	**5.0774**

3.22 70-kV Substation Equip Delivery & Installation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.3100e-003	0.0260	0.0293	9.0000e-005		8.5000e-004	8.5000e-004		7.8000e-004	7.8000e-004	0.0000	8.2297	8.2297	2.6600e-003	0.0000	8.2962
Total	**3.3100e-003**	**0.0260**	**0.0293**	**9.0000e-005**		**8.5000e-004**	**8.5000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**8.2297**	**8.2297**	**2.6600e-003**	**0.0000**	**8.2962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0121	3.8100e-003	5.0000e-005	1.2700e-003	3.0000e-005	1.3000e-003	3.7000e-004	3.0000e-005	3.9000e-004	0.0000	4.4473	4.4473	1.8000e-004	0.0000	4.4519
Worker	3.5000e-004	2.6000e-004	2.4900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.2000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.6251	0.6251	2.0000e-005	0.0000	0.6255
Total	**7.5000e-004**	**0.0123**	**6.3000e-003**	**6.0000e-005**	**2.0900e-003**	**4.0000e-005**	**2.1200e-003**	**5.9000e-004**	**3.0000e-005**	**6.1000e-004**	**0.0000**	**5.0724**	**5.0724**	**2.0000e-004**	**0.0000**	**5.0774**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.7000e-004	2.1000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2471	0.2471	1.0000e-005	0.0000	0.2473
Worker	1.0000e-004	8.0000e-005	7.1000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1865	0.1865	1.0000e-005	0.0000	0.1866
Total	**1.2000e-004**	**7.5000e-004**	**9.2000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.4335**	**0.4335**	**2.0000e-005**	**0.0000**	**0.4339**

3.23 70-kV Substation Control Enclosure Delivery and Install - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.7000e-004	2.1000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2471	0.2471	1.0000e-005	0.0000	0.2473
Worker	1.0000e-004	8.0000e-005	7.1000e-004	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.1865	0.1865	1.0000e-005	0.0000	0.1866
Total	**1.2000e-004**	**7.5000e-004**	**9.2000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.4335**	**0.4335**	**2.0000e-005**	**0.0000**	**0.4339**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3800e-003	0.0163	8.4200e-003	2.0000e-005		5.7000e-004	5.7000e-004		5.2000e-004	5.2000e-004	0.0000	2.1545	2.1545	7.0000e-004	0.0000	2.1719
Total	**1.3800e-003**	**0.0163**	**8.4200e-003**	**2.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**2.1545**	**2.1545**	**7.0000e-004**	**0.0000**	**2.1719**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.0200e-003	9.5000e-004	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.1118	1.1118	5.0000e-005	0.0000	1.1130
Worker	1.2000e-004	1.0000e-004	8.9000e-004	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2351	0.2351	1.0000e-005	0.0000	0.2352
Total	**2.2000e-004**	**3.1200e-003**	**1.8400e-003**	**1.0000e-005**	**6.3000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**1.3469**	**1.3469**	**6.0000e-005**	**0.0000**	**1.3482**

3.24 230-kV Transmission Site Clean-up and Restoration - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3800e-003	0.0163	8.4200e-003	2.0000e-005		5.7000e-004	5.7000e-004		5.2000e-004	5.2000e-004	0.0000	2.1545	2.1545	7.0000e-004	0.0000	2.1719
Total	**1.3800e-003**	**0.0163**	**8.4200e-003**	**2.0000e-005**		**5.7000e-004**	**5.7000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**2.1545**	**2.1545**	**7.0000e-004**	**0.0000**	**2.1719**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.0200e-003	9.5000e-004	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.1118	1.1118	5.0000e-005	0.0000	1.1130
Worker	1.2000e-004	1.0000e-004	8.9000e-004	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2351	0.2351	1.0000e-005	0.0000	0.2352
Total	**2.2000e-004**	**3.1200e-003**	**1.8400e-003**	**1.0000e-005**	**6.3000e-004**	**1.0000e-005**	**6.3000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**1.3469**	**1.3469**	**6.0000e-005**	**0.0000**	**1.3482**

3.25 230-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0000e-004	3.1500e-003	6.4500e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8711	0.8711	2.8000e-004	0.0000	0.8782
Total	**2.0000e-004**	**3.1500e-003**	**6.4500e-003**	**1.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.8711**	**0.8711**	**2.8000e-004**	**0.0000**	**0.8782**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.0100e-003	6.3000e-004	1.0000e-005	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.7412	0.7412	3.0000e-005	0.0000	0.7420
Worker	1.8000e-004	1.4000e-004	1.2700e-003	0.0000	4.4000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3358	0.3358	1.0000e-005	0.0000	0.3360
Total	**2.5000e-004**	**2.1500e-003**	**1.9000e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.0770**	**1.0770**	**4.0000e-005**	**0.0000**	**1.0780**

3.25 230-kV Substation Cable Installation and Termination - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0000e-004	3.1500e-003	6.4500e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8711	0.8711	2.8000e-004	0.0000	0.8782
Total	**2.0000e-004**	**3.1500e-003**	**6.4500e-003**	**1.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.8711**	**0.8711**	**2.8000e-004**	**0.0000**	**0.8782**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	2.0100e-003	6.3000e-004	1.0000e-005	2.1000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.7412	0.7412	3.0000e-005	0.0000	0.7420
Worker	1.8000e-004	1.4000e-004	1.2700e-003	0.0000	4.4000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3358	0.3358	1.0000e-005	0.0000	0.3360
Total	**2.5000e-004**	**2.1500e-003**	**1.9000e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.0770**	**1.0770**	**4.0000e-005**	**0.0000**	**1.0780**

3.26 230-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4500e-003	0.0436	0.0138	1.7000e-004	4.5900e-003	1.0000e-004	4.6900e-003	1.3300e-003	1.0000e-004	1.4200e-003	0.0000	16.0596	16.0596	6.6000e-004	0.0000	16.0761
Worker	4.1000e-004	3.0000e-004	2.8400e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.6946	0.6946	2.0000e-005	0.0000	0.6951
Total	**1.8600e-003**	**0.0439**	**0.0166**	**1.8000e-004**	**5.5000e-003**	**1.1000e-004**	**5.6000e-003**	**1.5700e-003**	**1.1000e-004**	**1.6700e-003**	**0.0000**	**16.7542**	**16.7542**	**6.8000e-004**	**0.0000**	**16.7713**

3.26 230-kV Substation Testing and Commissioning - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4500e-003	0.0436	0.0138	1.7000e-004	4.5900e-003	1.0000e-004	4.6900e-003	1.3300e-003	1.0000e-004	1.4200e-003	0.0000	16.0596	16.0596	6.6000e-004	0.0000	16.0761
Worker	4.1000e-004	3.0000e-004	2.8400e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.6946	0.6946	2.0000e-005	0.0000	0.6951
Total	**1.8600e-003**	**0.0439**	**0.0166**	**1.8000e-004**	**5.5000e-003**	**1.1000e-004**	**5.6000e-003**	**1.5700e-003**	**1.1000e-004**	**1.6700e-003**	**0.0000**	**16.7542**	**16.7542**	**6.8000e-004**	**0.0000**	**16.7713**

3.27 70-kV Substation Cable Installation and Termination - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.0200e-003	9.5000e-004	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.1118	1.1118	5.0000e-005	0.0000	1.1130
Worker	2.4000e-004	1.8000e-004	1.6900e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	**3.4000e-004**	**3.2000e-003**	**2.6400e-003**	**1.0000e-005**	**8.6000e-004**	**1.0000e-005**	**8.6000e-004**	**2.3000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.5245**	**1.5245**	**6.0000e-005**	**0.0000**	**1.5259**

3.27 70-kV Substation Cable Installation and Termination - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	3.0200e-003	9.5000e-004	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.1118	1.1118	5.0000e-005	0.0000	1.1130
Worker	2.4000e-004	1.8000e-004	1.6900e-003	0.0000	5.4000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.5000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	**3.4000e-004**	**3.2000e-003**	**2.6400e-003**	**1.0000e-005**	**8.6000e-004**	**1.0000e-005**	**8.6000e-004**	**2.3000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.5245**	**1.5245**	**6.0000e-005**	**0.0000**	**1.5259**

3.28 70-kV Power Line Site Development Mobilization - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.5400e-003	0.0000	9.5400e-003	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0465	0.0219	7.0000e-005		1.5800e-003	1.5800e-003		1.4600e-003	1.4600e-003	0.0000	6.0531	6.0531	1.9600e-003	0.0000	6.1021
Total	**3.9100e-003**	**0.0465**	**0.0219**	**7.0000e-005**	**9.5400e-003**	**1.5800e-003**	**0.0111**	**1.0300e-003**	**1.4600e-003**	**2.4900e-003**	**0.0000**	**6.0531**	**6.0531**	**1.9600e-003**	**0.0000**	**6.1021**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	6.7100e-003	2.1200e-003	3.0000e-005	7.1000e-004	2.0000e-005	7.2000e-004	2.0000e-004	1.0000e-005	2.2000e-004	0.0000	2.4707	2.4707	1.0000e-004	0.0000	2.4733
Worker	3.2000e-004	2.4000e-004	2.2700e-003	1.0000e-005	7.7000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5859	0.5859	2.0000e-005	0.0000	0.5863
Total	**5.4000e-004**	**6.9500e-003**	**4.3900e-003**	**4.0000e-005**	**1.4800e-003**	**2.0000e-005**	**1.5000e-003**	**4.1000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**3.0566**	**3.0566**	**1.2000e-004**	**0.0000**	**3.0595**

3.28 70-kV Power Line Site Development Mobilization - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7200e-003	0.0000	3.7200e-003	4.0000e-004	0.0000	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0465	0.0219	7.0000e-005		1.5800e-003	1.5800e-003		1.4600e-003	1.4600e-003	0.0000	6.0531	6.0531	1.9600e-003	0.0000	6.1021
Total	**3.9100e-003**	**0.0465**	**0.0219**	**7.0000e-005**	**3.7200e-003**	**1.5800e-003**	**5.3000e-003**	**4.0000e-004**	**1.4600e-003**	**1.8600e-003**	**0.0000**	**6.0531**	**6.0531**	**1.9600e-003**	**0.0000**	**6.1021**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	6.7100e-003	2.1200e-003	3.0000e-005	7.1000e-004	2.0000e-005	7.2000e-004	2.0000e-004	1.0000e-005	2.2000e-004	0.0000	2.4707	2.4707	1.0000e-004	0.0000	2.4733
Worker	3.2000e-004	2.4000e-004	2.2700e-003	1.0000e-005	7.7000e-004	0.0000	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.5859	0.5859	2.0000e-005	0.0000	0.5863
Total	**5.4000e-004**	**6.9500e-003**	**4.3900e-003**	**4.0000e-005**	**1.4800e-003**	**2.0000e-005**	**1.5000e-003**	**4.1000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**3.0566**	**3.0566**	**1.2000e-004**	**0.0000**	**3.0595**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0256	0.0143	4.0000e-005		9.1000e-004	9.1000e-004		8.3000e-004	8.3000e-004	0.0000	3.4369	3.4369	1.1100e-003	0.0000	3.4647
Total	**2.1800e-003**	**0.0256**	**0.0143**	**4.0000e-005**	**2.3900e-003**	**9.1000e-004**	**3.3000e-003**	**2.6000e-004**	**8.3000e-004**	**1.0900e-003**	**0.0000**	**3.4369**	**3.4369**	**1.1100e-003**	**0.0000**	**3.4647**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.3600e-003	1.0600e-003	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.2354	1.2354	5.0000e-005	0.0000	1.2366
Worker	2.5000e-004	1.9000e-004	1.7500e-003	0.0000	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4463	0.4463	1.0000e-005	0.0000	0.4466
Total	**3.6000e-004**	**3.5500e-003**	**2.8100e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.5000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.6817**	**1.6817**	**6.0000e-005**	**0.0000**	**1.6833**

3.29 Reconductoring Segment Clean-up and Restoration - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0256	0.0143	4.0000e-005		9.1000e-004	9.1000e-004		8.3000e-004	8.3000e-004	0.0000	3.4369	3.4369	1.1100e-003	0.0000	3.4647
Total	**2.1800e-003**	**0.0256**	**0.0143**	**4.0000e-005**	**9.3000e-004**	**9.1000e-004**	**1.8400e-003**	**1.0000e-004**	**8.3000e-004**	**9.3000e-004**	**0.0000**	**3.4369**	**3.4369**	**1.1100e-003**	**0.0000**	**3.4647**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.3600e-003	1.0600e-003	1.0000e-005	3.5000e-004	1.0000e-005	3.6000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.2354	1.2354	5.0000e-005	0.0000	1.2366
Worker	2.5000e-004	1.9000e-004	1.7500e-003	0.0000	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4463	0.4463	1.0000e-005	0.0000	0.4466
Total	**3.6000e-004**	**3.5500e-003**	**2.8100e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.5000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.6817**	**1.6817**	**6.0000e-005**	**0.0000**	**1.6833**

3.30 70-kV Power Line Pole Tower Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2259	1.7600	1.6673	5.5700e-003		0.0685	0.0685		0.0630	0.0630	0.0000	489.3626	489.3626	0.1583	0.0000	493.3193
Total	**0.2259**	**1.7600**	**1.6673**	**5.5700e-003**		**0.0685**	**0.0685**		**0.0630**	**0.0630**	**0.0000**	**489.3626**	**489.3626**	**0.1583**	**0.0000**	**493.3193**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5800e-003	0.1980	0.0624	7.5000e-004	0.0208	4.6000e-004	0.0213	6.0200e-003	4.4000e-004	6.4500e-003	0.0000	72.8857	72.8857	3.0100e-003	0.0000	72.9609
Worker	0.0124	9.3100e-003	0.0873	2.5000e-004	0.0292	1.9000e-004	0.0294	7.7700e-003	1.7000e-004	7.9400e-003	0.0000	22.2316	22.2316	6.1000e-004	0.0000	22.2468
Total	**0.0190**	**0.2073**	**0.1497**	**1.0000e-003**	**0.0501**	**6.5000e-004**	**0.0507**	**0.0138**	**6.1000e-004**	**0.0144**	**0.0000**	**95.1174**	**95.1174**	**3.6200e-003**	**0.0000**	**95.2077**

3.30 70-kV Power Line Pole Tower Installation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2259	1.7600	1.6673	5.5700e-003		0.0685	0.0685		0.0630	0.0630	0.0000	489.3620	489.3620	0.1583	0.0000	493.3187
Total	**0.2259**	**1.7600**	**1.6673**	**5.5700e-003**		**0.0685**	**0.0685**		**0.0630**	**0.0630**	**0.0000**	**489.3620**	**489.3620**	**0.1583**	**0.0000**	**493.3187**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5800e-003	0.1980	0.0624	7.5000e-004	0.0208	4.6000e-004	0.0213	6.0200e-003	4.4000e-004	6.4500e-003	0.0000	72.8857	72.8857	3.0100e-003	0.0000	72.9609
Worker	0.0124	9.3100e-003	0.0873	2.5000e-004	0.0292	1.9000e-004	0.0294	7.7700e-003	1.7000e-004	7.9400e-003	0.0000	22.2316	22.2316	6.1000e-004	0.0000	22.2468
Total	**0.0190**	**0.2073**	**0.1497**	**1.0000e-003**	**0.0501**	**6.5000e-004**	**0.0507**	**0.0138**	**6.1000e-004**	**0.0144**	**0.0000**	**95.1174**	**95.1174**	**3.6200e-003**	**0.0000**	**95.2077**

3.31 70-kV Substation Install Yard Rock - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3200e-003	0.0358	0.0414	1.1000e-004		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	9.6994	9.6994	3.1400e-003	0.0000	9.7778
Total	**4.3200e-003**	**0.0358**	**0.0414**	**1.1000e-004**		**1.4000e-003**	**1.4000e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**9.6994**	**9.6994**	**3.1400e-003**	**0.0000**	**9.7778**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0107	3.3900e-003	4.0000e-005	1.1300e-003	2.0000e-005	1.1600e-003	3.3000e-004	2.0000e-005	3.5000e-004	0.0000	3.9531	3.9531	1.6000e-004	0.0000	3.9572
Worker	2.1000e-004	1.6000e-004	1.5200e-003	0.0000	5.3000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4030	0.4030	1.0000e-005	0.0000	0.4032
Total	**5.7000e-004**	**0.0109**	**4.9100e-003**	**4.0000e-005**	**1.6600e-003**	**2.0000e-005**	**1.7000e-003**	**4.7000e-004**	**2.0000e-005**	**4.9000e-004**	**0.0000**	**4.3561**	**4.3561**	**1.7000e-004**	**0.0000**	**4.3604**

3.31 70-kV Substation Install Yard Rock - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3200e-003	0.0358	0.0414	1.1000e-004		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	9.6993	9.6993	3.1400e-003	0.0000	9.7778
Total	**4.3200e-003**	**0.0358**	**0.0414**	**1.1000e-004**		**1.4000e-003**	**1.4000e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**9.6993**	**9.6993**	**3.1400e-003**	**0.0000**	**9.7778**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0107	3.3900e-003	4.0000e-005	1.1300e-003	2.0000e-005	1.1600e-003	3.3000e-004	2.0000e-005	3.5000e-004	0.0000	3.9531	3.9531	1.6000e-004	0.0000	3.9572
Worker	2.1000e-004	1.6000e-004	1.5200e-003	0.0000	5.3000e-004	0.0000	5.4000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4030	0.4030	1.0000e-005	0.0000	0.4032
Total	**5.7000e-004**	**0.0109**	**4.9100e-003**	**4.0000e-005**	**1.6600e-003**	**2.0000e-005**	**1.7000e-003**	**4.7000e-004**	**2.0000e-005**	**4.9000e-004**	**0.0000**	**4.3561**	**4.3561**	**1.7000e-004**	**0.0000**	**4.3604**

3.32 230-kV Substation Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1200e-003	0.0208	0.0281	4.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	3.3654	3.3654	1.0900e-003	0.0000	3.3927
Total	**2.1200e-003**	**0.0208**	**0.0281**	**4.0000e-005**	**0.0000**	**1.1100e-003**	**1.1100e-003**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**3.3654**	**3.3654**	**1.0900e-003**	**0.0000**	**3.3927**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.7000e-004	0.0292	9.2000e-003	1.1000e-004	3.0700e-003	7.0000e-005	3.1400e-003	8.9000e-004	6.0000e-005	9.5000e-004	0.0000	10.7476	10.7476	4.4000e-004	0.0000	10.7586
Worker	1.8000e-004	1.3000e-004	1.2400e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3125	0.3125	1.0000e-005	0.0000	0.3128
Total	**1.1500e-003**	**0.0293**	**0.0104**	**1.1000e-004**	**3.4800e-003**	**7.0000e-005**	**3.5500e-003**	**1.0000e-003**	**6.0000e-005**	**1.0600e-003**	**0.0000**	**11.0601**	**11.0601**	**4.5000e-004**	**0.0000**	**11.0714**

3.32 230-kV Substation Cleanup and Restoration - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1200e-003	0.0208	0.0281	4.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003	0.0000	3.3654	3.3654	1.0900e-003	0.0000	3.3927
Total	**2.1200e-003**	**0.0208**	**0.0281**	**4.0000e-005**	**0.0000**	**1.1100e-003**	**1.1100e-003**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**3.3654**	**3.3654**	**1.0900e-003**	**0.0000**	**3.3927**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.7000e-004	0.0292	9.2000e-003	1.1000e-004	3.0700e-003	7.0000e-005	3.1400e-003	8.9000e-004	6.0000e-005	9.5000e-004	0.0000	10.7476	10.7476	4.4000e-004	0.0000	10.7586
Worker	1.8000e-004	1.3000e-004	1.2400e-003	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3125	0.3125	1.0000e-005	0.0000	0.3128
Total	**1.1500e-003**	**0.0293**	**0.0104**	**1.1000e-004**	**3.4800e-003**	**7.0000e-005**	**3.5500e-003**	**1.0000e-003**	**6.0000e-005**	**1.0600e-003**	**0.0000**	**11.0601**	**11.0601**	**4.5000e-004**	**0.0000**	**11.0714**

3.33 70-kV Cleanup and Restoration - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.2000e-004	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2754	0.2754	1.0000e-005	0.0000	0.2756
Total	**1.5000e-004**	**1.2000e-004**	**1.0800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2754**	**0.2754**	**1.0000e-005**	**0.0000**	**0.2756**

3.33 70-kV Cleanup and Restoration - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.2000e-004	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2754	0.2754	1.0000e-005	0.0000	0.2756
Total	**1.5000e-004**	**1.2000e-004**	**1.0800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2754**	**0.2754**	**1.0000e-005**	**0.0000**	**0.2756**

3.34 70-kV Substation Testing and Commissioning - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	5.8200e-003	1.8300e-003	2.0000e-005	6.1000e-004	1.0000e-005	6.3000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	2.1413	2.1413	9.0000e-005	0.0000	2.1435
Worker	8.2000e-004	6.2000e-004	5.7800e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9700e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.4844	1.4844	4.0000e-005	0.0000	1.4854
Total	**1.0100e-003**	**6.4400e-003**	**7.6100e-003**	**4.0000e-005**	**2.5600e-003**	**2.0000e-005**	**2.6000e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**3.6256**	**3.6256**	**1.3000e-004**	**0.0000**	**3.6289**

3.34 70-kV Substation Testing and Commissioning - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9000e-004	5.8200e-003	1.8300e-003	2.0000e-005	6.1000e-004	1.0000e-005	6.3000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	2.1413	2.1413	9.0000e-005	0.0000	2.1435
Worker	8.2000e-004	6.2000e-004	5.7800e-003	2.0000e-005	1.9500e-003	1.0000e-005	1.9700e-003	5.2000e-004	1.0000e-005	5.3000e-004	0.0000	1.4844	1.4844	4.0000e-005	0.0000	1.4854
Total	**1.0100e-003**	**6.4400e-003**	**7.6100e-003**	**4.0000e-005**	**2.5600e-003**	**2.0000e-005**	**2.6000e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**3.6256**	**3.6256**	**1.3000e-004**	**0.0000**	**3.6289**

3.35 70-kV Power Line Conductor Installation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0639	0.5478	0.4287	1.4000e-003		0.0226	0.0226		0.0208	0.0208	0.0000	122.7593	122.7593	0.0397	0.0000	123.7519
Total	**0.0639**	**0.5478**	**0.4287**	**1.4000e-003**		**0.0226**	**0.0226**		**0.0208**	**0.0208**	**0.0000**	**122.7593**	**122.7593**	**0.0397**	**0.0000**	**123.7519**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.7000e-004	0.0291	9.1700e-003	1.1000e-004	3.0600e-003	7.0000e-005	3.1300e-003	8.8000e-004	6.0000e-005	9.5000e-004	0.0000	10.7064	10.7064	4.4000e-004	0.0000	10.7174
Worker	2.2000e-003	1.6700e-003	0.0156	4.0000e-005	5.2800e-003	3.0000e-005	5.3100e-003	1.4000e-003	3.0000e-005	1.4300e-003	0.0000	4.0078	4.0078	1.1000e-004	0.0000	4.0106
Total	**3.1700e-003**	**0.0308**	**0.0248**	**1.5000e-004**	**8.3400e-003**	**1.0000e-004**	**8.4400e-003**	**2.2800e-003**	**9.0000e-005**	**2.3800e-003**	**0.0000**	**14.7142**	**14.7142**	**5.5000e-004**	**0.0000**	**14.7280**

3.35 70-kV Power Line Conductor Installation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0639	0.5478	0.4287	1.4000e-003		0.0226	0.0226		0.0208	0.0208	0.0000	122.7592	122.7592	0.0397	0.0000	123.7517
Total	**0.0639**	**0.5478**	**0.4287**	**1.4000e-003**		**0.0226**	**0.0226**		**0.0208**	**0.0208**	**0.0000**	**122.7592**	**122.7592**	**0.0397**	**0.0000**	**123.7517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.7000e-004	0.0291	9.1700e-003	1.1000e-004	3.0600e-003	7.0000e-005	3.1300e-003	8.8000e-004	6.0000e-005	9.5000e-004	0.0000	10.7064	10.7064	4.4000e-004	0.0000	10.7174
Worker	2.2000e-003	1.6700e-003	0.0156	4.0000e-005	5.2800e-003	3.0000e-005	5.3100e-003	1.4000e-003	3.0000e-005	1.4300e-003	0.0000	4.0078	4.0078	1.1000e-004	0.0000	4.0106
Total	**3.1700e-003**	**0.0308**	**0.0248**	**1.5000e-004**	**8.3400e-003**	**1.0000e-004**	**8.4400e-003**	**2.2800e-003**	**9.0000e-005**	**2.3800e-003**	**0.0000**	**14.7142**	**14.7142**	**5.5000e-004**	**0.0000**	**14.7280**

3.35 70-kV Power Line Conductor Installation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2634	0.2192	7.3000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	63.7556	63.7556	0.0206	0.0000	64.2711
Total	**0.0321**	**0.2634**	**0.2192**	**7.3000e-004**		**0.0107**	**0.0107**		**9.8400e-003**	**9.8400e-003**	**0.0000**	**63.7556**	**63.7556**	**0.0206**	**0.0000**	**64.2711**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	0.0146	4.5300e-003	6.0000e-005	1.5900e-003	3.0000e-005	1.6200e-003	4.6000e-004	3.0000e-005	4.9000e-004	0.0000	5.5287	5.5287	2.3000e-004	0.0000	5.5345
Worker	1.0800e-003	7.8000e-004	7.4500e-003	2.0000e-005	2.7400e-003	2.0000e-005	2.7600e-003	7.3000e-004	2.0000e-005	7.4000e-004	0.0000	2.0002	2.0002	5.0000e-005	0.0000	2.0014
Total	**1.5600e-003**	**0.0154**	**0.0120**	**8.0000e-005**	**4.3300e-003**	**5.0000e-005**	**4.3800e-003**	**1.1900e-003**	**5.0000e-005**	**1.2300e-003**	**0.0000**	**7.5289**	**7.5289**	**2.8000e-004**	**0.0000**	**7.5360**

3.35 70-kV Power Line Conductor Installation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0321	0.2634	0.2192	7.3000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	63.7556	63.7556	0.0206	0.0000	64.2711
Total	**0.0321**	**0.2634**	**0.2192**	**7.3000e-004**		**0.0107**	**0.0107**		**9.8400e-003**	**9.8400e-003**	**0.0000**	**63.7556**	**63.7556**	**0.0206**	**0.0000**	**64.2711**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	0.0146	4.5300e-003	6.0000e-005	1.5900e-003	3.0000e-005	1.6200e-003	4.6000e-004	3.0000e-005	4.9000e-004	0.0000	5.5287	5.5287	2.3000e-004	0.0000	5.5345
Worker	1.0800e-003	7.8000e-004	7.4500e-003	2.0000e-005	2.7400e-003	2.0000e-005	2.7600e-003	7.3000e-004	2.0000e-005	7.4000e-004	0.0000	2.0002	2.0002	5.0000e-005	0.0000	2.0014
Total	**1.5600e-003**	**0.0154**	**0.0120**	**8.0000e-005**	**4.3300e-003**	**5.0000e-005**	**4.3800e-003**	**1.1900e-003**	**5.0000e-005**	**1.2300e-003**	**0.0000**	**7.5289**	**7.5289**	**2.8000e-004**	**0.0000**	**7.5360**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0231	0.0142	4.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	3.4360	3.4360	1.1100e-003	0.0000	3.4638
Total	**2.0300e-003**	**0.0231**	**0.0142**	**4.0000e-005**	**2.3900e-003**	**8.1000e-004**	**3.2000e-003**	**2.6000e-004**	**7.4000e-004**	**1.0000e-003**	**0.0000**	**3.4360**	**3.4360**	**1.1100e-003**	**0.0000**	**3.4638**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-004	4.5400e-003	1.4100e-003	2.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.7201	1.7201	7.0000e-005	0.0000	1.7219
Worker	2.5000e-004	1.8000e-004	1.7500e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.4754	0.4754	1.0000e-005	0.0000	0.4757
Total	**4.0000e-004**	**4.7200e-003**	**3.1600e-003**	**3.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**2.1955**	**2.1955**	**8.0000e-005**	**0.0000**	**2.1976**

3.36 70-kV Power Line Clean-up and Restoration - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0231	0.0142	4.0000e-005		8.1000e-004	8.1000e-004		7.4000e-004	7.4000e-004	0.0000	3.4360	3.4360	1.1100e-003	0.0000	3.4638
Total	**2.0300e-003**	**0.0231**	**0.0142**	**4.0000e-005**	**9.3000e-004**	**8.1000e-004**	**1.7400e-003**	**1.0000e-004**	**7.4000e-004**	**8.4000e-004**	**0.0000**	**3.4360**	**3.4360**	**1.1100e-003**	**0.0000**	**3.4638**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-004	4.5400e-003	1.4100e-003	2.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.7201	1.7201	7.0000e-005	0.0000	1.7219
Worker	2.5000e-004	1.8000e-004	1.7500e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.4754	0.4754	1.0000e-005	0.0000	0.4757
Total	**4.0000e-004**	**4.7200e-003**	**3.1600e-003**	**3.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**2.1955**	**2.1955**	**8.0000e-005**	**0.0000**	**2.1976**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	13.00	5.00	5.00	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.588806	0.027737	0.198305	0.114471	0.022249	0.005748	0.012759	0.019721	0.002316	0.001163	0.004776	0.000758	0.001192

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.3482	62.3482	2.8200e-003	5.8000e-004	62.5924
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.3482	62.3482	2.8200e-003	5.8000e-004	62.5924
NaturalGas Mitigated	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699
NaturalGas Unmitigated	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	142880	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699
Total		**7.7000e-004**	**7.0000e-003**	**5.8800e-003**	**4.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**7.6246**	**7.6246**	**1.5000e-004**	**1.4000e-004**	**7.6699**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	142880	7.7000e-004	7.0000e-003	5.8800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.6246	7.6246	1.5000e-004	1.4000e-004	7.6699
Total		**7.7000e-004**	**7.0000e-003**	**5.8800e-003**	**4.0000e-005**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**7.6246**	**7.6246**	**1.5000e-004**	**1.4000e-004**	**7.6699**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	214320	62.3482	2.8200e-003	5.8000e-004	62.5924
Total		**62.3482**	**2.8200e-003**	**5.8000e-004**	**62.5924**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	214320	62.3482	2.8200e-003	5.8000e-004	62.5924
Total		**62.3482**	**2.8200e-003**	**5.8000e-004**	**62.5924**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493
Unmitigated	27.9120	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	27.9009					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0111	1.0900e-003	0.1202	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004	0.0000	0.2340	0.2340	6.1000e-004	0.0000	0.2493
Total	**27.9120**	**1.0900e-003**	**0.1202**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.2340**	**0.2340**	**6.1000e-004**	**0.0000**	**0.2493**

Data retrieval failed for the subreport, 'subreport1', located at: subAreaDetail. Please check the log files for more information.

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Trucks	1	4.00	13	402	0.38	Diesel
Off-Highway Trucks	1	4.00	12	402	0.38	Diesel
Other General Industrial Equipment	1	8.00	2	400	0.34	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Off-Highway Trucks	3.1100e-003	0.0208	0.0203	8.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	7.2595	7.2595	2.3500e-003	0.0000	7.3182
Other General Industrial Equipment	3.8000e-004	2.7700e-003	2.6600e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.0291	1.0291	3.3000e-004	0.0000	1.0374
Total	**3.4900e-003**	**0.0236**	**0.0230**	**9.0000e-005**		**8.4000e-004**	**8.4000e-004**		**7.8000e-004**	**7.8000e-004**	**0.0000**	**8.2886**	**8.2886**	**2.6800e-003**	**0.0000**	**8.3556**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

MEMORANDUM

Date: February 22, 2021

To: California Public Utilities Commission (CPUC)

From: Pacific Gas and Electric Company (PG&E)

Subject: Estrella DEIR Comments Attachment 4 – Revised Helicopter Noise Analysis

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HELICOPTER OPERATION ASSUMPTIONS

The following are revised assumptions for helicopter use during construction for the Estrella Substation and Paso Robles Area Reinforcement Project, which are based on assumptions provided to the CPUC for the Fulton-Fitch Mountain Reconductoring Project.

- One light/medium lift helicopters will be used to install new conductor on the new 70 kV power line segment and one heavy lift helicopter will be used to replace at most 10 poles along the bluff areas near South and North River Road on the reconductoring segment. Helicopters will not be used to replace conductor on the reconductoring segment. It is anticipated that construction of the reconductoring segment will occur before installation of the new 70 kV power line; therefore, the heavy lift helicopter and the light/medium lift helicopters will not operate at the same time.
  - The light/medium helicopter will be used to transport tools and most project materials weighing less than 5,000 pounds. The light/medium helicopter will be used to pull in the sock line that will be used to pull conductor. The light duty helicopter will be similar to the MD (McDonnell Douglas) 520N with the Notar System (no tail rotor) or Aerospatial SD-350.
  - The heavy lift helicopter will be used to transport the heaviest project materials weighing between 5,000 and 20,000 pounds, such as rock/gravel (if native soil is not adequate), soil (if soil cannot be spread along the pole line), new light-duty steel poles, and old poles. The heavy lift helicopters could also be used to remove old pole stubs from the ground. The heavy duty helicopter will be similar to the Sikorsky S92A or Sikorsky S70.

- Construction in the new 70 kV power line segment will be focused between pull-and-tension sites ("pull spans") in areas where driving along the power line is not possible (due to terrain, vineyards, etc.) until all poles and conductor are completely replaced along the section of the line. After construction is completed in each pull span, construction will transition to the next pull span and it is unlikely helicopters will return to the area for the remainder of construction. Construction will progress from west to east along the following pull spans:
  – **Pull Span 1:** Pole 96 to 101 (6 poles)
  – **Pull Span 2:** Pole 92 to 96 (5 poles)
  – **Pull Span 3:** Pole 71 to 92 (22 poles)
  – **Pull Span 10:** Pole 17 to 28 (12 poles)
  – **Pull Span 11:** Pole 11 to 17 (7 poles)
  – **Pull Span 12:** Pole 7 to 11 (4 poles)
- Helicopter operation in each pull span will be supported by the use of one or two landing zones, which will typically be the closest available locations on either end. Landing zones located between pull spans could be used to support helicopter activities in both pull spans.
- The planned landing zone south of State Route (SR-) 46 along the reconductoring segment is now occupied by a home. Therefore, a new landing zone / staging area has been identified west of North River Road approximately 0.2 mile north of Union Road to support pole replacement work south of SR-46. See Figure 1.

The following tables provide estimates for daily helicopter trips, as well as the duration of time helicopters will hover at poles and landing zones during each trip. **Table 1** lists the maximum daily helicopter trips and hovering times at poles and landing zones. **Table 2** lists the maximum daily helicopter operation based on the trips and hovering times listed in **Table 1**. **Table 3** summarizes the maximum daily helicopter operations that could occur at a single pole location / pull span.

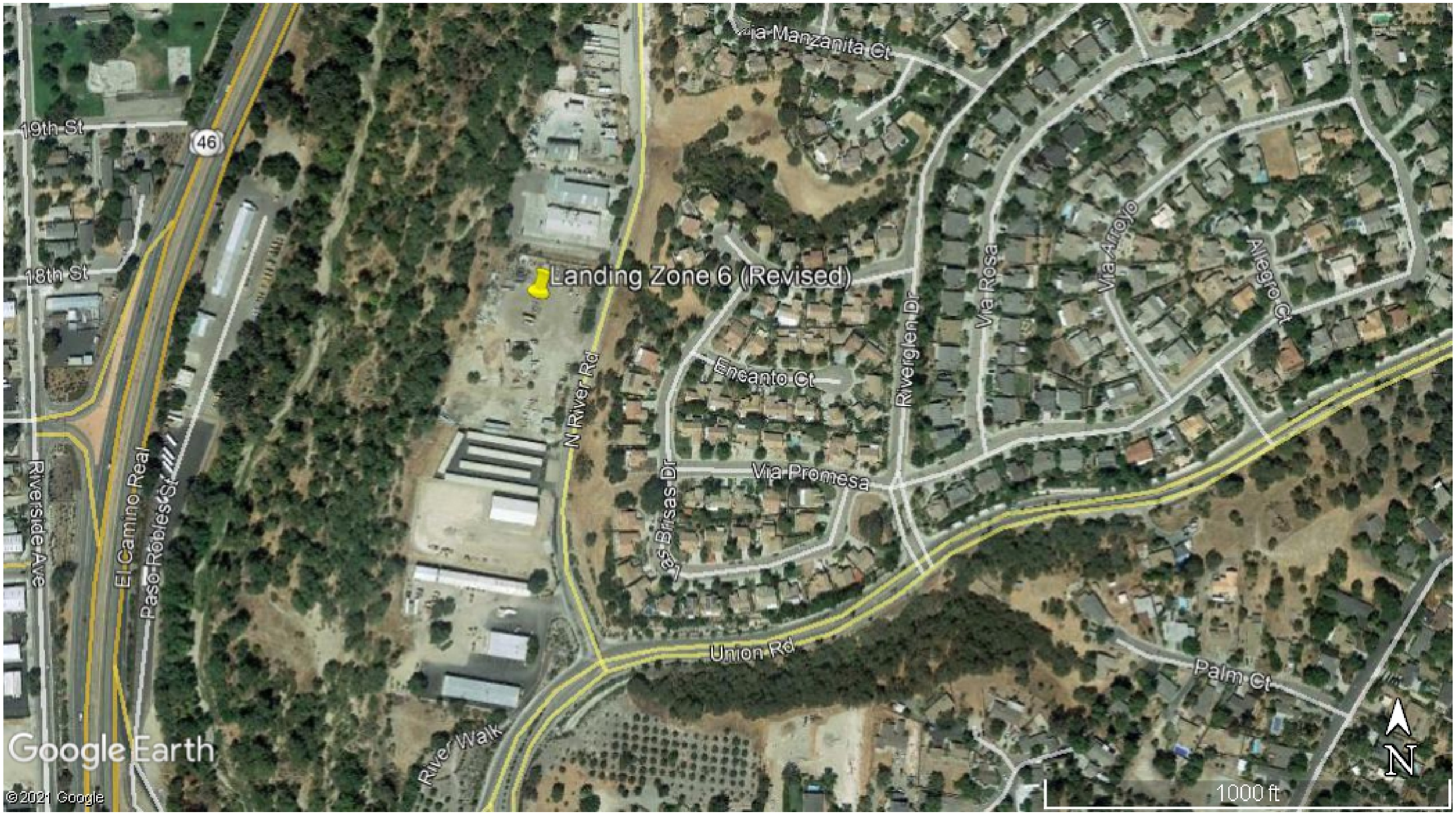

Figure 1: Landing Zone 6 (Revised)

Table 1 Maximum Daily Helicopter Trips and Hovering Times

Construction Activity	Days/ Activity	Helicopter Size	Maximum Poles Accessed/Day	Trips/Pole or Pull Span			Total Trips/ Landing Zone [a]	Hovering Time/Trip (minutes)	
				Workers	Tools/Materials	Total		Pole	Landing Zone
Pole Installation/Transfer Distribution/Pole Removal (Reconductoring Segment)	5[b]	Heavy	2[b]	0	6 (LDSPs)[c]	6	14[d]	1[e]	2[f]
Install Sock Line (New 70 kV Power Line)	6[g]	Light/Medium	22[h]	0	8[i]	8	10[i]	--	2[f]

Notes:

[a] Includes morning arrival and evening departure trip (one round trip for light/medium lift and one round trip for heavy lift each way), one round trip for fueling, and all pole/pull span trips per day.

[b] Up to 10 LDSPs will require the use of a helicopter. One crew can install one LDSP per day, and two crews will be conducting the pole replacements, so two LDSPs will be installed per day; therefore, 5 days will be required to install all 10 LDSPs.

[c] Each LDSP will require six total helicopter trips: one to deliver and set the new pole, one to deliver back-fill rock, one to remove unused soil that can't be spread in the area, two to remove the old pole pieces, and one to help raise the old conductor to the new arm position on the new poles.

[d] Two LDSPs will be installed per day and each LDSP will require 6 trips; therefore, 12 round trips from the landing zone to the pole locations will be required per day. In addition, one round trip for morning arrival and evening departure and one round trip for fueling will be required, resulting in a total of 14 round trips from the landing zone per day.

[e] The helicopter hover time at the pole site for each delivery or removal will be approximately 1 minute.

[f] The hovering time at each landing zone will be approximately 2 minutes per trip.

[g] Six pull spans will require the use of a helicopter, and one pull span will be completed per day; therefore, 6 days will be required to install sock lines along all six pull spans.

[h] The longest span contains 22 poles; therefore, the maximum poles accessed in a day will be 22.

[i] There will be a total of eight sock lines that need to be installed in each pull span: six sock lines for the conductors, one sock line for a common neutral conductor, and one sock line for an ADSS fiber cable. Each sock line will require one trip and one pull span will be completed per day; therefore, eight round trips from the landing zone to each pull span will be required per day. In addition, one round trip for morning arrival and evening departure and one round trip for fueling will be required, resulting in a total of 10 round trips from the landing zone per day.

Table 2 Maximum Daily Helicopter Operation

Construction Activity	Days/ Activity	Helicopter Lift/Size	Single Pole / Pull Span		All Poles / Pull Spans		Landing Zones		Flight Paths (Traveling)[a]		Total Time Operating	
			Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours
Pole Installation/Transfer Distribution/Pole Removal (Reconductoring Segment)	5[b]	Heavy	6 (LDSPs)[c]	0.1	12[d]	0.2	28[e]	0.5	112[f]	1.9	152	2.5
Install Sock Line (New 70 kV Power Line)	6[g]	Light/Medium	160[h]	2.7	160[h]	2.7	20[i]	0.3	80[j]	1.3	260	4.3

Notes:

[a] Values for flight paths represent the period traveling from the landing zone to the pole or pull span, which is an average of 2 miles (one way). At an average speed of 30 miles per hour, approximately 8 minutes of flight time will be required per round trip.

[b] Up to 10 LDSPs will require the use of a helicopter. One crew can install one LDSP per day, and two crews will be conducting the pole replacements, so two LDSPs will be installed per day; therefore, 5 days will be required to install all 10 LDSPs.

[c] The helicopter hover time at each pole will be six trips per day with 1 minute per pole hover time for a total of 6 minutes.

[d] Up to two poles will be installed per day with 6 minutes of hover time at each pole for a total 12 minutes of hover time per day.

[e] Fourteen round trips per day (12 to the poles, one for morning arrival/evening departure and one for refueling) at 2 minutes of hover time per trip will result in approximately 28 minutes of hover time per day at the landing zone.

[f] Fourteen round trips per day at 8 minutes per trip flight time will result in approximately 112 minutes of flight time per day.

[g] Six pull spans will require the use of a helicopter, and one pull span will be completed per day; therefore, 6 days will be required to install sock lines along all six pull spans.

[h] Each of the eight sock lines will take approximately 20 minutes to fly into the travelers connected to each pole, for each pull section, so this will take approximately 160 minutes per day.

[i] There will be a total of eight sock lines that need to be installed in each pull span section, six sock lines for the conductors, one sock line for a common neutral conductor, and one sock line for an ADSS fiber cable. Ten round trips will be required per pull section (eight for the sock lines, one for morning arrival/evening departure, and one for refueling). Each round trip is assumed to require approximately 2 minutes of hover time at the landing zone for a total of 20 minutes per day.

[j] Ten helicopter trips per pole with one pole span per day at 8 minutes per trip flight time will result in approximately 80 minutes of flight time per day.

Table 3 Maximum Daily Helicopter Operation – Single Pole / Pull Span

Helicopter Lift/Size	Measurement Period	Pole / Pull Span		Landing Zone		Flight Path [a]	
		Minutes	Hours	Minutes	Hours	Minutes	Hours
Heavy	Entire Day	6 (LDSPs)[b]	0.1	16[c]	0.3	64[d]	1.1
	Single Hour	4 (LDSPs)[e]	0.1	8[e]	0.1	32[e]	0.5
Light/Medium	Entire Day	160[f]	2.7	20[g]	0.3	80[h]	1.3
	Single Hour	40[i]	0.7	4[i]	0.1	16[i]	0.3

Notes:

[a] Values for flight path represent the period traveling from the landing zone to the pole or pull span, which is an average of 2 miles (one way). At an average speed of 30 miles per hour, approximately 8 minutes of flight time will be required per round trip.

[b] The helicopter hover time at each pole will be six trips per day with 1 minute per pole hover time for a total of 6 minutes.

[c] Each pole will require six trips per day, plus one trip for morning arrival/evening departure, and one trip for refueling, for a total of eight trips per pole per day. Landing zone hover time per trip is approximately 2 minutes; therefore, 16 minutes of hover time at the landing zone will be required.

[d] Eight helicopter trips per pole at 8 minutes per trip flight time will result in approximately 64 minutes of flight time per day.

[e] The most helicopter trips per hour will be 4 round trips during removal activities. This will equate to 4 minutes for pole hover time (4 trips at 1 minute per trip), 8 minutes for landing zone hovering time (4 trips at 2 minutes per trip), and 32 minutes for flight time (4 trips at 8 minutes per trip).

[f] Each of the eight sock lines will take approximately 20 minutes to fly into the travelers connected to each pole, for each pull section, so this will take approximately 160 minutes per day.

[g] Ten round trips will be required per pull section (eight for the sock lines, one for morning arrival/evening departure, and one for refueling). Each round trip is assumed to require approximately 2 minutes of hover time at the landing zone for a total of 20 minutes per day.

[h] Ten helicopter trips per pole with one pole span per day at 8 minutes per trip flight time will result in approximately 80 minutes of flight time per day.

[i] Two sock line pulls per hour is the maximum that will be accomplished. This equates to 40 minutes per hour for the flight time along the pull span (2 sock line pulls at 20 minutes per pull), 4 minutes of landing zone hover time (2 trips at 2 minutes per trip), and 16 minutes per hour for the flight time (2 trips at 8 minutes per trip).

CONCLUSION

Based on these assumptions, SWCA Environmental Consultants has recalculated the helicopter noise levels. The noise levels for the heavy lift helicopter were calculated using the same methodology described in the Draft Environmental Impact Report (DEIR), as shown in Appendix A. The noise levels for the light/medium lift helicopter were calculated using FAA's AEDT Version 3c model, as shown in Appendix B.

Table 4 shows the estimated helicopter noise levels associated with construction of the Proposed Project in terms of the distance to the Federal Transit Administration's (FTA's) 90 A-weighted decibel (dBA) equivalent sound level metric normalized over a one-hour time period ($L_{eq(1hr)}$) threshold presented by the CPUC in the DEIR.[1]

Table 4 Helicopter Noise Levels and Distance to Threshold

Helicopter Lift/Size	Helicopter Activity	Distance to 90 dBA $L_{eq(1hr)}$ (feet)
Heavy	Approaching landing zone or installation site	39.0 (Note 1)
	Hovering at the landing zone	76.4
	Cumulative - Landing Zone	85.4
	Hovering at pole installation site	69.9
	Ground level idling	7.5
	Level flight	857.8 (Note 2)
Light/Medium	All activities	(Note 3)

Notes:

No adjustments were made for lateral attenuation, source noise, or lateral directivity of the helicopters as adequate information was not readily available to make these adjustments.

1. Approaching produced higher noise levels than departing, so departing noise levels is not shown.

2. Appropriate hovering noise data is not readily available and is highly dependent on how close the helicopter is to the ground.

3. Light/medium helicopter activities are all below 90 dBA at all distances.

[1] FTA Transit Noise and Vibration Impact Assessment Manual, which contains guidelines for the evaluation of the significance of construction noise impacts, is for transit projects and should not be used to determine significance of the proposed utility project.

Appendix A: Heavy Lift Helicopter Noise

Heavy Lift Helicopter Noise

NPD Table for Sikorsky 70

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
Distance (ft)				200	400	630	1000	2000	4000	6300	10000	16000	25000
S70	S	A	L	94.9	91.4	89	86.3	81.9	76.9	73.1	68.6	64.6	60.2
S70	S	A	C	97.6	94.3	92	89.7	85.8	81.4	78	74.1	70.5	66.7
S70	S	A	R	100	96.7	94.4	92	88.1	83.5	79.9	75.6	71.8	67.6
S70	S	D	L	91.3	87.5	84.7	81.7	76.6	70.8	66.6	61.9	57.5	52.9
S70	S	D	C	89.5	85.7	83.1	80.2	75.4	69.9	65.6	60.8	56.3	51.6
S70	S	D	R	92.1	88.4	85.8	82.9	78.2	72.8	68.8	64.1	59.9	55.3
S70	M	G	S	73.7	66.5	61.8	56.9	49.7	42.5	37.8	32.9	28.2	23.4
S70	M	I	S	90.8	83.6	78.9	74	66.8	59.6	54.9	50	45.3	40.5
S70	S	L	L	100.6	97.1	94.6	91.8	87.1	81.4	77	72	67.4	62.5
S70	S	L	C	98	94.4	91.9	89	84.2	78.4	73.9	68.7	64	58.9
S70	S	L	R	101	97.2	94.5	91.6	86.6	80.8	76.4	71.2	66.5	61.5

Maximum Daily Helicopter Operation Single Hour

Flight Phase\ Area	Duration (minutes)			Acoustic Utilization Factor (%/hour)		
	Pole	Landing zone	Flight Path	Pole	Landing zone	Flight Path
Approaching	0	1	0	0.0	1.7	0.0
Departing	0	1	0	0.0	1.7	0.0
Ground Idling	0	1	0	0.0	1.7	0.0
Hover Above Ground	4	5	0	6.7	8.3	0.0
Level Flight	0	0	32	0.0	0.0	53.3
Total Duration	44			73.3		

NPD Adjusted for Acoustic Factor - Pole

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
Distance (ft)				200	400	630	1000	2000	4000	6300	10000	16000	25000
S70	S	A	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	S	D	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	G	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	I	S	79.0	71.8	67.1	62.2	55.0	47.8	43.1	38.2	33.5	28.7
S70	S	L	L	0	0	0	0	0	0	0	0	0	0
Total Noise Level (1-hr LAeq) from pole or pull span				79.0	71.8	67.1	62.2	55.0	47.8	43.1	38.2	33.5	28.7

NPD Adjusted for Acoustic Factor - Landing Zone

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
Distance (ft)				200	400	630	1000	2000	4000	6300	10000	16000	25000
S70	S	A	R	82.2	78.9	76.6	74.2	70.3	65.7	62.1	57.8	54.0	49.8
S70	S	D	R	74.3	70.6	68.0	65.1	60.4	55.0	51.0	46.3	42.1	37.5
S70	M	G	S	55.9	48.7	44.0	39.1	31.9	24.7	20.0	15.0	10.1	4.7
S70	M	I	S	80.0	72.8	68.1	63.2	56.0	48.8	44.1	39.2	34.5	29.7
S70	S	L	L	0	0	0	0	0	0	0	0	0	0
Total Noise Level (1-hr LAeq) from Landing Zone				84.7	80.4	77.7	75.0	70.9	66.2	62.5	58.2	54.3	50.1

NPD Adjusted for Acoustic Factor - Flight Path

Helicopter	NOISE_TYPE	OP_MODE	SIDE_TYPE	L_200	L_400	L_630	L_1000	L_2000	L_4000	L_6300	L_10000	L_16000	L_25000
Distance (ft)				200	400	630	1000	2000	4000	6300	10000	16000	25000
S70	S	A	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	S	D	R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	G	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	M	I	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	S	L	L	97.9	94.4	91.9	89.1	84.4	78.7	74.3	69.3	64.7	59.8
Total Noise Level (1-hr LAeq) from Flight Path				97.9	94.4	91.9	89.1	84.4	78.7	74.3	69.3	64.7	59.8

Helicopter Noise Levels and Distance to Threshold - Flight Path

Activity	Ld_1	Ld_2	d_1	d_2	d	Ld
	dBA	dBA	ft	ft	ft	dBA
Level Flight	91.9	89.1	630	1000	857.78	90.0

$$L_d = L_{d1} + \frac{(L_{d2} - L_{d1}) \times (\log_{10} d - \log_{10} d_1)}{(\log_{10} d_2 - \log_{10} d_1)}$$

Appendix B: Light/Medium Lift Helicopter Noise

Light/Medium Lift Helicopter Noise

Noise Result Index	Latitude (deg)	Longitude (deg)	Elevation (ft)	Noise Level (dB)	Metric Type	Metric Name	Receptor ID	Receptor Name	Receptor Set ID	Receptor Set Name
1	35.591058	-120.727217	838	1.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2	35.591061	-120.72313	838	2.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
3	35.591064	-120.719043	838	2.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
4	35.591067	-120.714956	838	3.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
5	35.59107	-120.710869	838	3.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
6	35.591073	-120.706781	838	4.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
7	35.591075	-120.702694	838	5.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
8	35.591078	-120.698607	838	5.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
9	35.59108	-120.69452	838	6.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
10	35.591083	-120.690433	838	7.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
11	35.591085	-120.686346	838	8.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
12	35.591087	-120.682259	838	9.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
13	35.591088	-120.678172	838	10.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
14	35.59109	-120.674085	838	11.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
15	35.591092	-120.669998	838	13.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
16	35.591093	-120.665911	838	15.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
17	35.591094	-120.661824	838	18.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
18	35.591095	-120.657736	838	20.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
19	35.591096	-120.653649	838	23.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
20	35.591097	-120.649562	838	27.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
21	35.591098	-120.645475	838	31.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
22	35.591098	-120.641388	838	35.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
23	35.591099	-120.637301	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
24	35.591099	-120.633214	838	31.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
25	35.591099	-120.629127	838	27.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
26	35.591099	-120.62504	838	23.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
27	35.591099	-120.620953	838	20.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
28	35.591099	-120.616866	838	18.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
29	35.591098	-120.612779	838	15.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
30	35.591098	-120.608691	838	14.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
31	35.591097	-120.604604	838	12.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
32	35.591096	-120.600517	838	11.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
33	35.591095	-120.59643	838	9.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
34	35.591094	-120.592343	838	8.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
35	35.591093	-120.588256	838	8.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
36	35.591092	-120.584169	838	7.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
37	35.59109	-120.580082	838	6.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
38	35.591088	-120.575995	838	5.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
39	35.591087	-120.571908	838	5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
40	35.591085	-120.567821	838	4.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
41	35.591083	-120.563734	838	3.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
42	35.59108	-120.559646	838	3.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
43	35.591078	-120.555559	838	2.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
44	35.591075	-120.551472	838	2.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
45	35.591073	-120.547385	838	1.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
46	35.59107	-120.543298	838	1.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
47	35.591067	-120.539211	838	0.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
48	35.591064	-120.535124	838	0.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
49	35.591061	-120.531037	838	-0.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
50	35.591058	-120.52695	838	-0.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
51	35.594396	-120.727221	838	1.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
52	35.594399	-120.723134	838	2.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
53	35.594402	-120.719047	838	2.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
54	35.594405	-120.714959	838	3.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
55	35.594408	-120.710872	838	3.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
56	35.594411	-120.706785	838	4.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
57	35.594414	-120.702698	838	5.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
58	35.594416	-120.69861	838	5.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
59	35.594419	-120.694523	838	6.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
60	35.594421	-120.690436	838	7.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
61	35.594423	-120.686349	838	8.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
62	35.594425	-120.682261	838	9.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
63	35.594427	-120.678174	838	10.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
64	35.594428	-120.674087	838	11.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
65	35.59443	-120.67	838	13.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
66	35.594431	-120.665912	838	15.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
67	35.594433	-120.661825	838	18.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
68	35.594434	-120.657738	838	20.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
69	35.594435	-120.65365	838	23.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
70	35.594436	-120.649563	838	27.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
71	35.594436	-120.645476	838	31.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
72	35.594437	-120.641389	838	35.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
73	35.594437	-120.637301	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

74	35.594437	-120.633214	838	31.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
75	35.594438	-120.629127	838	27.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
76	35.594438	-120.62504	838	23.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
77	35.594437	-120.620952	838	20.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
78	35.594437	-120.616865	838	18.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
79	35.594437	-120.612778	838	15.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
80	35.594436	-120.608691	838	14.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
81	35.594436	-120.604603	838	12.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
82	35.594435	-120.600516	838	11.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
83	35.594434	-120.596429	838	10.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
84	35.594433	-120.592342	838	9.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
85	35.594431	-120.588254	838	8.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
86	35.59443	-120.584167	838	7.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
87	35.594428	-120.58008	838	6.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
88	35.594427	-120.575993	838	5.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
89	35.594425	-120.571905	838	5.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
90	35.594423	-120.567818	838	4.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
91	35.594421	-120.563731	838	3.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
92	35.594419	-120.559644	838	3.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
93	35.594416	-120.555556	838	2.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
94	35.594414	-120.551469	838	2.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
95	35.594411	-120.547382	838	1.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
96	35.594408	-120.543295	838	1.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
97	35.594405	-120.539207	838	0.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
98	35.594402	-120.53512	838	0.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
99	35.594399	-120.531033	838	0	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
100	35.594396	-120.526946	838	-0.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
101	35.597734	-120.727225	838	1.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
102	35.597738	-120.723138	838	2.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
103	35.597741	-120.71905	838	2.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
104	35.597744	-120.714963	838	3.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
105	35.597747	-120.710876	838	4.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
106	35.59775	-120.706788	838	4.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
107	35.597752	-120.702701	838	5.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
108	35.597755	-120.698613	838	6.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
109	35.597757	-120.694526	838	6.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
110	35.597759	-120.690438	838	7.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
111	35.597761	-120.686351	838	8.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
112	35.597763	-120.682264	838	9.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
113	35.597765	-120.678176	838	10.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
114	35.597767	-120.674089	838	12.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
115	35.597768	-120.670001	838	13.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
116	35.59777	-120.665914	838	15.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
117	35.597771	-120.661826	838	18.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
118	35.597772	-120.657739	838	20.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
119	35.597773	-120.653652	838	23.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
120	35.597774	-120.649564	838	27.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
121	35.597775	-120.645477	838	31.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
122	35.597775	-120.641389	838	35.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
123	35.597776	-120.637302	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
124	35.597776	-120.633214	838	31.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
125	35.597776	-120.629127	838	27.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
126	35.597776	-120.62504	838	23.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
127	35.597776	-120.620952	838	20.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
128	35.597776	-120.616865	838	18.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
129	35.597775	-120.612777	838	16.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
130	35.597775	-120.60869	838	14.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
131	35.597774	-120.604602	838	12.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
132	35.597773	-120.600515	838	11.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
133	35.597772	-120.596428	838	10.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
134	35.597771	-120.59234	838	9.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
135	35.59777	-120.588253	838	8.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
136	35.597768	-120.584165	838	7.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
137	35.597767	-120.580078	838	6.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
138	35.597765	-120.575991	838	5.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
139	35.597763	-120.571903	838	5.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
140	35.597761	-120.567816	838	4.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
141	35.597759	-120.563728	838	4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
142	35.597757	-120.559641	838	3.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
143	35.597755	-120.555553	838	2.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
144	35.597752	-120.551466	838	2.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
145	35.59775	-120.547379	838	1.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
146	35.597747	-120.543291	838	1.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
147	35.597744	-120.539204	838	0.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
148	35.597741	-120.535116	838	0.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
149	35.597738	-120.531029	838	0.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
150	35.597734	-120.526941	838	-0.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

151	35.601073	-120.727229	838	2.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
152	35.601076	-120.723142	838	2.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
153	35.601079	-120.719054	838	3.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
154	35.601082	-120.714967	838	3.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
155	35.601085	-120.710879	838	4.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
156	35.601088	-120.706791	838	4.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
157	35.601091	-120.702704	838	5.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
158	35.601093	-120.698616	838	6.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
159	35.601095	-120.694529	838	7.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
160	35.601098	-120.690441	838	7.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
161	35.6011	-120.686353	838	8.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
162	35.601102	-120.682266	838	9.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
163	35.601103	-120.678178	838	10.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
164	35.601105	-120.674091	838	12.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
165	35.601107	-120.670003	838	13.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
166	35.601108	-120.665915	838	15.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
167	35.601109	-120.661828	838	18.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
168	35.60111	-120.65774	838	20.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
169	35.601111	-120.653653	838	23.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
170	35.601112	-120.649565	838	27.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
171	35.601113	-120.645478	838	31.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
172	35.601113	-120.64139	838	35.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
173	35.601114	-120.637302	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
174	35.601114	-120.633215	838	31.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
175	35.601114	-120.629127	838	27.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
176	35.601114	-120.62504	838	23.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
177	35.601114	-120.620952	838	20.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
178	35.601114	-120.616864	838	18.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
179	35.601113	-120.612777	838	16.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
180	35.601113	-120.608689	838	14.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
181	35.601112	-120.604602	838	12.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
182	35.601111	-120.600514	838	11.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
183	35.60111	-120.596426	838	10.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
184	35.601109	-120.592339	838	9.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
185	35.601108	-120.588251	838	8.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
186	35.601107	-120.584164	838	7.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
187	35.601105	-120.580076	838	6.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
188	35.601103	-120.575988	838	6.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
189	35.601102	-120.571901	838	5.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
190	35.6011	-120.567813	838	4.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
191	35.601098	-120.563726	838	4.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
192	35.601095	-120.559638	838	3.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
193	35.601093	-120.55555	838	3.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
194	35.601091	-120.551463	838	2.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
195	35.601088	-120.547375	838	1.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
196	35.601085	-120.543288	838	1.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
197	35.601082	-120.5392	838	1.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
198	35.601079	-120.535112	838	0.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
199	35.601076	-120.531025	838	0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
200	35.601073	-120.526937	838	-0.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
201	35.604411	-120.727234	838	2.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
202	35.604414	-120.723146	838	2.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
203	35.604417	-120.719058	838	3.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
204	35.604421	-120.71497	838	3.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
205	35.604423	-120.710882	838	4.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
206	35.604426	-120.706795	838	5.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
207	35.604429	-120.702707	838	5.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
208	35.604431	-120.698619	838	6.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
209	35.604434	-120.694531	838	7.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
210	35.604436	-120.690444	838	8.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
211	35.604438	-120.686356	838	8.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
212	35.60444	-120.682268	838	9.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
213	35.604442	-120.67818	838	11.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
214	35.604443	-120.674093	838	12.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
215	35.604445	-120.670005	838	13.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
216	35.604446	-120.665917	838	15.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
217	35.604448	-120.661829	838	18.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
218	35.604449	-120.657742	838	20.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
219	35.60445	-120.653654	838	23.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
220	35.604451	-120.649566	838	27.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
221	35.604451	-120.645478	838	31.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
222	35.604452	-120.641391	838	35.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
223	35.604452	-120.637303	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
224	35.604453	-120.633215	838	31.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
225	35.604453	-120.629127	838	27.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
226	35.604453	-120.625039	838	23.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
227	35.604453	-120.620952	838	20.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

228	35.604452	-120.616864	838	18.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
229	35.604452	-120.612776	838	16.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
230	35.604451	-120.608688	838	14.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
231	35.604451	-120.604601	838	12.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
232	35.60445	-120.600513	838	11.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
233	35.604449	-120.596425	838	10.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
234	35.604448	-120.592337	838	9.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
235	35.604446	-120.58825	838	8.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
236	35.604445	-120.584162	838	7.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
237	35.604443	-120.580074	838	6.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
238	35.604442	-120.575986	838	6.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
239	35.60444	-120.571899	838	5.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
240	35.604438	-120.567811	838	4.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
241	35.604436	-120.563723	838	4.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
242	35.604434	-120.559635	838	3.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
243	35.604431	-120.555547	838	3.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
244	35.604429	-120.55146	838	2.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
245	35.604426	-120.547372	838	2.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
246	35.604423	-120.543284	838	1.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
247	35.604421	-120.539196	838	1.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
248	35.604417	-120.535109	838	0.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
249	35.604414	-120.531021	838	0.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
250	35.604411	-120.526933	838	-0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
251	35.607749	-120.727238	838	2.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
252	35.607753	-120.72315	838	2.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
253	35.607756	-120.719062	838	3.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
254	35.607759	-120.714974	838	4.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
255	35.607762	-120.710886	838	4.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
256	35.607765	-120.706798	838	5.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
257	35.607767	-120.70271	838	5.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
258	35.60777	-120.698622	838	6.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
259	35.607772	-120.694534	838	7.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
260	35.607774	-120.690446	838	8.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
261	35.607776	-120.686358	838	9.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
262	35.607778	-120.68227	838	10.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
263	35.60778	-120.678183	838	11.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
264	35.607782	-120.674095	838	12.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
265	35.607783	-120.670007	838	14.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
266	35.607785	-120.665919	838	15.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
267	35.607786	-120.661831	838	18.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
268	35.607787	-120.657743	838	20.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
269	35.607788	-120.653655	838	23.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
270	35.607789	-120.649567	838	27.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
271	35.60779	-120.645479	838	31.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
272	35.60779	-120.641391	838	35.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
273	35.607791	-120.637303	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
274	35.607791	-120.633215	838	31.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
275	35.607791	-120.629127	838	27.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
276	35.607791	-120.625039	838	23.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
277	35.607791	-120.620951	838	20.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
278	35.607791	-120.616863	838	18.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
279	35.60779	-120.612776	838	16.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
280	35.60779	-120.608688	838	14.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
281	35.607789	-120.6046	838	12.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
282	35.607788	-120.600512	838	11.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
283	35.607787	-120.596424	838	10.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
284	35.607786	-120.592336	838	9.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
285	35.607785	-120.588248	838	8.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
286	35.607783	-120.58416	838	7.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
287	35.607782	-120.580072	838	7.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
288	35.60778	-120.575984	838	6.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
289	35.607778	-120.571896	838	5.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
290	35.607776	-120.567808	838	4.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
291	35.607774	-120.56372	838	4.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
292	35.607772	-120.559632	838	3.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
293	35.60777	-120.555544	838	3.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
294	35.607767	-120.551457	838	2.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
295	35.607765	-120.547369	838	2.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
296	35.607762	-120.543281	838	1.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
297	35.607759	-120.539193	838	1.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
298	35.607756	-120.535105	838	0.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
299	35.607753	-120.531017	838	0.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
300	35.607749	-120.526929	838	-0.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
301	35.611088	-120.727242	838	2.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
302	35.611091	-120.723154	838	3.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
303	35.611094	-120.719066	838	3.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
304	35.611097	-120.714978	838	4.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

305	35.6111	-120.710889	838	4.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
306	35.611103	-120.706801	838	5.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
307	35.611106	-120.702713	838	6.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
308	35.611108	-120.698625	838	6.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
309	35.61111	-120.694537	838	7.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
310	35.611113	-120.690449	838	8.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
311	35.611115	-120.686361	838	9.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
312	35.611117	-120.682273	838	10.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
313	35.611119	-120.678185	838	11.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
314	35.61112	-120.674097	838	12.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
315	35.611122	-120.670008	838	14.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
316	35.611123	-120.66592	838	16.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
317	35.611124	-120.661832	838	18.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
318	35.611125	-120.657744	838	20.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
319	35.611126	-120.653656	838	23.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
320	35.611127	-120.649568	838	27.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
321	35.611128	-120.64548	838	31.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
322	35.611129	-120.641392	838	35.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
323	35.611129	-120.637304	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
324	35.611129	-120.633215	838	31.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
325	35.611129	-120.629127	838	27.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
326	35.611129	-120.625039	838	23.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
327	35.611129	-120.620951	838	20.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
328	35.611129	-120.616863	838	18.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
329	35.611129	-120.612775	838	16.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
330	35.611128	-120.608687	838	14.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
331	35.611127	-120.604599	838	12.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
332	35.611126	-120.600511	838	11.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
333	35.611125	-120.596423	838	10.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
334	35.611124	-120.592334	838	9.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
335	35.611123	-120.588246	838	8.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
336	35.611122	-120.584158	838	7.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
337	35.61112	-120.58007	838	7.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
338	35.611119	-120.575982	838	6.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
339	35.611117	-120.571894	838	5.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
340	35.611115	-120.567806	838	5.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
341	35.611113	-120.563718	838	4.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
342	35.61111	-120.55963	838	3.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
343	35.611108	-120.555542	838	3.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
344	35.611106	-120.551453	838	2.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
345	35.611103	-120.547365	838	2.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
346	35.6111	-120.543277	838	1.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
347	35.611097	-120.539189	838	1.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
348	35.611094	-120.535101	838	0.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
349	35.611091	-120.531013	838	0.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
350	35.611088	-120.526925	838	-0.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
351	35.614426	-120.727246	838	2.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
352	35.614429	-120.723158	838	3.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
353	35.614433	-120.71907	838	3.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
354	35.614436	-120.714981	838	4.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
355	35.614439	-120.710893	838	5.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
356	35.614441	-120.706805	838	5.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
357	35.614444	-120.702716	838	6.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
358	35.614446	-120.698628	838	7.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
359	35.614449	-120.69454	838	7.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
360	35.614451	-120.690452	838	8.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
361	35.614453	-120.686363	838	9.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
362	35.614455	-120.682275	838	10.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
363	35.614457	-120.678187	838	11.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
364	35.614459	-120.674099	838	12.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
365	35.61446	-120.67001	838	14.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
366	35.614461	-120.665922	838	16.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
367	35.614463	-120.661834	838	18.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
368	35.614464	-120.657745	838	20.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
369	35.614465	-120.653657	838	23.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
370	35.614466	-120.649569	838	27.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
371	35.614466	-120.645481	838	31.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
372	35.614467	-120.641392	838	35.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
373	35.614467	-120.637304	838	35.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
374	35.614468	-120.633216	838	31.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
375	35.614468	-120.629127	838	27.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
376	35.614468	-120.625039	838	23.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
377	35.614468	-120.620951	838	21.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
378	35.614467	-120.616863	838	18.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
379	35.614467	-120.612774	838	16.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
380	35.614466	-120.608686	838	14.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
381	35.614466	-120.604598	838	13.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

382	35.614465	-120.60051	838	11.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
383	35.614464	-120.596421	838	10.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
384	35.614463	-120.592333	838	9.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
385	35.614461	-120.588245	838	8.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
386	35.61446	-120.584156	838	8.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
387	35.614459	-120.580068	838	7.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
388	35.614457	-120.57598	838	6.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
389	35.614455	-120.571892	838	5.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
390	35.614453	-120.567803	838	5.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
391	35.614451	-120.563715	838	4.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
392	35.614449	-120.559627	838	4.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
393	35.614446	-120.555539	838	3.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
394	35.614444	-120.55145	838	2.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
395	35.614441	-120.547362	838	2.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
396	35.614439	-120.543274	838	1.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
397	35.614436	-120.539185	838	1.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
398	35.614433	-120.535097	838	0.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
399	35.614429	-120.531009	838	0.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
400	35.614426	-120.526921	838	0.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
401	35.617764	-120.72725	838	2.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
402	35.617768	-120.723162	838	3.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
403	35.617771	-120.719073	838	4.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
404	35.617774	-120.714985	838	4.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
405	35.617777	-120.710896	838	5.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
406	35.61778	-120.706808	838	5.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
407	35.617782	-120.70272	838	6.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
408	35.617785	-120.698631	838	7.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
409	35.617787	-120.694543	838	8.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
410	35.617789	-120.690454	838	8.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
411	35.617791	-120.686366	838	9.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
412	35.617793	-120.682277	838	10.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
413	35.617795	-120.678189	838	11.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
414	35.617797	-120.6741	838	13.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
415	35.617798	-120.670012	838	14.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
416	35.6178	-120.665924	838	16.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
417	35.617801	-120.661835	838	18.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
418	35.617802	-120.657747	838	21.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
419	35.617803	-120.653658	838	23.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
420	35.617804	-120.64957	838	27.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
421	35.617805	-120.645481	838	31.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
422	35.617805	-120.641393	838	35.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
423	35.617806	-120.637304	838	35.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
424	35.617806	-120.633216	838	31.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
425	35.617806	-120.629128	838	27.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
426	35.617806	-120.625039	838	24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
427	35.617806	-120.620951	838	21.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
428	35.617806	-120.616862	838	18.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
429	35.617805	-120.612774	838	16.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
430	35.617805	-120.608685	838	14.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
431	35.617804	-120.604597	838	13.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
432	35.617803	-120.600508	838	12.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
433	35.617802	-120.59642	838	11.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
434	35.617801	-120.592332	838	10.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
435	35.6178	-120.588243	838	9.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
436	35.617798	-120.584155	838	8.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
437	35.617797	-120.580066	838	7.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
438	35.617795	-120.575978	838	6.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
439	35.617793	-120.571889	838	6.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
440	35.617791	-120.567801	838	5.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
441	35.617789	-120.563712	838	4.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
442	35.617787	-120.559624	838	4.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
443	35.617785	-120.555536	838	3.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
444	35.617782	-120.551447	838	2.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
445	35.61778	-120.547359	838	2.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
446	35.617777	-120.54327	838	1.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
447	35.617774	-120.539182	838	1.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
448	35.617771	-120.535093	838	0.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
449	35.617768	-120.531005	838	0.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
450	35.617764	-120.526916	838	0.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
451	35.621103	-120.727254	838	3.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
452	35.621106	-120.723166	838	3.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
453	35.621109	-120.719077	838	4.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
454	35.621112	-120.714989	838	4.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
455	35.621115	-120.7109	838	5.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
456	35.621118	-120.706811	838	6.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
457	35.621121	-120.702723	838	6.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
458	35.621123	-120.698634	838	7.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

459	35.621126	-120.694545	838	8.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
460	35.621128	-120.690457	838	9.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
461	35.62113	-120.686368	838	10.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
462	35.621132	-120.68228	838	11.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
463	35.621134	-120.678191	838	12.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
464	35.621135	-120.674102	838	13.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
465	35.621137	-120.670014	838	14.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
466	35.621138	-120.665925	838	16.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
467	35.621139	-120.661837	838	18.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
468	35.621141	-120.657748	838	21.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
469	35.621141	-120.653659	838	24.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
470	35.621142	-120.649571	838	27.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
471	35.621143	-120.645482	838	31.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
472	35.621144	-120.641393	838	35.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
473	35.621144	-120.637305	838	35.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
474	35.621144	-120.633216	838	31.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
475	35.621144	-120.629128	838	27.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
476	35.621144	-120.625039	838	24.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
477	35.621144	-120.62095	838	21.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
478	35.621144	-120.616862	838	18.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
479	35.621144	-120.612773	838	16.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
480	35.621143	-120.608685	838	14.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
481	35.621142	-120.604596	838	13.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
482	35.621141	-120.600507	838	12.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
483	35.621141	-120.596419	838	11.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
484	35.621139	-120.59233	838	10.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
485	35.621138	-120.588241	838	9.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
486	35.621137	-120.584153	838	8.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
487	35.621135	-120.580064	838	7.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
488	35.621134	-120.575976	838	6.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
489	35.621132	-120.571887	838	6.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
490	35.62113	-120.567798	838	5.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
491	35.621128	-120.56371	838	4.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
492	35.621126	-120.559621	838	4.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
493	35.621123	-120.555533	838	3.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
494	35.621121	-120.551444	838	3.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
495	35.621118	-120.547355	838	2.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
496	35.621115	-120.543267	838	2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
497	35.621112	-120.539178	838	1.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
498	35.621109	-120.53509	838	1.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
499	35.621106	-120.531001	838	0.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
500	35.621103	-120.526912	838	0.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
501	35.624441	-120.727259	838	3.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
502	35.624444	-120.72317	838	3.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
503	35.624448	-120.719081	838	4.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
504	35.624451	-120.714992	838	4.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
505	35.624454	-120.710903	838	5.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
506	35.624456	-120.706815	838	6.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
507	35.624459	-120.702726	838	7.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
508	35.624461	-120.698637	838	7.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
509	35.624464	-120.694548	838	8.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
510	35.624466	-120.69046	838	9.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
511	35.624468	-120.686371	838	10.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
512	35.62447	-120.682282	838	11.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
513	35.624472	-120.678193	838	12.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
514	35.624474	-120.674104	838	13.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
515	35.624475	-120.670016	838	15.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
516	35.624477	-120.665927	838	17.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
517	35.624478	-120.661838	838	19.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
518	35.624479	-120.657749	838	21.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
519	35.62448	-120.65366	838	24.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
520	35.624481	-120.649572	838	27.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
521	35.624481	-120.645483	838	31.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
522	35.624482	-120.641394	838	35.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
523	35.624482	-120.637305	838	35.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
524	35.624483	-120.633217	838	31.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
525	35.624483	-120.629128	838	27.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
526	35.624483	-120.625039	838	24.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
527	35.624483	-120.62095	838	21.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
528	35.624482	-120.616861	838	18.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
529	35.624482	-120.612773	838	16.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
530	35.624481	-120.608684	838	15.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
531	35.624481	-120.604595	838	13.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
532	35.62448	-120.600506	838	12.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
533	35.624479	-120.596417	838	11.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
534	35.624478	-120.592329	838	10.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
535	35.624477	-120.58824	838	9.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

536	35.624475	-120.584151	838	8.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
537	35.624474	-120.580062	838	7.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
538	35.624472	-120.575974	838	7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
539	35.62447	-120.571885	838	6.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
540	35.624468	-120.567796	838	5.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
541	35.624466	-120.563707	838	4.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
542	35.624464	-120.559618	838	4.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
543	35.624461	-120.55553	838	3.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
544	35.624459	-120.551441	838	3.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
545	35.624456	-120.547352	838	2.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
546	35.624454	-120.543263	838	2.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
547	35.624451	-120.539174	838	1.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
548	35.624448	-120.535086	838	1.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
549	35.624444	-120.530997	838	0.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
550	35.624441	-120.526908	838	0.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
551	35.627779	-120.727263	838	3.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
552	35.627783	-120.723174	838	3.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
553	35.627786	-120.719085	838	4.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
554	35.627789	-120.714996	838	5.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
555	35.627792	-120.710907	838	5.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
556	35.627795	-120.706818	838	6.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
557	35.627797	-120.702729	838	7.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
558	35.6278	-120.69864	838	8.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
559	35.627802	-120.694551	838	8.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
560	35.627804	-120.690462	838	9.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
561	35.627807	-120.686373	838	10.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
562	35.627808	-120.682284	838	11.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
563	35.62781	-120.678195	838	12.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
564	35.627812	-120.674106	838	14.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
565	35.627813	-120.670017	838	15.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
566	35.627815	-120.665928	838	17.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
567	35.627816	-120.661839	838	19.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
568	35.627817	-120.657751	838	22.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
569	35.627818	-120.653662	838	24.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
570	35.627819	-120.649573	838	27.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
571	35.62782	-120.645484	838	31.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
572	35.62782	-120.641395	838	35.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
573	35.627821	-120.637306	838	35.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
574	35.627821	-120.633217	838	31.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
575	35.627821	-120.629128	838	27.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
576	35.627821	-120.625039	838	24.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
577	35.627821	-120.62095	838	21.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
578	35.627821	-120.616861	838	19.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
579	35.62782	-120.612772	838	17.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
580	35.62782	-120.608683	838	15.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
581	35.627819	-120.604594	838	13.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
582	35.627818	-120.600505	838	12.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
583	35.627817	-120.596416	838	11.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
584	35.627816	-120.592327	838	10.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
585	35.627815	-120.588238	838	9.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
586	35.627813	-120.584149	838	8.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
587	35.627812	-120.58006	838	7.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
588	35.62781	-120.575971	838	7.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
589	35.627808	-120.571882	838	6.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
590	35.627807	-120.567793	838	5.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
591	35.627804	-120.563705	838	4.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
592	35.627802	-120.559616	838	4.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
593	35.6278	-120.555527	838	3.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
594	35.627797	-120.551438	838	3.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
595	35.627795	-120.547349	838	2.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
596	35.627792	-120.54326	838	2.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
597	35.627789	-120.539171	838	1.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
598	35.627786	-120.535082	838	1.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
599	35.627783	-120.530993	838	0.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
600	35.627779	-120.526904	838	0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
601	35.631118	-120.727267	838	3.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
602	35.631121	-120.723178	838	4.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
603	35.631124	-120.719089	838	4.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
604	35.631127	-120.715	838	5.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
605	35.63113	-120.71091	838	5.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
606	35.631133	-120.706821	838	6.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
607	35.631136	-120.702732	838	7.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
608	35.631138	-120.698643	838	8.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
609	35.631141	-120.694554	838	9.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
610	35.631143	-120.690465	838	10.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
611	35.631145	-120.686376	838	10.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
612	35.631147	-120.682287	838	12.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

613	35.631149	-120.678197	838	13.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
614	35.63115	-120.674108	838	14.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
615	35.631152	-120.670019	838	16.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
616	35.631153	-120.66593	838	17.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
617	35.631154	-120.661841	838	20.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
618	35.631156	-120.657752	838	22.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
619	35.631157	-120.653663	838	25.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
620	35.631157	-120.649574	838	28.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
621	35.631158	-120.645484	838	32.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
622	35.631159	-120.641395	838	36.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
623	35.631159	-120.637306	838	36.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
624	35.631159	-120.633217	838	31.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
625	35.631159	-120.629128	838	27.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
626	35.631159	-120.625039	838	24.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
627	35.631159	-120.62095	838	21.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
628	35.631159	-120.616861	838	19.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
629	35.631159	-120.612771	838	17.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
630	35.631158	-120.608682	838	15.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
631	35.631157	-120.604593	838	13.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
632	35.631157	-120.600504	838	12.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
633	35.631156	-120.596415	838	11.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
634	35.631154	-120.592326	838	10.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
635	35.631153	-120.588237	838	9.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
636	35.631152	-120.584148	838	8.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
637	35.63115	-120.580058	838	7.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
638	35.631149	-120.575969	838	7.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
639	35.631147	-120.57188	838	6.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
640	35.631145	-120.567791	838	5.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
641	35.631143	-120.563702	838	5.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
642	35.631141	-120.559613	838	4.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
643	35.631138	-120.555524	838	3.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
644	35.631136	-120.551435	838	3.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
645	35.631133	-120.547345	838	2.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
646	35.63113	-120.543256	838	2.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
647	35.631127	-120.539167	838	1.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
648	35.631124	-120.535078	838	1.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
649	35.631121	-120.530989	838	0.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
650	35.631118	-120.5269	838	0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
651	35.634456	-120.727271	838	3.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
652	35.634459	-120.723182	838	4.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
653	35.634463	-120.719092	838	4.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
654	35.634466	-120.715003	838	5.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
655	35.634469	-120.710914	838	6.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
656	35.634471	-120.706825	838	6.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
657	35.634474	-120.702735	838	7.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
658	35.634477	-120.698646	838	8.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
659	35.634479	-120.694557	838	9.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
660	35.634481	-120.690467	838	10.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
661	35.634483	-120.686378	838	11.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
662	35.634485	-120.682289	838	12.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
663	35.634487	-120.6782	838	13.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
664	35.634489	-120.67411	838	14.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
665	35.63449	-120.670021	838	16.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
666	35.634492	-120.665932	838	18.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
667	35.634493	-120.661842	838	20.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
668	35.634494	-120.657753	838	22.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
669	35.634495	-120.653664	838	25.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
670	35.634496	-120.649574	838	29.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
671	35.634496	-120.645485	838	33.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
672	35.634497	-120.641396	838	37.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
673	35.634497	-120.637307	838	36.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
674	35.634498	-120.633217	838	31.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
675	35.634498	-120.629128	838	27.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
676	35.634498	-120.625039	838	24.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
677	35.634498	-120.620949	838	21.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
678	35.634497	-120.61686	838	19.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
679	35.634497	-120.612771	838	17.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
680	35.634496	-120.608681	838	15.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
681	35.634496	-120.604592	838	14.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
682	35.634495	-120.600503	838	12.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
683	35.634494	-120.596414	838	11.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
684	35.634493	-120.592324	838	10.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
685	35.634492	-120.588235	838	9.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
686	35.63449	-120.584146	838	8.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
687	35.634489	-120.580056	838	8.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
688	35.634487	-120.575967	838	7.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
689	35.634485	-120.571878	838	6.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

690	35.634483	-120.567789	838	5.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
691	35.634481	-120.563699	838	5.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
692	35.634479	-120.55961	838	4.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
693	35.634477	-120.555521	838	3.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
694	35.634474	-120.551431	838	3.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
695	35.634471	-120.547342	838	2.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
696	35.634469	-120.543253	838	2.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
697	35.634466	-120.539163	838	1.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
698	35.634463	-120.535074	838	1.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
699	35.634459	-120.530985	838	0.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
700	35.634456	-120.526896	838	0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
701	35.637794	-120.727275	838	3.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
702	35.637798	-120.723186	838	4.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
703	35.637801	-120.719096	838	4.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
704	35.637804	-120.715007	838	5.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
705	35.637807	-120.710917	838	6.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
706	35.63781	-120.706828	838	6.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
707	35.637812	-120.702738	838	7.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
708	35.637815	-120.698649	838	8.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
709	35.637817	-120.69456	838	9.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
710	35.637819	-120.69047	838	10.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
711	35.637822	-120.686381	838	11.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
712	35.637824	-120.682291	838	12.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
713	35.637825	-120.678202	838	13.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
714	35.637827	-120.674112	838	15.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
715	35.637829	-120.670023	838	16.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
716	35.63783	-120.665933	838	18.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
717	35.637831	-120.661844	838	20.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
718	35.637832	-120.657754	838	23.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
719	35.637833	-120.653665	838	26.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
720	35.637834	-120.649575	838	29.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
721	35.637835	-120.645486	838	33.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
722	35.637835	-120.641396	838	38.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
723	35.637836	-120.637307	838	35.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
724	35.637836	-120.633218	838	30.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
725	35.637836	-120.629128	838	27.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
726	35.637836	-120.625039	838	24.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
727	35.637836	-120.620949	838	21.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
728	35.637836	-120.61686	838	19.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
729	35.637835	-120.61277	838	17.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
730	35.637835	-120.608681	838	15.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
731	35.637834	-120.604591	838	14.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
732	35.637833	-120.600502	838	12.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
733	35.637832	-120.596412	838	11.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
734	35.637831	-120.592323	838	10.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
735	35.63783	-120.588233	838	9.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
736	35.637829	-120.584144	838	8.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
737	35.637827	-120.580054	838	8.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
738	35.637825	-120.575965	838	7.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
739	35.637824	-120.571876	838	6.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
740	35.637822	-120.567786	838	5.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
741	35.637819	-120.563697	838	5.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
742	35.637817	-120.559607	838	4.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
743	35.637815	-120.555518	838	3.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
744	35.637812	-120.551428	838	3.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
745	35.63781	-120.547339	838	2.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
746	35.637807	-120.543249	838	2.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
747	35.637804	-120.53916	838	1.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
748	35.637801	-120.53507	838	1.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
749	35.637798	-120.530981	838	0.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
750	35.637794	-120.526891	838	0.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
751	35.641133	-120.727279	838	3.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
752	35.641136	-120.72319	838	4.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
753	35.641139	-120.7191	838	4.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
754	35.641142	-120.71501	838	5.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
755	35.641145	-120.710921	838	6.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
756	35.641148	-120.706831	838	7.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
757	35.641151	-120.702742	838	7.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
758	35.641153	-120.698652	838	8.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
759	35.641156	-120.694562	838	9.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
760	35.641158	-120.690473	838	10.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
761	35.64116	-120.686383	838	11.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
762	35.641162	-120.682293	838	12.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
763	35.641164	-120.678204	838	14.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
764	35.641165	-120.674114	838	15.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
765	35.641167	-120.670025	838	17.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
766	35.641168	-120.665935	838	19.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

767	35.64117	-120.661845	838	21.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
768	35.641171	-120.657756	838	23.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
769	35.641172	-120.653666	838	27.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
770	35.641172	-120.649576	838	30.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
771	35.641173	-120.645487	838	34.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
772	35.641174	-120.641397	838	39.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
773	35.641174	-120.637307	838	36.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
774	35.641174	-120.633218	838	31.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
775	35.641175	-120.629128	838	27.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
776	35.641175	-120.625039	838	24.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
777	35.641174	-120.620949	838	21.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
778	35.641174	-120.616859	838	19.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
779	35.641174	-120.61277	838	17.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
780	35.641173	-120.60868	838	15.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
781	35.641172	-120.60459	838	14.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
782	35.641172	-120.600501	838	13.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
783	35.641171	-120.596411	838	11.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
784	35.64117	-120.592321	838	10.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
785	35.641168	-120.588232	838	9.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
786	35.641167	-120.584142	838	9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
787	35.641165	-120.580053	838	8.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
788	35.641164	-120.575963	838	7.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
789	35.641162	-120.571873	838	6.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
790	35.64116	-120.567784	838	5.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
791	35.641158	-120.563694	838	5.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
792	35.641156	-120.559604	838	4.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
793	35.641153	-120.555515	838	3.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
794	35.641151	-120.551425	838	3.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
795	35.641148	-120.547335	838	2.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
796	35.641145	-120.543246	838	2.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
797	35.641142	-120.539156	838	1.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
798	35.641139	-120.535067	838	1.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
799	35.641136	-120.530977	838	0.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
800	35.641133	-120.526887	838	0.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
801	35.644471	-120.727284	838	3.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
802	35.644475	-120.723194	838	4.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
803	35.644478	-120.719104	838	5.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
804	35.644481	-120.715014	838	5.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
805	35.644484	-120.710924	838	6.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
806	35.644486	-120.706835	838	7.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
807	35.644489	-120.702745	838	8.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
808	35.644492	-120.698655	838	8.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
809	35.644494	-120.694565	838	9.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
810	35.644496	-120.690475	838	10.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
811	35.644498	-120.686386	838	11.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
812	35.6445	-120.682296	838	13.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
813	35.644502	-120.678206	838	14.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
814	35.644504	-120.674116	838	15.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
815	35.644505	-120.670026	838	17.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
816	35.644507	-120.665937	838	19.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
817	35.644508	-120.661847	838	21.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
818	35.644509	-120.657757	838	24.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
819	35.64451	-120.653667	838	27.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
820	35.644511	-120.649577	838	31.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
821	35.644511	-120.645487	838	35.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
822	35.644512	-120.641398	838	40.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
823	35.644512	-120.637308	838	36.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
824	35.644513	-120.633218	838	32.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
825	35.644513	-120.629128	838	28.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
826	35.644513	-120.625038	838	24.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
827	35.644513	-120.620949	838	22.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
828	35.644512	-120.616859	838	19.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
829	35.644512	-120.612769	838	17.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
830	35.644511	-120.608679	838	15.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
831	35.644511	-120.604589	838	14.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
832	35.64451	-120.6005	838	13.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
833	35.644509	-120.59641	838	12.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
834	35.644508	-120.59232	838	10.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
835	35.644507	-120.58823	838	9.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
836	35.644505	-120.58414	838	9.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
837	35.644504	-120.580051	838	8.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
838	35.644502	-120.575961	838	7.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
839	35.6445	-120.571871	838	6.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
840	35.644498	-120.567781	838	5.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
841	35.644496	-120.563691	838	5.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
842	35.644494	-120.559602	838	4.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
843	35.644492	-120.555512	838	3.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

844	35.644489	-120.551422	838	3.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
845	35.644486	-120.547332	838	2.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
846	35.644484	-120.543242	838	2.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
847	35.644481	-120.539153	838	1.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
848	35.644478	-120.535063	838	1.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
849	35.644475	-120.530973	838	0.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
850	35.644471	-120.526883	838	0.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
851	35.64781	-120.727288	838	3.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
852	35.647813	-120.723198	838	4.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
853	35.647816	-120.719108	838	5.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
854	35.647819	-120.715018	838	5.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
855	35.647822	-120.710928	838	6.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
856	35.647825	-120.706838	838	7.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
857	35.647827	-120.702748	838	8.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
858	35.64783	-120.698658	838	9.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
859	35.647832	-120.694568	838	10.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
860	35.647835	-120.690478	838	11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
861	35.647837	-120.686388	838	12.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
862	35.647839	-120.682298	838	13.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
863	35.64784	-120.678208	838	14.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
864	35.647842	-120.674118	838	15.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
865	35.647844	-120.670028	838	17.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
866	35.647845	-120.665938	838	19.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
867	35.647846	-120.661848	838	22.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
868	35.647847	-120.657758	838	25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
869	35.647848	-120.653668	838	28.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
870	35.647849	-120.649578	838	31.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
871	35.64785	-120.645488	838	35.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
872	35.64785	-120.641398	838	40.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
873	35.647851	-120.637308	838	37.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
874	35.647851	-120.633218	838	32.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
875	35.647851	-120.629128	838	28.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
876	35.647851	-120.625038	838	25.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
877	35.647851	-120.620948	838	22.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
878	35.647851	-120.616858	838	20.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
879	35.64785	-120.612768	838	18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
880	35.64785	-120.608678	838	16.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
881	35.647849	-120.604588	838	14.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
882	35.647848	-120.600498	838	13.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
883	35.647847	-120.596409	838	12.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
884	35.647846	-120.592319	838	11.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
885	35.647845	-120.588229	838	10.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
886	35.647844	-120.584139	838	9.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
887	35.647842	-120.580049	838	8.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
888	35.64784	-120.575959	838	7.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
889	35.647839	-120.571869	838	6.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
890	35.647837	-120.567779	838	5.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
891	35.647835	-120.563689	838	5.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
892	35.647832	-120.559599	838	4.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
893	35.64783	-120.555509	838	3.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
894	35.647827	-120.551419	838	3.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
895	35.647825	-120.547329	838	2.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
896	35.647822	-120.543239	838	2.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
897	35.647819	-120.539149	838	1.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
898	35.647816	-120.535059	838	1.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
899	35.647813	-120.530969	838	0.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
900	35.64781	-120.526879	838	0.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
901	35.651148	-120.727292	838	3.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
902	35.651151	-120.723202	838	4.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
903	35.651154	-120.719112	838	5.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
904	35.651157	-120.715021	838	5.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
905	35.65116	-120.710931	838	6.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
906	35.651163	-120.706841	838	7.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
907	35.651166	-120.702751	838	8.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
908	35.651168	-120.698661	838	9.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
909	35.651171	-120.694571	838	10.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
910	35.651173	-120.690481	838	11.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
911	35.651175	-120.68639	838	12.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
912	35.651177	-120.6823	838	13.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
913	35.651179	-120.67821	838	14.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
914	35.65118	-120.67412	838	16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
915	35.651182	-120.67003	838	17.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
916	35.651183	-120.66594	838	19.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
917	35.651185	-120.66185	838	22.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
918	35.651186	-120.657759	838	25.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
919	35.651187	-120.653669	838	28.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
920	35.651187	-120.649579	838	31.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

921	35.651188	-120.645489	838	36.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
922	35.651189	-120.641399	838	41.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
923	35.651189	-120.637309	838	38.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
924	35.651189	-120.633219	838	33.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
925	35.65119	-120.629128	838	29.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
926	35.65119	-120.625038	838	25.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
927	35.651189	-120.620948	838	22.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
928	35.651189	-120.616858	838	20.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
929	35.651189	-120.612768	838	18.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
930	35.651188	-120.608678	838	16.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
931	35.651187	-120.604588	838	14.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
932	35.651187	-120.600497	838	13.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
933	35.651186	-120.596407	838	12.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
934	35.651185	-120.592317	838	11.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
935	35.651183	-120.588227	838	10.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
936	35.651182	-120.584137	838	9.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
937	35.65118	-120.580047	838	8.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
938	35.651179	-120.575956	838	7.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
939	35.651177	-120.571866	838	6.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
940	35.651175	-120.567776	838	5.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
941	35.651173	-120.563686	838	5.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
942	35.651171	-120.559596	838	4.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
943	35.651168	-120.555506	838	3.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
944	35.651166	-120.551416	838	3.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
945	35.651163	-120.547325	838	2.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
946	35.65116	-120.543235	838	2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
947	35.651157	-120.539145	838	1.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
948	35.651154	-120.535055	838	0.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
949	35.651151	-120.530965	838	0.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
950	35.651148	-120.526875	838	0.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
951	35.654486	-120.727296	838	3.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
952	35.65449	-120.723206	838	4.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
953	35.654493	-120.719115	838	5.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
954	35.654496	-120.715025	838	5.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
955	35.654499	-120.710935	838	6.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
956	35.654502	-120.706845	838	7.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
957	35.654504	-120.702754	838	8.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
958	35.654507	-120.698664	838	9.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
959	35.654509	-120.694574	838	10	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
960	35.654511	-120.690483	838	10.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
961	35.654513	-120.686393	838	12.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
962	35.654515	-120.682303	838	13.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
963	35.654517	-120.678212	838	14.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
964	35.654519	-120.674122	838	15.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
965	35.65452	-120.670032	838	17.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
966	35.654522	-120.665941	838	19.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
967	35.654523	-120.661851	838	22.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
968	35.654524	-120.657761	838	24.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
969	35.654525	-120.65367	838	28.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
970	35.654526	-120.64958	838	31.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
971	35.654527	-120.64549	838	36.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
972	35.654527	-120.641399	838	42.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
973	35.654528	-120.637309	838	38.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
974	35.654528	-120.633219	838	33.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
975	35.654528	-120.629128	838	28.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
976	35.654528	-120.625038	838	25.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
977	35.654528	-120.620948	838	22.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
978	35.654528	-120.616858	838	20.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
979	35.654527	-120.612767	838	17.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
980	35.654527	-120.608677	838	16.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
981	35.654526	-120.604587	838	14.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
982	35.654525	-120.600496	838	13.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
983	35.654524	-120.596406	838	12.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
984	35.654523	-120.592316	838	10.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
985	35.654522	-120.588225	838	9.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
986	35.65452	-120.584135	838	8.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
987	35.654519	-120.580045	838	8.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
988	35.654517	-120.575954	838	7.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
989	35.654515	-120.571864	838	6.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
990	35.654513	-120.567774	838	5.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
991	35.654511	-120.563683	838	4.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
992	35.654509	-120.559593	838	4.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
993	35.654507	-120.555503	838	3.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
994	35.654504	-120.551412	838	3.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
995	35.654502	-120.547322	838	2.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
996	35.654499	-120.543232	838	1.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
997	35.654496	-120.539142	838	1.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

998	35.654493	-120.535051	838	0.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
999	35.65449	-120.530961	838	0.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1000	35.654486	-120.526871	838	-0.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1001	35.657825	-120.7273	838	3.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1002	35.657828	-120.72321	838	4.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1003	35.657831	-120.719119	838	5.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1004	35.657834	-120.715029	838	5.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1005	35.657837	-120.710938	838	6.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1006	35.65784	-120.706848	838	7.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1007	35.657843	-120.702757	838	8.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1008	35.657845	-120.698667	838	8.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1009	35.657847	-120.694576	838	9.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1010	35.65785	-120.690486	838	10.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1011	35.657852	-120.686395	838	11.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1012	35.657854	-120.682305	838	13.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1013	35.657855	-120.678214	838	14.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1014	35.657857	-120.674124	838	15.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1015	35.657859	-120.670033	838	17.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1016	35.65786	-120.665943	838	19.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1017	35.657861	-120.661852	838	21.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1018	35.657862	-120.657762	838	24.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1019	35.657863	-120.653672	838	27.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1020	35.657864	-120.649581	838	31.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1021	35.657865	-120.645491	838	36.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1022	35.657865	-120.6414	838	42.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1023	35.657866	-120.63731	838	38.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1024	35.657866	-120.633219	838	33.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1025	35.657866	-120.629129	838	28.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1026	35.657866	-120.625038	838	25.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1027	35.657866	-120.620948	838	22.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1028	35.657866	-120.616857	838	19.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1029	35.657865	-120.612767	838	17.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1030	35.657865	-120.608676	838	15.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1031	35.657864	-120.604586	838	14.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1032	35.657863	-120.600495	838	13.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1033	35.657862	-120.596405	838	11.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1034	35.657861	-120.592314	838	10.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1035	35.65786	-120.588224	838	9.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1036	35.657859	-120.584133	838	8.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1037	35.657857	-120.580043	838	7.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1038	35.657855	-120.575952	838	7.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1039	35.657854	-120.571862	838	6.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1040	35.657852	-120.567771	838	5.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1041	35.65785	-120.563681	838	4.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1042	35.657847	-120.55959	838	4.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1043	35.657845	-120.5555	838	3.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1044	35.657843	-120.551409	838	2.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1045	35.65784	-120.547319	838	2.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1046	35.657837	-120.543228	838	1.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1047	35.657834	-120.539138	838	1.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1048	35.657831	-120.535047	838	0.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1049	35.657828	-120.530957	838	0.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1050	35.657825	-120.526866	838	-0.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1051	35.661163	-120.727304	838	3.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1052	35.661166	-120.723214	838	4.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1053	35.661169	-120.719123	838	5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1054	35.661173	-120.715032	838	5.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1055	35.661175	-120.710942	838	6.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1056	35.661178	-120.706851	838	7.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1057	35.661181	-120.702761	838	7.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1058	35.661183	-120.69867	838	8.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1059	35.661186	-120.694579	838	9.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1060	35.661188	-120.690489	838	10.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1061	35.66119	-120.686398	838	11.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1062	35.661192	-120.682307	838	12.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1063	35.661194	-120.678217	838	14.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1064	35.661195	-120.674126	838	15.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1065	35.661197	-120.670035	838	17.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1066	35.661198	-120.665945	838	19.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1067	35.6612	-120.661854	838	21.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1068	35.661201	-120.657763	838	24.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1069	35.661202	-120.653673	838	27.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1070	35.661203	-120.649582	838	31.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1071	35.661203	-120.645491	838	36.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1072	35.661204	-120.641401	838	43.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1073	35.661204	-120.63731	838	39.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1074	35.661205	-120.633219	838	33.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1075	35.661205	-120.629129	838	28.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1076	35.661205	-120.625038	838	24.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1077	35.661205	-120.620947	838	22.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1078	35.661204	-120.616857	838	19.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1079	35.661204	-120.612766	838	17.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1080	35.661203	-120.608675	838	15.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1081	35.661203	-120.604585	838	14.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1082	35.661202	-120.600494	838	12.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1083	35.661201	-120.596403	838	11.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1084	35.6612	-120.592313	838	10.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1085	35.661198	-120.588222	838	9.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1086	35.661197	-120.584131	838	8.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1087	35.661195	-120.580041	838	7.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1088	35.661194	-120.57595	838	6.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1089	35.661192	-120.571859	838	6.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1090	35.66119	-120.567769	838	5.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1091	35.661188	-120.563678	838	4.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1092	35.661186	-120.559587	838	4.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1093	35.661183	-120.555497	838	3.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1094	35.661181	-120.551406	838	2.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1095	35.661178	-120.547316	838	2.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1096	35.661175	-120.543225	838	1.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1097	35.661173	-120.539134	838	1.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1098	35.661169	-120.535044	838	0.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1099	35.661166	-120.530953	838	0.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1100	35.661163	-120.526862	838	-0.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1101	35.664501	-120.727309	838	3.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1102	35.664505	-120.723218	838	4.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1103	35.664508	-120.719127	838	4.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1104	35.664511	-120.715036	838	5.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1105	35.664514	-120.710945	838	6.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1106	35.664517	-120.706854	838	7.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1107	35.664519	-120.702764	838	7.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1108	35.664522	-120.698673	838	8.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1109	35.664524	-120.694582	838	9.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1110	35.664526	-120.690491	838	10.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1111	35.664528	-120.6864	838	11.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1112	35.66453	-120.68231	838	12.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1113	35.664532	-120.678219	838	13.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1114	35.664534	-120.674128	838	15.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1115	35.664535	-120.670037	838	16.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1116	35.664537	-120.665946	838	18.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1117	35.664538	-120.661855	838	21.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1118	35.664539	-120.657765	838	23.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1119	35.66454	-120.653674	838	26.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1120	35.664541	-120.649583	838	30.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1121	35.664542	-120.645492	838	36.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1122	35.664542	-120.641401	838	45.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1123	35.664543	-120.63731	838	40.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1124	35.664543	-120.63322	838	33.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1125	35.664543	-120.629129	838	28.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1126	35.664543	-120.625038	838	24.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1127	35.664543	-120.620947	838	21.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1128	35.664543	-120.616856	838	19.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1129	35.664542	-120.612765	838	17.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1130	35.664542	-120.608675	838	15.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1131	35.664541	-120.604584	838	13.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1132	35.66454	-120.600493	838	12.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1133	35.664539	-120.596402	838	11.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1134	35.664538	-120.592311	838	10.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1135	35.664537	-120.58822	838	9.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1136	35.664535	-120.58413	838	8.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1137	35.664534	-120.580039	838	7.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1138	35.664532	-120.575948	838	6.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1139	35.66453	-120.571857	838	6.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1140	35.664528	-120.567766	838	5.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1141	35.664526	-120.563675	838	4.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1142	35.664524	-120.559585	838	4.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1143	35.664522	-120.555494	838	3.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1144	35.664519	-120.551403	838	2.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1145	35.664517	-120.547312	838	2.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1146	35.664514	-120.543221	838	1.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1147	35.664511	-120.539131	838	1.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1148	35.664508	-120.53504	838	0.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1149	35.664505	-120.530949	838	0.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1150	35.664501	-120.526858	838	-0.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1151	35.66784	-120.727313	838	3.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1152	35.667843	-120.723222	838	4.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1153	35.667846	-120.719131	838	4.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1154	35.667849	-120.71504	838	5.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1155	35.667852	-120.710949	838	6.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1156	35.667855	-120.706858	838	6.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1157	35.667858	-120.702767	838	7.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1158	35.66786	-120.698676	838	8.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1159	35.667862	-120.694585	838	9.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1160	35.667865	-120.690494	838	10.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1161	35.667867	-120.686403	838	11.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1162	35.667869	-120.682312	838	12.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1163	35.667871	-120.678221	838	13.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1164	35.667872	-120.67413	838	15.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1165	35.667874	-120.670039	838	16.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1166	35.667875	-120.665948	838	18.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1167	35.667876	-120.661857	838	20.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1168	35.667877	-120.657766	838	23.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1169	35.667878	-120.653675	838	26.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1170	35.667879	-120.649584	838	29.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1171	35.66788	-120.645493	838	35.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1172	35.667881	-120.641402	838	48.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1173	35.667881	-120.637311	838	43.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1174	35.667881	-120.63322	838	32.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1175	35.667881	-120.629129	838	27.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1176	35.667881	-120.625038	838	24.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1177	35.667881	-120.620947	838	21.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1178	35.667881	-120.616856	838	19.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1179	35.667881	-120.612765	838	16.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1180	35.66788	-120.608674	838	15.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1181	35.667879	-120.604583	838	13.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1182	35.667878	-120.600492	838	12.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1183	35.667877	-120.596401	838	11.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1184	35.667876	-120.59231	838	10.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1185	35.667875	-120.588219	838	9.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1186	35.667874	-120.584128	838	8.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1187	35.667872	-120.580037	838	7.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1188	35.667871	-120.575946	838	6.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1189	35.667869	-120.571855	838	5.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1190	35.667867	-120.567764	838	5.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1191	35.667865	-120.563673	838	4.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1192	35.667862	-120.559582	838	3.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1193	35.66786	-120.555491	838	3.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1194	35.667858	-120.5514	838	2.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1195	35.667855	-120.547309	838	2.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1196	35.667852	-120.543218	838	1.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1197	35.667849	-120.539127	838	1.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1198	35.667846	-120.535036	838	0.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1199	35.667843	-120.530945	838	0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1200	35.66784	-120.526854	838	-0.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1201	35.671178	-120.727317	838	3.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1202	35.671181	-120.723226	838	4.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1203	35.671185	-120.719135	838	4.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1204	35.671188	-120.715043	838	5.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1205	35.671191	-120.710952	838	6.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1206	35.671193	-120.706861	838	6.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1207	35.671196	-120.70277	838	7.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1208	35.671198	-120.698679	838	8.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1209	35.671201	-120.694588	838	9.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1210	35.671203	-120.690496	838	10.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1211	35.671205	-120.686405	838	11.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1212	35.671207	-120.682314	838	12.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1213	35.671209	-120.678223	838	13.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1214	35.671211	-120.674132	838	14.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1215	35.671212	-120.670041	838	16.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1216	35.671213	-120.665949	838	18.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1217	35.671215	-120.661858	838	20.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1218	35.671216	-120.657767	838	22.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1219	35.671217	-120.653676	838	25.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1220	35.671218	-120.649585	838	28.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1221	35.671218	-120.645494	838	34.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1222	35.671219	-120.641402	838	47.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1223	35.671219	-120.637311	838	41.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1224	35.67122	-120.63322	838	31.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1225	35.67122	-120.629129	838	26.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1226	35.67122	-120.625038	838	23.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1227	35.67122	-120.620947	838	20.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1228	35.671219	-120.616855	838	18.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1229	35.671219	-120.612764	838	16.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1230	35.671218	-120.608673	838	14.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1231	35.671218	-120.604582	838	13.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1232	35.671217	-120.600491	838	12.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1233	35.671216	-120.5964	838	11.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1234	35.671215	-120.592308	838	10.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1235	35.671213	-120.588217	838	9.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1236	35.671212	-120.584126	838	8.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1237	35.671211	-120.580035	838	7.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1238	35.671209	-120.575944	838	6.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1239	35.671207	-120.571853	838	5.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1240	35.671205	-120.567761	838	5.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1241	35.671203	-120.56367	838	4.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1242	35.671201	-120.559579	838	3.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1243	35.671198	-120.555488	838	3.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1244	35.671196	-120.551397	838	2.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1245	35.671193	-120.547306	838	2.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1246	35.671191	-120.543214	838	1.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1247	35.671188	-120.539123	838	1.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1248	35.671185	-120.535032	838	0.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1249	35.671181	-120.530941	838	0.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1250	35.671178	-120.52685	838	-0.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1251	35.674516	-120.727321	838	3.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1252	35.67452	-120.72323	838	4.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1253	35.674523	-120.719138	838	4.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1254	35.674526	-120.715047	838	5.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1255	35.674529	-120.710956	838	6.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1256	35.674532	-120.706864	838	6.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1257	35.674534	-120.702773	838	7.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1258	35.674537	-120.698682	838	8.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1259	35.674539	-120.69459	838	9.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1260	35.674541	-120.690499	838	10.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1261	35.674543	-120.686408	838	11.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1262	35.674545	-120.682316	838	12.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1263	35.674547	-120.678225	838	13.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1264	35.674549	-120.674134	838	14.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1265	35.67455	-120.670042	838	16.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1266	35.674552	-120.665951	838	18.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1267	35.674553	-120.66186	838	20.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1268	35.674554	-120.657768	838	22.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1269	35.674555	-120.653677	838	25.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1270	35.674556	-120.649586	838	28.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1271	35.674557	-120.645494	838	34.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1272	35.674557	-120.641403	838	44.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1273	35.674558	-120.637312	838	40.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1274	35.674558	-120.63322	838	32.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1275	35.674558	-120.629129	838	27.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1276	35.674558	-120.625038	838	23.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1277	35.674558	-120.620946	838	21.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1278	35.674558	-120.616855	838	18.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1279	35.674557	-120.612764	838	16.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1280	35.674557	-120.608672	838	14.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1281	35.674556	-120.604581	838	13.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1282	35.674555	-120.60049	838	12.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1283	35.674554	-120.596398	838	11.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1284	35.674553	-120.592307	838	10.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1285	35.674552	-120.588216	838	9.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1286	35.67455	-120.584124	838	8.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1287	35.674549	-120.580033	838	7.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1288	35.674547	-120.575942	838	6.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1289	35.674545	-120.57185	838	5.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1290	35.674543	-120.567759	838	5.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1291	35.674541	-120.563668	838	4.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1292	35.674539	-120.559576	838	3.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1293	35.674537	-120.555485	838	3.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1294	35.674534	-120.551394	838	2.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1295	35.674532	-120.547302	838	2.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1296	35.674529	-120.543211	838	1.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1297	35.674526	-120.53912	838	1.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1298	35.674523	-120.535028	838	0.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1299	35.67452	-120.530937	838	0.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1300	35.674516	-120.526846	838	-0.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1301	35.677855	-120.727325	838	3.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1302	35.677858	-120.723234	838	4.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1303	35.677861	-120.719142	838	4.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1304	35.677864	-120.715051	838	5.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1305	35.677867	-120.710959	838	6.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1306	35.67787	-120.706868	838	6.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1307	35.677873	-120.702776	838	7.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1308	35.677875	-120.698685	838	8.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1309	35.677877	-120.694593	838	9.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1310	35.67788	-120.690502	838	10.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1311	35.677882	-120.68641	838	11.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1312	35.677884	-120.682319	838	12.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1313	35.677886	-120.678227	838	13.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1314	35.677887	-120.674136	838	14.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1315	35.677889	-120.670044	838	16.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1316	35.67789	-120.665953	838	18.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1317	35.677891	-120.661861	838	20.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1318	35.677893	-120.65777	838	22.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1319	35.677893	-120.653678	838	25.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1320	35.677894	-120.649587	838	29.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1321	35.677895	-120.645495	838	35.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1322	35.677896	-120.641404	838	41.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1323	35.677896	-120.637312	838	40	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1324	35.677896	-120.633221	838	33.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1325	35.677896	-120.629129	838	28.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1326	35.677896	-120.625038	838	24.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1327	35.677896	-120.620946	838	21.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1328	35.677896	-120.616855	838	19.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1329	35.677896	-120.612763	838	16.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1330	35.677895	-120.608672	838	15.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1331	35.677894	-120.60458	838	13.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1332	35.677893	-120.600489	838	12.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1333	35.677893	-120.596397	838	11.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1334	35.677891	-120.592305	838	10.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1335	35.67789	-120.588214	838	9.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1336	35.677889	-120.584122	838	8.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1337	35.677887	-120.580031	838	7.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1338	35.677886	-120.575939	838	6.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1339	35.677884	-120.571848	838	5.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1340	35.677882	-120.567756	838	5.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1341	35.67788	-120.563665	838	4.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1342	35.677877	-120.559573	838	3.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1343	35.677875	-120.555482	838	3.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1344	35.677873	-120.55139	838	2.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1345	35.67787	-120.547299	838	2.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1346	35.677867	-120.543207	838	1.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1347	35.677864	-120.539116	838	1.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1348	35.677861	-120.535024	838	0.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1349	35.677858	-120.530933	838	0.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1350	35.677855	-120.526841	838	-0.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1351	35.681193	-120.727329	838	3.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1352	35.681196	-120.723238	838	4.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1353	35.6812	-120.719146	838	4.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1354	35.681203	-120.715054	838	5.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1355	35.681206	-120.710963	838	6.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1356	35.681208	-120.706871	838	6.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1357	35.681211	-120.702779	838	7.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1358	35.681213	-120.698688	838	8.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1359	35.681216	-120.694596	838	9.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1360	35.681218	-120.690504	838	10.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1361	35.68122	-120.686413	838	11.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1362	35.681222	-120.682321	838	12.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1363	35.681224	-120.678229	838	13.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1364	35.681226	-120.674138	838	14.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1365	35.681227	-120.670046	838	16.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1366	35.681228	-120.665954	838	18.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1367	35.68123	-120.661863	838	20.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1368	35.681231	-120.657771	838	22.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1369	35.681232	-120.653679	838	26.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1370	35.681233	-120.649588	838	30.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1371	35.681233	-120.645496	838	34.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1372	35.681234	-120.641404	838	38.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1373	35.681234	-120.637313	838	38.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1374	35.681235	-120.633221	838	33.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1375	35.681235	-120.629129	838	29.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1376	35.681235	-120.625037	838	25.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1377	35.681235	-120.620946	838	22.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1378	35.681234	-120.616854	838	19.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1379	35.681234	-120.612762	838	17.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1380	35.681233	-120.608671	838	15.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1381	35.681233	-120.604579	838	13.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1382	35.681232	-120.600487	838	12.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1383	35.681231	-120.596396	838	11.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1384	35.68123	-120.592304	838	10.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1385	35.681228	-120.588212	838	9.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1386	35.681227	-120.584121	838	8.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1387	35.681226	-120.580029	838	7.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1388	35.681224	-120.575937	838	6.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1389	35.681222	-120.571846	838	5.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1390	35.68122	-120.567754	838	5.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1391	35.681218	-120.563662	838	4.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1392	35.681216	-120.559571	838	3.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1393	35.681213	-120.555479	838	3.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1394	35.681211	-120.551387	838	2.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1395	35.681208	-120.547296	838	2.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1396	35.681206	-120.543204	838	1.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1397	35.681203	-120.539112	838	1.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1398	35.6812	-120.535021	838	0.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1399	35.681196	-120.530929	838	0.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1400	35.681193	-120.526837	838	-0.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1401	35.684531	-120.727334	838	3.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1402	35.684535	-120.723242	838	4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1403	35.684538	-120.71915	838	4.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1404	35.684541	-120.715058	838	5.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1405	35.684544	-120.710966	838	5.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1406	35.684547	-120.706874	838	6.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1407	35.684549	-120.702783	838	7.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1408	35.684552	-120.698691	838	8.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1409	35.684554	-120.694599	838	9.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1410	35.684556	-120.690507	838	9.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1411	35.684559	-120.686415	838	10.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1412	35.68456	-120.682323	838	11.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1413	35.684562	-120.678231	838	13.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1414	35.684564	-120.67414	838	14.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1415	35.684565	-120.670048	838	15.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1416	35.684567	-120.665956	838	17.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1417	35.684568	-120.661864	838	19.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1418	35.684569	-120.657772	838	22.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1419	35.68457	-120.65368	838	25.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1420	35.684571	-120.649589	838	29.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1421	35.684572	-120.645497	838	33.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1422	35.684572	-120.641405	838	37.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1423	35.684573	-120.637313	838	37.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1424	35.684573	-120.633221	838	32.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1425	35.684573	-120.629129	838	28.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1426	35.684573	-120.625037	838	24.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1427	35.684573	-120.620946	838	21.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1428	35.684573	-120.616854	838	19.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1429	35.684572	-120.612762	838	17.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1430	35.684572	-120.60867	838	15.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1431	35.684571	-120.604578	838	13.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1432	35.68457	-120.600486	838	12.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1433	35.684569	-120.596394	838	11.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1434	35.684568	-120.592303	838	10.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1435	35.684567	-120.588211	838	9.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1436	35.684565	-120.584119	838	8.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1437	35.684564	-120.580027	838	7.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1438	35.684562	-120.575935	838	6.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1439	35.68456	-120.571843	838	5.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1440	35.684559	-120.567751	838	5.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1441	35.684556	-120.56366	838	4.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1442	35.684554	-120.559568	838	3.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1443	35.684552	-120.555476	838	3.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1444	35.684549	-120.551384	838	2.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1445	35.684547	-120.547292	838	2.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1446	35.684544	-120.5432	838	1.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1447	35.684541	-120.539109	838	1.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1448	35.684538	-120.535017	838	0.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1449	35.684535	-120.530925	838	0.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1450	35.684531	-120.526833	838	-0.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1451	35.68787	-120.727338	838	3.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1452	35.687873	-120.723246	838	3.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1453	35.687876	-120.719154	838	4.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1454	35.687879	-120.715062	838	5.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1455	35.687882	-120.71097	838	5.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1456	35.687885	-120.706878	838	6.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1457	35.687888	-120.702786	838	7.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1458	35.68789	-120.698694	838	8.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1459	35.687893	-120.694602	838	8.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1460	35.687895	-120.69051	838	9.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1461	35.687897	-120.686418	838	10.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1462	35.687899	-120.682326	838	11.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1463	35.687901	-120.678234	838	12.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1464	35.687902	-120.674142	838	14.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1465	35.687904	-120.67005	838	15.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1466	35.687905	-120.665958	838	17.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1467	35.687906	-120.661866	838	19.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1468	35.687908	-120.657773	838	22.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1469	35.687909	-120.653681	838	25.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1470	35.687909	-120.649589	838	28.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1471	35.68791	-120.645497	838	32.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1472	35.687911	-120.641405	838	36.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1473	35.687911	-120.637313	838	36.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1474	35.687911	-120.633221	838	31.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1475	35.687911	-120.629129	838	27.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1476	35.687911	-120.625037	838	24.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1477	35.687911	-120.620945	838	21.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1478	35.687911	-120.616853	838	19.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1479	35.687911	-120.612761	838	16.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1480	35.68791	-120.608669	838	15.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1481	35.687909	-120.604577	838	13.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1482	35.687909	-120.600485	838	12.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1483	35.687908	-120.596393	838	11.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1484	35.687906	-120.592301	838	10.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1485	35.687905	-120.588209	838	9.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1486	35.687904	-120.584117	838	8.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1487	35.687902	-120.580025	838	7.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1488	35.687901	-120.575933	838	6.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1489	35.687899	-120.571841	838	5.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1490	35.687897	-120.567749	838	5.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1491	35.687895	-120.563657	838	4.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1492	35.687893	-120.559565	838	3.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1493	35.68789	-120.555473	838	3.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1494	35.687888	-120.551381	838	2.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1495	35.687885	-120.547289	838	2.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1496	35.687882	-120.543197	838	1.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1497	35.687879	-120.539105	838	1.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1498	35.687876	-120.535013	838	0.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1499	35.687873	-120.530921	838	0.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1500	35.68787	-120.526829	838	-0.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1501	35.691208	-120.727342	838	3.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1502	35.691211	-120.72325	838	3.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1503	35.691215	-120.719158	838	4.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1504	35.691218	-120.715065	838	5.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1505	35.691221	-120.710973	838	5.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1506	35.691223	-120.706881	838	6.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1507	35.691226	-120.702789	838	7.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1508	35.691229	-120.698697	838	7.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1509	35.691231	-120.694604	838	8.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1510	35.691233	-120.690512	838	9.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1511	35.691235	-120.68642	838	10.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1512	35.691237	-120.682328	838	11.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1513	35.691239	-120.678236	838	12.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1514	35.691241	-120.674144	838	13.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1515	35.691242	-120.670051	838	15.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1516	35.691244	-120.665959	838	17.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1517	35.691245	-120.661867	838	19.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1518	35.691246	-120.657775	838	21.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1519	35.691247	-120.653683	838	24.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1520	35.691248	-120.64959	838	28.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1521	35.691248	-120.645498	838	32.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1522	35.691249	-120.641406	838	36.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1523	35.691249	-120.637314	838	36.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1524	35.69125	-120.633222	838	32.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1525	35.69125	-120.629129	838	27.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1526	35.69125	-120.625037	838	24.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1527	35.69125	-120.620945	838	21.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1528	35.691249	-120.616853	838	19.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1529	35.691249	-120.612761	838	16.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1530	35.691248	-120.608668	838	15.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1531	35.691248	-120.604576	838	13.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1532	35.691247	-120.600484	838	12.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1533	35.691246	-120.596392	838	11.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1534	35.691245	-120.5923	838	10.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1535	35.691244	-120.588208	838	9.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1536	35.691242	-120.584115	838	8.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1537	35.691241	-120.580023	838	7.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1538	35.691239	-120.575931	838	6.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1539	35.691237	-120.571839	838	5.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1540	35.691235	-120.567747	838	5.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1541	35.691233	-120.563654	838	4.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1542	35.691231	-120.559562	838	3.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1543	35.691229	-120.55547	838	3.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1544	35.691226	-120.551378	838	2.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1545	35.691223	-120.547286	838	2.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1546	35.691221	-120.543193	838	1.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1547	35.691218	-120.539101	838	1.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1548	35.691215	-120.535009	838	0.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1549	35.691211	-120.530917	838	0.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1550	35.691208	-120.526825	838	-0.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1551	35.694546	-120.727346	838	3.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1552	35.69455	-120.723254	838	3.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1553	35.694553	-120.719161	838	4.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1554	35.694556	-120.715069	838	4.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1555	35.694559	-120.710977	838	5.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1556	35.694562	-120.706884	838	6.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1557	35.694564	-120.702792	838	6.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1558	35.694567	-120.6987	838	7.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1559	35.694569	-120.694607	838	8.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1560	35.694571	-120.690515	838	9.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1561	35.694574	-120.686423	838	10.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1562	35.694576	-120.68233	838	11.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1563	35.694577	-120.678238	838	12.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1564	35.694579	-120.674145	838	13.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1565	35.694581	-120.670053	838	15.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1566	35.694582	-120.665961	838	16.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1567	35.694583	-120.661868	838	19.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1568	35.694584	-120.657776	838	21.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1569	35.694585	-120.653684	838	24.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1570	35.694586	-120.649591	838	27.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1571	35.694587	-120.645499	838	31.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1572	35.694587	-120.641407	838	35.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1573	35.694588	-120.637314	838	35.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1574	35.694588	-120.633222	838	31.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1575	35.694588	-120.62913	838	27.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1576	35.694588	-120.625037	838	24.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1577	35.694588	-120.620945	838	21.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1578	35.694588	-120.616852	838	18.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1579	35.694587	-120.61276	838	16.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1580	35.694587	-120.608668	838	14.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1581	35.694586	-120.604575	838	13.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1582	35.694585	-120.600483	838	12.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1583	35.694584	-120.596391	838	11.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1584	35.694583	-120.592298	838	10.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1585	35.694582	-120.588206	838	9.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1586	35.694581	-120.584114	838	8.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1587	35.694579	-120.580021	838	7.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1588	35.694577	-120.575929	838	6.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1589	35.694576	-120.571836	838	5.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1590	35.694574	-120.567744	838	5.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1591	35.694571	-120.563652	838	4.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1592	35.694569	-120.559559	838	3.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1593	35.694567	-120.555467	838	3.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1594	35.694564	-120.551375	838	2.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1595	35.694562	-120.547282	838	2.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1596	35.694559	-120.54319	838	1.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1597	35.694556	-120.539098	838	1.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1598	35.694553	-120.535005	838	0.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1599	35.69455	-120.530913	838	0.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1600	35.694546	-120.52682	838	-0.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1601	35.697885	-120.72735	838	2.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1602	35.697888	-120.723258	838	3.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1603	35.697891	-120.719165	838	4.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1604	35.697894	-120.715073	838	4.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1605	35.697897	-120.71098	838	5.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1606	35.6979	-120.706888	838	6.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1607	35.697903	-120.702795	838	6.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1608	35.697905	-120.698703	838	7.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1609	35.697908	-120.69461	838	8.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1610	35.69791	-120.690518	838	9.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1611	35.697912	-120.686425	838	10.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1612	35.697914	-120.682333	838	11.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1613	35.697916	-120.67824	838	12.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1614	35.697917	-120.674147	838	13.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1615	35.697919	-120.670055	838	14.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1616	35.69792	-120.665962	838	16.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1617	35.697922	-120.66187	838	18.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1618	35.697923	-120.657777	838	21.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1619	35.697924	-120.653685	838	23.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1620	35.697924	-120.649592	838	27.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1621	35.697925	-120.6455	838	31.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1622	35.697926	-120.641407	838	35.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1623	35.697926	-120.637315	838	35.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1624	35.697926	-120.633222	838	31.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1625	35.697927	-120.62913	838	27.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1626	35.697927	-120.625037	838	24.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1627	35.697926	-120.620945	838	21.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1628	35.697926	-120.616852	838	18.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1629	35.697926	-120.612759	838	16.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1630	35.697925	-120.608667	838	14.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1631	35.697924	-120.604574	838	13.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1632	35.697924	-120.600482	838	12.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1633	35.697923	-120.596389	838	10.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1634	35.697922	-120.592297	838	9.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1635	35.69792	-120.588204	838	8.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1636	35.697919	-120.584112	838	8.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1637	35.697917	-120.580019	838	7.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1638	35.697916	-120.575927	838	6.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1639	35.697914	-120.571834	838	5.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1640	35.697912	-120.567742	838	4.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1641	35.69791	-120.563649	838	4.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1642	35.697908	-120.559557	838	3.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1643	35.697905	-120.555464	838	3.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1644	35.697903	-120.551371	838	2.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1645	35.6979	-120.547279	838	2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1646	35.697897	-120.543186	838	1.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1647	35.697894	-120.539094	838	0.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1648	35.697891	-120.535001	838	0.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1649	35.697888	-120.530909	838	0.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1650	35.697885	-120.526816	838	-0.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1651	35.701223	-120.727355	838	2.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1652	35.701226	-120.723262	838	3.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1653	35.70123	-120.719169	838	3.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1654	35.701233	-120.715076	838	4.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1655	35.701236	-120.710984	838	5.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1656	35.701238	-120.706891	838	5.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1657	35.701241	-120.702798	838	6.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1658	35.701244	-120.698706	838	7.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1659	35.701246	-120.694613	838	8.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1660	35.701248	-120.69052	838	8.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1661	35.70125	-120.686428	838	9.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1662	35.701252	-120.682335	838	10.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1663	35.701254	-120.678242	838	11.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1664	35.701256	-120.674149	838	13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1665	35.701257	-120.670057	838	14.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1666	35.701259	-120.665964	838	16.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1667	35.70126	-120.661871	838	18.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1668	35.701261	-120.657779	838	20.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1669	35.701262	-120.653686	838	23.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1670	35.701263	-120.649593	838	27.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1671	35.701263	-120.6455	838	31.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1672	35.701264	-120.641408	838	35.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1673	35.701264	-120.637315	838	35.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1674	35.701265	-120.633222	838	31.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1675	35.701265	-120.62913	838	27.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1676	35.701265	-120.625037	838	23.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1677	35.701265	-120.620944	838	20.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1678	35.701264	-120.616852	838	18.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1679	35.701264	-120.612759	838	16.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1680	35.701263	-120.608666	838	14.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1681	35.701263	-120.604573	838	13.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1682	35.701262	-120.600481	838	11.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1683	35.701261	-120.596388	838	10.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1684	35.70126	-120.592295	838	9.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1685	35.701259	-120.588203	838	8.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1686	35.701257	-120.58411	838	7.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1687	35.701256	-120.580017	838	7.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1688	35.701254	-120.575925	838	6.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1689	35.701252	-120.571832	838	5.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1690	35.70125	-120.567739	838	4.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1691	35.701248	-120.563646	838	4.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1692	35.701246	-120.559554	838	3.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1693	35.701244	-120.555461	838	3.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1694	35.701241	-120.551368	838	2.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1695	35.701238	-120.547276	838	1.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1696	35.701236	-120.543183	838	1.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1697	35.701233	-120.53909	838	0.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1698	35.70123	-120.534998	838	0.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1699	35.701226	-120.530905	838	0.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1700	35.701223	-120.526812	838	-0.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1701	35.704562	-120.727359	838	2.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1702	35.704565	-120.723266	838	3.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1703	35.704568	-120.719173	838	3.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1704	35.704571	-120.71508	838	4.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1705	35.704574	-120.710987	838	4.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1706	35.704577	-120.706894	838	5.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1707	35.704579	-120.702801	838	6.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1708	35.704582	-120.698709	838	7.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1709	35.704584	-120.694616	838	7.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1710	35.704587	-120.690523	838	8.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1711	35.704589	-120.68643	838	9.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1712	35.704591	-120.682337	838	10.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1713	35.704592	-120.678244	838	11.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1714	35.704594	-120.674151	838	12.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1715	35.704596	-120.670059	838	14.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1716	35.704597	-120.665966	838	16.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1717	35.704598	-120.661873	838	18.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1718	35.704599	-120.65778	838	20.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1719	35.7046	-120.653687	838	23.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1720	35.704601	-120.649594	838	27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1721	35.704602	-120.645501	838	31.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1722	35.704602	-120.641408	838	35.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1723	35.704603	-120.637316	838	35.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1724	35.704603	-120.633223	838	31.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1725	35.704603	-120.62913	838	27.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1726	35.704603	-120.625037	838	23.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1727	35.704603	-120.620944	838	20.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1728	35.704603	-120.616851	838	18.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1729	35.704602	-120.612758	838	16.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1730	35.704602	-120.608665	838	14.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1731	35.704601	-120.604573	838	12.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1732	35.7046	-120.60048	838	11.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1733	35.704599	-120.596387	838	10.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1734	35.704598	-120.592294	838	9.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1735	35.704597	-120.588201	838	8.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1736	35.704596	-120.584108	838	7.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1737	35.704594	-120.580015	838	6.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1738	35.704592	-120.575922	838	6.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1739	35.704591	-120.57183	838	5.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1740	35.704589	-120.567737	838	4.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1741	35.704587	-120.563644	838	4.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1742	35.704584	-120.559551	838	3.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1743	35.704582	-120.555458	838	2.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1744	35.704579	-120.551365	838	2.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1745	35.704577	-120.547272	838	1.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1746	35.704574	-120.543179	838	1.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1747	35.704571	-120.539087	838	0.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1748	35.704568	-120.534994	838	0.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1749	35.704565	-120.530901	838	-0.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1750	35.704562	-120.526808	838	-0.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1751	35.7079	-120.727363	838	2.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1752	35.707903	-120.72327	838	3.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1753	35.707906	-120.719177	838	3.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1754	35.707909	-120.715084	838	4.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1755	35.707912	-120.710991	838	4.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1756	35.707915	-120.706898	838	5.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1757	35.707918	-120.702805	838	6.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1758	35.70792	-120.698712	838	6.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1759	35.707923	-120.694619	838	7.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1760	35.707925	-120.690526	838	8.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1761	35.707927	-120.686432	838	9.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1762	35.707929	-120.682339	838	10.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1763	35.707931	-120.678246	838	11.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1764	35.707932	-120.674153	838	12.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1765	35.707934	-120.67006	838	13.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1766	35.707935	-120.665967	838	15.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1767	35.707937	-120.661874	838	18.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1768	35.707938	-120.657781	838	20.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1769	35.707939	-120.653688	838	23.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1770	35.707939	-120.649595	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1771	35.70794	-120.645502	838	31.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1772	35.707941	-120.641409	838	35.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1773	35.707941	-120.637316	838	35.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1774	35.707941	-120.633223	838	31.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1775	35.707942	-120.62913	838	27.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1776	35.707942	-120.625037	838	23.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1777	35.707941	-120.620944	838	20.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1778	35.707941	-120.616851	838	18.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1779	35.707941	-120.612758	838	16.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1780	35.70794	-120.608665	838	14.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1781	35.707939	-120.604572	838	12.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1782	35.707939	-120.600479	838	11.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1783	35.707938	-120.596385	838	10.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1784	35.707937	-120.592292	838	9.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1785	35.707935	-120.588199	838	8.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1786	35.707934	-120.584106	838	7.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1787	35.707932	-120.580013	838	6.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1788	35.707931	-120.57592	838	6.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1789	35.707929	-120.571827	838	5.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1790	35.707927	-120.567734	838	4.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1791	35.707925	-120.563641	838	4.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1792	35.707923	-120.559548	838	3.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1793	35.70792	-120.555455	838	2.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1794	35.707918	-120.551362	838	2.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1795	35.707915	-120.547269	838	1.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1796	35.707912	-120.543176	838	1.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1797	35.707909	-120.539083	838	0.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1798	35.707906	-120.53499	838	0.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1799	35.707903	-120.530897	838	-0.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1800	35.7079	-120.526804	838	-0.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1801	35.711238	-120.727367	838	2.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1802	35.711242	-120.723274	838	2.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1803	35.711245	-120.719181	838	3.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1804	35.711248	-120.715087	838	4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1805	35.711251	-120.710994	838	4.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1806	35.711254	-120.706901	838	5.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1807	35.711256	-120.702808	838	5.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1808	35.711259	-120.698715	838	6.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1809	35.711261	-120.694621	838	7.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1810	35.711263	-120.690528	838	8.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1811	35.711265	-120.686435	838	9.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1812	35.711267	-120.682342	838	9.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1813	35.711269	-120.678249	838	11.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1814	35.711271	-120.674155	838	12.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1815	35.711272	-120.670062	838	13.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1816	35.711274	-120.665969	838	15.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1817	35.711275	-120.661876	838	17.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1818	35.711276	-120.657782	838	20.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1819	35.711277	-120.653689	838	23.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1820	35.711278	-120.649596	838	26.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1821	35.711279	-120.645503	838	31.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1822	35.711279	-120.64141	838	35.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1823	35.71128	-120.637316	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1824	35.71128	-120.633223	838	31.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1825	35.71128	-120.62913	838	27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1826	35.71128	-120.625037	838	23.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1827	35.71128	-120.620944	838	20.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1828	35.71128	-120.61685	838	18.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1829	35.711279	-120.612757	838	15.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1830	35.711279	-120.608664	838	14.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1831	35.711278	-120.604571	838	12.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1832	35.711277	-120.600477	838	11.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1833	35.711276	-120.596384	838	10.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1834	35.711275	-120.592291	838	9.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1835	35.711274	-120.588198	838	8.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1836	35.711272	-120.584105	838	7.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1837	35.711271	-120.580011	838	6.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1838	35.711269	-120.575918	838	5.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1839	35.711267	-120.571825	838	5.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1840	35.711265	-120.567732	838	4.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1841	35.711263	-120.563639	838	3.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1842	35.711261	-120.559545	838	3.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1843	35.711259	-120.555452	838	2.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1844	35.711256	-120.551359	838	2.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1845	35.711254	-120.547266	838	1.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1846	35.711251	-120.543172	838	1.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1847	35.711248	-120.539079	838	0.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1848	35.711245	-120.534986	838	0.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1849	35.711242	-120.530893	838	-0.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1850	35.711238	-120.5268	838	-0.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1851	35.714577	-120.727371	838	2.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1852	35.71458	-120.723278	838	2.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1853	35.714583	-120.719184	838	3.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1854	35.714586	-120.715091	838	3.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1855	35.714589	-120.710998	838	4.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1856	35.714592	-120.706904	838	5.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1857	35.714595	-120.702811	838	5.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1858	35.714597	-120.698718	838	6.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1859	35.714599	-120.694624	838	7.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1860	35.714602	-120.690531	838	7.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1861	35.714604	-120.686437	838	8.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1862	35.714606	-120.682344	838	9.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1863	35.714607	-120.678251	838	10.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1864	35.714609	-120.674157	838	12.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1865	35.714611	-120.670064	838	13.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1866	35.714612	-120.66597	838	15.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1867	35.714613	-120.661877	838	17.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1868	35.714614	-120.657784	838	20.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1869	35.714615	-120.65369	838	23.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1870	35.714616	-120.649597	838	26.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1871	35.714617	-120.645504	838	31.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1872	35.714617	-120.64141	838	35.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1873	35.714618	-120.637317	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1874	35.714618	-120.633223	838	31.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1875	35.714618	-120.62913	838	26.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1876	35.714618	-120.625037	838	23.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1877	35.714618	-120.620943	838	20.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1878	35.714618	-120.61685	838	18.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1879	35.714617	-120.612756	838	15.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1880	35.714617	-120.608663	838	13.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1881	35.714616	-120.60457	838	12.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1882	35.714615	-120.600476	838	11.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1883	35.714614	-120.596383	838	10.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1884	35.714613	-120.59229	838	9.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1885	35.714612	-120.588196	838	8.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1886	35.714611	-120.584103	838	7.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1887	35.714609	-120.580009	838	6.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1888	35.714607	-120.575916	838	5.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1889	35.714606	-120.571823	838	5.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1890	35.714604	-120.567729	838	4.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1891	35.714602	-120.563636	838	3.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1892	35.714599	-120.559542	838	3.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1893	35.714597	-120.555449	838	2.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1894	35.714595	-120.551356	838	2.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1895	35.714592	-120.547262	838	1.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1896	35.714589	-120.543169	838	1.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1897	35.714586	-120.539076	838	0.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1898	35.714583	-120.534982	838	0.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1899	35.71458	-120.530889	838	-0.28	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1900	35.714577	-120.526795	838	-0.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1901	35.717915	-120.727375	838	2.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1902	35.717918	-120.723282	838	2.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1903	35.717921	-120.719188	838	3.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1904	35.717925	-120.715095	838	3.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1905	35.717927	-120.711001	838	4.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1906	35.71793	-120.706908	838	4.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1907	35.717933	-120.702814	838	5.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1908	35.717935	-120.698721	838	6.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1909	35.717938	-120.694627	838	6.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1910	35.71794	-120.690533	838	7.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1911	35.717942	-120.68644	838	8.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1912	35.717944	-120.682346	838	9.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1913	35.717946	-120.678253	838	10.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1914	35.717947	-120.674159	838	11.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1915	35.717949	-120.670066	838	13.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1916	35.71795	-120.665972	838	15.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1917	35.717952	-120.661879	838	17.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1918	35.717953	-120.657785	838	20.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1919	35.717954	-120.653691	838	23.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1920	35.717955	-120.649598	838	26.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1921	35.717955	-120.645504	838	31.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1922	35.717956	-120.641411	838	35.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1923	35.717956	-120.637317	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1924	35.717956	-120.633224	838	31.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1925	35.717957	-120.62913	838	26.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1926	35.717957	-120.625037	838	23.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1927	35.717956	-120.620943	838	20.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1928	35.717956	-120.616849	838	17.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1929	35.717956	-120.612756	838	15.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1930	35.717955	-120.608662	838	13.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1931	35.717955	-120.604569	838	12.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1932	35.717954	-120.600475	838	11.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1933	35.717953	-120.596382	838	9.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1934	35.717952	-120.592288	838	8.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1935	35.71795	-120.588195	838	8.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1936	35.717949	-120.584101	838	7.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1937	35.717947	-120.580007	838	6.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1938	35.717946	-120.575914	838	5.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1939	35.717944	-120.57182	838	4.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1940	35.717942	-120.567727	838	4.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1941	35.71794	-120.563633	838	3.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1942	35.717938	-120.55954	838	3.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1943	35.717935	-120.555446	838	2.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1944	35.717933	-120.551353	838	1.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1945	35.71793	-120.547259	838	1.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1946	35.717927	-120.543165	838	0.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1947	35.717925	-120.539072	838	0.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1948	35.717921	-120.534978	838	0.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1949	35.717918	-120.530885	838	-0.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1950	35.717915	-120.526791	838	-0.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1951	35.721253	-120.72738	838	1.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1952	35.721257	-120.723286	838	2.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1953	35.72126	-120.719192	838	2.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1954	35.721263	-120.715098	838	3.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1955	35.721266	-120.711005	838	4.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1956	35.721269	-120.706911	838	4.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1957	35.721271	-120.702817	838	5.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1958	35.721274	-120.698724	838	6.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1959	35.721276	-120.69463	838	6.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1960	35.721278	-120.690536	838	7.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1961	35.72128	-120.686442	838	8.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1962	35.721282	-120.682349	838	9.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1963	35.721284	-120.678255	838	10.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1964	35.721286	-120.674161	838	11.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1965	35.721287	-120.670067	838	13.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1966	35.721289	-120.665974	838	15.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1967	35.72129	-120.66188	838	17.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1968	35.721291	-120.657786	838	20.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1969	35.721292	-120.653693	838	23.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1970	35.721293	-120.649599	838	26.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1971	35.721294	-120.645505	838	31.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1972	35.721294	-120.641411	838	35.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1973	35.721295	-120.637318	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1974	35.721295	-120.633224	838	31.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1975	35.721295	-120.62913	838	26.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1976	35.721295	-120.625036	838	23.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1977	35.721295	-120.620943	838	20.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1978	35.721295	-120.616849	838	17.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1979	35.721294	-120.612755	838	15.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1980	35.721294	-120.608662	838	13.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1981	35.721293	-120.604568	838	12.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1982	35.721292	-120.600474	838	10.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1983	35.721291	-120.59638	838	9.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1984	35.72129	-120.592287	838	8.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1985	35.721289	-120.588193	838	7.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1986	35.721287	-120.584099	838	7.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1987	35.721286	-120.580005	838	6.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1988	35.721284	-120.575912	838	5.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1989	35.721282	-120.571818	838	4.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1990	35.72128	-120.567724	838	4.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1991	35.721278	-120.563631	838	3.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1992	35.721276	-120.559537	838	2.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1993	35.721274	-120.555443	838	2.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1994	35.721271	-120.551349	838	1.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1995	35.721269	-120.547256	838	1.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1996	35.721266	-120.543162	838	0.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1997	35.721263	-120.539068	838	0.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
1998	35.72126	-120.534975	838	-0.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

1999	35.721257	-120.530881	838	-0.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2000	35.721253	-120.526787	838	-0.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2001	35.724592	-120.727384	838	1.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2002	35.724595	-120.72329	838	2.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2003	35.724598	-120.719196	838	2.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2004	35.724601	-120.715102	838	3.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2005	35.724604	-120.711008	838	3.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2006	35.724607	-120.706914	838	4.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2007	35.72461	-120.70282	838	5.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2008	35.724612	-120.698727	838	5.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2009	35.724614	-120.694633	838	6.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2010	35.724617	-120.690539	838	7.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2011	35.724619	-120.686445	838	8.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2012	35.724621	-120.682351	838	9.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2013	35.724622	-120.678257	838	10.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2014	35.724624	-120.674163	838	11.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2015	35.724626	-120.670069	838	13.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2016	35.724627	-120.665975	838	15.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2017	35.724628	-120.661881	838	17.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2018	35.724629	-120.657788	838	20.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2019	35.72463	-120.653694	838	23.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2020	35.724631	-120.6496	838	26.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2021	35.724632	-120.645506	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2022	35.724632	-120.641412	838	35.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2023	35.724633	-120.637318	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2024	35.724633	-120.633224	838	31.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2025	35.724633	-120.62913	838	26.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2026	35.724633	-120.625036	838	23.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2027	35.724633	-120.620942	838	20.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2028	35.724633	-120.616849	838	17.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2029	35.724632	-120.612755	838	15.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2030	35.724632	-120.608661	838	13.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2031	35.724631	-120.604567	838	12.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2032	35.72463	-120.600473	838	10.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2033	35.724629	-120.596379	838	9.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2034	35.724628	-120.592285	838	8.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2035	35.724627	-120.588191	838	7.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2036	35.724626	-120.584097	838	6.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2037	35.724624	-120.580004	838	6.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2038	35.724622	-120.57591	838	5.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2039	35.724621	-120.571816	838	4.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2040	35.724619	-120.567722	838	3.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2041	35.724617	-120.563628	838	3.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2042	35.724614	-120.559534	838	2.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2043	35.724612	-120.55544	838	2.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2044	35.72461	-120.551346	838	1.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2045	35.724607	-120.547252	838	1.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2046	35.724604	-120.543158	838	0.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2047	35.724601	-120.539065	838	0.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2048	35.724598	-120.534971	838	-0.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2049	35.724595	-120.530877	838	-0.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2050	35.724592	-120.526783	838	-0.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2051	35.72793	-120.727388	838	1.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2052	35.727933	-120.723294	838	2.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2053	35.727937	-120.7192	838	2.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2054	35.72794	-120.715106	838	3.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2055	35.727942	-120.711012	838	3.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2056	35.727945	-120.706918	838	4.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2057	35.727948	-120.702824	838	4.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2058	35.72795	-120.69873	838	5.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2059	35.727953	-120.694635	838	6.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2060	35.727955	-120.690541	838	7.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2061	35.727957	-120.686447	838	8.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2062	35.727959	-120.682353	838	9.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2063	35.727961	-120.678259	838	10.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2064	35.727963	-120.674165	838	11.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2065	35.727964	-120.670071	838	13.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2066	35.727965	-120.665977	838	15.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2067	35.727967	-120.661883	838	17.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2068	35.727968	-120.657789	838	20.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2069	35.727969	-120.653695	838	23.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2070	35.72797	-120.649601	838	26.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2071	35.72797	-120.645507	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2072	35.727971	-120.641413	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2073	35.727971	-120.637319	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2074	35.727972	-120.633224	838	31.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2075	35.727972	-120.62913	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

2076	35.727972	-120.625036	838	23.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2077	35.727972	-120.620942	838	20.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2078	35.727971	-120.616848	838	17.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2079	35.727971	-120.612754	838	15.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2080	35.72797	-120.60866	838	13.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2081	35.72797	-120.604566	838	12.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2082	35.727969	-120.600472	838	10.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2083	35.727968	-120.596378	838	9.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2084	35.727967	-120.592284	838	8.6	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2085	35.727965	-120.58819	838	7.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2086	35.727964	-120.584096	838	6.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2087	35.727963	-120.580002	838	5.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2088	35.727961	-120.575907	838	5.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2089	35.727959	-120.571813	838	4.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2090	35.727957	-120.567719	838	3.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2091	35.727955	-120.563625	838	3.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2092	35.727953	-120.559531	838	2.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2093	35.72795	-120.555437	838	2.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2094	35.727948	-120.551343	838	1.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2095	35.727945	-120.547249	838	1.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2096	35.727942	-120.543155	838	0.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2097	35.72794	-120.539061	838	0.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2098	35.727937	-120.534967	838	-0.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2099	35.727933	-120.530873	838	-0.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2100	35.72793	-120.526779	838	-1.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2101	35.731268	-120.727392	838	1.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2102	35.731272	-120.723298	838	1.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2103	35.731275	-120.719204	838	2.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2104	35.731278	-120.715109	838	2.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2105	35.731281	-120.711015	838	3.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2106	35.731284	-120.706921	838	4.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2107	35.731286	-120.702827	838	4.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2108	35.731289	-120.698732	838	5.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2109	35.731291	-120.694638	838	6.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2110	35.731293	-120.690544	838	7.17	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2111	35.731295	-120.68645	838	8.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2112	35.731297	-120.682356	838	9.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2113	35.731299	-120.678261	838	10.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2114	35.731301	-120.674167	838	11.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2115	35.731302	-120.670073	838	13.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2116	35.731304	-120.665979	838	15.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2117	35.731305	-120.661884	838	17.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2118	35.731306	-120.65779	838	20.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2119	35.731307	-120.653696	838	23.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2120	35.731308	-120.649602	838	26.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2121	35.731309	-120.645507	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2122	35.731309	-120.641413	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2123	35.73131	-120.637319	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2124	35.73131	-120.633225	838	31.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2125	35.73131	-120.62913	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2126	35.73131	-120.625036	838	23.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2127	35.73131	-120.620942	838	20.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2128	35.73131	-120.616848	838	17.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2129	35.731309	-120.612753	838	15.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2130	35.731309	-120.608659	838	13.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2131	35.731308	-120.604565	838	12.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2132	35.731307	-120.600471	838	10.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2133	35.731306	-120.596377	838	9.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2134	35.731305	-120.592282	838	8.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2135	35.731304	-120.588188	838	7.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2136	35.731302	-120.584094	838	6.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2137	35.731301	-120.58	838	5.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2138	35.731299	-120.575905	838	5.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2139	35.731297	-120.571811	838	4.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2140	35.731295	-120.567717	838	3.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2141	35.731293	-120.563623	838	3.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2142	35.731291	-120.559528	838	2.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2143	35.731289	-120.555434	838	2.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2144	35.731286	-120.55134	838	1.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2145	35.731284	-120.547246	838	1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2146	35.731281	-120.543151	838	0.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2147	35.731278	-120.539057	838	0.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2148	35.731275	-120.534963	838	-0.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2149	35.731272	-120.530869	838	-0.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2150	35.731268	-120.526775	838	-1.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2151	35.734607	-120.727396	838	1.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2152	35.73461	-120.723302	838	1.75	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

2153	35.734613	-120.719208	838	2.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2154	35.734616	-120.715113	838	2.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2155	35.734619	-120.711019	838	3.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2156	35.734622	-120.706924	838	4.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2157	35.734625	-120.70283	838	4.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2158	35.734627	-120.698735	838	5.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2159	35.734629	-120.694641	838	6.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2160	35.734632	-120.690547	838	7.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2161	35.734634	-120.686452	838	7.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2162	35.734636	-120.682358	838	9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2163	35.734638	-120.678263	838	10.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2164	35.734639	-120.674169	838	11.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2165	35.734641	-120.670075	838	13.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2166	35.734642	-120.66598	838	15.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2167	35.734643	-120.661886	838	17.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2168	35.734644	-120.657791	838	20.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2169	35.734645	-120.653697	838	23.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2170	35.734646	-120.649603	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2171	35.734647	-120.645508	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2172	35.734648	-120.641414	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2173	35.734648	-120.637319	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2174	35.734648	-120.633225	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2175	35.734648	-120.629131	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2176	35.734648	-120.625036	838	23.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2177	35.734648	-120.620942	838	20.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2178	35.734648	-120.616847	838	17.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2179	35.734648	-120.612753	838	15.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2180	35.734647	-120.608658	838	13.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2181	35.734646	-120.604564	838	11.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2182	35.734645	-120.60047	838	10.65	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2183	35.734644	-120.596375	838	9.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2184	35.734643	-120.592281	838	8.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2185	35.734642	-120.588186	838	7.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2186	35.734641	-120.584092	838	6.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2187	35.734639	-120.579998	838	5.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2188	35.734638	-120.575903	838	5.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2189	35.734636	-120.571809	838	4.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2190	35.734634	-120.567714	838	3.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2191	35.734632	-120.56362	838	3.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2192	35.734629	-120.559526	838	2.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2193	35.734627	-120.555431	838	1.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2194	35.734625	-120.551337	838	1.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2195	35.734622	-120.547242	838	0.9	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2196	35.734619	-120.543148	838	0.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2197	35.734616	-120.539054	838	-0.02	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2198	35.734613	-120.534959	838	-0.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2199	35.73461	-120.530865	838	-0.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2200	35.734607	-120.52677	838	-1.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2201	35.737945	-120.7274	838	1.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2202	35.737948	-120.723306	838	1.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2203	35.737952	-120.719211	838	2.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2204	35.737955	-120.715117	838	2.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2205	35.737958	-120.711022	838	3.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2206	35.73796	-120.706928	838	3.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2207	35.737963	-120.702833	838	4.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2208	35.737965	-120.698738	838	5.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2209	35.737968	-120.694644	838	6.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2210	35.73797	-120.690549	838	6.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2211	35.737972	-120.686455	838	7.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2212	35.737974	-120.68236	838	8.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2213	35.737976	-120.678266	838	10.1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2214	35.737978	-120.674171	838	11.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2215	35.737979	-120.670076	838	13.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2216	35.73798	-120.665982	838	15.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2217	35.737982	-120.661887	838	17.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2218	35.737983	-120.657793	838	20.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2219	35.737984	-120.653698	838	23.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2220	35.737985	-120.649604	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2221	35.737985	-120.645509	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2222	35.737986	-120.641414	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2223	35.737986	-120.63732	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2224	35.737987	-120.633225	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2225	35.737987	-120.629131	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2226	35.737987	-120.625036	838	23.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2227	35.737987	-120.620941	838	20.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2228	35.737986	-120.616847	838	17.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2229	35.737986	-120.612752	838	15.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

2230	35.737985	-120.608658	838	13.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2231	35.737985	-120.604563	838	11.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2232	35.737984	-120.600469	838	10.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2233	35.737983	-120.596374	838	9.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2234	35.737982	-120.592279	838	8.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2235	35.73798	-120.588185	838	7.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2236	35.737979	-120.58409	838	6.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2237	35.737978	-120.579996	838	5.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2238	35.737976	-120.575901	838	4.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2239	35.737974	-120.571807	838	4.23	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2240	35.737972	-120.567712	838	3.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2241	35.73797	-120.563617	838	2.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2242	35.737968	-120.559523	838	2.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2243	35.737965	-120.555428	838	1.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2244	35.737963	-120.551334	838	1.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2245	35.73796	-120.547239	838	0.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2246	35.737958	-120.543144	838	0.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2247	35.737955	-120.53905	838	-0.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2248	35.737952	-120.534955	838	-0.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2249	35.737948	-120.530861	838	-0.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2250	35.737945	-120.526766	838	-1.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2251	35.741283	-120.727405	838	1	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2252	35.741287	-120.72331	838	1.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2253	35.74129	-120.719215	838	2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2254	35.741293	-120.71512	838	2.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2255	35.741296	-120.711026	838	3.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2256	35.741299	-120.706931	838	3.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2257	35.741301	-120.702836	838	4.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2258	35.741304	-120.698741	838	5.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2259	35.741306	-120.694647	838	6.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2260	35.741308	-120.690552	838	6.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2261	35.74131	-120.686457	838	7.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2262	35.741312	-120.682362	838	8.87	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2263	35.741314	-120.678268	838	10.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2264	35.741316	-120.674173	838	11.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2265	35.741317	-120.670078	838	13.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2266	35.741319	-120.665983	838	15.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2267	35.74132	-120.661889	838	17.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2268	35.741321	-120.657794	838	20.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2269	35.741322	-120.653699	838	23.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2270	35.741323	-120.649604	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2271	35.741324	-120.64551	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2272	35.741324	-120.641415	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2273	35.741325	-120.63732	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2274	35.741325	-120.633225	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2275	35.741325	-120.629131	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2276	35.741325	-120.625036	838	23.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2277	35.741325	-120.620941	838	20.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2278	35.741325	-120.616846	838	17.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2279	35.741324	-120.612752	838	15.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2280	35.741324	-120.608657	838	13.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2281	35.741323	-120.604562	838	11.91	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2282	35.741322	-120.600467	838	10.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2283	35.741321	-120.596373	838	9.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2284	35.74132	-120.592278	838	8.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2285	35.741319	-120.588183	838	7.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2286	35.741317	-120.584088	838	6.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2287	35.741316	-120.579994	838	5.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2288	35.741314	-120.575899	838	4.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2289	35.741312	-120.571804	838	4.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2290	35.74131	-120.567709	838	3.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2291	35.741308	-120.563615	838	2.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2292	35.741306	-120.55952	838	2.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2293	35.741304	-120.555425	838	1.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2294	35.741301	-120.55133	838	1.2	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2295	35.741299	-120.547236	838	0.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2296	35.741296	-120.543141	838	0.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2297	35.741293	-120.539046	838	-0.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2298	35.74129	-120.534951	838	-0.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2299	35.741287	-120.530857	838	-1.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2300	35.741283	-120.526762	838	-1.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2301	35.744622	-120.727409	838	0.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2302	35.744625	-120.723314	838	1.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2303	35.744628	-120.719219	838	1.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2304	35.744631	-120.715124	838	2.44	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2305	35.744634	-120.711029	838	3.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2306	35.744637	-120.706934	838	3.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

2307	35.74464	-120.702839	838	4.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2308	35.744642	-120.698744	838	5.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2309	35.744645	-120.69465	838	5.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2310	35.744647	-120.690555	838	6.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2311	35.744649	-120.68646	838	7.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2312	35.744651	-120.682365	838	8.82	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2313	35.744653	-120.67827	838	10.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2314	35.744654	-120.674175	838	11.36	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2315	35.744656	-120.67008	838	13.09	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2316	35.744657	-120.665985	838	15.14	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2317	35.744658	-120.66189	838	17.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2318	35.74466	-120.657795	838	20.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2319	35.744661	-120.6537	838	23.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2320	35.744661	-120.649605	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2321	35.744662	-120.64551	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2322	35.744663	-120.641416	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2323	35.744663	-120.637321	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2324	35.744663	-120.633226	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2325	35.744663	-120.629131	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2326	35.744663	-120.625036	838	23.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2327	35.744663	-120.620941	838	20.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2328	35.744663	-120.616846	838	17.79	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2329	35.744663	-120.612751	838	15.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2330	35.744662	-120.608656	838	13.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2331	35.744661	-120.604561	838	11.88	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2332	35.744661	-120.600466	838	10.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2333	35.74466	-120.596371	838	9.35	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2334	35.744658	-120.592277	838	8.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2335	35.744657	-120.588182	838	7.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2336	35.744656	-120.584087	838	6.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2337	35.744654	-120.579992	838	5.58	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2338	35.744653	-120.575897	838	4.8	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2339	35.744651	-120.571802	838	4.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2340	35.744649	-120.567707	838	3.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2341	35.744647	-120.563612	838	2.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2342	35.744645	-120.559517	838	2.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2343	35.744642	-120.555422	838	1.64	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2344	35.74464	-120.551327	838	1.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2345	35.744637	-120.547232	838	0.62	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2346	35.744634	-120.543137	838	0.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2347	35.744631	-120.539043	838	-0.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2348	35.744628	-120.534948	838	-0.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2349	35.744625	-120.530853	838	-1.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2350	35.744622	-120.526758	838	-1.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2351	35.74796	-120.727413	838	0.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2352	35.747963	-120.723318	838	1.26	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2353	35.747967	-120.719223	838	1.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2354	35.74797	-120.715128	838	2.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2355	35.747973	-120.711033	838	2.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2356	35.747975	-120.706938	838	3.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2357	35.747978	-120.702843	838	4.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2358	35.747981	-120.698747	838	5.05	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2359	35.747983	-120.694652	838	5.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2360	35.747985	-120.690557	838	6.76	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2361	35.747987	-120.686462	838	7.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2362	35.747989	-120.682367	838	8.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2363	35.747991	-120.678272	838	9.97	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2364	35.747993	-120.674177	838	11.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2365	35.747994	-120.670082	838	13.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2366	35.747996	-120.665987	838	15.13	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2367	35.747997	-120.661892	838	17.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2368	35.747998	-120.657797	838	20.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2369	35.747999	-120.653701	838	23.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2370	35.748	-120.649606	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2371	35.748	-120.645511	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2372	35.748001	-120.641416	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2373	35.748001	-120.637321	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2374	35.748002	-120.633226	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2375	35.748002	-120.629131	838	26.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2376	35.748002	-120.625036	838	23.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2377	35.748002	-120.620941	838	20.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2378	35.748001	-120.616846	838	17.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2379	35.748001	-120.612751	838	15.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2380	35.748	-120.608655	838	13.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2381	35.748	-120.60456	838	11.86	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2382	35.747999	-120.600465	838	10.51	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2383	35.747998	-120.59637	838	9.32	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

2384	35.747997	-120.592275	838	8.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2385	35.747996	-120.58818	838	7.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2386	35.747994	-120.584085	838	6.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2387	35.747993	-120.57999	838	5.52	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2388	35.747991	-120.575895	838	4.73	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2389	35.747989	-120.5718	838	4.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2390	35.747987	-120.567705	838	3.33	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2391	35.747985	-120.563609	838	2.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2392	35.747983	-120.559514	838	2.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2393	35.747981	-120.555419	838	1.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2394	35.747978	-120.551324	838	1.03	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2395	35.747975	-120.547229	838	0.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2396	35.747973	-120.543134	838	0.07	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2397	35.74797	-120.539039	838	-0.38	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2398	35.747967	-120.534944	838	-0.81	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2399	35.747963	-120.530849	838	-1.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2400	35.74796	-120.526754	838	-1.61	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2401	35.751298	-120.727417	838	0.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2402	35.751302	-120.723322	838	1.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2403	35.751305	-120.719227	838	1.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2404	35.751308	-120.715131	838	2.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2405	35.751311	-120.711036	838	2.85	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2406	35.751314	-120.706941	838	3.5	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2407	35.751316	-120.702846	838	4.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2408	35.751319	-120.69875	838	4.99	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2409	35.751321	-120.694655	838	5.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2410	35.751323	-120.69056	838	6.71	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2411	35.751326	-120.686465	838	7.67	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2412	35.751327	-120.682369	838	8.74	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2413	35.751329	-120.678274	838	9.94	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2414	35.751331	-120.674179	838	11.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2415	35.751332	-120.670084	838	13.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2416	35.751334	-120.665988	838	15.12	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2417	35.751335	-120.661893	838	17.55	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2418	35.751336	-120.657798	838	20.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2419	35.751337	-120.653703	838	23.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2420	35.751338	-120.649607	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2421	35.751339	-120.645512	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2422	35.751339	-120.641417	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2423	35.75134	-120.637321	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2424	35.75134	-120.633226	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2425	35.75134	-120.629131	838	26.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2426	35.75134	-120.625036	838	23.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2427	35.75134	-120.62094	838	20.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2428	35.75134	-120.616845	838	17.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2429	35.751339	-120.61275	838	15.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2430	35.751339	-120.608655	838	13.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2431	35.751338	-120.604559	838	11.84	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2432	35.751337	-120.600464	838	10.49	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2433	35.751336	-120.596369	838	9.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2434	35.751335	-120.592274	838	8.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2435	35.751334	-120.588178	838	7.25	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2436	35.751332	-120.584083	838	6.34	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2437	35.751331	-120.579988	838	5.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2438	35.751329	-120.575893	838	4.68	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2439	35.751327	-120.571797	838	3.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2440	35.751326	-120.567702	838	3.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2441	35.751323	-120.563607	838	2.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2442	35.751321	-120.559512	838	2.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2443	35.751319	-120.555416	838	1.48	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2444	35.751316	-120.551321	838	0.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2445	35.751314	-120.547226	838	0.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2446	35.751311	-120.54313	838	-0.01	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2447	35.751308	-120.539035	838	-0.46	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2448	35.751305	-120.53494	838	-0.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2449	35.751302	-120.530845	838	-1.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2450	35.751298	-120.526749	838	-1.69	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2451	35.754637	-120.727421	838	0.56	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2452	35.75464	-120.723326	838	1.06	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2453	35.754643	-120.719231	838	1.59	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2454	35.754646	-120.715135	838	2.16	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2455	35.754649	-120.71104	838	2.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2456	35.754652	-120.706944	838	3.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2457	35.754655	-120.702849	838	4.15	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2458	35.754657	-120.698753	838	4.93	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2459	35.75466	-120.694658	838	5.78	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2460	35.754662	-120.690563	838	6.66	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set

2461	35.754664	-120.686467	838	7.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2462	35.754666	-120.682372	838	8.7	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2463	35.754668	-120.678276	838	9.92	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2464	35.754669	-120.674181	838	11.29	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2465	35.754671	-120.670085	838	13.04	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2466	35.754672	-120.66599	838	15.11	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2467	35.754673	-120.661895	838	17.54	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2468	35.754675	-120.657799	838	20.18	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2469	35.754676	-120.653704	838	23.31	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2470	35.754676	-120.649608	838	26.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2471	35.754677	-120.645513	838	31.41	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2472	35.754678	-120.641417	838	35.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2473	35.754678	-120.637322	838	35.72	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2474	35.754678	-120.633226	838	31.24	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2475	35.754678	-120.629131	838	26.95	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2476	35.754678	-120.625036	838	23.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2477	35.754678	-120.62094	838	20.4	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2478	35.754678	-120.616845	838	17.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2479	35.754678	-120.612749	838	15.45	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2480	35.754677	-120.608654	838	13.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2481	35.754676	-120.604558	838	11.83	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2482	35.754676	-120.600463	838	10.47	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2483	35.754675	-120.596368	838	9.27	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2484	35.754673	-120.592272	838	8.19	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2485	35.754672	-120.588177	838	7.22	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2486	35.754671	-120.584081	838	6.3	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2487	35.754669	-120.579986	838	5.43	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2488	35.754668	-120.57589	838	4.63	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2489	35.754666	-120.571795	838	3.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2490	35.754664	-120.5677	838	3.21	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2491	35.754662	-120.563604	838	2.57	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2492	35.75466	-120.559509	838	1.98	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2493	35.754657	-120.555413	838	1.42	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2494	35.754655	-120.551318	838	0.89	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2495	35.754652	-120.547222	838	0.39	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2496	35.754649	-120.543127	838	-0.08	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2497	35.754646	-120.539032	838	-0.53	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2498	35.754643	-120.534936	838	-0.96	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2499	35.75464	-120.530841	838	-1.37	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set
2500	35.754637	-120.526745	838	-1.77	Exposure	LAEQ	1	50x50 grid	1	LTO 50x50 Receptor set