

# ***Ldn Consulting, Inc.***

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September 4, 2025

LS Power Grid California  
16150 Main Circle Drive, Suite 310  
Chesterfield, MO 63017

**RE: Collinsville-Pittsburg 500/230 kV Substation Project – Solano and Contra Costa Counties, CA - Health Risk Screening Letter**

The purpose of this Air Quality Health Risk screening letter is to identify potential health risks from toxic air contaminants (TACs) which would be expected during construction of the Collinsville 500/230 Kilovolt (kV) Substation Project (Project). The Project seeks to construct an approximately 11-acre 500/230 kV substation (Collinsville Substation) with an additional disturbance of up to 21 acres for grading disturbance, installation of new transmission lines (which includes the overhead, submarine cable, and underground segments alike), a new telecommunications line, roads and ancillary facilities. Transmission lines include a new 6-mile 230kV transmission between the new Collinsville Substation and the existing Pittsburg Substation, two Pacific Gas and Electric Company (PG&E) 1.5-mile 500kV transmission line segments connecting into the new Collinsville Substation, new PG&E transposition structures along the existing Vaca Dixon-Tesla 500 kV transmission line right-of-way, and extending and connecting an existing 12kV distribution line into the new Collinsville Substation. PG&E's existing Pittsburg Substation would be modified by shifting line positions, bus work, and modifying electrical equipment to facilitate the connection of the proposed LSPGC 230 kV Transmission Line.

The new 6-mile 230kV transmission line would be located in a combination of overhead, underground, and submarine cable. The new telecommunication line will extend from the new Collinsville Substation to an existing telecom provider located southwest of the existing Pittsburg Substation. Equipment will be stored at the substation construction site, at staging yards and along the transmission line alignment proposed in this Project. TACs during operations would not be expected since, after the substation is operational, minimal site visits to the substation would be required.

The Bay Area Air Quality Management District (BAAQMD) has established significance thresholds for assessing air quality impacts within its jurisdiction, including Solano and Contra Costa Counties. These thresholds are used to evaluate health risks associated with individual projects

(BAAQMD, 2022). Health risk impacts are categorized into carcinogens and non-carcinogens for both acute and chronic exposures.

An individual project cannot increase the cancer risk for a sensitive receptor beyond 10 individuals per one million exposed. For non-carcinogens, an individual projects increase in the hazard index for both acute and chronic exposures must not exceed 1.0 for a sensitive receptor. Additionally, individual project incremental annual Particulate Matter emissions having a size of 2.5 micrometers ( $\mu\text{m}$ ) or smaller ( $\text{PM}_{2.5}$ ) shall not increase concentrations above  $0.3 \mu\text{g}/\text{m}^3$ . Refer to **Table 1, BAAQMD Air Quality Thresholds of Significance**, below for detailed threshold values. If these thresholds are exceeded, a cumulative health risk may be present, requiring further evaluation.

**Table 1: BAAQMD Air Quality Thresholds of Significance**

| <b>Risk and Hazards for New Source and Receptors</b>                             | <b>Threshold</b>                             |
|----------------------------------------------------------------------------------|----------------------------------------------|
| <b>Cumulative</b>                                                                |                                              |
| Increased Cancer Risk                                                            | >100 individuals per one million exposed     |
| Increased Non-Cancer Hazard (Acute or Chronic)                                   | >10.0 Hazard Index                           |
| Incremental Annual $\text{PM}_{2.5}$                                             | >0.8 $\mu\text{g}/\text{m}^3$ annual average |
| <b>Individual Project</b>                                                        |                                              |
| Increased Cancer Risk                                                            | >10.0 individuals per one million exposed    |
| Increased Non-Cancer Hazard (Acute or Chronic)                                   | >1.0 Hazard Index                            |
| Incremental Annual $\text{PM}_{2.5}$                                             | >0.3 $\mu\text{g}/\text{m}^3$ annual average |
| Source: Bay Area Air Quality Management District 2022 CEQA Guideline (Table 3-1) |                                              |

For this analysis, the Project is broken into three distinct sections: the Collinsville Substation, the Pittsburg Substation and linear work. Each section addresses the specific activities, sensitive receptors, and associated health risk calculations where expected. Health risks are calculated at sensitive receptors estimated to experience the highest potential impacts.

### ***Linear Transmission Line Work:***

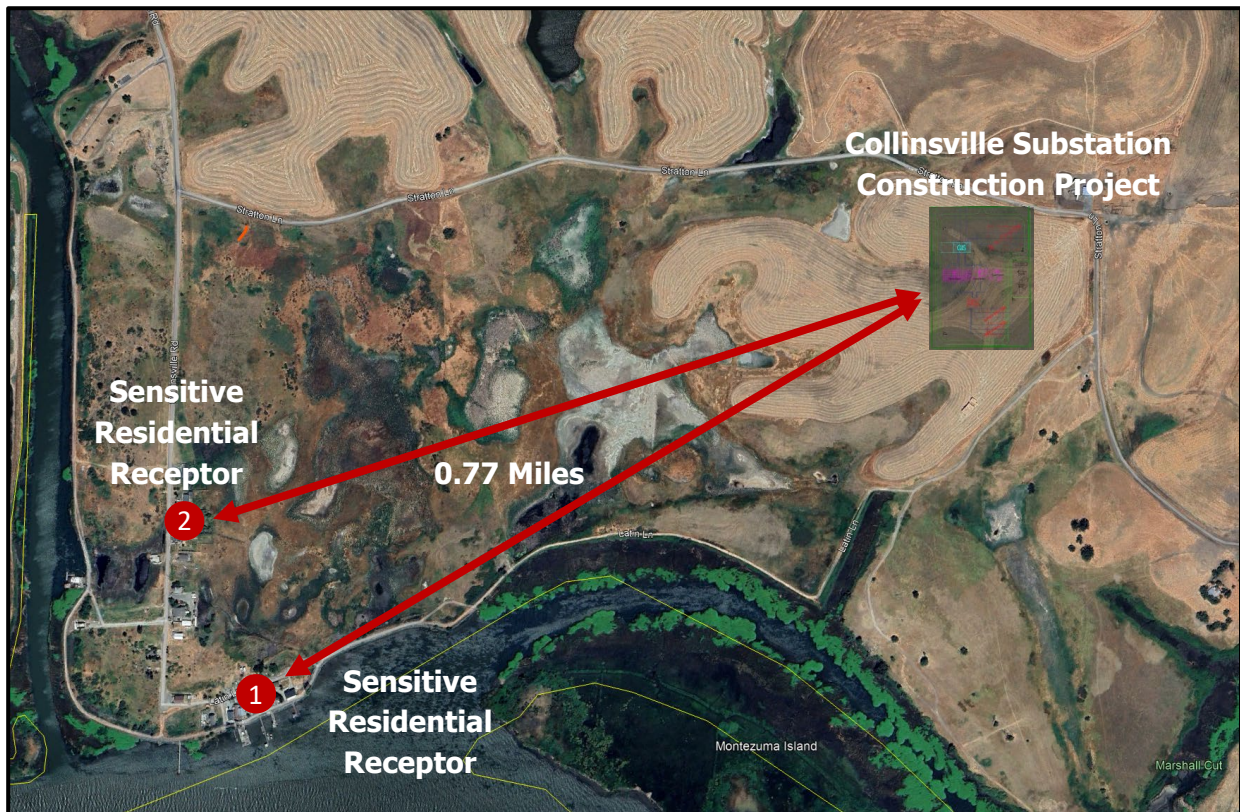
Connecting the two sites would require approximately 6 miles of linear transmission line, distribution line, transposition line, and line work over roughly 304 working days. Based on discussions with the applicant, a typical construction rate is about 100 feet per day, meaning it would take an average of 20 days to complete 2,000 feet. Sensitive receptors near the project would not experience a noticeable increase in emissions due to the construction of these linear

project features. Since construction along the transmission line alignment would progress linearly at a rate of approximately 100 feet per day, any given 1,000-foot zone of influence around a sensitive receptor would experience active construction for approximately 20 days before crews move beyond that area, effectively limiting prolonged exposure. Additionally, staging areas for construction materials and equipment will be located along the alignment, with minimal construction activity occurring at these locations. Minimal construction equipment would be used within these areas, resulting in minimal diesel particulate matter (DPM) emissions and therefore, no modeling is required.

### ***Collinsville Substation:***

Based on the construction area for the Collinsville Substation, sensitive receptors are located over 0.7 miles away. Figure 1 on the following page shows the relative location and distance of the nearest residential receptor from the substation construction area and are identified in this analysis as Receptors 1 and 2. Based upon the site map provided by the Project applicant, the Collinsville Substation work area was determined to be 8.43 acres. These receptors are currently occupied residential structures. These homes represent the closest potential receptors exposed to TAC from the Collinsville Substation construction. Construction within this area would be expected to start in May 2026 and be completed in February 2028. Typically, health risks are highest when the construction TAC source is within 1,000 feet. Therefore, although these receptors are beyond the 1,000-foot threshold where health risks are typically highest, a conservative analysis has been conducted to assess potential impacts at these locations.

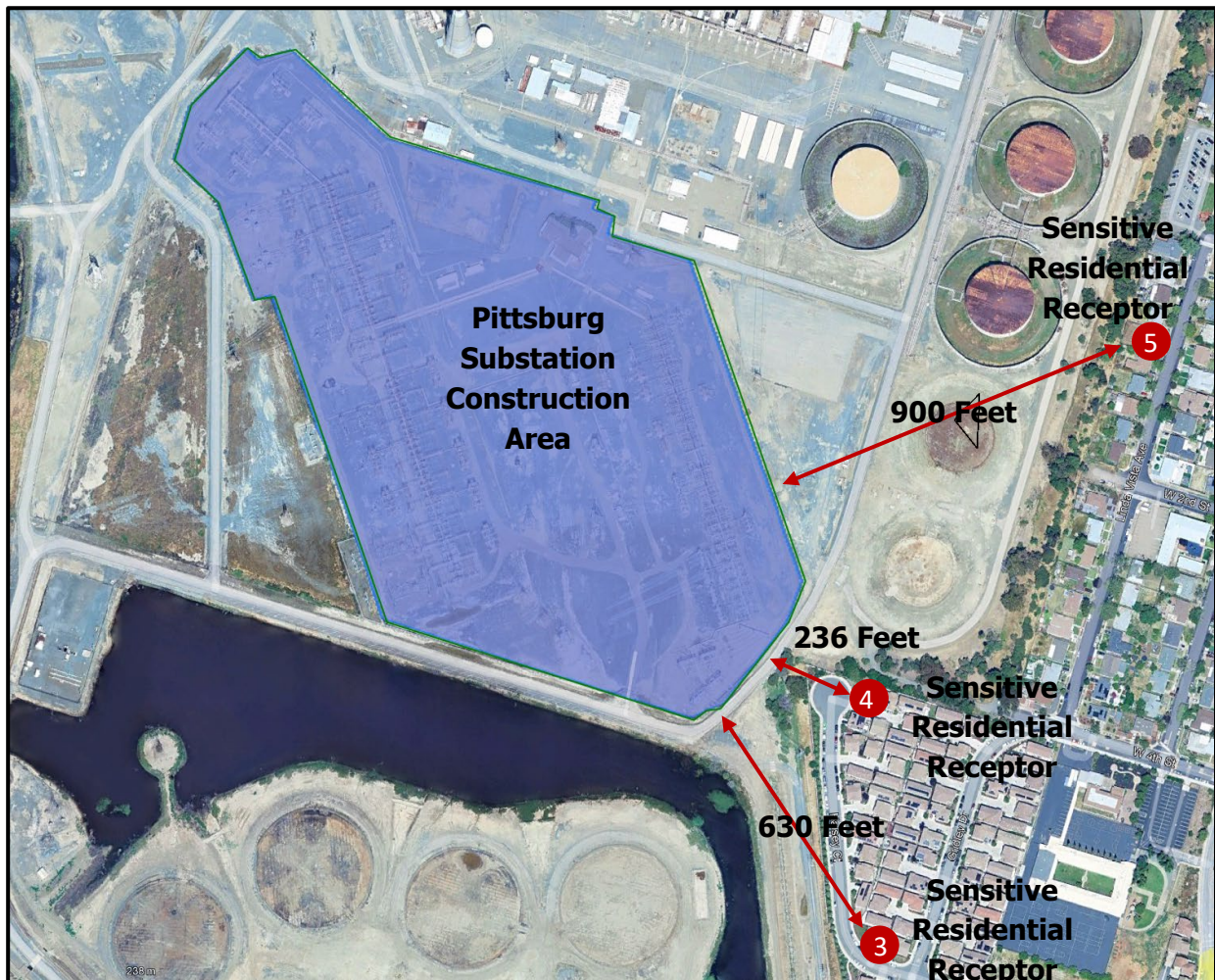
**Figure 1: Collinsville Project Layout and Distance to the nearest Sensitive Receptors**



***Pittsburg Substation:***

Based on the Project requirements, renovations to the Pittsburg Substation would be required. Sensitive receptors are located in a residential area to the east of PG&E's existing Pittsburg Substation located at Halsey Court. The closest home is roughly 236 feet from the edge of the existing Pittsburg Substation. These receptors are identified as numbers 3 through 5 in this analysis in order to keep track of the health risks for each receptor analyzed in this report. Based upon the site map provided by the Project applicant, the Pittsburg Substation work area was determined to be 29.08 acres. Construction within the Pittsburg area is estimated to start in May 2027 and be completed roughly one year later. The general footprint where construction may occur as well as a representative selection of three sensitive receptors which would be exposed to TAC from the Pittsburg Substation construction are shown in Figure 2 on the following Page.

**Figure 2: Pittsburg Project Layout and Distance to the nearest Sensitive Receptors**



### ***Health Risk Analysis***

Inhalation cancer risks are typically associated with stationary sources emitting DPM over long periods, as noted by OEHHA (OEHHA, 2001). This Project includes two such areas at the Collinsville and Pittsburg Substations, where detailed health risk analyses are provided in this assessment.

The Office of Environmental Health Hazard Assessment (OEHHA) does not recommend assessing cancer risk for projects lasting less than two months due to the uncertainty in quantifying long-term health effects from short-term exposures. Since construction along the transmission line alignment will progress at approximately 100 feet per day, any given 1,000-foot zone of influence around a sensitive receptor would experience active construction for about

20 days before crews move beyond the area. Because this exposure duration remains below OEHHA's two-month recommendation, the health risk from linear construction activities is considered less than significant.

### **Collinsville Substation Project Construction Emissions**

The primary health risks from TACs related to construction at the Collinsville Substation would be from DPM emitted from construction equipment emitted over roughly 533 active construction days or 651-calendar days. DPM emissions from this work were provided in Table 18 (uncontrolled) and Table 20 (controlled) of Attachment 5.3-A to the Proponents' Environmental Assessment (PEA) (denoted as L-02, L-03, L-04). Also, it should be noted that transmission line work will extend from the east edge of the Project and traverse initially southeast from the project site and then southwest into the waters of the Sacramento-San Joaquin River Delta waterways which ultimately interconnect with the existing PG&E Pittsburg Substation. These activities will involve continuous linear movement of construction, progressing at approximately 100 feet per day. Construction activities at the Collinsville Substation, along with the analyzed equipment list from the Air Quality analysis, are presented in ***Table 2: Collinsville Substation Construction Activities*** below.

Based on review of construction modeling identified in Table 20 of Attachment 5.3-A to the PEA, the total uncontrolled diesel particulate emissions during the construction activities (L-02, L-03, and L-04) would have resulted in approximately 0.366 tons of diesel particulates 10 microns or smaller (PM<sub>10</sub>), which is the primary TAC considered in this analysis. However, the PEA assumes implementation of Applicant Proposed Measure 1 (APM AIR-1), requiring the use of Tier 4 construction equipment, which substantially reduces emissions. With APM AIR-1 in place, the controlled diesel PM<sub>10</sub> emissions are reduced to 0.217 tons as identified in Table 22 of Attachment 5.3-A to the PEA. This control measure is consistent with CEQA and will be a condition of the Project, described as follows:

(APM AIR-1) - Tier 4 Construction Equipment. Construction equipment with a rating between 100 and 750 hp would be required to use engines compliant with EPA Tier 4 non-road engine standards. In the event that enough Tier 4 equipment is not available, documentation of the unavailability would be provided and engines utilizing a lower standard would be used.)

**Table 2: Collinsville Substation Construction Activities**

| Equipment Identification                                                 | Estimated Start | Estimated Completion | Quantity | HP  |
|--------------------------------------------------------------------------|-----------------|----------------------|----------|-----|
| <b>Site Development<br/>(INDEX L-02 – 76 Construction Days)</b>          | 5/1/2026        | 8/1/2026             |          |     |
| Truck - Water 4 K                                                        |                 |                      | 4        | 300 |
| Loader - 4-5 Yd                                                          |                 |                      | 2        | 230 |
| Truck - Dump 10-12 Yd                                                    |                 |                      | 5        | 415 |
| Motor Grader                                                             |                 |                      | 2        | 250 |
| Scraper                                                                  |                 |                      | 4        | 410 |
| Vibratory Roller                                                         |                 |                      | 2        | 157 |
| Generator – 25 Kw                                                        |                 |                      | 2        | 36  |
| Forklift - 15,000 lb                                                     |                 |                      | 4        | 130 |
| Pickup - 1 Ton                                                           |                 |                      | 4        | 410 |
| 844 Loader                                                               |                 |                      | 1        | 417 |
| Semi Truck                                                               |                 |                      | 2        | 500 |
| <b>Below Grade Construction<br/>(INDEX L-03 – 152 Construction Days)</b> | 7/14/2026       | 1/14/2027            |          |     |
| Truck - Water 4 K                                                        |                 |                      | 2        | 300 |
| Excavator                                                                |                 |                      | 2        | 108 |
| Forklift - 15 K Reach                                                    |                 |                      | 3        | 130 |
| Backhoe - 2X4                                                            |                 |                      | 2        | 68  |
| Pickup - 1 Ton                                                           |                 |                      | 4        | 410 |
| Excavator - Mini                                                         |                 |                      | 1        | 70  |
| Generator – 25 Kw                                                        |                 |                      | 1        | 36  |
| Truck - Concrete                                                         |                 |                      | 4        | 425 |
| Loader - 4-5 Yd                                                          |                 |                      | 2        | 230 |
| Pressure Digger - Lo-Drill (Tracked)                                     |                 |                      | 1        | 275 |
| Excavator                                                                |                 |                      | 1        | 275 |
| Truck - Dump 10-12 Yd                                                    |                 |                      | 3        | 415 |
| Trencher                                                                 |                 |                      | 2        | 75  |
| Skid steer loader                                                        |                 |                      | 2        | 74  |
| Wire Trailer/ Tensioner                                                  |                 |                      | 1        | 175 |
| Wire Puller                                                              |                 |                      | 1        | 175 |
| <b>Above Grade Construction<br/>(INDEX L-04– 333 Construction Days)</b>  | 1/2/2027        | 2/11/2028            |          |     |
| Wire Trailer/ Tensioner                                                  |                 |                      | 1        | 175 |
| Wire Puller                                                              |                 |                      | 1        | 175 |
| Crane - 200 Ton                                                          |                 |                      | 1        | 275 |
| Pickup - 1 Ton                                                           |                 |                      | 4        | 410 |
| Welding Truck                                                            |                 |                      | 2        | 395 |
| Generator – 25 Kw                                                        |                 |                      | 2        | 36  |
| Crane - 35 Ton (Manlift)                                                 |                 |                      | 2        | 250 |
| Forklift - 10 K Reach                                                    |                 |                      | 2        | 130 |
| Forklift -15,000 lb                                                      |                 |                      | 1        | 130 |
| Loader - 4-5 Yd                                                          |                 |                      | 2        | 74  |
| 120' Manlift                                                             |                 |                      | 2        | 74  |

## **Pittsburg Substation Project Construction Emissions**

The primary health risks from TACs related to construction at the Pittsburg Substation along with the 115 kV Bus Reactors would be from DPM emitted from construction equipment emitted at the Pittsburg Substation while construction is actively occurring at this location. Construction for substations, which includes three separate areas to include the Pittsburgh substation, would be over a 396-calendar day period (5/1/2027 - 5/31/2028) (denoted as P-19 in Tables 20 and 22 described of Attachment 5.3-A to the PEA).

Additionally, the transmission line work extending from Collinsville Substation to the existing Vaca-Dixon to Tesla transmission line, transposition line work along the existing right-of-way, and distribution work involves short-duration, linear construction activities. As previously noted, these linear construction activities would not result in significant TAC exposure to sensitive receptors, as work would progress at approximately 100 feet per day, ensuring that no location along the alignment experiences construction for more than 20 days within a 1,000-foot zone of influence, with the total duration at any given receptor remaining under two months. Construction activities at the Pittsburg Substation, including the associated equipment list analyzed in the Air Quality assessment and the expected start and completion dates are detailed in ***Table 3, Pittsburg Substation Construction Activities***, below.

The total uncontrolled diesel particulate emissions during the construction activities (P-19) would have been approximately 0.0555 tons of diesel particulates PM<sub>10</sub>, the primary TAC considered in this analysis. However, the PEA assumes implementation of PG&E Construction Measure AIR-1 (CM AIR-1), which requires the use of Tier 4 construction equipment, consistent with CEQA. With CM AIR-1 in place, the controlled diesel PM<sub>10</sub> emissions are reduced to 0.036 tons. Again, this data is PM<sub>10</sub> exhaust emissions presented in Table 20 (uncontrolled) and Table 22 (controlled). This control measure will be a condition of the Project, described as follows:

CM AIR-1: Tier 4 Construction Equipment. Construction equipment with a rating between 100 and 750 hp would be required to use engines compliant with Environmental Protection Agency Tier 4 non-road engine standards. In the event that enough Tier 4 equipment is not available, documentation of the unavailability would be provided and engines utilizing a lower standard would be used.

**Table 3: Pittsburg Substation Construction Activities**

| Equipment Identification                                                                 | Pittsburg Substation Estimated Start | Pittsburg Substation Estimated Completion | Quantity | HP  |
|------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------|----------|-----|
| <b>Pittsburg Substation Upgrades (INDEX P-19 – 396 Calendar Day Construction Period)</b> | 5/1/2027                             | 5/31/2028                                 |          |     |
| Pickup - 1 Ton                                                                           |                                      |                                           | 2        | 410 |
| Welding Truck                                                                            |                                      |                                           | 1        | 395 |
| Crane - 35 Ton (Manlift)                                                                 |                                      |                                           | 1        | 250 |
| Forklift -15,000 lb                                                                      |                                      |                                           | 2        | 130 |
| 120' Manlift                                                                             |                                      |                                           | 2        | 74  |
| Truck - Water 4 K                                                                        |                                      |                                           | 1        | 300 |
| Excavator                                                                                |                                      |                                           | 1        | 108 |
| Excavator - Mini                                                                         |                                      |                                           | 2        | 70  |
| Generator – 25 Kw                                                                        |                                      |                                           | 1        | 36  |
| Truck - Concrete                                                                         |                                      |                                           | 4        | 425 |
| Loader - 4-5 Yd                                                                          |                                      |                                           | 1        | 230 |
| Pressure Digger - Lo-Drill (Tracked)                                                     |                                      |                                           | 1        | 275 |
| Excavator                                                                                |                                      |                                           | 1        | 275 |
| Truck - Dump 10-12 Yd                                                                    |                                      |                                           | 4        | 415 |
| Skid steer loader                                                                        |                                      |                                           | 2        | 74  |

### Construction Emissions Calculations

The AERMOD dispersion model was used to determine the concentration of PM<sub>2.5</sub> from the diesel exhaust generated during construction at the nearby residential receptor. The AERMOD files for the Project (Collinsville and Pittsburg Substations) are provided in **Attachments A** and **-B** respectively to this Letter.

The AERMOD model was set up using an area source to represent the active construction zone. A release height of 3 meters was used to approximate the exhaust height of diesel construction equipment used onsite. An initial vertical dimension of 1 meter was applied to represent the vertical dispersion of emissions at the time of release. While higher release heights and initial vertical dimensions are sometimes recommended, the scenario used is conservative since a lower value for these inputs yield higher ground-level concentrations resulting in higher receptor exposures. Therefore, this analysis would be conservative.

Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2,

2<9, and 2<16 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (OEHHA, February 2015).

*Equation 1*  $Dose_{air} = C_{air} * (BR/BW) * A * EF * (1 \times 10^{-6})$

|                    |   |                                                                                                                                                   |
|--------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|
| $Dose_{air}$       | = | Dose through inhalation (mg/kg/d)                                                                                                                 |
| $C_{air}$          | = | Concentration in air ( $\mu\text{g}/\text{m}^3$ ) Annual average DPM concentration in $\mu\text{g}/\text{m}^3$ - AERMOD predicts annual averages. |
| $BR/BW$            | = | Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.                      |
| $A$                | = | Inhalation absorption factor (assumed to be 1)                                                                                                    |
| $EF$               | = | Exposure frequency (unitless, days/365 days)                                                                                                      |
| $1 \times 10^{-6}$ | = | Milligrams to micrograms conversion ( $10^{-3}$ mg/ $\mu\text{g}$ ), cubic meters to liters conversion ( $10^{-3}$ m <sup>3</sup> /l)             |

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

*Equation 2*  $RISK_{inh-res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$

|                  |   |                                                             |
|------------------|---|-------------------------------------------------------------|
| $RISK_{inh-res}$ | = | Residential inhalation cancer risk                          |
| $DOSE_{air}$     | = | Daily inhalation dose (mg/kg-day)                           |
| $CPF$            | = | Inhalation cancer potency factor (mg/kg-day <sup>-1</sup> ) |
| $ASF$            | = | Age sensitivity factor for a specified age group (unitless) |
| $ED$             | = | Exposure duration (in years) for a specified age group      |
| $AT$             | = | Averaging time for lifetime cancer risk (years)             |
| $FAH$            | = | Fraction of time spent at home (unitless)                   |

The OEHHA recommends that an exposure duration (residency time) during construction activities be over the construction period which for this project is 651 calendar days for the Collinsville Substation and 396 calendar days for the Pittsburg Substation as denoted by activity P-19. It should be noted that Table 16 of Attachment 5.3-A to the PEA describes that 325 days are scheduled, however only 250 days of that schedule would be working days. This analysis however is based on the Proposed Start and End dates and calculates risk over this total duration to nearby receptors. These durations should be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). Health risk calculations are shown for Collinsville

and Pittsburg Substations respectively in ***Attachment C*** and ***-D*** to this Letter. Based on the durations, the worst-case age groups (3rd trimester, 0<2) were used to calculate risk.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to DPM and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the OEHHA (OEHHA, February 2015). Diesel Exhaust has a REL of 5 µg/m<sup>3</sup> and targets the respiratory system.

## **Heath Risk Calculations**

### ***Collinsville Substation TAC DPM***

Over the construction duration, the project would emit an estimated 0.366 tons of diesel PM<sub>10</sub> under uncontrolled conditions and 0.217 tons under controlled conditions, over a 651-day elapsed period. This equates to an average emission rate of approximately 0.00590 grams per second (g/s) under the uncontrolled scenario, and 0.0035 g/s under the controlled scenario. Construction emissions would be emitted at various times and days but since health risk is based on longer term exposures, it's appropriate to use the total elapsed time the construction activities would start and then finish. Based on the site configuration, the average emission rate over the grading area is estimated at  $1.73 \times 10^{-7}$  grams/second per meter squared (g/s-m<sup>2</sup>) for the uncontrolled scenario and  $1.02 \times 10^{-7}$  g/s-m<sup>2</sup> for the controlled scenario. Again, these calculations are provided in ***Attachment C*** to this report.

Utilizing the AERMOD dispersion model for the Collinsville Substation, the worst-case annual DPM concentration (at Receptor 2 identified in Figure 1 above) is estimated at 0.022 µg/m<sup>3</sup> under the uncontrolled scenario and 0.013 µg/m<sup>3</sup> under the controlled scenario. Utilizing Equation 2 above, the inhalation cancer risk for the closest residential receptor is estimated at 6.75 per one million under the uncontrolled scenario and 3.99 per one million under the controlled scenario, over the construction duration.

In addition, since the annual concentrations remain below the REL of 5 µg/m<sup>3</sup> under both scenarios, non-cancer risks are less than 1, and a less than significant non-cancer risk is expected.

An acute hazard index estimates the likelihood of a person experiencing non-cancer health effects when they are exposed to a TAC concentration for a 1-hour period. However, no acute RELs are established for DPM; therefore, an acute hazard risk would not be expected for DPM.

The district is also concerned about health risks to maximally exposed offsite workers; however, a nearby worker location where workers would be onsite 8 hours per day or more does not exist around the Collinsville Substation construction site. Emissions for Receptor 1 are noted as 0.019  $\mu\text{g}/\text{m}^3$  under the uncontrolled scenario and 0.011  $\mu\text{g}/\text{m}^3$  under the controlled scenario, which would therefore correspond to cancer risks of 5.80 per one million under the uncontrolled scenario and 3.38 per one million under the controlled scenario, respectively. Given this, a less than significant health risk impact is expected from the Collinsville Substation construction activities at any nearby residential receptors.

### ***Pittsburg Substation TAC DPM***

Similarly, over the 396-day construction period, the project is expected to emit an estimated 0.056 tons of DPM under uncontrolled conditions and 0.036 tons under controlled conditions. This corresponds to an average  $\text{PM}_{10}$  exhaust emission rate of approximately 0.0015 g/s for the uncontrolled scenario, and 0.0010 g/s for the controlled scenario. Construction emissions would be emitted at various times and days but since health risks are based on longer term exposures, it is appropriate to use the total elapsed time the construction activities would start and then finish. Based on the site configuration, the average emission rate over the grading area is estimated at  $1.26 \times 10^{-8}$  g/s- $\text{m}^2$  for the uncontrolled case and  $8.10 \times 10^{-9}$  g/s- $\text{m}^2$  for the controlled case. These Calculations are provided in ***Attachment D*** to this report.

Using AERMOD, the highest annual DPM concentration from the construction is estimated at 0.035  $\mu\text{g}/\text{m}^3$  under the uncontrolled scenario and 0.022  $\mu\text{g}/\text{m}^3$  under the controlled scenario, both occurring at Receptor 4 (see Figure 2 above). Applying Equation 2, the inhalation cancer risk for the nearest residential receptor is calculated at 6.68 per one million exposed under the uncontrolled scenario and 4.22 per one million exposed under the controlled scenario over the construction duration.

In addition, since the annual DPM concentration under both scenarios remains below the REL of 5  $\mu\text{g}/\text{m}^3$ , non-cancer risks are expected to be less than 1. Therefore, no significant non-cancer health risk impacts would be expected under either condition. Emissions at Receptors 5 which is the next highest was modeled at 0.033  $\mu\text{g}/\text{m}^3$  uncontrolled and 0.021  $\mu\text{g}/\text{m}^3$  controlled. These would yield risks at 6.30 per one million under uncontrolled and 4.03 per one million under controlled, as shown at Receptor 4. Receptor 3 is only 0.009  $\mu\text{g}/\text{m}^3$  which is much lower when compared to either Receptors 4 or 5 and would present risks even lower as well. Given this no additional calculations are necessary for Receptor 3.

### ***Collinsville Substation Total PM<sub>2.5</sub>***

The BAAQMD also has a requirement that the incremental annual PM<sub>2.5</sub> cannot exceed 0.3 µg/m<sup>3</sup>. Based on the construction outputs identified in Tables 48 and -49 (Uncontrolled and Controlled Annual Emissions of Attachment 5.3-A (Air Quality and GHG Calculations)), the PM<sub>2.5</sub> generated emissions from both the emissions and fugitive dust onsite for the Collinsville Substation construction activities analyzed within this report are 2.85 tons uncontrolled and 1.04 tons controlled over the same 615 days. Using AERMOD, the maximum incremental annual PM<sub>2.5</sub> concentration for the uncontrolled scenario would be 0.176 µg/m<sup>3</sup> at Receptor 2 and 0.147 µg/m<sup>3</sup> at Receptor 1. Since the thresholds is 0.3 µg/m<sup>3</sup> a less than significant incremental PM<sub>2.5</sub> risk is expected for the uncontrolled scenario. For the controlled scenario, would be 0.063 µg/m<sup>3</sup> at Receptor 2 and 0.054 µg/m<sup>3</sup> at Receptor 1. Since the thresholds is 0.3 µg/m<sup>3</sup> a less than significant incremental PM<sub>2.5</sub> risk is expected for the controlled scenario. This is shown in ***Attachment E*** to this letter. Therefore, the work at the Collinsville Substations would have a less than significant total incremental PM<sub>2.5</sub> emission.

### ***Pittsburg Substation Total PM<sub>2.5</sub>***

The Total PM<sub>2.5</sub> emissions from both construction equipment and fugitive dust onsite at the Pittsburg Substation during construction was estimated at 1.19 tons uncontrolled and 0.381 tons controlled over the construction period. Using AERMOD, the maximum incremental annual PM<sub>2.5</sub> would be 0.74 µg/m<sup>3</sup> at Receptor 4 and slightly lower at 0.699 µg/m<sup>3</sup> at Receptor 5 and only 0.196 µg/m<sup>3</sup> at Receptor 3. Since the threshold is 0.3 µg/m<sup>3</sup> a significant incremental PM<sub>2.5</sub> risk would be expected without mitigation. It should be noted; the Project would be required to implement CM AIR-1 which makes up the controlled scenario. Under the controlled scenario, the maximum incremental annual PM<sub>2.5</sub> would be 0.24 µg/m<sup>3</sup> at Receptor 4 and slightly lower at 0.22 µg/m<sup>3</sup> at Receptor 5 and only 0.063 µg/m<sup>3</sup> at Receptor 3. Given this, CM AIR-1 would sufficiently reduce PM<sub>2.5</sub> to a level considered less than significant. It should be noted that the total PM<sub>2.5</sub> emissions include on-road vehicular emissions which when those emissions are greater than 1,000 feet from the modeled receptors wouldn't necessarily contribute to the exposure seen by the receptors. Therefore, this analysis is considered worst-case. Emissions from uncontrolled and controlled emissions are provided as ***Attachment F*** to this letter. Therefore, the work at the Pittsburg Substation would have a less than significant total incremental PM<sub>2.5</sub> emission.

A cumulative health risk during construction could exist if another large project were occurring simultaneously to the proposed Project using diesel construction equipment. However, for cumulative health risks to reach the threshold of 100 excess cancer cases per million exposed, construction equipment usage would need to be up to 10 times more intensive than what is

currently proposed. Based on review of the site and following discussions with the applicant, no nearby construction projects would be expected to meet these diesel equipment conditions. Given this, a less than significant cumulative health risk would be expected during construction of the Collinsville Substation.

If you should have any questions regarding this assessment, please do not hesitate to contact (760) 473-1253.

Sincerely,  
Ldn Consulting, Inc.

Jeremy Loudon

**Attachments:**

- A: AERMOD Files (PM 10 - DPM Collinsville – Uncontrolled/Controlled Emissions from Off Road Equipment)
- B: AERMOD Files (PM 10 - DPM Pittsburg - Uncontrolled/Controlled Emissions from Off Road Equipment)
- C: Cancer Risk Calculations - Uncontrolled/Controlled Collinsville
- D: Cancer Risk Calculations - Uncontrolled/Controlled Pittsburg
- E: AERMOD Files (Total PM 2.5 Collinsville Substation - Uncontrolled/Controlled)
- F: AERMOD Files (Total PM 2.5 Pittsburg Substation - Uncontrolled/Controlled)

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