5.0 IMPACT ANALYSIS

This section addresses Project-related noise and vibration impacts that would occur during Project construction and operation.

5.1 CONSTRUCTION NOISE

Methodology

Construction noise is considered temporary and short term in duration. Construction noise at its source varies depending on construction activities and duration, and the type and usage of equipment involved. Noise impacts from construction are dependent on the construction noise levels generated, the timing and duration of the construction activities, proximity to sensitive receptors, and noise regulations and standards. Construction equipment can be stationary or mobile. Stationary equipment operates in one location for various periods of time with fixed-power operation, such as pumps, generators, and compressors, or a variable noise operation, such as pile drivers, rock drills, and pavement breakers. Mobile equipment moves around the construction site such as bulldozers, graders, and loaders (FTA 2006).

Heavy construction equipment typically operates for short periods at full power followed by extended periods of operation at lower power, idling, or powered-off conditions. Typically, site preparation involves demolition, grading, compacting, and excavating, which would include the use of backhoes, bulldozers, loaders, excavation equipment (e.g., graders and scrapers), pile drivers, and compaction equipment. Finishing activities may include the use of pneumatic hand tools, scrapers, concrete trucks, vibrators, and haul trucks. Typical maximum noise levels generated by typical pieces of construction equipment are listed in Table 8.

As shown in Table 8, maximum noise levels range from 70 to 95 dBA L_{max}, depending upon the piece of equipment operating (FTA 2006). In typical construction projects, grading and impact activities typically generate the highest noise levels. Grading involves the largest heaviest equipment and typically includes bulldozers, excavators, dump trucks, front-end loaders, and graders with maximum noise levels range from 80 to 85 dBA L_{max}. Impact equipment includes pile drivers, rock drills, pavement breakers, concrete crushers, and industrial/concrete saws with maximum noise levels range from 90 to 95 dBA L_{max}. Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some phases would have higher continuous noise levels than others, and some have high-impact noise levels.

Table 8
Construction Equipment Noise Levels

Equipment	Noise Level (dBA L_{max}) at 50 Feet
Auger Drill Rig	85
Backhoe	80
Blasting	94
Chain Saw	85
Clam Shovel	93
Compactor (ground)	80
Compressor (air)	80
Concrete Batch Plant*	80
Concrete Mixer Truck	85
Concrete Pump	82
Concrete Saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump Truck	84
Excavator	85
Front End Loader	80
Generator (25 KVA or less)	70
Generator (more than 25 KVA)	82
Grader	85
Hydra Break Ram	90
Impact Pile Driver (diesel or drop)	95
Insitu Soil Sampling Rig	84
Jackhammer	85
Mounted Impact Hammer (hoe ram)	90
Paver	85
Pneumatic Tools	85
Pumps	77
Rock Drill	85
Scraper	85
Tractor	84
Vacuum Excavator (vac-truck)	85
Vibratory Concrete Mixer	80
Vibratory Pile Driver	95

Source: Thalheimer 2000, *FTA 2006, KVA = kilovolt amps

Typical construction projects, with equipment moving from one point to another, work breaks, and idle time, have hourly average noise levels (L_{eq}) that are lower than loud short-term, or instantaneous, peak noise events shown in Table 8. The L_{eq} of each phase is determined by combining the L_{eq} contributions from each piece of equipment used in that phase (FTA 2006). Therefore, typically, hourly average noise levels would be approximately 75 to 80 dBA L_{eq} at 50 feet from the center of the non-impact construction activities area, with 90 dBA L_{eq} at 50 feet for impact equipment. Noise levels of other activities would be less. Noise levels from construction activities would attenuate with distance at a rate of 6 dBA per doubling of distance over acoustically hard sites, such as streets and parking lots. Intervening structures and/or topography would further attenuate noise levels. These factors generally limit the distance construction noise travels and ensure noise impacts from construction are localized.

Anticipated Project Construction Activities

In general, construction of the transmission line would follow a sequence of operations including right-of-way acquisition, access road identification, site clearing, construction staging, foundation installation, assembly and erection of structures, clearing areas, grounding installation (including ground rods and tying grounding between poles), and cleanup and site reclamation. Various phases of construction may occur at the same time at different locations throughout the construction process, requiring several construction crews operating simultaneously in different locations.

The construction, operation, and maintenance of the proposed transmission line would require that heavy vehicles access structure sites along the right-of-way. Access would be acquired through the proposed line route. In addition, spur roads may be utilized to minimize disturbances. Staging areas and pole construction will be sited inside the right-of-way.

Installation of foundations (drilled shafts, drilled piers, caissons and/or direct embedment) would require appropriate drilling equipment. Trucks with augers, cranes, bucket trucks, material trucks, and ready mix trucks are some typical equipment that would be used for construction of foundations. Foundations will be excavated with an auger. Various types of foundations would be used depending on structure type and soil conditions.

After the structures are erected, new insulators and hardware would be installed to each structure. The structures would be rigged with insulator strings at each ground wire and position conductor. Installation of all required structure grounding would be completed promptly following structure erection.

Modeling

Because several construction activities are expected and could occur at multiple locations along the Project alignment, Project construction noise was predicted at the representative nearby noise-sensitive receivers with a technique based on the "general assessment" methodology as appearing in Chapter 12 of the FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2006) guidance report. In summary, this technique presumes the two loudest pieces of equipment associated with an activity are operating at full power and located at the geographic center of a construction area or zone. These geographic centers would be collinear with the Project alignment. Consistent with the high end of value ranges for reference construction noise levels at a distance of fifty feet as appearing in the EIR, 83 dBA L_{eq} was estimated as an average reference sound pressure level for all construction activities during daytime hours. Sound propagation between construction noise sources associated with this reference sound level and the representative receivers was estimated with an Excel spreadsheet model that incorporates algorithms and data based on International Organization for Standardization (ISO) 9613-2 standards, accounting for geometric divergence and acoustical absorption from air and ground effects.

While the Project anticipates coordinating construction activities to occur during daytime hours so as to avoid noise impacts, some specific construction activities or processes (e.g., concrete pours and/or curing) may need to continue into or otherwise occur during nighttime periods. For such a potential nighttime construction noise scenario, this analysis assumes that the two loudest equipment would be an operating light tower with a 20 kW generator, rated at 71 dBA at 23 feet (4-way rentals 2015) and equipment conducting a concrete pour process: 70 dBA at 82 feet (NSW 2009). Estimation of sound propagation to representative receivers would use the same aforementioned algorithms and data based on ISO 9613-2 information.

Impact Analysis

Project noise analysis is based on Project construction activities occurring separately (and not concurrently) at a given location. Project construction activities would be closest to existing and proposed residences at locations ST-4, ST-5, ST-6, ST-7, ST-8, and ST-10, as shown on Figure 3, and distance identified in Table 2. In addition, construction noise would be generated off-site by Project construction-related vehicle traffic trips to and from the job site on local roadways, including daily worker commute vehicle trips, and by heavy truck trips from construction equipment and materials deliveries.

<u>Construction Impact Summary</u>

Noise Standards

Project construction noise impacts would be significant if the Project would exceed the County's/Cities' applicable noise ordinance construction standards. The City of Riverside noise ordinance limits construction activities to the hours of 7 a.m. to 7 p.m. on weekdays, and to 8 a.m. to 5 p.m. on Saturdays.

The County and the City of Jurupa Valley noise ordinances exempt construction between the hours of 6 a.m. to 6 p.m. during the months of June through September, and 7 a.m. to 6 p.m. during the months of October through May. External to these time periods, noise limits with respect to non-transportation noise sources would apply and are described in Section 4.3.

Project construction noise would be localized at the specific areas of construction activity and generally anticipated to occur from 7 a.m. to 7 p.m. Monday through Saturday, during either the allowable construction hours (i.e., within 7 a.m. to 7 p.m.) or similar time periods when construction activity noise is exempted per the applicable County's/Cities noise ordinances. In addition, the County's/Cities noise ordinances do not provide a construction noise level limit. Therefore, if Project construction activity occurs during these allowable times, or generates noise within the allowable exemption timeframes, this would be a **less than significant impact**.

However, in the event construction activities are necessary on days or hours outside of what is specified by local ordinance (for example, if existing lines must be taken out of service for the work to be performed safely and the line outage must be taken at night for system reliability reasons, or if construction needs require continuous work), then this would be a potentially significant impact and applicable noise reduction measures discussed in Section 6 would be considered for feasibility during the time of Project construction. With respect to identified representative receivers, Table 9 shows where these potentially significant impacts may occur on the basis of the assumed nighttime construction noise emission of a light tower and concrete pour process.

Ambient Noise Levels

As shown in Table 10, estimated daytime Project construction noise level calculated at each of the representative receptors was logarithmically added to the measured existing daytime ambient noise level that is either co-located with or considered representative of, as described in Section 3.3, the baseline sound environments at those representative receptors. These log-summed ambient-plus-construction noise levels (aka, "future ambient") were then arithmetically compared to the measured existing ambient noise levels to determine the net ambient noise level increment at each representative receptor due to construction noise. This net increase in dBA was then compared to the relative threshold for a substantial temporary ambient noise level increment of 10 dBA L_{eq} or greater, also shown in Table 10.

Table 9
Predicted Nighttime Project Construction Noise Levels

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Apparent City Jurisdiction	Distance (ft)	Predicted Noise from Light Tower and Concrete Pour (dBA, L_{eq})	Potential Impact? (>45 dBA L_{eq} ambient increment)
ST-1N (Stratham[1])	Jurupa Valley	50	74	**Yes**
ST-2N (Stratham[2], Lyon[1])	Jurupa Valley	50	74	**Yes**
ST-3N (Thoroughbred[3])	Jurupa Valley	50	74	**Yes**
ST-4N (DR Horton[4])	Jurupa Valley	3,500	29	No
ST-4N (Lennar[5], Lyon[8])	Jurupa Valley	2,000	35	No
ST-4N (APV1[6], APV2[6])	Jurupa Valley	1,750	37	No
ST-5N (APV2[7])	Jurupa Valley	1,500	38	No
ST-5N (Vernola[1,2])	Jurupa Valley	50	74	**Yes**
ST-6N (Riverbend[9])	Jurupa Valley	50	74	**Yes**
ST-7N (Riverbend[9])	Jurupa Valley	50	74	**Yes**
ST-8N[10]	Norco	425	50	**Yes**
ST-9N[11]	Jurupa Valley	212	57	**Yes**
ST-10N[12]	Riverside	168	59	No**
ST-11N[13]	Riverside	1,330	40	No**

N = daytime
Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
** City of Riverside, Section 7.35.020.F of the noise ordinance exempts construction activity "conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public"
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] as close as approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

Table 10
Daytime Project Construction Noise, Ambient Increase

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Measured Existing Daytime Ambient Sound Level at ASP (dBA, L_{eq})	Predicted Construction Noise at Representative Receptor Location (dBA, L_{eq})	Future Ambient (Log-sum of Existing Ambient and Predicted Construction Noise; dBA, L_{eq})	Increase over Existing Ambient due to Construction Noise Contribution (dBA, L_{eq})	Impact? (>10 dBA L_{eq} ambient increment)
ST-1D (Stratham[1])	63	83	83	20	**Yes**
ST-2D (Stratham[2], Lyon[1])	66	83	83	17	**Yes**
ST-3D (Thoroughbred[3])	62	83	83	21	**Yes**
ST-4D (DR Horton[4])	68	38	68	0	No
ST-4D (Lennar[5], Lyon[8])	68	44	68	0	No
ST-4D (APV1[6], APV2[6])	68	45	68	0	No
ST-5D (APV2[7])	60	47	68	0	No
ST-5D (Vernola[1,2])	60	83	62	2	No
ST-6D (Riverbend[9])	67	83	69	2	No
ST-7D (Riverbend[9])	47	83	59	12	**Yes**
ST-8D[10]	53	59	60	7	No
ST-9D[11]	47	65	65	18	**Yes**
ST-10D[12]	52	68	68	16	**Yes**
ST-11D[13]	55	48	56	1	No

D = daytime
Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] as close as approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

As shown in Table 10, estimated daytime Project construction noise levels would result in substantial predicted increases in ambient noise levels during the daytime at locations ST-1D, ST-2D, ST-3D, ST-7D, ST-9D, and ST-10D. Therefore, this would be a **potentially significant impact**. At these locations, applicable noise reduction measures would be considered for feasibility during the time of Project construction, as discussed in Section 6.

According to the EIR, and as assumed by this noise analysis, in order to minimize ground disturbance, SCE plans to use light duty helicopters (i.e., Hughes 500-E) to efficiently and rapidly pull light-weight sock lines from structure to structure during conductor stringing. This is a helicopter commonly used for aerial tours in parks and other scenic areas. During stringing activities, helicopters would generate intermittent noise levels of approximately 80 dBA at 200 feet. Helicopters would operate for a short time at any given location. Because the Proposed Project area is in proximity to approaches to the Riverside Municipal Airport, construction helicopter flights would enter the Project area immediately and not pass over residential areas during Project ingress and egress.

The proposed 230 kV transmission line would also traverse the City of Riverside's undeveloped Hole Lake and Savi Ranch park sites, various trails including the Santa Ana River Trail, and the Hidden Valley Wildlife Area. Construction activities would result in noise that may disrupt recreational and/or open space areas. During construction, ground work would be required at each structure location as well as along select roadways between the locations. These impacts would be temporary and of short duration, lasting only as long as required to complete the activity in a given location. Depending on the activity (structure erection, transmission line stringing, etc.), the duration of construction activities at any one location along the right-of-way would generally range from a few minutes to a few days and would not result in a significant impact to recreationists.

As shown in Table 11, estimated nighttime Project construction noise levels would result in substantial predicted increases in ambient noise levels at representative locations ST-1N, ST-3N, ST-5N (Vernola), ST-6N, ST-7N, and ST-9N. Therefore, this would be a **potentially significant impact**. At these locations, applicable noise reduction measures would be considered for feasibility during the time of Project construction, as discussed in Section 6.

Construction Noise Level Contours

Figures 5A through G display predicted daytime Project construction noise levels as iso-pleths (a.k.a., noise contours) radiating out from the Project alignment, superimposed on aerial imagery of the Project vicinity. Figure 4 provides a guide for each Figure 5A-G location along the entire alignment, and includes the construction contours, as well as the operation noise level contours (to be discussed after construction). These contours represent daytime Project construction noise, which allow the reader to see where the extent of construction noise (at a certain L_{eq}) is expected to occur; hence, the contours do not represent a single moment in time but the aggregate of potential noise levels as the construction activity occurs with its acoustical “center” located on the Project transmission line alignment.

Table 11
Nighttime Project Construction Noise, Ambient Increase

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Measured Existing Nighttime Ambient Sound Level at ASP (dBA, L_{eq})	Predicted Nighttime Construction Noise (Light Tower and Concrete Pour; dBA, L_{eq})	Future Ambient (Log-sum of Existing Ambient and Predicted Nighttime Construction Noise; dBA, L_{eq})	Increase over Existing Ambient due to Nighttime Construction Noise Contribution (dBA, L_{eq})	Impact? (>10 dBA L_{eq} ambient increment)
ST-1N (Stratham[1])	61	74	75	14	**Yes**
ST-2N (Stratham[2], Lyon[1])	71	74	76	5	No
ST-3N (Thoroughbred[3])	57	74	74	17	**Yes**
ST-4N (DR Horton[4])	47	29	47	0	No
ST-4N (Lennar[5], Lyon[8])	47	35	47	0	No
ST-4N (APV1[6], APV2[6])	47	37	47	0	No
ST-5N (APV2[7])	56	38	56	0	No
ST-5N (Vernola[1,2])	56	74	74	18	**Yes**
ST-6N (Riverbend[9])	50	74	74	24	**Yes**
ST-7N (Riverbend[9])	36	74	74	38	**Yes**
ST-8N[10]	43	50	51	8	No
ST-9N[11]	42**	57	57	15	**Yes**
ST-10N[12]	49	59	59	10	No
ST-11N[13]	50	40	50	0	No

N = daytime
Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
** assumed to be 5 dBA less than daytime measurement
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] as close as approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

5.2 VIBRATION

Potential vibration impacts may occur from Project construction activities, including pavement demolition, site excavation and surface grading, and construction. Although it is possible for vibrations from construction projects to cause building damage, the vibrations from construction activities are almost never of sufficient amplitude to cause more than minor cosmetic damage to buildings (FTA 2006). Groundborne vibration generated by construction projects is usually highest during pile driving, soil compacting, jackhammering, and demolition-related activities. Table 12 shows typical vibration levels for various pieces of construction equipment that generate high vibration levels (FTA 2006).

Table 12
Construction Equipment Vibration Levels

Equipment		PPV at 25 Feet (in/sec)
Pile Driver (impact)	Upper range	1.518
	Typical	0.644
Pile Driver (sonic)	Upper range	0.734
	Typical	0.170
Hydromill (slurry wall)	Soil	0.008
	Rock	0.017
Clam Shovel Drop (slurry wall)		0.202
Vibratory Roller		0.210
Hoe Ram		0.089
Large Bulldozer		0.089
Caisson Drilling		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA 2006

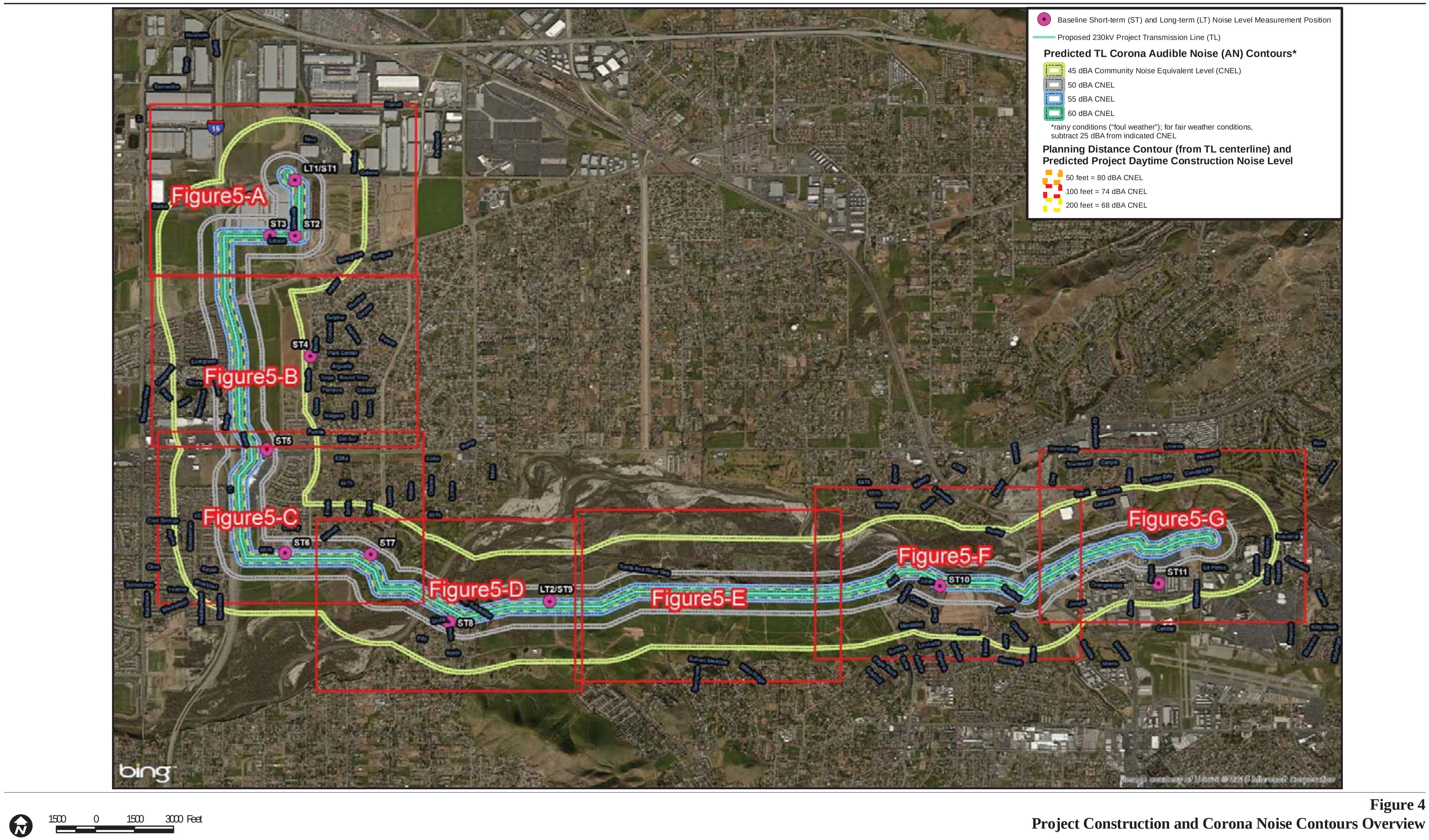

Figure 4
Project Construction and Corona Noise Contours Overview

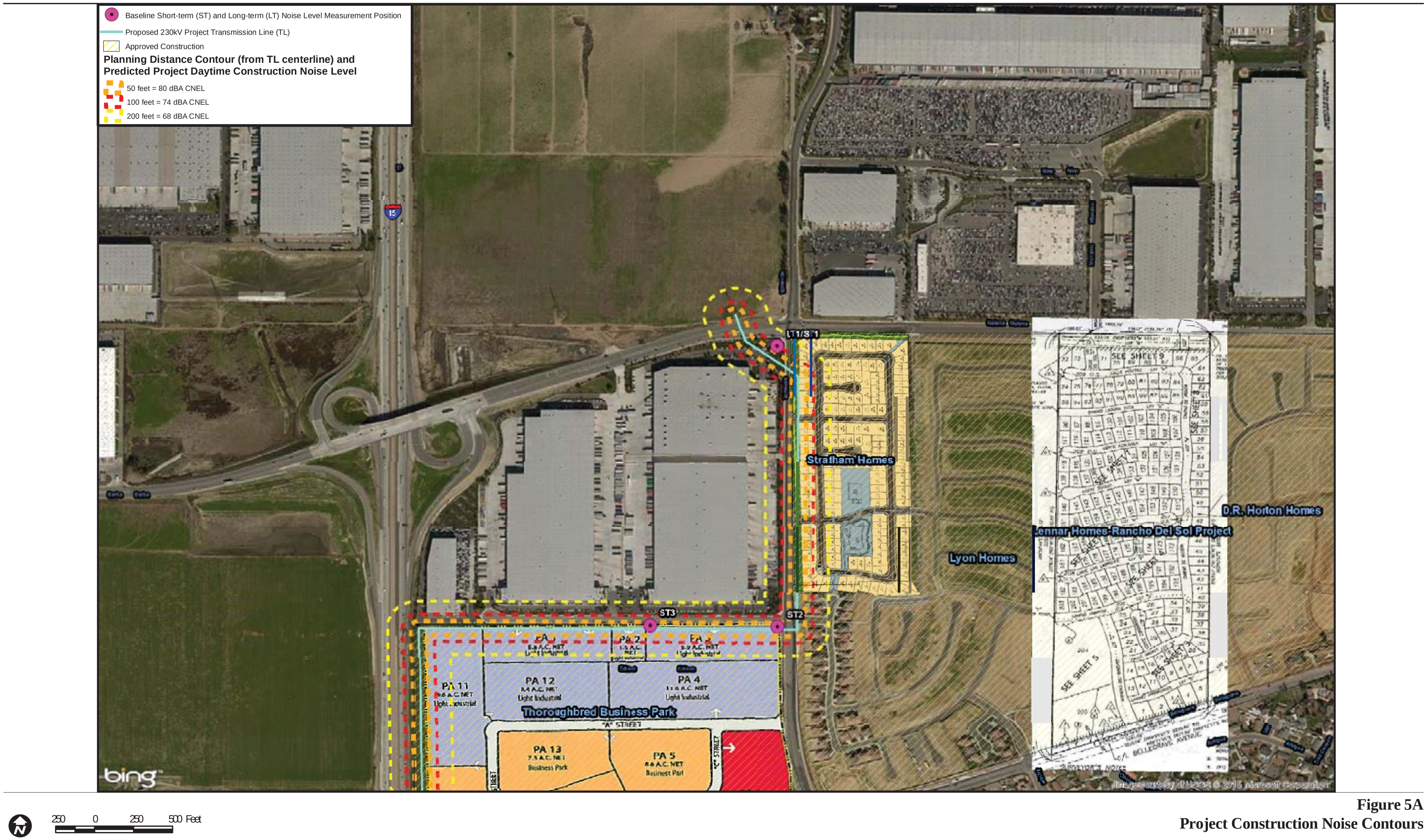

Figure 5A
Project Construction Noise Contours

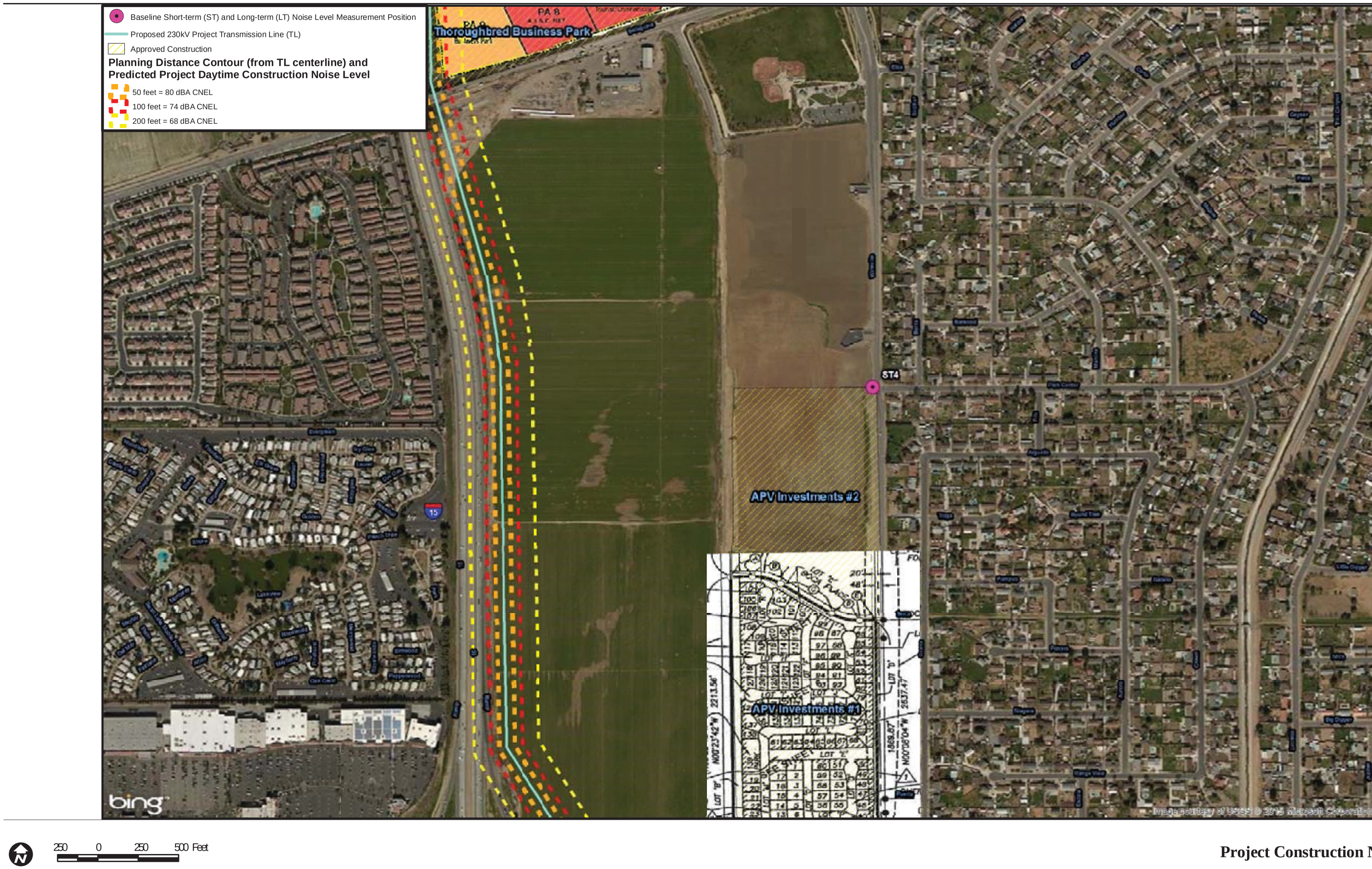

Figure 5B
Project Construction Noise Contours

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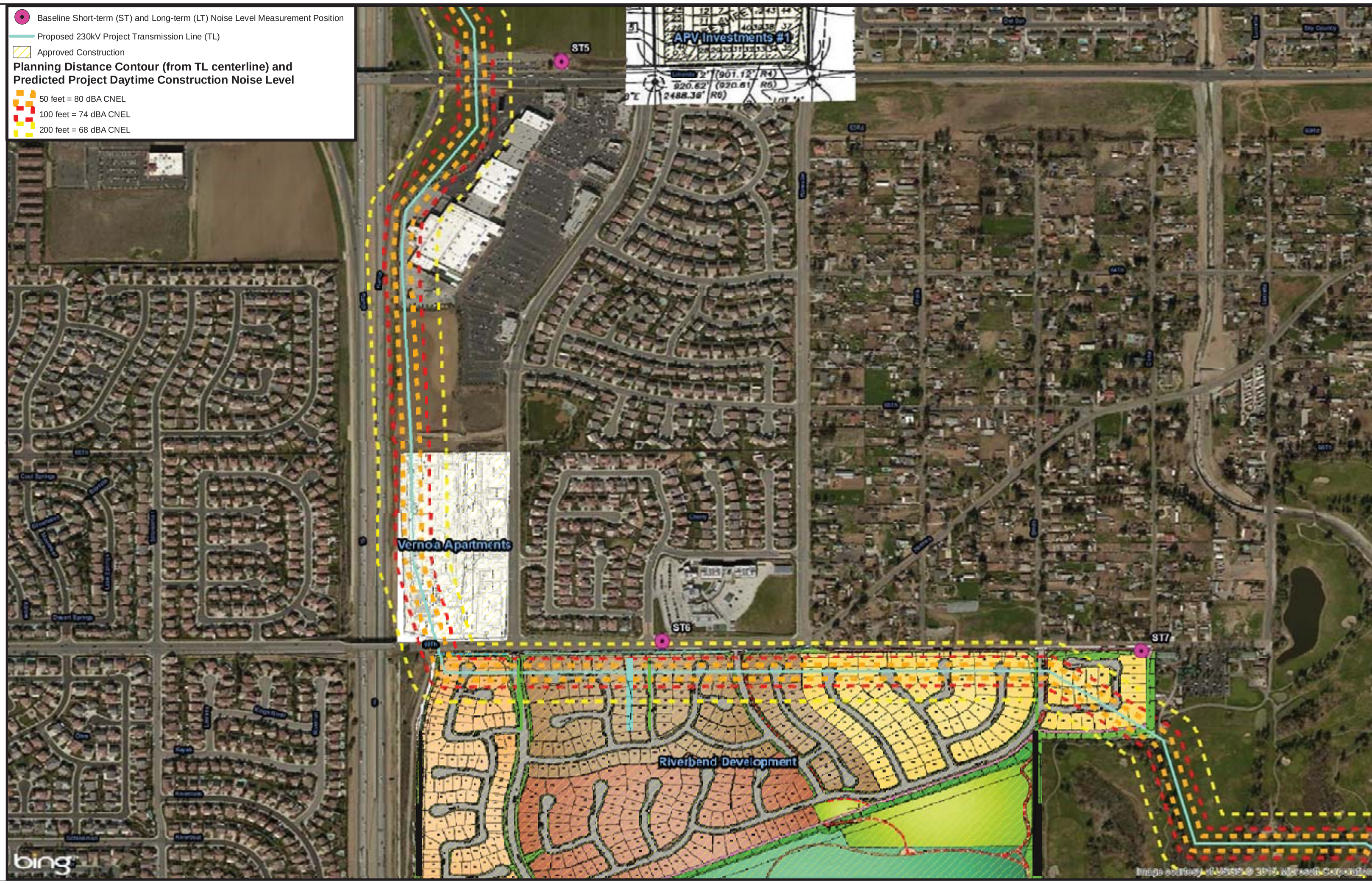

Figure 5C
Project Construction Noise Contours

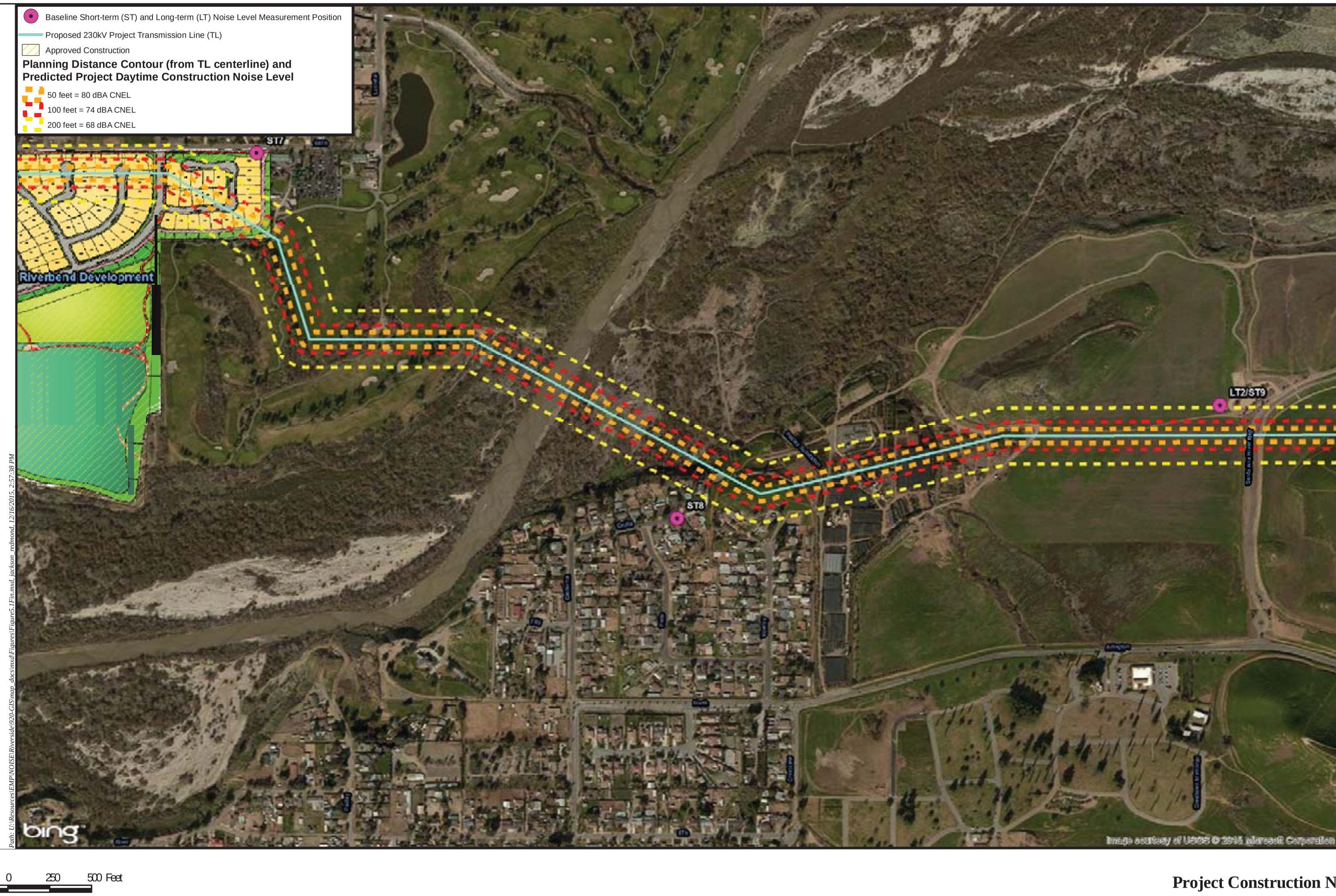

Figure 5D
Project Construction Noise Contours

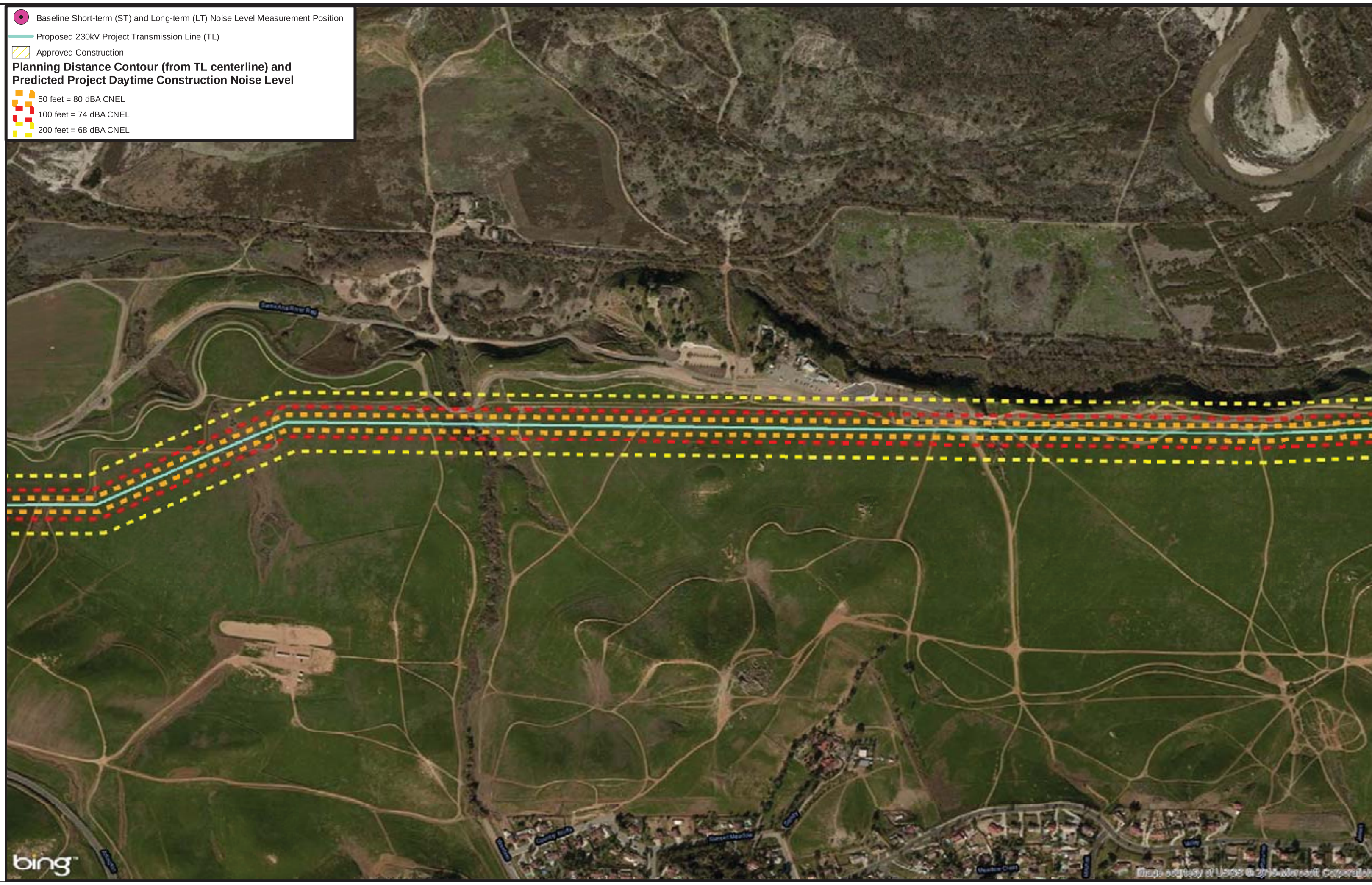

Figure 5E
Project Construction Noise Contours

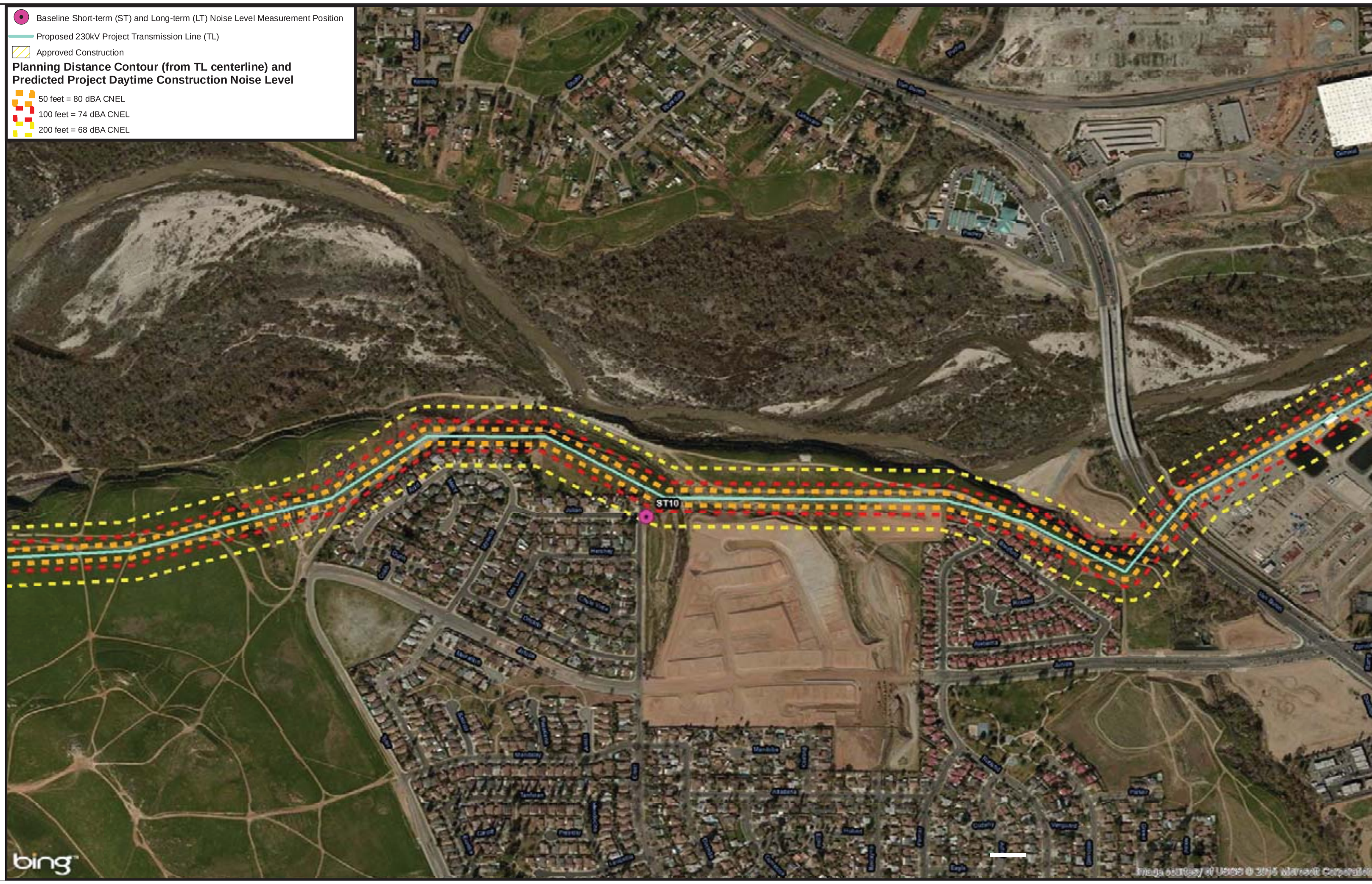

Figure 5F
Project Construction Noise Contours

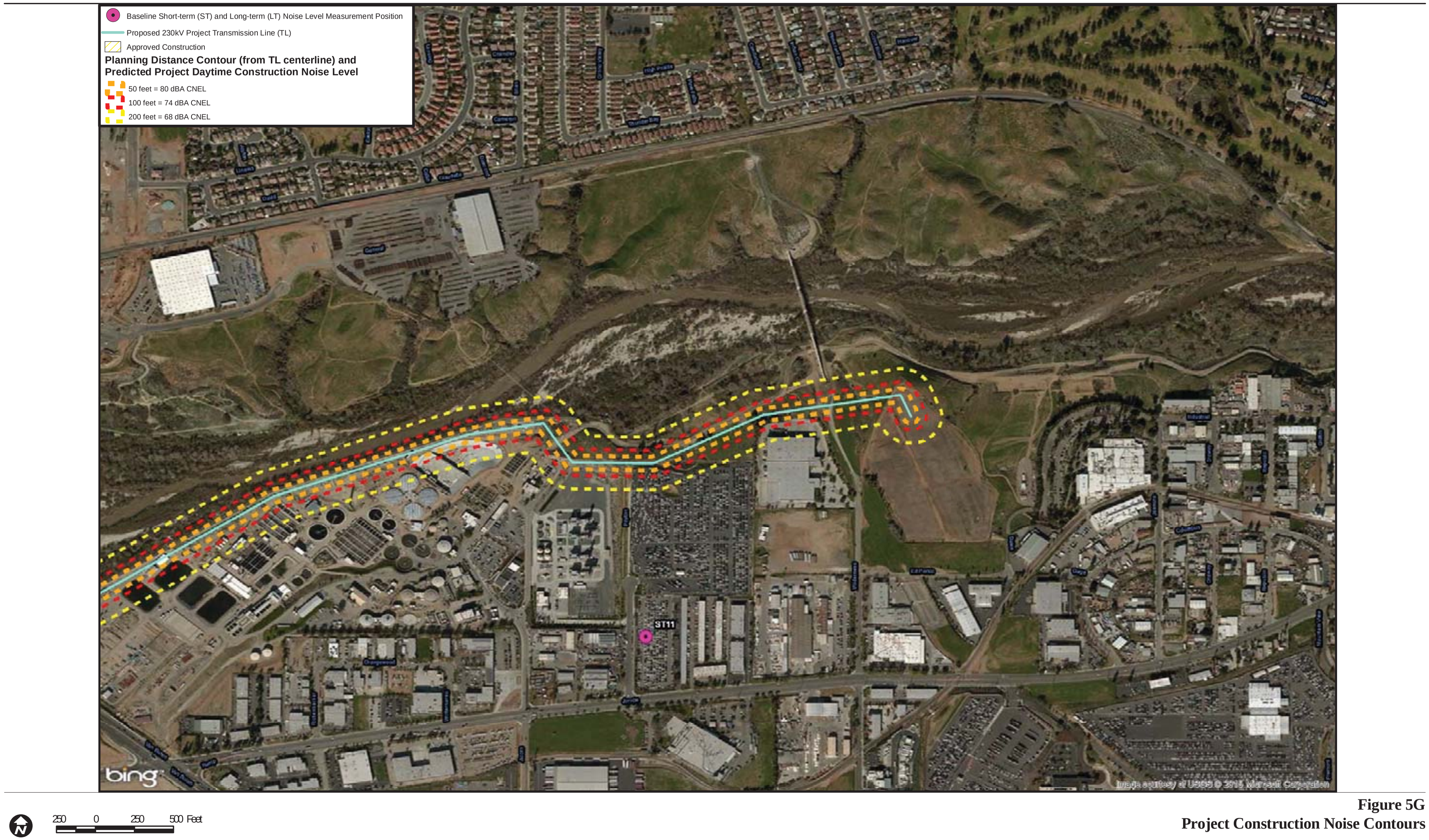

Figure 5G
Project Construction Noise Contours

As shown in Table 12, vibration levels at 25 feet from construction equipment, with the exception of pile drivers, are at or below the threshold of risk of structural damage (0.2 ppv in/sec). At distances beyond 65 feet, vibration levels would be below the threshold of risk of structural damage and below the threshold for human perception (0.1 ppv in/sec) beyond 80 feet.

Existing structures in proximity to the Project are located approximately 100 feet or greater from where major construction activities would occur. At this distance, vibration from Project construction activities would be below the vibration threshold of 0.2 in/sec ppv for structural damage (FTA 2006). Therefore, groundborne vibration generated by construction of the Project would not result in cosmetic or structural damage to nearby structures. Vibration from Project construction would not expose people or structures to excessive vibration levels that would result in structural damage or human annoyance. This is a less than significant impact.

Transport of materials by heavy trucks to and from construction sites has the potential to generate higher levels of groundborne vibration than mechanical equipment. However, heavy trucks generally operate at very low speeds on-site. Therefore, the groundborne vibration induced by heavy truck traffic is not anticipated to be perceptible at distances greater than 25 feet, and would be a **less than significant impact**.

5.3 TRAFFIC NOISE

Project construction would generate construction traffic from daily construction worker trips, construction equipment and materials delivery truck trips, and demolition materials truck hauling. However, construction vehicles would access the Project site using I-15, where Project construction trips would be a minor contribution to the average daily traffic volumes of I-15, which include a high percentage of truck volumes. Therefore, the increase in traffic volume due to Project construction-related traffic would result in a less than 1 dBA L_{eq} increase in noise levels along adjacent roadways, which is not considered a perceptible change in noise level. This is a less than significant impact.

Aside from occasional maintenance activities, the Project would not generate significant additional volumes of operational traffic and, therefore, would not expose people to current or future transportation noise levels that exceed applicable standards. This is a less than significant impact.

5.4 OPERATIONAL NOISE

Methodology and Modeling

The predicted AN levels from Project conductor corona were calculated using the same mathematical expressions that form the basis of the Bonneville Power Administration (BPA) Corona and Field Effects Program—the industry standard for these types of calculations. Appendix A presents a view of an Excel spreadsheet that contains these model parameters and equations used to estimate corona AN at the representative noise-sensitive receivers shown in Tables 13, 14, 15, and 16 and as appearing in Figures 6A through G. For example, the calculated L_{50} foul weather (i.e., rainy conditions) AN at a position approximately 50 horizontal feet from the 230 kV conductors is approximately 53 dBA. Under fair or dry weather conditions, according to the original BPA Technical Report ERJ-77-167 *Description of Equations and Computer Program for Predicting Audible Noise, Radio Interference, Television Interference, and Ozone from A-C Transmission Lines* contained in a BPA response to a public request for information (BPA 2015), the estimated AN level would be reduced by 25 dBA to L_{50} 28 dBA. For purposes of impact assessment, the L_{50} statistical value and L_{eq} metric will be considered comparable.

After accounting for environmental conditions and other factors such as differences in tower design and conductor arrangement, the predicted corona AN sound levels from this BPA-based technique appear to be generally consistent with field measurements of corona AN from an existing operating 230 kV transmission line as described in Section 3.4.

Impact Analysis

Tables 13 through 16 present an assessment of Project operational corona AN levels compared to applicable daytime and nighttime L_{eq} and CNEL standards, and whether it would result in substantial permanent increase in CNEL ambient levels, during fair and foul weather conditions, respectively, at the same locations studied for Project construction in Section 5.1.

Noise Standards

Tables 13 and 14 present the assessment of Project operational corona AN impact, during fair and foul weather conditions, with respect to allowable daytime and nighttime noise standard of 55 and 45 dBA $L_{eq,}$ respectively.

Table 13
Project Operation Corona Audible Noise (AN), Foul Weather, L_{eq} Standard

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Predicted Project 230 kV Transmission Line Corona Audible Noise (AN) (dBA, L_{eq})	Corona AN Exceeds Daytime Standard (55 dBA L_{eq})?	Corona AN Exceeds Nighttime Standard (45 dBA L_{eq})?
ST-1 (Stratham[1])	54	No	**Yes**
ST-2 (Stratham[2], Lyon[1])	54	No	**Yes**
ST-3 (Thoroughbred[3])	54	No	**Yes**
ST-4 (DR Horton[4])	36	No	No
ST-4 (Lennar[5], Lyon[8])	38	No	No
ST-4 (APV1[6], APV2[6])	39	No	No
ST-5 (APV2[7])	40	No	No
ST-5 (Vernola[1,2])	54	No	**Yes**
ST-6 (Riverbend[9])	54	No	**Yes**
ST-7 (Riverbend[9])	54	No	**Yes**
ST-8[10]	46	No	**Yes**
ST-9[11]	50	No	**Yes**
ST-10[12]	50	No	**Yes**
ST-11[13]	40	No	No

Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

Table 14
Project Operation Corona Audible Noise (AN), Fair Weather, L_{eq} Standard

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Predicted Project 230 kV Transmission Line Corona Audible Noise (AN) (dBA, L_{eq})	Corona AN Exceeds Daytime Standard (55 dBA L_{eq})?	Corona AN Exceeds Nighttime Standard (45 dBA L_{eq})?
ST-1 (Stratham[1])	29	No	No
ST-2 (Stratham[2], Lyon[1])	29	No	No
ST-3 (Thoroughbred[3])	29	No	No
ST-4 (DR Horton[4])	11	No	No
ST-4 (Lennar[5], Lyon[8])	13	No	No
ST-4 (APV1[6], APV2[6])	14	No	No
ST-5 (APV2[7])	15	No	No
ST-5 (Vernola[1,2])	29	No	No
ST-6 (Riverbend[9])	29	No	No
ST-7 (Riverbend[9])	29	No	No
ST-8[10]	21	No	No
ST-9[11]	25	No	No
ST-10[12]	25	No	No
ST-11[13]	15	No	No

Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

As shown in Tables 13 and 14, the proposed Project operation AN would generally not expose persons to noise levels in excess of standards established in applicable general plans or noise ordinances for a majority of time the facilities are in operation. Corona effects from the 230 kV transmission lines would result in short-term, temporary instantaneous noise levels in excess of local standards (45 dBA L_{eq} at night, and 55 dBA L_{eq} during the day) only at the indicated locations in Table 11 during “foul” weather (i.e., rain or related conditions that wet the conductor surface) conditions. Under “fair” weather conditions that generally typify the Project vicinity, noise impacts are not expected as shown in Table 14. Therefore, impacts would be **less than significant.**

Ambient Noise Levels

Tables 15 and 16 present the assessment of Project operational corona AN impact, during “fair” and “foul” weather conditions, with respect to allowable permanent outdoor ambient noise increment of and a residential land use compatibility noise standard of 60 dBA CNEL.

Table 15
Project Operation Corona Audible Noise (AN), Foul Weather, CNEL Standard/Increase

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Measured Existing Outdoor Ambient Sound Level (dBA, CNEL)	Predicted Project 230 kV Transmission Line Corona Audible Noise** (AN) (dBA, CNEL)	Future Ambient (Log-sum of Existing Ambient and Predicted Corona AN) (dBA, CNEL)	Increase over Existing Ambient due to Corona AN Contribution (dBA, CNEL)	Impact? (>60 dBA CNEL from Corona AN or >5 dBA, CNEL ambient increment)
ST-1 (Stratham[1])	68	59	69	1	No
ST-2 (Stratham[2], Lyon[1])	77	59	77	0	No
ST-3 (Thoroughbred[3])	65	59	66	1	No
ST-4 (DR Horton[4])	68	41	68	0	No
ST-4 (Lennar[5], Lyon[8])	68	44	68	0	No
ST-4 (APV1[6], APV2[6])	68	45	68	0	No
ST-5 (APV2[7])	64	46	64	0	No
ST-5 (Vernola[1,2])	64	59	64	0	No
ST-6 (Riverbend[9])	67	59	68	1	No
ST-7 (Riverbend[9])	48	59	59	**11**	**Yes**
ST-8[10]	54	52	56	2	No
ST-9[11]	61	55	62	1	No
ST-10[12]	57	56	60	3	No
ST-11[13]	58	46	58	0	No

Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
** assumes foul weather conditions only at night (10 p.m. to 7 a.m.)
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

Table 15 exhibits that at all representative receptor locations, predicted corona AN under "foul" weather conditions is not expected to exceed 60 dBA CNEL, and only one location (representing the northeastern corner of the Riverbend development) might experience an increase in ambient sound greater than 5 dBA.

Table 16
Project Operation Corona Audible Noise (AN),
Fair Weather, CNEL Standard/Increase

Ambient Survey Position (ASP) ID (and Representative Receptor Location*)	Measured Existing Outdoor Ambient Sound Level (dBA, CNEL)	Predicted Project 230 kV Transmission Line Corona Audible Noise** (AN) (dBA, CNEL)	Future Ambient (Log-sum of Existing Ambient and Predicted Corona AN) (dBA, CNEL)	Increase over Existing Ambient due to Corona AN Contribution (dBA, CNEL)	Impact? (>60 dBA CNEL from Corona AN or >5 dBA, CNEL ambient increment)
ST-1 (Stratham[1])	68	35	68	0	No
ST-2 (Stratham[2], Lyon[1])	77	35	77	0	No
ST-3 (Thoroughbred[3])	65	36	65	0	No
ST-4 (DR Horton[4])	68	17	68	0	No
ST-4 (Lennar[5], Lyon[8])	68	20	64	0	No
ST-4 (APV1[6], APV2[6])	68	21	67	0	No
ST-5 (APV2[7])	64	22	64	0	No
ST-5 (Vernola[1,2])	64	35	64	0	No
ST-6 (Riverbend[9])	67	35	67	0	No
ST-7 (Riverbend[9])	48	35	48	0	No
ST-8[10]	54	28	54	0	No
ST-9[11]	61	31	61	0	No
ST-10[12]	57	32	57	0	No
ST-11[13]	58	22	58	0	No

Exceedances shown in **bold**
* Represented Entitled or Under-construction Development
** assumes fair weather conditions all day, evening, and night
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

As shown in Table 16, the proposed Project would be in compliance with the allowable outdoor permanent ambient noise CNEL standard and increment; therefore, impacts would be **less than significant.**

Corona Noise Level Contours

Figures 6A through G display predicted Project corona AN as iso-pleths (a.k.a., noise contours), radiating out from the Project alignment, superimposed on aerial imagery of the Project vicinity. While these contours only represent Project corona AN and not the future ambient levels as presented in Tables 15 and 16, the reader can see in Figures 6A through 6G, where corona AN during fair weather conditions at certain dBA CNEL is expected. During foul weather conditions, these predicted contours would be at the same distances, but would be characterized by AN values that are 25 dBA higher than those shown.

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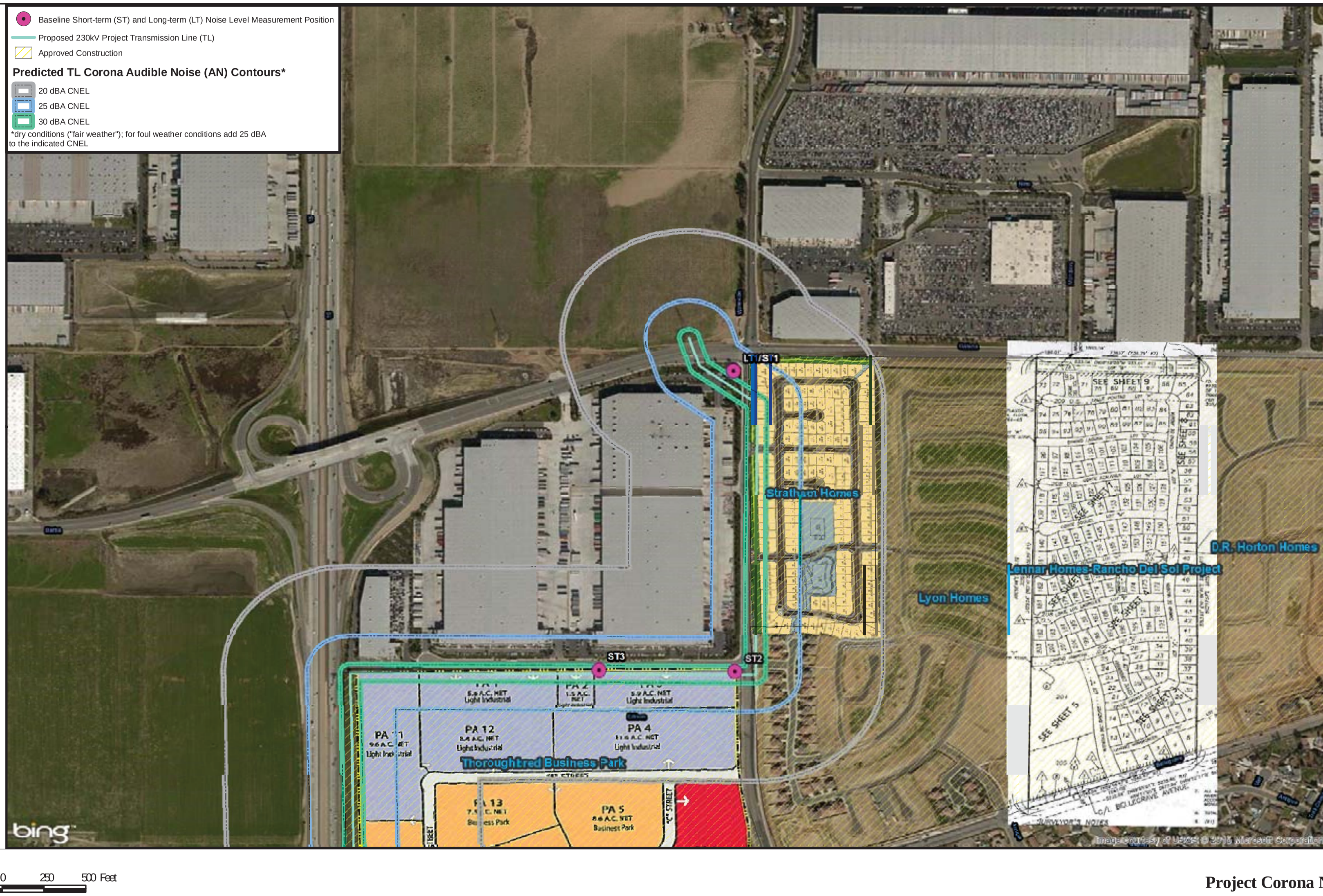

Figure 6A
Project Corona Noise Contours

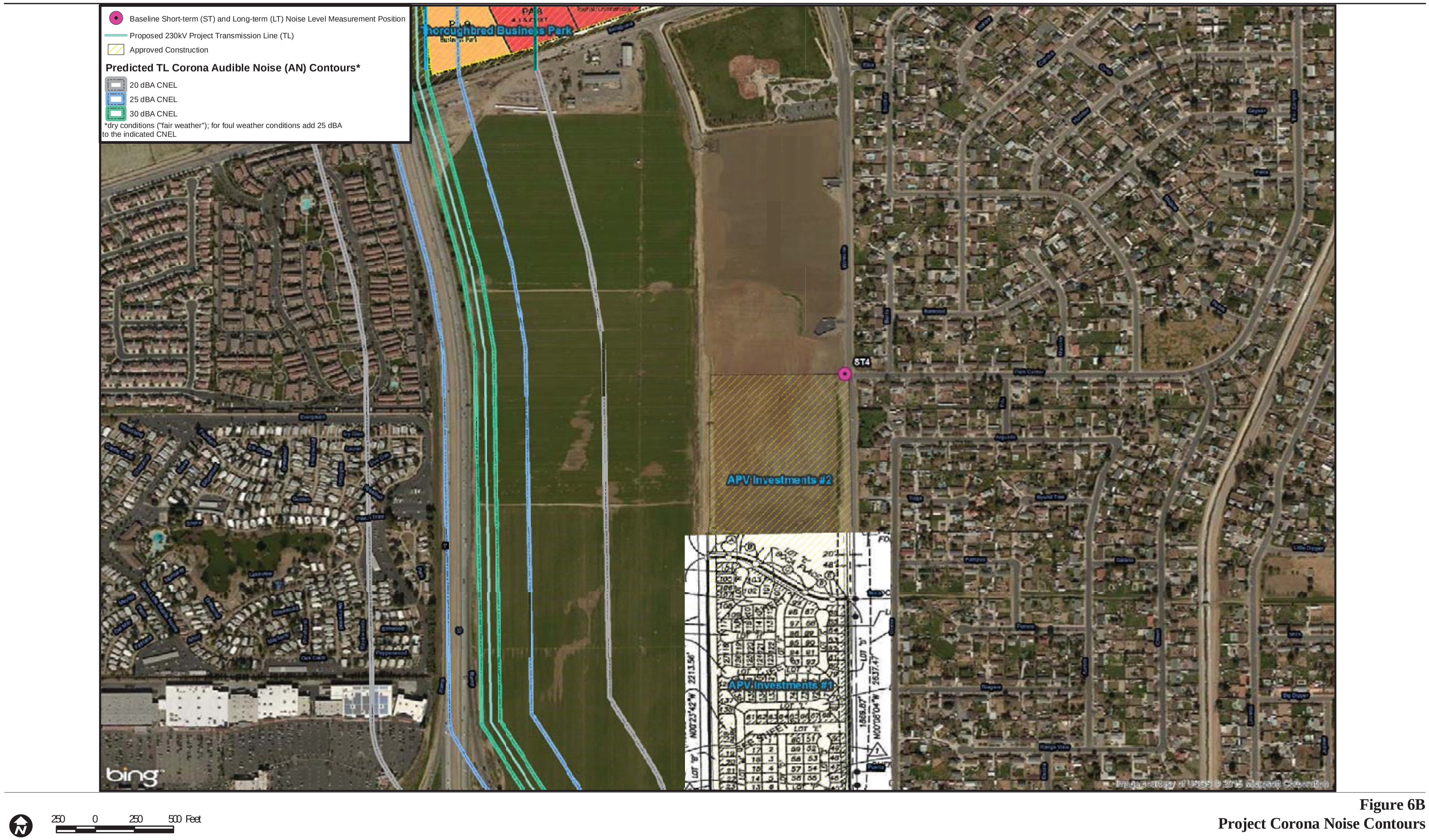

Figure 6B
Project Corona Noise Contours

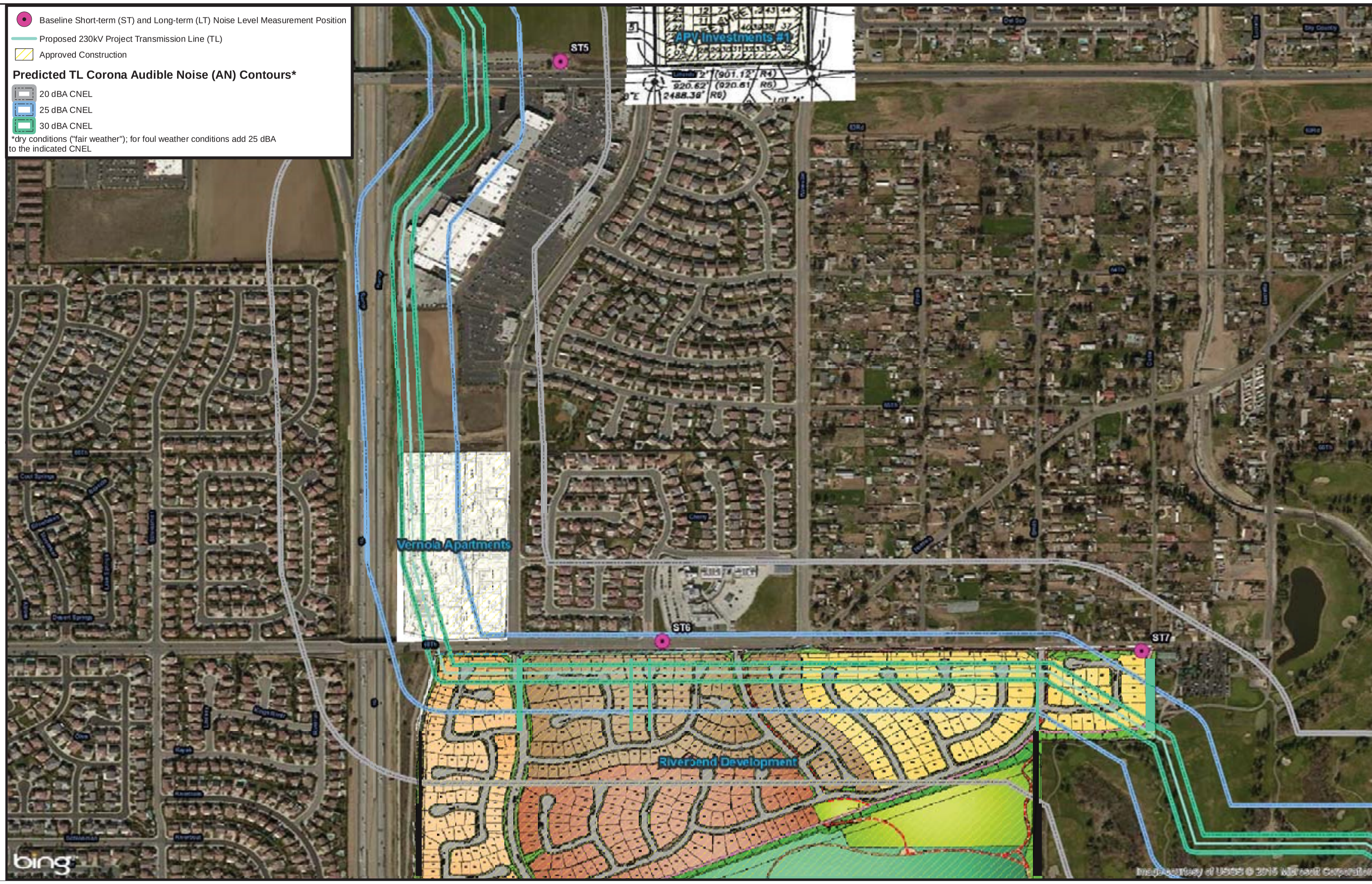

Figure 6C
Project Corona Noise Contours

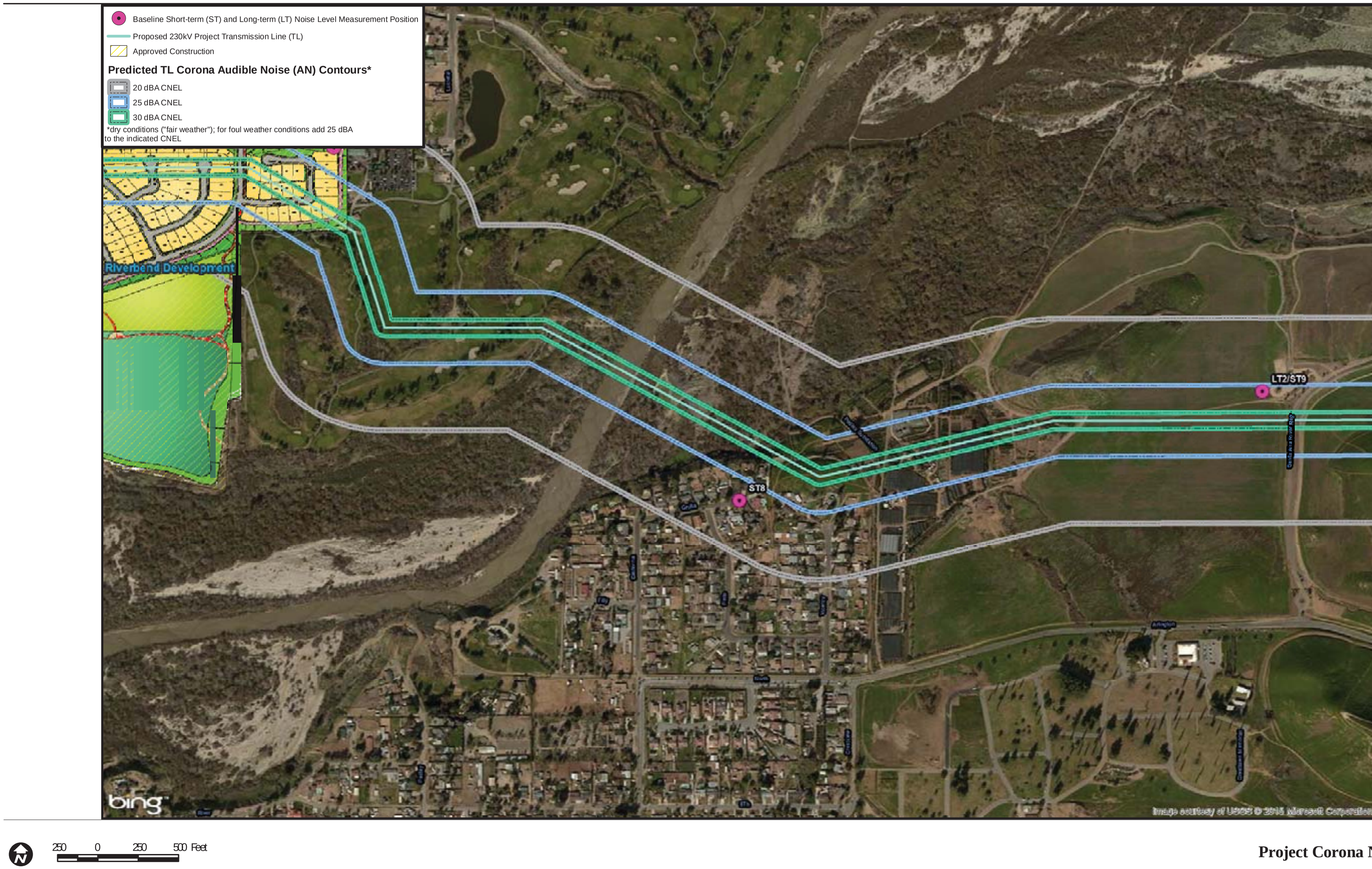

Figure 6D
Project Corona Noise Contours

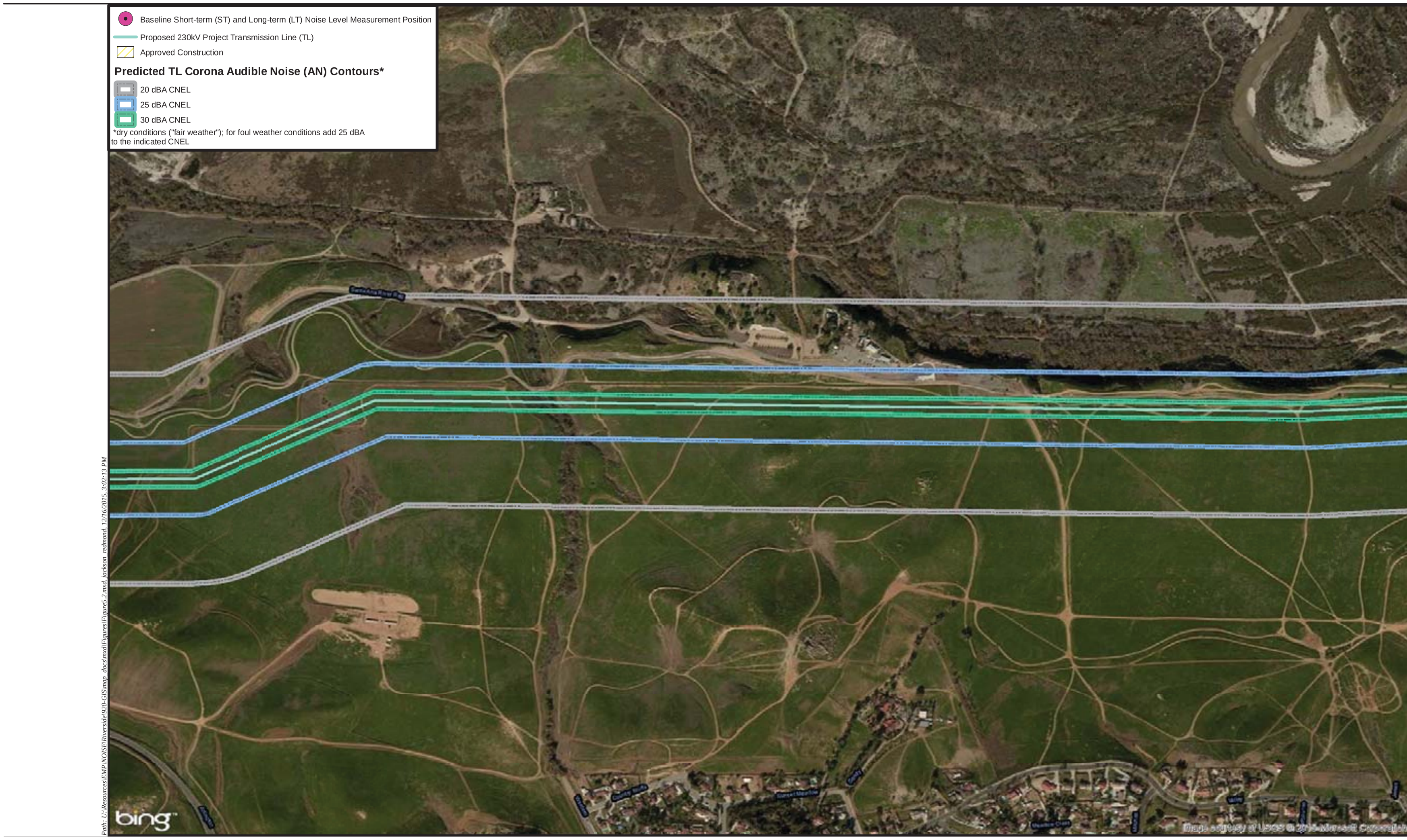

Figure 6E
Project Corona Noise Contours

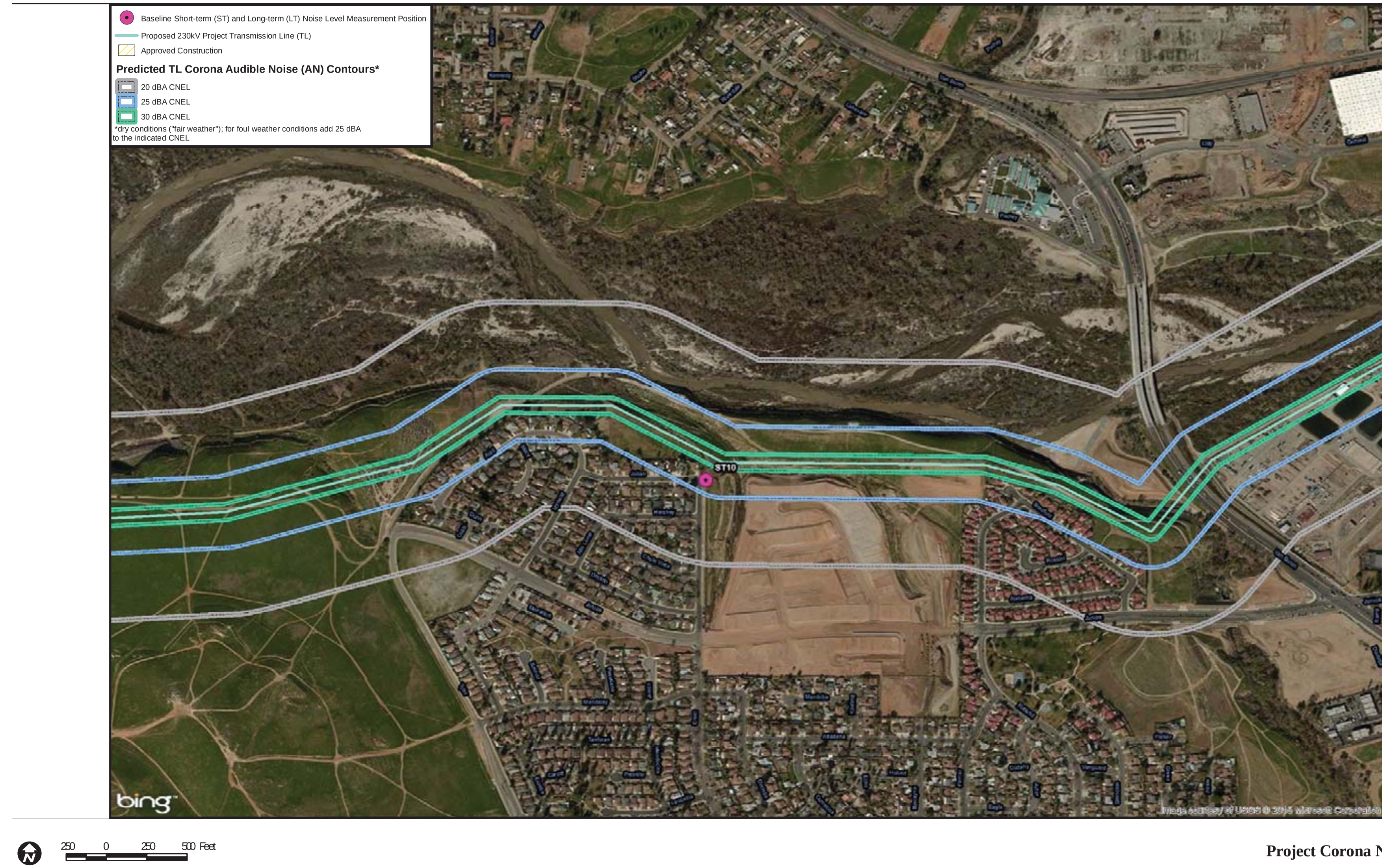

Figure 6F
Project Corona Noise Contours

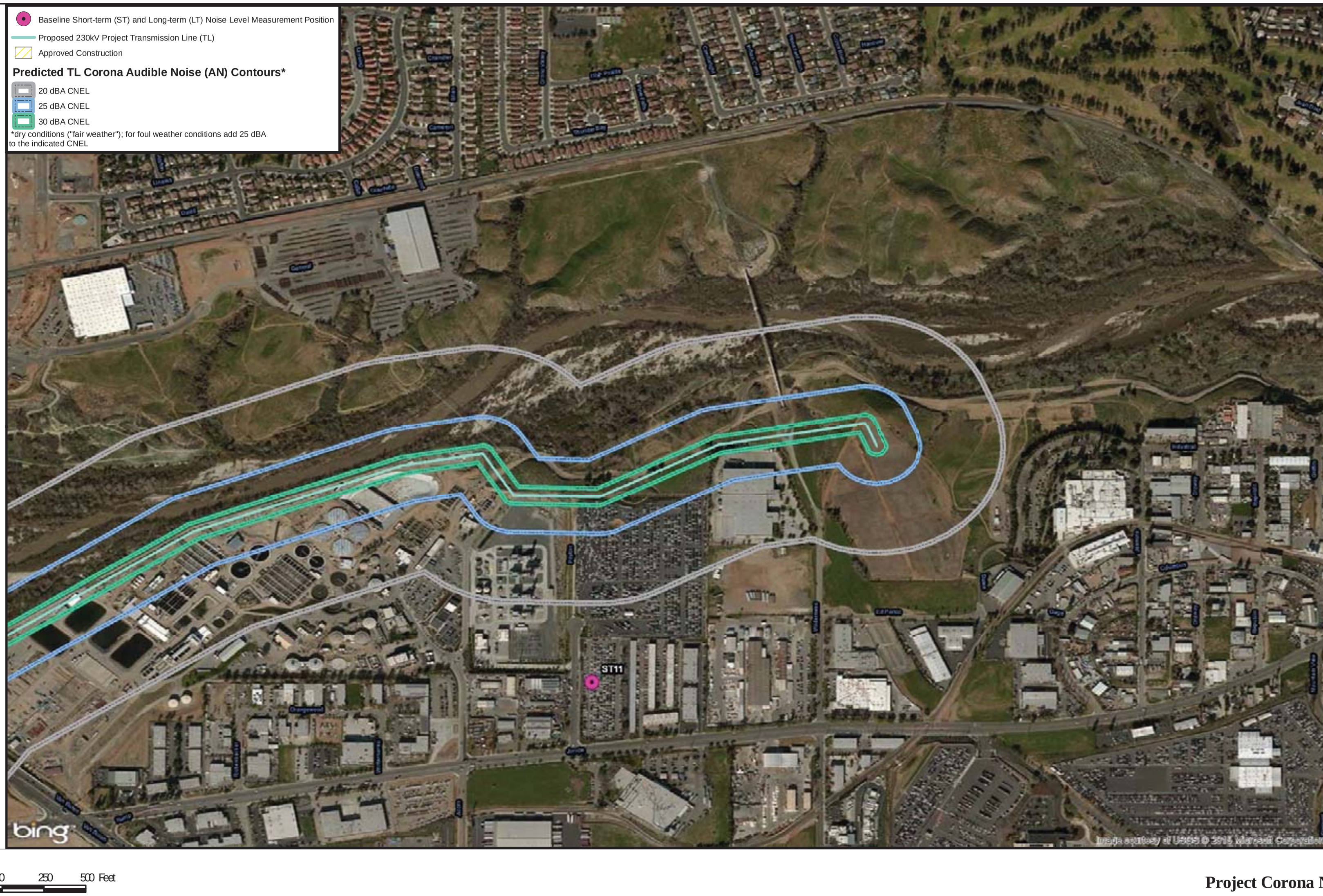

Figure 6G
Project Corona Noise Contours

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6.0 APPLICANT PROPOSED MEASURES

6.1 APPLICANT PROPOSED MEASURES

The following applicant proposed measures (APMs) are provided to reduce Project construction and operational noise levels, and where potentially significant noise impacts have been identified, to attempt to reduce levels below those that indicate significant impacts.

Project Construction

As discussed in Section 5.1, Project construction noise may occur during hours outside of those specified by local noise ordinances and daytime construction noise levels would result in a substantial increase in ambient noise levels at representative receptor locations for the Stratham, Lyon and Thoroughbred developments, as well as representative receptor locations ST-7, ST-9 and ST-10, which would result in **potentially significant impacts**.

Were Project construction activity noise to occur at night, involving likely equipment as described in Section 5 and during hours when construction noise is not exempt from local noise ordinance thresholds, potentially significant impacts are predicted for the Stratham, Lyon and Thoroughbred developments, as well as representative receptor locations ST-5 (Vernola), ST-7, ST-8 and ST-9. With respect to an increase in ambient noise levels, potentially significant impacts are predicted for the Stratham and Thoroughbred developments, along with ST-5 (Vernola), ST-6, ST-7 and ST-9.

The following typical construction noise reduction measures are recommended to reduce and minimize noise levels during construction, including, but not limited to:

- NOI-1 (Implement Noise Complaint Reporting) – The Project (via construction contractor) would establish a telephone hot-line for use by the public to report any perceived significant adverse noise conditions associated with the construction of the Project. If the telephone is not staffed 24 hours per day, the contractor would include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This hot-line telephone number would be posted at the Project site during construction in a manner visible to passersby. This telephone number would be maintained until the Project has been considered commissioned and ready for operation.

- NOI-2 (Implement Noise Complaint Investigation) – Throughout the construction of the Project, the contractor would document, investigate, evaluate, and attempt to resolve all Project-related noise complaints. The contractor or its authorized agent would:
    - Use a Noise Complaint Resolution Form to document and respond to each noise complaint;
    - Contact the person(s) making the noise complaint within 24 hours;
    - Conduct an investigation to attempt to determine the source of noise related to the complaint; and
    - Take all reasonable measures to reduce the noise at its source.
- NOI-3 (Implement Construction Practices) – The following are typical field techniques for reducing noise from construction activities, with the purpose of reducing aggregate construction noise levels at nearby noise-sensitive receptors:
    - To the extent practical and unless safety provisions require otherwise, adjust all audible back-up alarms downward in sound level, reflecting vicinities that have expected lower background level, while still maintaining adequate signal-to-noise ratio for alarm effectiveness. Consider signal persons, strobe lights, or alternative safety equipment and/or processes as allowed, for reducing reliance on high-amplitude sonic alarms.
    - Place stationary noise sources, such as generators and air compressors, on the Project site away from affected noise-sensitive receivers. Place non-noise-producing mobile equipment such as trailers in the direct sound pathways between suspected major noise-producing sources and sensitive receptors.
- NOI-4 (Implement Equipment Noise Reduction) – The following are typical practices for construction equipment selection (or preferences) and expected function that can help reduce noise.
    - Pneumatic impact tools and equipment used at the construction site would have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.
    - Provide impact noise producing equipment (i.e., jackhammers and pavement breaker[s]) with noise attenuating shields, shrouds or portable barriers or enclosures, to reduce operating noise.

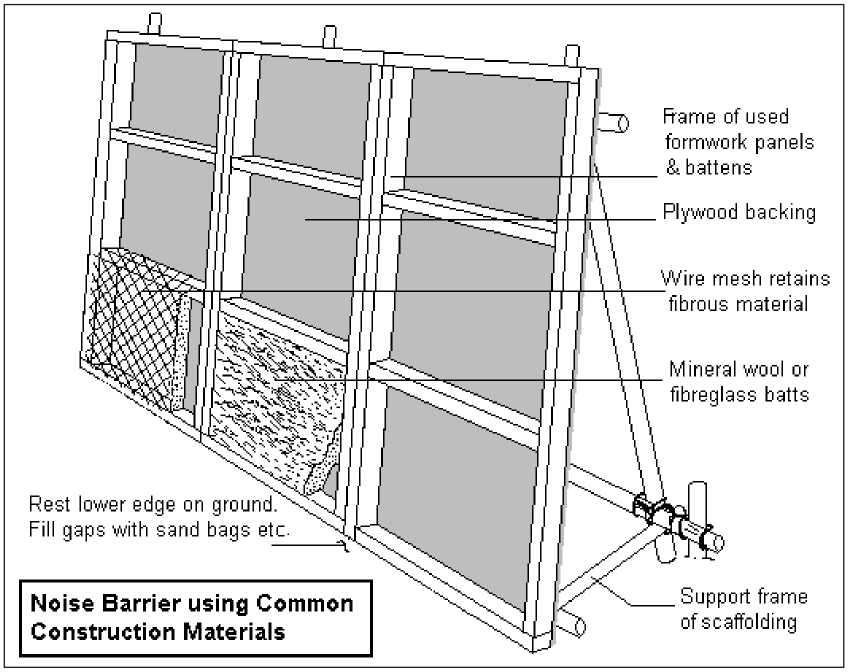
- Line or cover hoppers, storage bins, and chutes with sound-deadening material (e.g., apply wood or rubber liners to metal bin impact surfaces).
- Provide upgraded mufflers, acoustical lining, or acoustical paneling for other noisy equipment, including internal combustion engines.
- Use alternative procedures of construction and select a combination of techniques that generate the least overall noise and vibration.
- Use construction equipment manufactured or modified to reduce noise and vibration emissions, such as:
  - Electric instead of diesel-powered equipment.
  - Hydraulic tools instead of pneumatic tools.
  - Electric saws instead of air- or gasoline-driven saws.

- NOI-5 (After-Hours Construction) – In the event construction activities are necessary on days or hours outside of what is specified by noise ordinance, SCE would provide 5-day advanced notification, including a general description of the work to be performed, location, and hours of construction anticipated, to the CPUC, local municipality or County where anticipated work is to be performed, and residents within 300 feet of the anticipated work, as well as route all construction traffic and/or helicopter flight(s) away from residences, schools and recreational facilities to the maximum extent feasible.

If there is insufficient space or lack of available resources (e.g., semi-truck trailers, bulk material containers, moving vans, etc.) to create a noise barrier using non-noise-producing equipment in use at an active construction site as suggested in one of the NOI-3 options, the contractor may also employ field-erected temporary noise barriers. Options for such on-site barriers could include, but are not necessarily limited to, using appropriately thick wooden panel walls (at least ½-inch thick) that resemble what appears in Figure 7 and are high enough to block the line-of-sight from the dominant construction noise source(s) to the noise-sensitive receptor. Such barriers could, depending on factors such as barrier height, barrier length, and distance between the barrier and the noise-producing equipment or activity, reduce construction noise by 5 to 15 dBA at nearby noise-sensitive receptor locations. Alternately, field-erected noise curtain assemblies could be installed around specific equipment sites or zones of anticipated mobile or stationary activity, resembling the sample shown in Figure 8. These techniques are most effective and practical when the construction activity noise source is stationary (e.g., auger or drill operation) and the specific source locations of noise emission are near the ground and can be placed as close to the equipment/activity-facing side of the noise barrier as possible. Although barrier layout and other implementation details would vary by construction site, the following are coarse categories of expected temporary barrier performance:

- *Short barrier* (SB) – provides linear occlusion (expected noise reduction between 3 to 5 dBA), and has a total length less than four times the perpendicular distance between the barrier and the geographic center of the set of noise-producing construction equipment.
- *Medium barrier* (MB) – provides linear occlusion (expected noise reduction between 5 to 10 dBA), and has a total length between four to eight times the perpendicular distance between the barrier and the geographic center of the set of noise-producing construction equipment. Alternately, the barrier may be shorter in extent (not height) so long as the included angle (α) between the noise source(s) and the ends of the barrier must be at least 160 degrees—please refer to Figure 9, which shows the end-flanking effect of the included angle on what is otherwise a barrier designed (based on height, etc.) to deliver an indicated "S" value of insertion loss.
- *Long barrier* (LB) – provides linear occlusion (expected noise reduction between 10 to 15 dBA), and has a total length of at least eight times the perpendicular distance between the barrier and the geographic center of the set of noise-producing construction equipment. Alternately, the barrier may be shorter in extent (not height) so long as the included angle (α) between the noise source(s) and the ends of the barrier is greater than 180 degrees.

Figure 7
Temporary Noise Barrier using Common Construction Site Materials

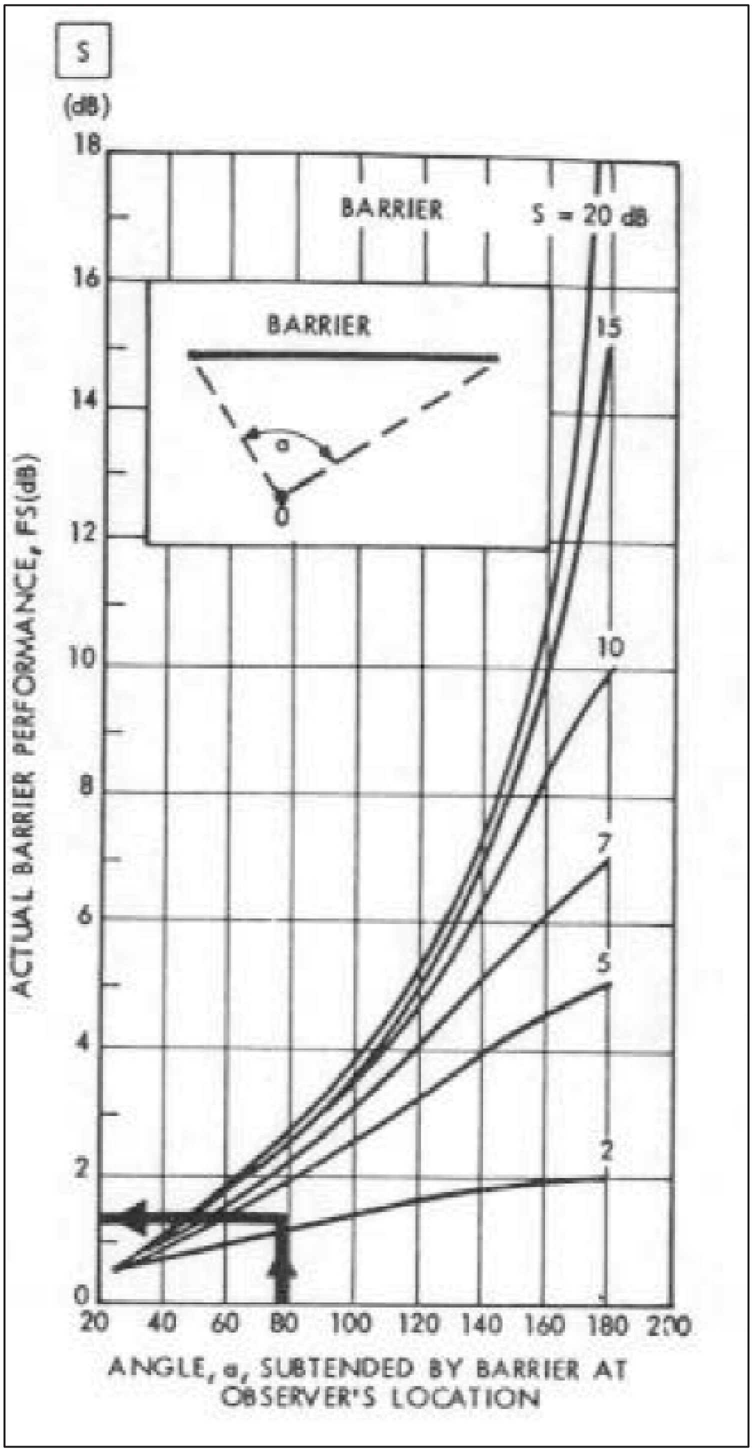


Source: Eaton, Construction Noise, 2000

Figure 8
Sample Site-Erected Curtain-type Noise Barrier

Source: AECOM (2015)

Figure 9
Effect of Included Angle on Noise Barrier Performance



Source: HUD (1991)

In all three barrier types above, the barrier material is assumed to be solid and dense enough to demonstrate acoustical transmission loss (TL) that is at least 10 dBA greater than the estimated noise reduction effect. These suggested barrier types do not represent the only ways to achieve the indicated noise reduction in dBA; rather, they represent examples of how such noise attenuation might be attained by an implemented APM under the right conditions and offer some insight on the level of resources (e.g., barrier extent) likely to be involved. Hence, Table 17 presents the representative receptor locations that would, on the basis of predicted construction noise impact assessment appearing in Tables 9, 10 and 11, likely need the indicated APM-provided noise reduction in order to result in predicted Project construction noise no greater than 45 dBA (Table 9 assessment results for potential nighttime construction) or 10 dBA above the existing ambient sound level (Tables 10 and 11 for daytime and nighttime).

Table 17
Probable Construction Noise Reduction Need at Representative Receivers

Ambient Survey Position (ASP) ID (and Representative Receptor [RR] Location*)	Nighttime Construction Noise Reduction, to comply with 45 dBA at RR (dBA)	Daytime Construction Noise Reduction, to comply with <= 10 dBA increase over ambient at RR (dBA)	Nighttime Construction Noise Reduction, to comply with <= 10 dBA increase over ambient at RR (dBA)
ST-1 (Stratham[1])	29	10	4
ST-2 (Stratham[2], Lyon[1])	29	7	n/a
ST-3 (Thoroughbred[3])	29	11	7
ST-4 (DR Horton[4])	n/a	n/a	n/a
ST-4 (Lennar[5], Lyon[8])	n/a	n/a	n/a
ST-4 (APV1[6], APV2[6])	n/a	n/a	n/a
ST-5 (APV2[7])	n/a	n/a	n/a
ST-5 (Vernola[1,2])	29	n/a	8
ST-6 (Riverbend[9])	29	n/a	14
ST-7 (Riverbend[9])	29	2	28
ST-8[10]	5	n/a	n/a
ST-9[11]	12	8	5
ST-10[12]	n/a	6	n/a
ST-11[13]	n/a	n/a	n/a

n/a = not applicable, noise mitigation not anticipated for this case/scenario
* Represented Entitled or Under-construction Development
[1] northern end of westernmost row of homes, 50 feet from the Project alignment
[2] southern end of westernmost row of homes, 50 feet from the Project alignment
[3] northern portion of light industrial development, 50 feet from the Project alignment
[4] westernmost row of homes, as close as approximately 3,500 feet from the Project alignment
[5] westernmost row of homes, as close as approximately 2,000 feet from the Project alignment
[6] westernmost row of homes, as close as approximately 1,750 feet from the Project alignment
[7] westernmost row of homes, as close as approximately 1,500 feet from the Project alignment
[8] easternmost row of homes, as close as approximately 2,000 feet from the Project alignment
[9] approximately 50 feet from the Project alignment, assuming 100-foot-wide Project right-of-way
[10] approximately 425 feet from the Project alignment
[11] approximately 212 feet from the Project alignment
[12] approximately 168 feet from the Project alignment
[13] approximately 1,330 feet from the Project alignment

SCE and its contractor(s) would consider these predicted construction noise reduction values (at the indicated representative receptor locations) the acoustical objectives they need to consider and for which to evaluate, develop, and properly implement an appropriate APM that either enables sufficient noise control at the noise-producing sources, sound attenuation along the sound pathways between source and receiver, noise abatement at or near the receptors of concern, or some combination of these three techniques.

Project Operation

Based on the predictive analysis, Project operation could generate transmission line corona AN that would exceed local night residential standards of 45 dBA L_{eq} at several representative receptor locations during temporary or intermittent periods associated with "foul" weather conditions (i.e., rain or related conditions that wet the conductor surface) as shown in Table 11. And at the northeastern corner of the Riverbend development, based on measured ambient sound levels at ST-7 and as shown in Table 13, the temporary increase in ambient sound under such conditions might be greater than 5 dBA. However, the following reasons support an assertion that corona AN, overall, does not create a significant impact requiring APM:

1. Even under "foul" weather conditions, predicted corona AN is less than 60 dBA CNEL and thus compatible with outdoor noise levels for residential developments.
2. While the opportunity for "foul" weather conditions could occur over the lifetime of the Project, such conditions would not be considered "permanent" or durable and are instead considered intermittent and temporary—they occur and last only as long as the right meteorological conditions or conductor surface conditions are present.
3. Under "fair" weather conditions that generally typify the environmental status of the Project vicinity, Tables 12 and 14 illustrate that predicted Project corona AN would not exceed the local day and night L_{eq} and CNEL standards, nor create a significant permanent ambient CNEL increase.

6.2 SIGNIFICANCE AFTER APMs

Implementation of APMs NOI-1 though NOI-4 would reduce daytime Project construction noise levels at the source. To reduce daytime Project construction noise levels below levels of significance, implementation of NOI-3 (Implement Construction Practices) and NOI-4 (Implement Equipment Noise Reduction), specifically, the construction of temporary noise barriers adjacent to the source, would be required. After the implementation of APMs NOI-1 though NOI-4, daytime Project construction noise levels would be reduced at the source, resulting in less than substantial increases in ambient noise levels during the daytime at residential locations; this would be a **less than significant impact**.

In the event construction activities are necessary on days or hours outside of what is specified by noise ordinance, SCE would implement NOI-5 (after-hours construction) in order to reduce construction noise impacts to the extent feasible. However, despite the implementation of NOI-5, after-hours construction noise impacts would potentially be significant and unavoidable.

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7.0 CONCLUSIONS

Project construction would be expected to occur, depending on specific location and the applicable local municipal or County noise regulations or general plan policies, within the allowable hours of construction activity (and during which time construction noise limits may not be established or specified) or during periods of time that exempt construction activity noise from otherwise applicable noise level thresholds; hence, with respect to relevant noise standards, this would be a less than significant impact. However, in the event construction activities are necessary on days or hours outside of what is specified by noise ordinance, then this would be a potentially significant impact. Project construction noise levels could result in substantial predicted increases of ambient noise levels during the daytime at some locations; therefore, on the basis of temporary ambient noise level increase, this would also be a potentially significant impact. After the implementation of APMs NOI-1 though NOI-4, Project construction noise levels would be reduced, resulting in less than substantial increases in ambient noise levels during the daytime at residential locations; thus, after APM implementation, temporary ambient noise increase would become a less than significant impact.

In the event construction activities are necessary on days or hours outside of what is specified by noise ordinance, SCE would implement NOI-5 (After-Hours Construction) in order to reduce construction noise impacts to the extent feasible. However, despite the implementation of NOI-5, after-hours construction noise impacts would potentially be significant and unavoidable.

Anticipated vibration from Project construction activities would not result in vibration velocity levels exceeding vibration guidelines for structural damage risk and human annoyance; hence, this would be a less than significant impact. The proposed Project would not generate significant construction and operational traffic and, therefore, would not expose people to current or future transportation noise levels that exceed applicable standards. This is a less than significant impact.

Project operation could generate transmission line corona AN that would, only under “foul” weather conditions (i.e., rain or related conditions that wet the conductor surface), result in short-term, temporary instantaneous noise levels in excess of local nighttime residential standards of 45 dBA L_{eq} at some representative receptor locations and a substantial but nondurable ambient noise increase of 5 dBA CNEL or greater at one representative receptor vicinity. However, under “fair” weather conditions that generally typify the Project vicinity, Project corona AN would not exceed the local day and night L_{eq} standards, nor create a substantial permanent ambient CNEL increase. And under both “fair” and “foul” conditions, corona AN is not expected to exceed

CNEL-related compatibility guidelines for residential land uses. Therefore, this is a less than significant impact.

Overall, the proposed Project, with appropriate proposed APMs, would not result in a significant impact if construction activity would be, to the extent practical, limited within the allowable hours of construction activity (and during which time construction noise limits may not be established or specified) or during periods of time that exempt construction activity noise from otherwise applicable noise level thresholds.

8.0 REFERENCES

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