

NOTICE OF EXEMPTION

To:
Los Angeles County Registrar-Recorder/County Clerk
12400 E. Imperial Highway, Room 2001
Norwalk, CA 90650

From:
City of Long Beach
Community Development
411 W. Ocean Boulevard, 3rd Floor
Long Beach, CA 90802

Project Title: 1401 Long Beach Boulevard Project

Project Applicant: City of Long Beach

Project Address: 1401 Long Beach Boulevard, Long Beach, CA 90813

Project City: Long Beach

Project County: Los Angeles

Project Description: Please see attachment.

Name of Public Agency Approving Project: City of Long Beach

Name of Person or Agency Carrying Out Project: City of Long Beach

Exempt Status (Check one):

- ☐ Ministerial (California Public Resources Code, §21080(b)(1); California Code of Regulations, Title 14, Chapter 3, Article 18, §15268)
- ☐ Declared Emergency (California Public Resources Code, §21080(b)(3); 15269(a))
- ☐ Emergency Project (California Public Resources Code, §21080(b)(4); 15269(b)(c))
- ☒ Categorical Exemption (California Code of Regulations, Title 14, Chapter 3, Article 19, Class 32, §15332, Infill Development Projects)
- ☐ Statutory Exemption (California Code of Regulations, Title 14, Chapter 3, Article 18, §(#))
- ☐ General Rule (California Code of Regulations, Title 14, Chapter 3, Article 5, §15061(b)(3))

Reason why project is exempt: This Project has been determined to be categorically exempt from environmental review pursuant to the guidelines of the California Environmental Quality Act (Public Resources Code §21080(b)(9); Administrative Code, Title 14, Chapter 1, §15332 Class 32, Infill Development. Please see attachment.

Lead Agency: City of Long Beach

Contact Person: Gina Casillas

Phone: (562) 570-6879

Project Description

The 1401 Long Beach Boulevard Project (Project) consists of a new affordable housing development on a 1.09-acre site located at 1401 Long Beach Boulevard, Long Beach, California, and it is associated with five Assessor Parcel Numbers (APNs) including 7269-016-041, -042, -157, -158, and -159. Specifically, the Project site is located between East 14th Street and East 15th Street, east of Long Beach Boulevard, and west of Locust Avenue in the central portion of the City of Long Beach (City). The site is currently undeveloped, graded flat to street level and contains minimal vegetation. The surrounding land uses include residential homes and apartments to the west and northwest; an auto repair facility and used car dealer to the north; the LA Metro A line (formerly the Blue line) and used car dealership to the east; and a strip mall, saloon, and beauty store to the south. The Project site is currently located in the Midtown Specific Plan, Transit Node (SP-1-TN) zone and has a PlaceType designation of Transit-Oriented Development Moderate Density (TOD-M).

The Project involves construction of a six-story affordable housing residential building with 153 units as shown on **Attachment A**, Site Plan. The Project consists of 100-percent affordable housing units, including 74 one-bedroom units, 40 two-bedroom units, and 39 three-bedroom units. The building would have a maximum height of 70 feet above ground level. The net building floor area comprises approximately 154,637 square feet (sf), including 123,646 sf of residential space, 25,896 sf of circulation space, 5,095 sf of private deck space, and an additional 31,834 sf of garage parking space. Provided parking would include 80 parking spaces with 60 standard parking spots, 5 accessible parking spots, 15 compact spots, and 77 bicycle parking spaces. Parking access would be provided by East 14th Street, and the Project would provide two new driveways built according to the City of Long Beach Standard Plans. The proposed parking would meet the needs estimated by the Long Angeles Region Affordable Parking Demand Study. Outdoor open space for residents would include 7,600 sf of outdoor common space and 5,095 sf of private outdoor space.

Evaluation Pursuant to the California Environmental Quality Act

This Project qualifies for a Categorical Exemption (CE), pursuant to the California Environmental Quality Act (CEQA) under Class 32, as outlined below.

Exemption Requirements: Pursuant to Section 15332 of the State CEQA Guidelines, a Class 32 exemption applies to the following type of projects:

Class 32 consists of projects characterized as infill development meeting the following conditions:

(a) The project is consistent with the applicable General Plan designation and all applicable General Plan policies as well as with applicable zoning designation and regulations.

The Project site is currently located in the SP-1-TN zone and has a PlaceType designation of TOD-M. The Project proposes construction of a six-story affordable housing development with 153 units, which is an allowable use under both the SP-1-TN zone and TOD-M PlaceType. The Project site is located within a high-quality transit area as defined in Assembly Bill (AB) 2097 (City of Long Beach 2024a). AB 2097 eliminates the minimum parking requirements for projects located within high-quality transit areas.

The Project would require discretionary actions including adjustment of parking requirements to allow for a reduced number of parking spots provided for residents, compliant with the Los Angeles Region Affordable Parking Demand Study. The Project would consist of 100 percent

affordable housing units and would take advantage of the density bonus offered by State law (California Government Code §65915). The Project also would take advantage of the provisions of State law that requires local governments to grant development standards waivers and additional development standards concessions for affordable housing projects (§65915) and commercial development partnered with affordable housing projects (§65917.5) if the strict application of normal development standards would preclude the project from being feasible. The Project would not require a General Plan Amendment or Zone Change and would comply with all General Plan and Zoning allowances. Therefore, the proposed Project is consistent with the existing land use designation, applicable General Plan policies, and Zoning for the site.

(b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

The Project site is located entirely within the City of Long Beach limits on an approximate 1.09-acre site, surrounded by residential homes and apartments to the west and northwest; an auto repair facility and used car dealer to the north; the LA Metro A line (formerly the Blue line) and used car dealership to the east; and a strip mall, saloon, and beauty store to the south. Based on these characteristics, the Project is consistent with the requirements of CEQA Guidelines Section 15332(b).

(c) The project site has no value as habitat for endangered, rare or threatened species.

The Project site is currently undeveloped, graded flat to street level, and contains minimal non-native vegetation, such as grasses, and would not likely offer habitat to for endangered, rare or threatened species. A portion of the site is paved, and is surrounded by urban development, including residences and commercial businesses. Common urban wildlife species, such as ground squirrels, may occur on-site. However, none of these species observed are threatened, endangered, or otherwise special status (e.g., least concern), or rare as defined in the State CEQA Guidelines. As the Project is located within an urban context, the location and type of vegetation present on the Project site does not offer value as habitat for any endangered, rare, or threatened plant or wildlife species. Therefore, impacts would be less than significant.

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

No significant effects would occur related to traffic, noise, air quality, or water quality, as discussed further below.

Air Quality

An air quality analysis was prepared for the proposed Project, in July 2024, which quantified the estimated construction and operational emissions of criteria pollutants due to demolition and export of demolished materials, on-site grading activities, building construction, and the vehicle trips generated by the proposed Project, included as **Attachment B**, CalEEMod Outputs. As shown in Table 1, Estimated Maximum Daily Construction Emissions, the Project's construction emissions would be well below the regional emission significance thresholds established by the South Coast Air Quality Management District (SCAQMD).

TABLE 1
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Year	Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2026	2	21	24	<1	6	3
2027	10	19	25	<1	4	2
2028	10	18	25	<1	4	2
<i>Maximum Daily Emissions</i>	10	21	25	<1	6	3
<i>SCAQMD Thresholds (Table 1)</i>	75	100	550	150	150	55
Exceeds SCAQMD Thresholds?	No	No	No	No	No	No
lbs/day: pounds per day; VOC: volatile organic compound; NO _x : nitrogen oxides; CO: carbon monoxide; SO _x : sulfur oxides; PM ₁₀ : respirable particulate matter 10 microns or less in diameter; PM _{2.5} : fine particulate matter 2.5 microns or less in diameter; SCAQMD: South Coast Air Quality Management District. Source: SCAQMD 2023 (thresholds); see Attachment B for CalEEMod model outputs.						

Additionally, Table 1 shows the maximum daily on-site emissions for Project construction activities compared with the SCAQMD Localized Significance Thresholds (LSTs), with receptors assumed to be within 25 meters of the Project site. As shown in Table 2, Localized Significance Threshold – Unmitigated Construction Emissions, the localized emissions from the Project would be below the thresholds, and no significant air quality impacts would result to sensitive receptors.

TABLE 2
LOCALIZED SIGNIFICANCE THRESHOLD –
UNMITIGATED CONSTRUCTION EMISSIONS

Year	Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Maximum Daily On Site Emissions	18	21	3	2
SCAQMD Localized Significance Threshold^a	57	585	4	3
Exceed threshold?	No	No	No	No
lbs/day: pounds per day; NO _x : nitrogen oxides; CO: carbon monoxide; PM ₁₀ : respirable particulate matter 10 microns or less in diameter; PM _{2.5} : fine particulate matter 2.5 microns or less in diameter; SCAQMD: South Coast Air Quality Management District. ^a Data is for SCAQMD Source Receptor Area 4, 25-meter distance, 1 acre. Source: SCAQMD 2023 (thresholds); Attachment B for CalEEMod model outputs.				

Based on the CalEEMod outputs, and emissions from stationary sources (e.g., heating, ventilation, and air conditioning (HVAC) systems, consumer products), estimated peak daily operational emissions would also be well below regional SCAQMD significance thresholds, as shown in Table 3, Peak Daily Operational Emissions.

**TABLE 3
PEAK DAILY OPERATIONAL EMISSIONS**

Source	Emissions (lbs/day)*					
	VOC	NOx	CO	SOx	PM10	PM2.5
Mobile sources	2	<1	4	<1	<1	<1
Area sources	5	<1	10	<1	<1	<1
Energy sources	<1	<1	<1	<1	<1	<1
Total Operational Emissions*	6	1	14	<1	<1	<1
<i>SCAQMD Significance Thresholds</i>	<i>55</i>	<i>55</i>	<i>550</i>	<i>150</i>	<i>150</i>	<i>55</i>
Significant Impact?	No	No	No	No	No	No
lbs/day: pounds per day; VOC: volatile organic compound; NOx: nitrogen oxides; CO: carbon monoxide; SOx: sulfur oxides; PM10: respirable particulate matter 10 microns or less in diameter; PM2.5: fine particulate matter 2.5 microns or less in diameter; SCAQMD: South Coast Air Quality Management District. * Some totals do not add due to rounding. Source: SCAQMD 2023 (thresholds); see Attachment A for CalEEMod model outputs.						

Moreover, as shown in Table 4, Localized Significance Threshold Operational Emissions, below, the ongoing operations of the Project would not exceed the local NOx, CO, PM10, and PM2.5 thresholds of significance.

**TABLE 4
LOCALIZED SIGNIFICANCE THRESHOLD
OPERATIONAL EMISSIONS**

On-Site Emission Source	Pollutant Emissions (lbs/day)			
	NOx	CO	PM10	PM2.5
Mobile Sources	<1	<1	<1	<1
Area Sources	<1	10	<1	<1
Energy Sources	<1	<1	<1	<1
Water	<1	<1	<1	<1
Waste	<1	<1	<1	<1
Refrig.	<1	<1	<1	<1
Project's total maximum daily on-site emissions	<1	10	<1	<1
SCAQMD Localized Significance Threshold^b	57	585	1	1
Exceeds Threshold?	No	No	No	No
lbs/day: pounds per day; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter 10 microns or less in diameter; PM2.5: fine particulate matter 2.5 microns or less in diameter; SCAQMD: South Coast Air Quality Management District. ^a Onsite vehicle emissions based on 5% of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the Project site. ^b SCAQMD Source Receptor Area 4, 25-meter distance, 1 acre. Source: SCAQMD 2023 (thresholds); see Attachment A for CalEEMod model outputs.				

As such, implementation of the Project would not violate any air quality standard or contribute to an existing or projected air quality violation. Nor would the Project contribute to a cumulatively considerable air quality impact or expose sensitive receptors to substantial pollutant concentrations. As such, air quality impacts would be less than significant.

Long Beach Climate Action Plan Consistency

The City of Long Beach also requires all Class 32 In-Fill Development Projects to demonstrate consistency with the CAP through the LB CAP Consistency Review Checklist. In accordance with the steps outlined in the checklist, consistency with the LB CAP is demonstrated in **Attachment C**, Climate Action + Adaption Plan Consistency Review Checklist; the analysis and findings of the said Consistency Checklist are summarized in Table 5, below.

**TABLE 5
LB CAP CONSISTENCY REVIEW CHECKLIST**

LB CAP Consistency Review Checklist Step	Response
Step 1. Demonstrate consistency with the City's General Plan As discussed in the LB CAP, the process for determining General Plan consistency is as follows: Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element? If yes, move to Step 2 below.	As discussed previously, the Project is consistent with the City of Long Beach General Plan; as such, this analysis moves to Step 2, below. In accordance with the flowchart on Page 7 of Attachment C, this analysis proceeds to Step 2.
Step 2. Determine if project screens out of CAAP Action consistency If the project would achieve emissions of 1.4 MTCO ₂ e per service population or less, the project is considered consistent with the CAAP Actions and the analysis is complete (no project-specific GHG analysis would be required).	Based on the 2.5 people per unit multiplier provided in the LB CAP, the Project's service population would be 293. As demonstrated in the Project's CalEEMod output, Project operation and amortized construction emissions would result in approximately 385.4 MTCO ₂ e/year. As such, the Project would result in approximately 0.98MTCO ₂ e per service population. This value is less than the 1.4 MTCO ₂ e per service population screening threshold; as such, the Project would be considered consistent with the CAP Actions and, per the flowchart on Page 7 of Attachment C, this analysis proceeds to Step 5.
Step 3. Demonstrate consistency with the CAAP GHG Emission Reduction Actions	As discussed previously, based on the Project's response to Step 2, above, the Project would be consistent with CAP Actions and is therefore directed to move on to Step 5.
Step 4. Identify alternative project emission reduction measures and additional GHG reductions	As discussed previously, based on the Project's response to Step 2, above, the Project would be consistent with CAP Actions and does not require the identification of alternative Project emission reduction measures; as such, this analysis is directed to move on to Step 5.

TABLE 5
LB CAP CONSISTENCY REVIEW CHECKLIST

LB CAP Consistency Review Checklist Step	Response
<p>Step 5. Demonstrate consistency with the CAAP Adaptation Actions</p> <ol style="list-style-type: none"> 1. Review the project consistency options described in the column titled "CAAP Adaptation Action Consistency Requirement". 2. Use the check boxes in the column titled "Project Consistency" to indicate if the "Project Complies," the requirement is "Not Applicable," or the "Project Does Not Comply." 3. Provide a qualitative analysis of the proposed project's compliance with the CAAP Adaptation Action requirements in the column titled "Description of Project Measure(s) / Documentation of Compliance." This will be the basis for CEQA analysis to demonstrate compliance with the CAAP and by extension SB 32. The qualitative analysis should provide: <ol style="list-style-type: none"> a. A description of which consistency requirements are included as part of the proposed project, or; b. A description of why the consistency requirements are not applicable to the proposed project, or; c. A description of why the consistency requirements are infeasible. 	<p>Please refer to Step 5 in Attachment C.</p>
Source: City of Long Beach 2022	

Based on the information provided in Appendix C, Climate Action Consistency Checklist, and the summaries provided above, the Project would be consistent with the LB CAP.

Water Quality

Construction of the Project would disturb more than one acre of soil, and therefore, the Project would be required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and implementation of construction best management practices (BMPs). Additionally, the Project would comply with all requirements of the Long Beach Municipal Code related to stormwater management, the City's Stormwater Management Plan, and the City's Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges from the City of Long Beach (City of Long Beach Municipal Separate Storm Sewer System Permit). As such, the Project would not cause any impacts related to water quality during construction.

During Project operations, due to the increase in impervious surfaces, the Project would be required to implement post-construction BMPs to mitigate stormwater pollution and prepare a Low Impact Development (LID) Plan or equivalent, in compliance with the City of Long Beach Low Impact Development (LID) Best Management Practice Design Manual. Typical BMPs include catch basins, permeable pavement, and bioretention basins. As the Project would be required to

comply with the City's LID Manual and implement Project-specific BMPs, the Project would not cause any impacts related to water quality during operations.

Noise

A Noise and Vibration Technical Study, dated March 2021, was prepared for the Project by PlaceWorks and is provided as **Attachment D**. The contents and findings of this Study were incorporated into the following analysis (PlaceWorks 2021). The Noise and Vibration Technical Study discussed the existing regulatory and environmental setting; construction noise impacts due to haul trucks, worker trucks, and construction equipment; operational noise impacts; construction and operational vibration; and exposure to airport noise.

Noise and Vibration Metrics

The following is a listing of noise and vibration terms used in this section and their definitions:

- dB: Unit of measure for sound (noise) known as decibels.
- dBA: A-weighted decibels which accounts for sound levels adjusted in frequency to approximate typical human hearing sensitivity.
- L_{eq} : Average equivalent sound level during a given period of time.
- L_{max} : Maximum noise level during a given period of time.
- L_{dn} : Day-Night noise level, which is the equivalent weighted noise level during a 24-hour period, with a 10-dBA penalty applied to noise levels occurring between the hours of 10pm and 7am due to people's heightened sensitivity to noise during sleep.
- CNEL: Community Noise Equivalent Level, which is the equivalent weighted noise level during a 24-hour period, with an approximately 5-dBA penalty applied to noise levels occurring during evening hours of 7pm to 10pm and a 10-dBA penalty applied to noise levels occurring between the hours of 10pm and 7am due to people's heightened sensitivity to noise in the evenings and during sleep.
- VdB: Vibration decibels, or the vibration velocity level in decibel scale. Often used as a unit of measurement of human sensitivity to groundborne vibration.
- PPV: Peak Particle Velocity is a vibration metric usually expressed in inches/second. PPV is the maximum instantaneous positive or negative peak of the vibration signal. PPV is often used in monitoring of construction vibration (such as blasting) since it is related to the stresses that are experienced by buildings and is not used to evaluate human response.

Environmental Setting

The Project site is bounded by Long Beach Boulevard to the east, 14th Street to the south, a four-story apartment building and parking structure to the west and northwest, and commercial uses to the north. Metro's A Line (formerly known as the Blue Line) is at street level and extends along the Long Beach Boulevard median. The Anaheim Street station is located 0.2 mile south of the site (PlaceWorks 2021).

The existing noise environment in the Project Area is primarily influenced by traffic noise on Long Beach Boulevard and 14th Street and rail noise from the Metro A Line. Secondary noise

characteristics of the site include noise associated with the surrounding businesses such as Horn's Collision Center and Sam's Auto Body adjoining the Project site to the north, and outdoor activities associated with the recreational uses to the south of the proposed mixed-use development and west of the proposed parklet (PlaceWorks 2021). According to the City of Long Beach Noise Element of the General Plan (City of Long Beach 2023), traffic noise contours show the Project site to be within the 60 to 65 dBA L_{dn} noise contours.

Certain land uses are particularly sensitive to noise and vibration, including residential, schools, hospitals, and open space/recreation areas where quiet environments are necessary for enjoyment, relaxation, and public health.

The nearest existing sensitive receptors to the Project site include multifamily residential uses adjacent to the west and the First Apostolic Church to the southwest. Other, more distant sensitive receptors in the vicinity of the Project include single-family and multi-family residential to the north and south, and Un Mundo De Amigos Preschool to the northeast.

Construction Noise

The Project would result in a short-term period of construction-related noise. No pile driving equipment or other substantial noise-generating equipment would be used. Construction equipment would include items such as graders, dozers, tractors, excavators, hand tools, large trucks for equipment and materials delivery, and passenger vehicles for workers. All construction activities would be performed in compliance with the City's Noise Ordinance. Noise is regulated under Section 8.80.202 - Construction Activity, Noise Regulations, of the City of Long Beach Municipal Code. The City prohibits construction activities that produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity from 7:00 PM to 7:00 AM Monday through Friday (including federal holidays), and before 9:00 AM or after 6:00 PM on Saturdays. Construction is prohibited on Sundays unless a permit has been issued (PlaceWorks 2021).

The analysis of construction noise in the reference Technical Report consisted of a qualitative discussion of noise emanating from on-road construction vehicles and quantification of noise generated by the operation of construction equipment.

During Project construction, the transport of workers and materials to and from the Project site would incrementally increase noise levels along Long Beach Boulevard. Individual construction vehicle pass-bys may create momentary maximum noise levels (L_{max}) of up to approximately 85 dBA at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived. Based on CalEEMod construction defaults, the proposed Project would generate up to 133 combined temporary worker and vendor and 10 daily haul trips (the haul trips would be during a separate phase). The addition of these construction trips on the road would be temporary and would not substantially increase ambient noise levels when compared to the thousands of existing daily trips along Long Beach Boulevard. The traffic noise increase would be less than 0.1 dBA over a 24-hour period, which is referred to as the Community Noise Equivalent Level (CNEL) (PlaceWorks 2021). Therefore, the proposed Project would not result in significant impacts related to construction traffic noise as found in the Midtown Specific Plan Environmental Impact Report (PlaceWorks 2016).

Noise generated by on-site construction equipment is based on the types of equipment used, their locations relative to nearby sensitive receptors, and the timing and duration of noise-generating activities. Each phase of construction involves different types of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest several pieces of equipment. The dominant equipment noise source is typically the engine,

although work-piece noise (such as dropping of materials) can also be noticeable (PlaceWorks 2021).

The noise produced at each construction phase is determined by combining the average equivalent noise level (L_{eq}) contributions from the top three loudest pieces of equipment used at a given time, while accounting for the ongoing time-variations of noise emissions (commonly referred to as the usage factor) (PlaceWorks 2021).

Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the Project site (site of each development phase) with different loads and power requirements (PlaceWorks 2021). The City of Long Beach does not have an established construction noise threshold. Therefore, the Federal Transit Administration (FTA) criterion of 80 dBA L_{eq} is used to determine impact significance at off-site receptors (FTA 2018).

Construction noise levels associated with the proposed Project were modeled using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) from the acoustical center of the construction site to the nearest sensitive receptors. The results of the construction noise analysis are summarized in Table 6, Project Related Construction Noise. Construction noise levels due to the Proposed Project would be within those analyzed in the Midtown Specific Plan Environmental Impact Report (PlaceWorks 2016) and would be below the FTA 80 dBA L_{eq} (8-hr) threshold. As a result, the potential impacts are considered to be less than significant.

TABLE 6
PROJECT RELATED CONSTRUCTION NOISE (L_{eq} , DBA)

Construction Activity Phase	Noise Levels at 50 feet	Un Mundo de Amigos Preschool to the northeast (450 feet)	First Apostolic Church to the Southwest (460 feet)	Residential to the west (190 feet)	Exceeds 80 dBA L_{eq} (8 hr) Threshold?
Asphalt Demolition	85	66	66	74	No
Site Prep/Rough Grading	85	66	65	73	No
Parking/Building Construction	83	63	63	71	No
Utility Trenching	77	58	57	65	No
Paving	85	66	66	73	No
Finish/Landscaping	77	58	57	65	No
Architectural Paving	74	55	54	62	No
Notes: Calculations performed with the FHWA's RCNM software are included in Appendix A of the Noise and Vibration Technical Study, which is provided in Attachment C. Distance to sensitive receivers measured from the construction site's acoustical center to receptor property line. Source: Table 6 of the Noise and Vibration Technical Study prepared by PlaceWorks dated March 2021.					

Operational Noise

The analysis of operational noise includes quantitative discussions on Project induced increases in roadway noise as well as quantitative discussions on Project-related stationary-source noise impacts.

The Midtown Specific Plan Environmental Impact Report addressed traffic noise along three roadway segments in the vicinity of the proposed Project: Pacific Avenue from 16th Street to 15th Street, Atlantic Avenue from 16th Street to 15th Street, and Long Beach Boulevard from 11th Street to 10th Street. Existing Plus Project Average Daily Traffic (ADT) volumes along these roadway segments ranged between 13,800 and 20,500 vehicles. The proposed Project is anticipated to generate 626 daily trips, as stated below. To calculate the net traffic noise increase between the proposed Project and the Midtown Specific Plan, the 626 daily trips are added to the Midtown Specific Plan Environmental Impact Report Baseline No Project ADT scenario and compared logarithmically to the Midtown Specific Plan Environmental Impact Report Baseline No Project plus proposed Project ADT scenario. Table 7, Net Traffic Noise Increases, shows the net change in trips and the resulting traffic noise increases to be up to 0.1 dBA CNEL. Therefore, Project related traffic noise would not exceed the 3 dBA threshold for existing noise environments greater than 65 dBA CNEL, and the proposed Project would not result in new or greater impacts than what was analyzed in the Midtown Specific Plan Environmental Impact Report (PlaceWorks 2021).

**TABLE 7
PROJECT-RELATED TRAFFIC NOISE INCREASES**

Roadway Segment	2016 Certified EIR No Project	2016 Certified EIR Plus Midtown Specific Plan Environmental Impact Report ADT	Proposed Project Daily Trip Generation	2016 Certified EIR No Project Plus Proposed Project ADT	Net Daily Segment Volume Increase	Net Increase, dBA CNEL
Pacific Ave – 16 th to 15 th St	12,952	13,800	626	13,578	-222	<0.1
Atlantic Ave – 16 th to 15 th St	19,672	20,500	626	20,298	-202	<0.1
Long Beach Blvd - 11 th to 10 th St	17,835	17,900	626	18,461	561	0.1
Source of Traffic Data: Fehr & Peers 2020						
1 Daily trip generation of 626 applied to all segments for conservative approach.						
Source: Table 7 of the Noise and Vibration Technical Study prepared by PlaceWorks, dated March 2021.						

As stated previously, the proposed Project is an affordable residential housing project. Minimal loading and unloading activities would be associated with the residential uses. Loading and unloading equipment would be subject to limited hours of 7:00 AM to 10:00 PM from the City's Municipal Code. No major loading activities would be associated with the proposed Project and impacts would not be greater than analyzed in the Midtown Specific Plan Environmental Impact Report (PlaceWorks 2021).

Other Project-related operational sources of noise include stationary sources as well as noise emanating from the future park located south of the project. Stationary noise sources proposed as part of the Project include a total of 162 rooftop HVAC units, located at least 40 feet east of the western receptors (the adjacent residential building) property line, and one transformer, located approximately 15 feet east of the western receptor's property line. The rooftop stationary

sources would also be elevated above the adjoining buildings. Noise levels generated by the HVAC units and transformer are presented in Table 8, Stationary Source Noise Impacts.

**TABLE 8
STATIONARY SOURCE NOISE IMPACTS**

Equipment	Effective Receptor Distance	Estimated L_{eq}
162 Rooftop HVAC Units	166 feet	49
Transformer	19 feet	55
Notes: Calculations are included in Attachment C.		
*: noise levels would be further attenuated by the rooftop parapet and building structure, which would reduce HVAC noise levels by up to 15 dBA.		
Source: Psomas 2024.		

As shown in Table 10, stationary noise sources would not result in noise levels that would exceed the Municipal Code air conditioning and air refrigeration noise standards of:

- 55 dBA at any point on neighboring property line, five feet above grade level, no closer than three feet from any wall.
- 50 dBA outside the neighboring living area window nearest the equipment location, not more than three feet from the window opening, but at least three feet from any other surface.

In terms of transformer noise, this noise would be attenuated by the inclusion of a concrete masonry unit (CMU) block wall, which would extend along the site's western property line, thereby obstructing the line-of-sight between the transformer unit and the adjacent apartment building. As a result, impacts from stationary noise sources are anticipated to be less than significant, and stationary noise levels would not be greater than what was analyzed in the Midtown Specific Plan Environmental Impact Report.

The Project includes common open space in the form of "community space", located within community rooms situated within the eastern portion of the proposed building adjacent to Long Beach Boulevard and "podium level open space", situated within the central portion of the proposed building on the second floor. Noise generated within the community rooms would not be audible from the building's exterior. This noise would be attenuated by the building's shell, which could attenuate noise by a minimum of 10 dBA under an "open window" scenario and up to 20 dBA for light frame construction with closed windows (Caltrans 2013). As a result, noise generated within community rooms would not exceed the City of Long Beach daytime and nighttime noise standard of 50 dBA under the District One land use (the Project site is situated within District One).

The podium level open space would consist of two open space areas: one area would feature a barbeque and seating and the other area would feature a children's tot-lot. The dominant sources of noise associated with the proposed podium open space areas are expected to include, but not be limited to, people talking, children playing, and music. Noise generated within the podium level open space areas would not be audible beyond the Project site's property lines due to several factors, which include attenuation due to the building's shell obstructing the line-of-sight between these open spaces and the sensitive receptors located to the west; and sound spreading loss due to distance. As a result, sounds generated within these podium level open space areas are not expected to exceed the City of Long Beach daytime and nighttime noise standard of 50 dBA under the District One land use (the Project site is situated within District One).

Construction Vibration

Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and the receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels (PlaceWorks 2021).

Table 9, Construction Vibration Damage Assessment, summarizes vibration levels for typical construction equipment at a reference distance of 25 feet and the calculated groundborne vibration levels at the nearest sensitive building located west of the Project site.

TABLE 9
CONSTRUCTION VIBRATION DAMAGE ASSESSMENT (IN/SEC PPV)

Equipment	FTA Reference PPV (in/sec) at 25 feet	PPV (in/sec) at 15 feet West - Residential uses
Vibratory Roller	0.21	0.452
Large Bulldozer	0.089	0.191
Loaded Trucks	0.079	0.164
Jackhammer	0.035	0.075
Small Bulldozer	0.003	0.006
Source: Table 8 of the Noise and Vibration Technical Study prepared by PlaceWorks dated March of 2021. Source of Reference Levels: FTA 2018.		

Under the proposed Project, the nearest structures to construction activities are the apartment building to the west and the parking structure to the north. Both are within 15 feet of anticipated paving areas. Paving typically requires the use of a vibratory roller. A vibratory roller would result in vibration levels of up to 0.452 in/sec PPV at the nearest sensitive buildings, which would exceed the vibration damage criterion of 0.2 in/sec PPV for buildings similar to the neighboring structures (FTA 2018). However, with implementation of the Regulatory Compliance Measure NOI-1 (Mitigation Measure N-2 of the Midtown Specific Plan Environmental Impact Report), impacts from rollers would be reduced to levels that are less than significant (PlaceWorks 2021). Regulatory compliance measures (RCM) are standard conditions (laws or code ordinances) that are mandatory for development projects independent of CEQA (an example of an RCM would be the installation of building insulation, which is a Title 24 requirement). RCMs applicable to the Project include the following (PlaceWorks 2021):

RCM NOI-1 If vibration levels exceed 0.20 in/sec PPV, alternative equipment, such as static rollers, shall be used.

Adherence to the abovementioned RCM would reduce construction vibration to levels below the building damage criteria. It is important to note that construction would be temporary and would not involve the use of equipment that would be unusual for urban infill development. As a result, Project-related construction activities would result in less than significant impacts in terms of damage criteria and would not require implementation of further mitigation measures.

For vibration annoyance, average attenuated vibration decibels (VdB) at sensitive receptors are determined by measuring the distance from the acoustical center of the construction site to the nearest sensitive receptor, which is the apartment building to the west of the Project site.

Table 10, Construction Vibration Annoyance Assessment, shows vibration levels for typical construction equipment at a reference distance of 25 feet and calculated vibration levels at the nearest sensitive receptors (PlaceWorks 2021). As shown in the table, the proposed Project would not exceed the established vibration annoyance threshold of 72 VdB applied to frequent events at residential buildings (FTA 2018). It should be noted that when heavier construction equipment such as a bulldozer or vibratory roller operate in very close proximity to the neighboring building, they would generate feelable groundborne vibration. However, such events would occur only for short periods of time and not be of the frequency to result in annoyance. Construction vibration annoyance would be no greater than what was previously analyzed as part of the Midtown Specific Plan Environmental Impact Report.

**TABLE 10
CONSTRUCTION VIBRATION ANNOYANCE ASSESSMENT (VDB)**

Construction Equipment	FTA Reference VdB at 25 feet	Un Mundo de Amigos Preschool to the northeast (450 feet)	First Apostolic Church to the Southwest (460 feet)	Residential to the west (190 feet)	Exceeds 72 VdB Threshold?
Vibratory Roller	94	56	56	68	No
Hoe Ram	87	49	49	61	No
Large Bulldozer	87	49	49	61	No
Caisson Drilling	87	49	49	61	No
Loaded Trucks	86	48	48	60	No
Jackhammer	79	41	41	53	No
Small Bulldozer	58	20	20	32	No
Note: Distance to sensitive receivers measured from the construction site's acoustical center to receptor property line. Source: Table 9 of the Noise and Vibration Technical Study prepared by PlaceWorks dated March 2021. Source of Reference Levels: FTA 2018.					

Operational Vibration

The proposed Project would not include any sources of operational vibration. Rooftop HVAC units and the proposed transformer would not generate any detectable vibrations. Vehicular traffic associated with the Project would be similar to the existing mix of traffic in the general Project area. Therefore, Project operational vibration impacts would be less than significant.

Aircraft Noise

The Project site is not located within two miles of any airport. The nearest airport is the Long Beach Airport, which is located approximately 2.5 miles northeast of the Project site. According to the Los Angeles County Airport Land Use Commission, the Project site is not located within the Airport's 65 dBA CNEL contours. Therefore, less than significant impacts regarding the exposure of future residents and guests to aircraft noise would occur.

Traffic

The Project Traffic Memorandum included as **Attachment E** was completed in January 2021 based on information in the 10th Edition of the Institute of Transportation Engineers *Trip Generation Manual*. Later that year, the 11th Edition was published. In addition, the number of residential units has been reduced from 160 to 153 and the Project no longer includes a retail component. Therefore, to verify that the findings in the Memorandum are still valid, the trip

generation estimates for the Project were recalculated based on the information in the 11th Edition of the manual. Contrary to the 10th Edition, trip generation rates are higher for affordable housing than they are for mid-rise multifamily housing. The same 15% transit proximity reduction was taken to remain consistent with the 2021 Memorandum. Table 11 shows the updated trip generation calculations.

As shown in the table, the Project is expected to generate 626 new, external trips. This is fewer trips than what was calculated in the 2021 Memorandum; therefore, the Project is still consistent with the Midtown Specific Plan, and no operational analyses are required. The City Guidelines provide various screening types that can effectively screen projects from a project-level Vehicle Miles Traveled (VMT) assessment. The Project screens out per multiple criteria, including the fact that it is located within a half mile of high-quality transit; it is in a low-VMT area; and the residential development is 100% affordable housing. The VMT assessment in the attached Memorandum remains accurate despite the minor changes in the trip generation calculations, and therefore the transportation impacts from the Project are expected to be less than significant.

**TABLE 11
UPDATED PROJECT TRIP GENERATION ESTIMATES**

ITE LU 223 – Affordable Housing						
Number of Units			153			
Period	Trips/Unit	Trips	% In	% Out	Trips In	Trips Out
AM Peak	0.50	77	29%	71%	22	54
PM Peak	0.46	70	59%	41%	42	29
Daily	4.81	736	50%	50%	368	368
Transit Reduction						
Period	Trips		Trips In		Trips Out	
AM Peak	11		3		8	
PM Peak	11		6		4	
Daily	110		55		55	
TOTAL						
Period	Trips		Trips In		Trips Out	
AM Peak	65		19		46	
PM Peak	60		35		25	
Daily	626		313		313	

(e) The site can be adequately served by all required utilities and public services.

The proposed Project would be adequately served by existing utilities (i.e., water, wastewater, solid waste, electricity, natural gas, and telecommunications) and public services (i.e., fire protection, police protection, schools, parks and recreation, and libraries). The City of Long Beach would provide potable water, sewer, natural gas and solid waste collection services; Southern California Edison (SCE) would provide electricity; and Frontier, AT&T and Spectrum, amongst other providers would provide telecommunication services. All utilities and related infrastructure constructed as part of the Project would connect to existing utility infrastructure within the Project site vicinity.

According to the Recirculated Draft EIR prepared for the City's General Plan Land Use and Urban Designs Element (City of Long Beach 2019), the City anticipates an increase in approximately 28,524 dwelling units and the addition of approximately 18,230 persons by year 2040. The

estimated City population associated with the anticipated General Plan build out scenario (year 2040) would be approximately 484,485, which can adequately be served by the City's existing public facilities and services. Based on data provided by the U.S. Census Bureau for the City of Long Beach based on an average of 2.57 persons per household (U.S. Census Bureau 2024), the proposed 153 units would result in an estimated population of 393 people. Although the Project would generate an additional 393 persons to the City's population in the Project area that may minimally increase the use of utilities and public services in the area, the impact on utilities and public services within the Project area would be negligible. The Project would therefore be adequately served by existing public facilities and services and impacts in this regard would be less than significant.

Exception Requirements Exemptions are subject to the additional conditions described in Section 15300.2, Exceptions, of the State CEQA Guidelines, as follows:

“(a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.”

The Project is not considered under Classes 3, 4, 5, 6 or 11. Therefore, this exception does not apply to the Project.

“(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.”

The Project would be limited to the proposed approximate 1.09-acre site and the immediate surrounding area to gain access. Based on review of the City Capital Improvement Program (CIP), there are no proposed projects for Fiscal Year 2025 in the vicinity of the Project site (City of Long Beach 2024b). This Project would be stand-alone as the City of Long Beach is not contemplating similar, repeated projects in the area. No cumulative impact would result.

“(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.”

The Project would not have a significant effect on the environment due to unusual circumstances, as demonstrated by the following discussion. The Project site encompasses 1.09-acres of underutilized land within an existing urban area and is immediately surrounded by existing development of the same or similar uses. Project-related activities would occur within the boundaries of the proposed Project site and the immediately adjacent area, and would be similar to existing residential uses.

The Project would involve the construction of a six-story affordable housing residential development with 153 units with associated hardscaping and landscaping. The population generated by the Project would not be considered substantial and would be adequately served by existing public services, facilities, and utilities. There would be no impact to any public services or utilities during construction or long-term operation. All existing utilities would be protected in place, with Project-related utilities connecting to the existing service lines and infrastructure near the Project site, as previously discussed.

During construction, the contractor would be required to comply with all applicable safety laws, rules, ordinances and regulations and be in compliance with the California Building Code (ICC 2022). Appropriate Best Management Practices (BMPs) for construction-related materials, wastes, spills or residues would be implemented to minimize transport from the site to streets, drainage facilities, or adjoining property by wind, runoff, or tracking. Construction of the Project would comply with the allowable the City's Noise Ordinance to ensure noise generation would not be considered substantial or adverse.

No significant effects related to the demolition, construction, or long-term operation of the Project would occur; therefore, this exception does not apply to the Project.

“(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.”

No officially designated or eligible scenic highways are located near the Project. The closest officially designated scenic highway is State Route 55 (SR-55), located in Orange County, which is more than 18 miles northeast of the Project site (Caltrans 2024). As such, the Project would not adversely affect any scenic resources within the scenic highway. Based on this finding, this exception does not apply to the Project.

“(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.”

The hazardous waste and substances list compiled pursuant to Section 65962.5 of the *California Government Code*, also referred to as the Cortese List, was consulted (CalEPA 2024). The Project site is not identified on the Cortese List; therefore, this exception does not apply to the Project.

“(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.”

As stated in the Cultural Resources Analysis prepared by HDR Engineering, Inc., and dated February 12, 2021, there are no historic properties located at the Project site (report contains confidential information, thus it is not included as an attachment). Within the immediately adjacent parcels, one built environment resource was evaluated. The Packard Long Beach Company Building, constructed in 1946, is a two-story commercial building located at 1427 Long Beach Boulevard. The building historically served as an automobile dealership and repair shop and was originally used as a Packard dealership. The property is currently occupied by Sam's Autobody and Horn's Collision Center.

The property, specifically the eastern portion of the property, located east of North Palmer Court and containing the original showroom, embodies the distinctive characteristics of the Googie style and postwar-era automobile-related architecture. In addition, the eastern portion of the property retains a high degree of integrity and most of its original features. Therefore, the Packard Long Beach Company Building dealership building is recommended eligible for listing in the National Register of Historic Places under *Criterion C* and the California Register of Historical Resources under *Criterion 3* for embodying the distinctive characteristics of the Googie style and postwar automobile-related architecture.

The character-defining features of the Packard Long Beach Company Building dealership building include: the building location and overall building form, the roof form and cantilevered canopy, the fenestration pattern, all of the windows and doors (except for one replacement vinyl window), the curved exterior and interior walls, and the projecting signboard attached to the façade. There are no character-defining setting features and the immediate setting has been altered on multiple occasions as adjacent buildings have been constructed and demolished.

The proposed Project is expected to have no effect on this property, as it would not cause physical destruction or damage to the property and would not remove it from its current location; it would not change the character of the property's use or of physical features within the property's setting that contribute to its historic significance; it would not introduce visual, audible, or atmospheric elements that are out of character with the property or alter its setting; and the Project would not lead to the neglect of the property, or its sale, transfer or lease. In addition, there are no character-defining features, or character-defining viewsheds or views that have the potential to be impacted by the Project. Therefore, the Project would not directly or indirectly cause a substantial adverse change in the significance of a historical resource, and this exception does not apply.

Conclusion: Based on the above analysis, the Project would be consistent with the requirements of Section 15032 of the State CEQA Guidelines, and a Categorical Exemption is the appropriate CEQA documentation.

Attachments

Attachment A – Site Plan

Attachment B – CalEEMod Outputs

Attachment C – Climate Action + Adaptation Plan Consistency Review Checklist

Attachment D – Noise and Vibration Technical Report

Attachment E – Traffic Memorandum

References

- California Department of Transportation (Caltrans). 2024 (September 5, last accessed). Scenic Highways. Sacramento, CA: Caltrans. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>.
- . 2013 (September) Technical Noise Supplement to the Traffic Noise Analysis Protocol. Sacramento, CA: Caltrans. <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf>.
- California Environmental Protection Agency (CalEPA). 2024 (September 5, last accessed). Cortese List Data Resources. Sacramento, CA: CalEPA. <https://calepa.ca.gov/SiteCleanup/CorteseList/>.
- Federal Transit Administration. 2018 (September). Transit Noise and Vibration Impact Assessment. Washington D.C.: USDOT – FTA. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.
- Fehr and Peers. 2020. Transportation Impact Assessment. Los Angeles, CA: Fehrs and Peers.
- HDR Engineering, Inc. 2021 (February 12). 1401 Long Beach Boulevard Cultural Resources Analysis. San Diego, CA: HDR Engineering.
- Long Beach, City of. 2024a (September 24, access date). Long Beach Transit Priority Areas Map. Long Beach, CA: the City. <https://www.longbeach.gov/globalassets/lbcd/media-library/documents/planning/sb9/transit-priority-areas-map>.
- . 2024b (September 24, access date). Capital Improvement Program Budget, Fiscal Year 2025. Long Beach, CA: the City. <https://www.longbeach.gov/globalassets/pw/media-library/documents/resources/general/capital-improvement-plan/capital-improvement-plan/fy-25-proposed-cip-book>.
- . 2023 (June). City of Long Beach General Plan Noise Element. Long Beach, CA: the City.
- . 2022 (August 16). City of Long Beach Climate Action Plan. Long Beach, CA: the City. ———. 2019 (June).. Long Beach, CA: the City.
- International Code Council (ICC). 2022 (Adopted). 2022 California Building Code, Title 24, Part 2. Washington, D.C.: ICC. <https://codes.iccsafe.org/content/CABC2022P1>.
- PlaceWorks. 2021 (March, report dated). Noise and Vibration Technical Study - 14th & Long Beach Boulevard Affordable Housing Project. Santa Ana, CA: PlaceWorks.
- . 2016 (June). Midtown Specific Plan Environmental Impact Report. Santa Ana, CA: PlaceWorks.
- South Coast Air Quality Management District (SCAQMD). 2023 (March). South Coast AQMD Air Quality Significance Thresholds. <http://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25>.
- U.S. Census Bureau. 2024 (September 24). QuickFacts: Long Beach City, California; United States. Washington, D.C.: U.S. Census Bureau. <https://www.census.gov/quickfacts/>.

ATTACHMENT A
SITE PLAN

ATTACHMENT B
CALEEMOD OUTPUTS

14th & Long Beach Custom Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
 - 2.3. Construction Emissions by Year, Mitigated
 - 2.4. Operations Emissions Compared Against Thresholds
 - 2.5. Operations Emissions by Sector, Unmitigated
 - 2.6. Operations Emissions by Sector, Mitigated
- 3. Construction Emissions Details
 - 3.1. Asphalt Demolition (2026) - Unmitigated
 - 3.2. Asphalt Demolition (2026) - Mitigated
 - 3.3. Site Preparation (2026) - Unmitigated

- 3.4. Site Preparation (2026) - Mitigated
- 3.5. Rough Grading (2026) - Unmitigated
- 3.6. Rough Grading (2026) - Mitigated
- 3.7. Fine Grading (2027) - Unmitigated
- 3.8. Fine Grading (2027) - Mitigated
- 3.9. Fine Grading (2028) - Unmitigated
- 3.10. Fine Grading (2028) - Mitigated
- 3.11. Building Construction (2027) - Unmitigated
- 3.12. Building Construction (2027) - Mitigated
- 3.13. Building Construction (2028) - Unmitigated
- 3.14. Building Construction (2028) - Mitigated
- 3.15. Parking Structure Construction (2026) - Unmitigated
- 3.16. Parking Structure Construction (2026) - Mitigated
- 3.17. Parking Structure Construction (2027) - Unmitigated
- 3.18. Parking Structure Construction (2027) - Mitigated
- 3.19. Asphalt Paving (2028) - Unmitigated
- 3.20. Asphalt Paving (2028) - Mitigated
- 3.21. Architectural Coating (2027) - Unmitigated

3.22. Architectural Coating (2027) - Mitigated

3.23. Architectural Coating (2028) - Unmitigated

3.24. Architectural Coating (2028) - Mitigated

3.25. Utility Trenching (2026) - Unmitigated

3.26. Utility Trenching (2026) - Mitigated

3.27. Finish/Landscaping (2027) - Unmitigated

3.28. Finish/Landscaping (2027) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14th & Long Beach
Construction Start Date	6/1/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.30
Precipitation (days)	18.4
Location	33.78420171002411, -118.18990893739527
County	Los Angeles-South Coast
City	Long Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4751
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Long Beach Gas & Oil
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	153	Dwelling Unit	1.09	158,620	0.00	—	453	—

Other Non-Asphalt Surfaces	2.79	1000sqft	0.00	0.00	0.00	—	—	—
Enclosed Parking with Elevator	31.8	1000sqft	0.00	31,830	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.05	8.77	21.4	23.8	0.04	0.94	5.16	6.09	0.86	2.33	3.20	—	5,084	5,084	0.22	0.19	4.89	5,148
Mit.	8.71	8.50	13.1	24.0	0.04	0.19	5.16	5.24	0.17	2.33	2.41	—	5,084	5,084	0.22	0.19	4.89	5,148
% Reduced	4%	3%	39%	-1%	—	80%	—	14%	80%	—	24%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.2	9.77	19.1	24.9	0.04	0.68	3.29	3.97	0.62	1.30	1.92	—	5,450	5,450	0.20	0.18	0.14	5,510
Mit.	8.95	8.74	15.1	26.6	0.04	0.20	3.29	3.49	0.18	1.30	1.48	—	5,450	5,450	0.20	0.18	0.14	5,510
% Reduced	13%	11%	21%	-7%	—	71%	—	12%	70%	—	23%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	2.83	2.62	8.13	11.2	0.02	0.25	0.94	1.19	0.23	0.30	0.54	—	2,543	2,543	0.09	0.09	1.22	2,575
Mit.	2.45	2.32	7.27	12.3	0.02	0.11	0.94	1.05	0.11	0.30	0.41	—	2,543	2,543	0.09	0.09	1.22	2,575
% Reduced	13%	11%	11%	-10%	—	55%	—	12%	55%	—	24%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.52	0.48	1.48	2.04	< 0.005	0.05	0.17	0.22	0.04	0.06	0.10	—	421	421	0.01	0.02	0.20	426
Mit.	0.45	0.42	1.33	2.24	< 0.005	0.02	0.17	0.19	0.02	0.06	0.07	—	421	421	0.01	0.02	0.20	426
% Reduced	13%	11%	11%	-10%	—	55%	—	12%	55%	—	24%	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	No	No	Yes	—	No	Yes	—	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.88	2.39	21.4	23.8	0.04	0.94	5.16	6.09	0.86	2.33	3.20	—	5,084	5,084	0.22	0.19	3.83	5,148

2027	9.05	8.77	10.1	15.6	0.03	0.29	1.13	1.41	0.26	0.27	0.54	—	3,629	3,629	0.15	0.15	4.89	3,684
2028	1.93	1.60	13.0	20.4	0.03	0.38	1.06	1.45	0.35	0.26	0.61	—	4,388	4,388	0.15	0.16	4.31	4,443
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.50	1.25	9.90	13.1	0.02	0.32	0.54	0.86	0.29	0.13	0.42	—	2,704	2,704	0.11	0.08	0.06	2,730
2027	10.2	9.77	19.1	24.9	0.04	0.68	3.29	3.97	0.62	1.30	1.92	—	5,450	5,450	0.20	0.18	0.14	5,510
2028	10.2	9.69	18.3	24.6	0.04	0.63	3.29	3.92	0.58	1.30	1.88	—	5,415	5,415	0.19	0.18	0.13	5,474
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.63	0.52	4.32	5.24	0.01	0.16	0.45	0.61	0.14	0.15	0.29	—	1,099	1,099	0.05	0.04	0.39	1,111
2027	2.83	2.62	8.13	11.2	0.02	0.25	0.94	1.19	0.23	0.30	0.54	—	2,543	2,543	0.09	0.09	1.22	2,575
2028	1.79	1.68	4.61	6.49	0.01	0.15	0.65	0.80	0.13	0.23	0.37	—	1,447	1,447	0.05	0.05	0.61	1,464
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.11	0.10	0.79	0.96	< 0.005	0.03	0.08	0.11	0.03	0.03	0.05	—	182	182	0.01	0.01	0.07	184
2027	0.52	0.48	1.48	2.04	< 0.005	0.05	0.17	0.22	0.04	0.06	0.10	—	421	421	0.01	0.02	0.20	426
2028	0.33	0.31	0.84	1.18	< 0.005	0.03	0.12	0.15	0.02	0.04	0.07	—	240	240	0.01	0.01	0.10	242

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.15	0.98	12.8	24.0	0.04	0.19	5.16	5.24	0.17	2.33	2.41	—	5,084	5,084	0.22	0.19	3.83	5,148
2027	8.71	8.50	9.64	17.1	0.03	0.16	1.13	1.29	0.15	0.27	0.43	—	3,629	3,629	0.15	0.15	4.89	3,684
2028	1.40	1.19	13.1	22.3	0.03	0.18	1.06	1.25	0.17	0.26	0.43	—	4,388	4,388	0.15	0.16	4.31	4,443
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.15	0.97	9.20	14.5	0.02	0.19	0.54	0.73	0.17	0.13	0.30	—	2,704	2,704	0.11	0.08	0.06	2,730

2027	8.95	8.74	15.1	26.6	0.04	0.20	3.29	3.49	0.18	1.30	1.48	—	5,450	5,450	0.20	0.18	0.14	5,510
2028	8.90	8.69	14.9	26.3	0.04	0.18	3.29	3.47	0.17	1.30	1.46	—	5,415	5,415	0.19	0.18	0.13	5,474
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.35	0.30	3.48	5.59	0.01	0.06	0.45	0.51	0.06	0.15	0.20	—	1,099	1,099	0.05	0.04	0.39	1,111
2027	2.45	2.32	7.27	12.3	0.02	0.11	0.94	1.05	0.11	0.30	0.41	—	2,543	2,543	0.09	0.09	1.22	2,575
2028	1.53	1.47	4.08	7.03	0.01	0.05	0.65	0.70	0.05	0.23	0.28	—	1,447	1,447	0.05	0.05	0.61	1,464
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06	0.06	0.64	1.02	< 0.005	0.01	0.08	0.09	0.01	0.03	0.04	—	182	182	0.01	0.01	0.07	184
2027	0.45	0.42	1.33	2.24	< 0.005	0.02	0.17	0.19	0.02	0.06	0.07	—	421	421	0.01	0.02	0.20	426
2028	0.28	0.27	0.74	1.28	< 0.005	0.01	0.12	0.13	0.01	0.04	0.05	—	240	240	0.01	0.01	0.10	242

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.52	6.42	0.57	13.8	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	67.5	1,905	1,972	6.97	0.08	1.15	2,171
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.46	5.41	0.51	4.47	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	67.5	1,877	1,945	6.98	0.08	1.14	2,144
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.07	5.98	0.54	11.0	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	67.5	1,891	1,958	6.97	0.08	1.14	2,156
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.11	1.09	0.10	2.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.2	313	324	1.15	0.01	0.19	357

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	55.0	55.0	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.81	1.76	0.48	3.74	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	127	127	0.09	0.05	0.01	144
Area	4.71	4.65	0.09	10.1	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	28.9	28.9	< 0.005	< 0.005	—	29.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,715	1,715	0.11	0.01	—	1,721
Water	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Waste	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	6.52	6.42	0.57	13.8	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	67.5	1,905	1,972	6.97	0.08	1.15	2,171
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.79	1.74	0.51	4.47	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	129	129	0.10	0.05	< 0.005	146
Area	3.67	3.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,715	1,715	0.11	0.01	—	1,721

Water	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Waste	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	5.46	5.41	0.51	4.47	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	67.5	1,877	1,945	6.98	0.08	1.14	2,144
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.69	1.64	0.48	4.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	122	122	0.10	0.05	< 0.005	138
Area	4.38	4.34	0.06	6.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.8	19.8	< 0.005	< 0.005	—	19.9
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,715	1,715	0.11	0.01	—	1,721
Water	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Waste	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	6.07	5.98	0.54	11.0	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	67.5	1,891	1,958	6.97	0.08	1.14	2,156
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.30	0.09	0.75	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	20.2	20.2	0.02	0.01	< 0.005	22.9
Area	0.80	0.79	0.01	1.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	284	284	0.02	< 0.005	—	285
Water	—	—	—	—	—	—	—	—	—	—	—	1.09	5.62	6.71	0.11	< 0.005	—	10.3
Waste	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.01	0.00	—	35.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	1.11	1.09	0.10	2.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.2	313	324	1.15	0.01	0.19	357

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.81	1.76	0.48	3.74	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	127	127	0.09	0.05	0.01	144

Area	4.71	4.65	0.09	10.1	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	28.9	28.9	< 0.005	< 0.005	—	29.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,715	1,715	0.11	0.01	—	1,721
Water	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Waste	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	6.52	6.42	0.57	13.8	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	67.5	1,905	1,972	6.97	0.08	1.15	2,171
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.79	1.74	0.51	4.47	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	129	129	0.10	0.05	< 0.005	146
Area	3.67	3.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,715	1,715	0.11	0.01	—	1,721
Water	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Waste	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	5.46	5.41	0.51	4.47	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	67.5	1,877	1,945	6.98	0.08	1.14	2,144
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.69	1.64	0.48	4.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	122	122	0.10	0.05	< 0.005	138
Area	4.38	4.34	0.06	6.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.8	19.8	< 0.005	< 0.005	—	19.9
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,715	1,715	0.11	0.01	—	1,721
Water	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Waste	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	6.07	5.98	0.54	11.0	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	67.5	1,891	1,958	6.97	0.08	1.14	2,156
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.30	0.09	0.75	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	20.2	20.2	0.02	0.01	< 0.005	22.9
Area	0.80	0.79	0.01	1.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	284	284	0.02	< 0.005	—	285

Water	—	—	—	—	—	—	—	—	—	—	—	1.09	5.62	6.71	0.11	< 0.005	—	10.3
Waste	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.01	0.00	—	35.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	1.11	1.09	0.10	2.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.2	313	324	1.15	0.01	0.19	357

3. Construction Emissions Details

3.1. Asphalt Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.77	1.48	12.5	12.2	0.02	0.50	—	0.50	0.46	—	0.46	—	2,042	2,042	0.08	0.02	—	2,049
Demolition	—	—	—	—	—	—	1.10	1.10	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.85	0.84	< 0.005	0.03	—	0.03	0.03	—	0.03	—	140	140	0.01	< 0.005	—	140
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.2	23.2	< 0.005	< 0.005	—	23.2
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.12	1.94	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	406	406	0.02	0.01	1.38	412
Vendor	0.02	0.01	0.38	0.18	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	343	343	0.01	0.05	0.93	359
Hauling	0.05	0.01	0.82	0.32	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	680	680	0.04	0.11	1.53	715
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.8	26.8	< 0.005	< 0.005	0.04	27.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.5	23.5	< 0.005	< 0.005	0.03	24.5
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.6	46.6	< 0.005	0.01	0.04	48.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.43	4.43	< 0.005	< 0.005	0.01	4.49
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.89	3.89	< 0.005	< 0.005	< 0.005	4.06
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.71	7.71	< 0.005	< 0.005	0.01	8.10

3.2. Asphalt Demolition (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.43	0.40	8.13	11.5	0.02	0.16	—	0.16	0.15	—	0.15	—	2,042	2,042	0.08	0.02	—	2,049
Demoliti on	—	—	—	—	—	—	1.10	1.10	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.03	0.03	0.56	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	140	140	0.01	< 0.005	—	140
Demoliti on	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01	< 0.005	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.2	23.2	< 0.005	< 0.005	—	23.2
Demoliti on	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.12	1.94	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	406	406	0.02	0.01	1.38	412
Vendor	0.02	0.01	0.38	0.18	< 0.005	< 0.005	0.09	0.10	< 0.005	0.03	0.03	—	343	343	0.01	0.05	0.93	359
Hauling	0.05	0.01	0.82	0.32	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	680	680	0.04	0.11	1.53	715
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.8	26.8	< 0.005	< 0.005	0.04	27.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.5	23.5	< 0.005	< 0.005	0.03	24.5
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.6	46.6	< 0.005	0.01	0.04	48.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.43	4.43	< 0.005	< 0.005	0.01	4.49
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.89	3.89	< 0.005	< 0.005	< 0.005	4.06
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.71	7.71	< 0.005	< 0.005	0.01	8.10

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.47	1.24	11.0	11.7	0.02	0.51	—	0.51	0.47	—	0.47	—	2,065	2,065	0.08	0.02	—	2,072

Dust From Material Movement	—	—	—	—	—	—	2.45	2.45	—	1.17	1.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.37	9.37	< 0.005	< 0.005	—	9.40
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	135	135	0.01	< 0.005	0.46	137

Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	125	125	0.01	0.02	0.34	130
Hauling	0.05	0.01	0.82	0.32	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	680	680	0.04	0.11	1.53	715
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.42	3.42	< 0.005	< 0.005	< 0.005	3.57
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.59
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.09	3.09	< 0.005	< 0.005	< 0.005	3.24

3.4. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.27	0.27	6.40	11.9	0.02	0.04	—	0.04	0.04	—	0.04	—	2,065	2,065	0.08	0.02	—	2,072
Dust From Material Movement	—	—	—	—	—	—	2.45	2.45	—	1.17	1.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01	0.01	0.18	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.6	56.6	< 0.005	< 0.005	—	56.8
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	0.03	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.37	9.37	< 0.005	< 0.005	—	9.40
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	135	135	0.01	< 0.005	0.46	137
Vendor	0.01	< 0.005	0.14	0.07	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	125	125	0.01	0.02	0.34	130
Hauling	0.05	0.01	0.82	0.32	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	680	680	0.04	0.11	1.53	715
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	0.01	3.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.42	3.42	< 0.005	< 0.005	< 0.005	3.57
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.59
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.09	3.09	< 0.005	< 0.005	< 0.005	3.24

3.5. Rough Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.22	1.02	9.19	9.69	0.02	0.42	—	0.42	0.39	—	0.39	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.07	0.06	0.53	0.56	< 0.005	0.02	—	0.02	0.02	—	0.02	—	98.6	98.6	< 0.005	< 0.005	—	99.0
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.4
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	93.5	93.5	< 0.005	0.01	0.25	97.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.38	5.38	< 0.005	< 0.005	0.01	5.62
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.93
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Rough Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.22	5.26	9.79	0.02	0.03	—	0.03	0.03	—	0.03	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.30	0.56	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	98.6	98.6	< 0.005	< 0.005	—	99.0
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.06	0.06	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.4
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.29	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	271	271	0.01	0.01	0.92	275
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	93.5	93.5	< 0.005	0.01	0.25	97.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.38	5.38	< 0.005	< 0.005	0.01	5.62
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.93
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Fine Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.70	9.56	0.02	0.39	—	0.39	0.36	—	0.36	—	1,715	1,715	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.40	< 0.005	0.06	—	0.06	0.05	—	0.05	—	252	252	0.01	< 0.005	—	253
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.23	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.7	41.7	< 0.005	< 0.005	—	41.8
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.0	63.0	< 0.005	< 0.005	0.01	63.7
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.8	91.8	< 0.005	0.01	0.01	95.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.38	9.38	< 0.005	< 0.005	0.01	9.50
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.02	14.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.33
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Fine Grading (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.22	5.26	9.79	0.02	0.03	—	0.03	0.03	—	0.03	—	1,715	1,715	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.77	1.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	252	252	0.01	< 0.005	—	253
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.14	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.7	41.7	< 0.005	< 0.005	—	41.8

Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.0	63.0	< 0.005	< 0.005	0.01	63.7
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	91.8	91.8	< 0.005	0.01	0.01	95.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.38	9.38	< 0.005	< 0.005	0.01	9.50
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.02	14.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.33
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Fine Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	8.42	9.59	0.02	0.38	—	0.38	0.35	—	0.35	—	1,715	1,715	0.07	0.01	—	1,721
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.25	1.43	< 0.005	0.06	—	0.06	0.05	—	0.05	—	255	255	0.01	< 0.005	—	256
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.26	< 0.005	0.01	—	0.01	0.01	—	0.01	—	42.2	42.2	< 0.005	< 0.005	—	42.4
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	61.9	61.9	< 0.005	< 0.005	< 0.005	62.6
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	89.6	89.6	< 0.005	0.01	0.01	93.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.34	9.34	< 0.005	< 0.005	0.01	9.46
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.01	13.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.30
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Fine Grading (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.22	0.22	5.26	9.79	0.02	0.03	—	0.03	0.03	—	0.03	—	1,715	1,715	0.07	0.01	—	1,721
Dust From Material Movement	—	—	—	—	—	—	2.07	2.07	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.78	1.46	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	255	255	0.01	< 0.005	—	256
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.14	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	42.2	42.2	< 0.005	< 0.005	—	42.4
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	61.9	61.9	< 0.005	< 0.005	< 0.005	62.6
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	89.6	89.6	< 0.005	0.01	0.01	93.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.34	9.34	< 0.005	< 0.005	0.01	9.46
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.01	13.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	< 0.005	1.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.21	2.21	< 0.005	< 0.005	< 0.005	2.30
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.55	4.68	5.62	0.01	0.15	—	0.15	0.14	—	0.14	—	1,022	1,022	0.04	0.01	—	1,026
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.85	1.03	< 0.005	0.03	—	0.03	0.02	—	0.02	—	169	169	0.01	< 0.005	—	170
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.17	3.00	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	664	664	0.03	0.02	2.07	674
Vendor	0.04	0.02	0.66	0.31	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	611	611	0.03	0.08	1.59	639
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.17	0.22	2.54	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	630	630	0.01	0.02	0.05	637
Vendor	0.04	0.02	0.68	0.32	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	612	612	0.03	0.08	0.04	638
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.10	0.12	1.52	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	363	363	0.01	0.01	0.51	367
Vendor	0.02	0.01	0.39	0.18	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	347	347	0.01	0.05	0.39	362
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	60.1	60.1	< 0.005	< 0.005	0.08	60.8
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.5	57.5	< 0.005	0.01	0.06	60.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.83	0.71	7.75	11.4	0.02	0.14	—	0.14	0.13	—	0.13	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.83	0.71	7.75	11.4	0.02	0.14	—	0.14	0.13	—	0.13	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.47	0.40	4.40	6.46	0.01	0.08	—	0.08	0.07	—	0.07	—	1,022	1,022	0.04	0.01	—	1,026
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.80	1.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	169	169	0.01	< 0.005	—	170
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.17	3.00	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	664	664	0.03	0.02	2.07	674
Vendor	0.04	0.02	0.66	0.31	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	611	611	0.03	0.08	1.59	639
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.17	0.22	2.54	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	630	630	0.01	0.02	0.05	637
Vendor	0.04	0.02	0.68	0.32	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	612	612	0.03	0.08	0.04	638
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.12	1.52	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	363	363	0.01	0.01	0.51	367
Vendor	0.02	0.01	0.39	0.18	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	347	347	0.01	0.05	0.39	362
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	60.1	60.1	< 0.005	< 0.005	0.08	60.8
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.5	57.5	< 0.005	0.01	0.06	60.0

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
---------	------	------	------	------	------	------	------	------	------	------	------	---	------	------	------	------	------	------

3.13. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.93	7.89	9.88	0.02	0.23	—	0.23	0.21	—	0.21	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.93	7.89	9.88	0.02	0.23	—	0.23	0.21	—	0.21	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.31	2.59	3.25	0.01	0.08	—	0.08	0.07	—	0.07	—	592	592	0.02	< 0.005	—	594
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.07	0.06	0.47	0.59	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.0	98.0	< 0.005	< 0.005	—	98.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.17	2.82	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	653	653	0.01	0.02	1.86	662
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.19	2.40	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	619	619	0.01	0.02	0.05	626
Vendor	0.04	0.01	0.66	0.31	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	598	598	0.02	0.08	0.04	623
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.82	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	206	206	< 0.005	0.01	0.26	209
Vendor	0.01	< 0.005	0.22	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	196	196	0.01	0.03	0.21	205
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	34.2	34.2	< 0.005	< 0.005	0.04	34.6
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.04	33.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Building Construction (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.80	0.68	7.64	11.4	0.02	0.12	—	0.12	0.11	—	0.11	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.80	0.68	7.64	11.4	0.02	0.12	—	0.12	0.11	—	0.11	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.26	0.22	2.51	3.73	0.01	0.04	—	0.04	0.04	—	0.04	—	592	592	0.02	< 0.005	—	594
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.05	0.04	0.46	0.68	< 0.005	0.01	—	0.01	0.01	—	0.01	—	98.0	98.0	< 0.005	< 0.005	—	98.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.17	2.82	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	653	653	0.01	0.02	1.86	662
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.19	2.40	0.00	0.00	0.65	0.65	0.00	0.15	0.15	—	619	619	0.01	0.02	0.05	626
Vendor	0.04	0.01	0.66	0.31	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	598	598	0.02	0.08	0.04	623
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.82	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	206	206	< 0.005	0.01	0.26	209
Vendor	0.01	< 0.005	0.22	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	196	196	0.01	0.03	0.21	205
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	34.2	34.2	< 0.005	< 0.005	0.04	34.6
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.04	33.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Parking Structure Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	1.22	1.01	8.57	9.96	0.02	0.29	—	0.29	0.27	—	0.27	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	1.22	1.01	8.57	9.96	0.02	0.29	—	0.29	0.27	—	0.27	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.33	0.27	2.30	2.67	0.01	0.08	—	0.08	0.07	—	0.07	—	483	483	0.02	< 0.005	—	484
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.06	0.05	0.42	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.9	79.9	< 0.005	< 0.005	—	80.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.61	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	339	339	0.01	0.01	1.15	344
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.42	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.38	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	321	321	0.01	0.01	0.03	325
Vendor	0.01	< 0.005	0.18	0.09	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.01	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.39	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.4	87.4	< 0.005	< 0.005	0.13	88.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.8	41.8	< 0.005	0.01	0.05	43.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.92	6.92	< 0.005	< 0.005	0.01	7.23
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Parking Structure Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.87	0.74	7.87	11.4	0.02	0.16	—	0.16	0.15	—	0.15	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.87	0.74	7.87	11.4	0.02	0.16	—	0.16	0.15	—	0.15	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	2.11	3.06	0.01	0.04	—	0.04	0.04	—	0.04	—	483	483	0.02	< 0.005	—	484
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.38	0.56	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.9	79.9	< 0.005	< 0.005	—	80.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.61	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	339	339	0.01	0.01	1.15	344
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.42	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.38	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	321	321	0.01	0.01	0.03	325
Vendor	0.01	< 0.005	0.18	0.09	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.01	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.02	0.03	0.39	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.4	87.4	< 0.005	< 0.005	0.13	88.5
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.8	41.8	< 0.005	0.01	0.05	43.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.92	6.92	< 0.005	< 0.005	0.01	7.23
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Parking Structure Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.17	0.97	8.25	9.91	0.02	0.26	—	0.26	0.24	—	0.24	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.21	1.45	< 0.005	0.04	—	0.04	0.04	—	0.04	—	264	264	0.01	< 0.005	—	265
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.22	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	43.8	43.8	< 0.005	< 0.005	—	43.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.27	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	315	315	< 0.005	0.01	0.03	319
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	0.01	0.02	0.01	159
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	46.9	46.9	< 0.005	< 0.005	0.07	47.5
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.4	22.4	< 0.005	< 0.005	0.03	23.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.77	7.77	< 0.005	< 0.005	0.01	7.87
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.72	3.72	< 0.005	< 0.005	< 0.005	3.88
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.18. Parking Structure Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.83	0.71	7.75	11.4	0.02	0.14	—	0.14	0.13	—	0.13	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.12	0.10	1.14	1.67	< 0.005	0.02	—	0.02	0.02	—	0.02	—	264	264	0.01	< 0.005	—	265
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.02	0.02	0.21	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.8	43.8	< 0.005	< 0.005	—	43.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.11	1.27	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	315	315	< 0.005	0.01	0.03	319
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	0.01	0.02	0.01	159
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.02	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	46.9	46.9	< 0.005	< 0.005	0.07	47.5
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.4	22.4	< 0.005	< 0.005	0.03	23.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.77	7.77	< 0.005	< 0.005	0.01	7.87
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.72	3.72	< 0.005	< 0.005	< 0.005	3.88
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Asphalt Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.51	0.43	4.13	6.47	0.01	0.15	—	0.15	0.13	—	0.13	—	991	991	0.04	0.01	—	995
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.51	0.43	4.13	6.47	0.01	0.15	—	0.15	0.13	—	0.13	—	991	991	0.04	0.01	—	995
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.29	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	70.6	70.6	< 0.005	< 0.005	—	70.9
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.7	11.7	< 0.005	< 0.005	—	11.7
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.85	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	196	196	< 0.005	0.01	0.56	198
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	149	149	0.01	0.02	0.38	156
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.06	0.72	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.01	188
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	149	149	0.01	0.02	0.01	156
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.02	13.6
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.01	11.1

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.25
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.20. Asphalt Paving (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.27	4.41	6.89	0.01	0.06	—	0.06	0.05	—	0.05	—	991	991	0.04	0.01	—	995
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.27	4.41	6.89	0.01	0.06	—	0.06	0.05	—	0.05	—	991	991	0.04	0.01	—	995
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.02	0.02	0.31	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.6	70.6	< 0.005	< 0.005	—	70.9
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.7	11.7	< 0.005	< 0.005	—	11.7
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.85	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	196	196	< 0.005	0.01	0.56	198
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	149	149	0.01	0.02	0.38	156
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.06	0.72	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.01	188
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	149	149	0.01	0.02	0.01	156
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.02	13.6
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.01	11.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.25
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	7.41	7.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	7.41	7.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.7	28.7	< 0.005	< 0.005	—	28.8
Architectural Coatings	1.59	1.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.76	4.76	< 0.005	< 0.005	—	4.77
Architectural Coatings	0.29	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	1.20	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	266	266	0.01	0.01	0.83	270
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	0.01	0.02	0.40	160
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.02	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	252	252	< 0.005	0.01	0.02	255
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	0.01	0.02	0.01	159

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.0	55.0	< 0.005	< 0.005	0.08	55.7
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.9	32.9	< 0.005	< 0.005	0.04	34.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.11	9.11	< 0.005	< 0.005	0.01	9.23
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.45	5.45	< 0.005	< 0.005	0.01	5.69
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.22. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	7.41	7.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	7.41	7.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.7	28.7	< 0.005	< 0.005	—	28.8
Architectural Coatings	1.59	1.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.76	4.76	< 0.005	< 0.005	—	4.77
Architectural Coatings	0.29	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	1.20	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	266	266	0.01	0.01	0.83	270

Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	0.01	0.02	0.40	160
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.02	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	252	252	< 0.005	0.01	0.02	255
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	153	153	0.01	0.02	0.01	159
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.0	55.0	< 0.005	< 0.005	0.08	55.7
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.9	32.9	< 0.005	< 0.005	0.04	34.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.11	9.11	< 0.005	< 0.005	0.01	9.23
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.45	5.45	< 0.005	< 0.005	0.01	5.69
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134

Architect Coatings	7.41	7.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Architect ural Coating s	1.10	1.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Architect ural Coating s	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.96	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	247	247	< 0.005	0.01	0.02	250
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	149	149	0.01	0.02	0.01	156

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.05	37.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.2	22.2	< 0.005	< 0.005	0.02	23.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.18	6.18	< 0.005	< 0.005	0.01	6.26
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.68	3.68	< 0.005	< 0.005	< 0.005	3.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.24. Architectural Coating (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	7.41	7.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.12	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.9	19.9	< 0.005	< 0.005	—	19.9
Architectural Coatings	1.10	1.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.29	3.29	< 0.005	< 0.005	—	3.30
Architectural Coatings	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.96	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	247	247	< 0.005	0.01	0.02	250
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	149	149	0.01	0.02	0.01	156
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	37.4	37.4	< 0.005	< 0.005	0.05	37.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.2	22.2	< 0.005	< 0.005	0.02	23.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.18	6.18	< 0.005	< 0.005	0.01	6.26
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.68	3.68	< 0.005	< 0.005	< 0.005	3.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. Utility Trenching (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.11	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.11	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.70	2.70	< 0.005	< 0.005	—	2.71
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	135	135	0.01	< 0.005	0.46	137
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.42	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.55	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	128	128	0.01	< 0.005	0.01	130
Vendor	0.01	< 0.005	0.18	0.09	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.01	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.02	18.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.97	2.97	< 0.005	< 0.005	< 0.005	3.10
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.26. Utility Trenching (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.11	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.11	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.3	16.3	< 0.005	< 0.005	—	16.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.70	2.70	< 0.005	< 0.005	—	2.71
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	135	135	0.01	< 0.005	0.46	137
Vendor	0.01	< 0.005	0.17	0.08	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.42	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.55	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	128	128	0.01	< 0.005	0.01	130
Vendor	0.01	< 0.005	0.18	0.09	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	156	156	0.01	0.02	0.01	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.02	18.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.97	2.97	< 0.005	< 0.005	< 0.005	3.10
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. Finish/Landscaping (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.11	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01	0.01	0.10	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.5	17.5	< 0.005	< 0.005	—	17.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.89	2.89	< 0.005	< 0.005	—	2.90
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.02	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	252	252	< 0.005	0.01	0.02	255
Vendor	0.02	0.01	0.34	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	306	306	0.01	0.04	0.02	319
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.5	31.5	< 0.005	< 0.005	0.04	31.9
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.7	37.7	< 0.005	0.01	0.04	39.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.22	5.22	< 0.005	< 0.005	0.01	5.29
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.24	6.24	< 0.005	< 0.005	0.01	6.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.28. Finish/Landscaping (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.81	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.5	17.5	< 0.005	< 0.005	—	17.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.89	2.89	< 0.005	< 0.005	—	2.90
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.02	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	252	252	< 0.005	0.01	0.02	255
Vendor	0.02	0.01	0.34	0.16	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	306	306	0.01	0.04	0.02	319
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.5	31.5	< 0.005	< 0.005	0.04	31.9
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.7	37.7	< 0.005	0.01	0.04	39.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.22	5.22	< 0.005	< 0.005	0.01	5.29
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.24	6.24	< 0.005	< 0.005	0.01	6.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.10	0.01	—	1,549
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	171	171	0.01	< 0.005	—	172
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,715	1,715	0.11	0.01	—	1,721
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.10	0.01	—	1,549
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	171	171	0.01	< 0.005	—	172

Total	—	—	—	—	—	—	—	—	—	—	—	—	1,715	1,715	0.11	0.01	—	1,721
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	256	256	0.02	< 0.005	—	256
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	28.4	28.4	< 0.005	< 0.005	—	28.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	284	284	0.02	< 0.005	—	285

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.10	0.01	—	1,549
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	171	171	0.01	< 0.005	—	172
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,715	1,715	0.11	0.01	—	1,721

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.10	0.01	—	1,549
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	171	171	0.01	< 0.005	—	172
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,715	1,715	0.11	0.01	—	1,721
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	256	256	0.02	< 0.005	—	256
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	—	28.4	28.4	< 0.005	< 0.005	—	28.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	284	284	0.02	< 0.005	—	285

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartme Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclose d Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclose d Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclose d Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
-------	------	------	------	------	------	------	---	------	------	---	------	---	------	------	------	------	---	------

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.39	3.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.05	0.98	0.09	10.1	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	28.9	28.9	< 0.005	< 0.005	—	29.0
Total	4.71	4.65	0.09	10.1	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	28.9	28.9	< 0.005	< 0.005	—	29.0

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.39	3.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.67	3.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.62	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.13	0.12	0.01	1.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29
Total	0.80	0.79	0.01	1.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	3.39	3.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.05	0.98	0.09	10.1	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	28.9	28.9	< 0.005	< 0.005	—	29.0
Total	4.71	4.65	0.09	10.1	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	28.9	28.9	< 0.005	< 0.005	—	29.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.39	3.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.27	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.67	3.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.62	0.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.13	0.12	0.01	1.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29

Total	0.80	0.79	0.01	1.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.28	3.28	< 0.005	< 0.005	—	3.29
-------	------	------	------	------	---------	---------	---	---------	---------	---	---------	---	------	------	---------	---------	---	------

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	1.09	5.62	6.71	0.11	< 0.005	—	10.3
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.09	5.62	6.71	0.11	< 0.005	—	10.3

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.56	34.0	40.5	0.67	0.02	—	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	1.09	5.62	6.71	0.11	< 0.005	—	10.3
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1.09	5.62	6.71	0.11	< 0.005	—	10.3

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.01	0.00	—	35.3
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.01	0.00	—	35.3

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	61.0	0.00	61.0	6.10	0.00	—	213
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.01	0.00	—	35.3
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Enclosed Parking with Elevator	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	10.1	0.00	10.1	1.01	0.00	—	35.3

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartme Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.14	1.14

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipm ent Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipm ent Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipm ent Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipm ent Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
-----------------------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Asphalt Demolition	Demolition	6/1/2026	7/3/2026	5.00	25.0	—
Site Preparation	Site Preparation	7/6/2026	7/17/2026	5.00	10.0	—

Rough Grading	Grading	7/17/2026	8/14/2026	5.00	21.0	—
Fine Grading	Grading	10/18/2027	3/16/2028	5.00	109	—
Building Construction	Building Construction	3/17/2027	6/16/2028	5.00	328	—
Parking Structure Construction	Building Construction	8/17/2026	3/16/2027	5.00	152	—
Asphalt Paving	Paving	3/17/2028	4/22/2028	5.00	26.0	—
Architectural Coating	Architectural Coating	9/13/2027	3/16/2028	5.00	134	—
Utility Trenching	Trenching	8/17/2026	10/16/2026	5.00	42.0	—
Finish/Landscaping	Trenching	1/18/2027	3/16/2027	5.00	45.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Asphalt Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Asphalt Demolition	Tractors/Loaders/Back hoes	Diesel	Average	3.00	8.00	36.0	0.38
Asphalt Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Asphalt Demolition	Crushing/Proc. Equipment	Diesel	Average	1.00	8.00	85.0	0.78
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Rough Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Rough Grading	Tractors/Loaders/Back hoes	Diesel	Average	1.00	7.00	84.0	0.37
Fine Grading	Graders	Diesel	Average	1.00	6.00	148	0.41

Fine Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40
Fine Grading	Tractors/Loaders/Back hoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Parking Structure Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Parking Structure Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Parking Structure Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Parking Structure Construction	Tractors/Loaders/Back hoes	Diesel	Average	1.00	6.00	84.0	0.37
Parking Structure Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Asphalt Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Asphalt Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Asphalt Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Asphalt Paving	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utility Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Finish/Landscaping	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Asphalt Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Asphalt Demolition	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	3.00	8.00	36.0	0.38
Asphalt Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Asphalt Demolition	Crushing/Proc. Equipment	Diesel	Tier 4 Interim	1.00	8.00	85.0	0.78
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Rough Grading	Graders	Diesel	Tier 4 Interim	1.00	6.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	6.00	367	0.40
Rough Grading	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Fine Grading	Graders	Diesel	Tier 4 Interim	1.00	6.00	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	6.00	367	0.40
Fine Grading	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Parking Structure Construction	Cranes	Diesel	Tier 4 Interim	1.00	6.00	367	0.29
Parking Structure Construction	Forklifts	Diesel	Tier 4 Interim	1.00	6.00	82.0	0.20
Parking Structure Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Parking Structure Construction	Tractors/Loaders/Back	Diesel	Tier 4 Interim	1.00	6.00	84.0	0.37
Parking Structure Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Asphalt Paving	Pavers	Diesel	Tier 4 Interim	1.00	6.00	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Asphalt Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Asphalt Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Asphalt Paving	Tractors/Loaders/Back hoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Utility Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Finish/Landscaping	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Asphalt Demolition	—	—	—	—
Asphalt Demolition	Worker	30.0	18.5	LDA,LDT1,LDT2
Asphalt Demolition	Vendor	11.0	10.2	HHDT,MHDT
Asphalt Demolition	Hauling	10.0	20.0	HHDT
Asphalt Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	10.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	10.2	HHDT,MHDT
Site Preparation	Hauling	10.0	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—

Rough Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Rough Grading	Vendor	3.00	10.2	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	50.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	20.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Asphalt Paving	Vendor	5.00	10.2	HHDT,MHDT
Asphalt Paving	Hauling	0.00	20.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	20.0	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	5.00	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Fine Grading	—	—	—	—
Fine Grading	Worker	5.00	18.5	LDA,LDT1,LDT2
Fine Grading	Vendor	3.00	10.2	HHDT,MHDT
Fine Grading	Hauling	0.00	20.0	HHDT
Fine Grading	Onsite truck	—	—	HHDT
Parking Structure Construction	—	—	—	—
Parking Structure Construction	Worker	25.0	18.5	LDA,LDT1,LDT2
Parking Structure Construction	Vendor	5.00	10.2	HHDT,MHDT
Parking Structure Construction	Hauling	0.00	20.0	HHDT

Parking Structure Construction	Onsite truck	—	—	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	10.0	18.5	LDA,LDT1,LDT2
Utility Trenching	Vendor	5.00	10.2	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	Onsite truck	—	—	HHDT
Finish/Landscaping	—	—	—	—
Finish/Landscaping	Worker	20.0	18.5	LDA,LDT1,LDT2
Finish/Landscaping	Vendor	10.0	10.2	HHDT,MHDT
Finish/Landscaping	Hauling	0.00	20.0	HHDT
Finish/Landscaping	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Asphalt Demolition	—	—	—	—
Asphalt Demolition	Worker	30.0	18.5	LDA,LDT1,LDT2
Asphalt Demolition	Vendor	11.0	10.2	HHDT,MHDT
Asphalt Demolition	Hauling	10.0	20.0	HHDT
Asphalt Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	10.0	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	10.2	HHDT,MHDT
Site Preparation	Hauling	10.0	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Rough Grading	Vendor	3.00	10.2	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT

Rough Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	50.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	20.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Asphalt Paving	Vendor	5.00	10.2	HHDT,MHDT
Asphalt Paving	Hauling	0.00	20.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	20.0	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	5.00	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Fine Grading	—	—	—	—
Fine Grading	Worker	5.00	18.5	LDA,LDT1,LDT2
Fine Grading	Vendor	3.00	10.2	HHDT,MHDT
Fine Grading	Hauling	0.00	20.0	HHDT
Fine Grading	Onsite truck	—	—	HHDT
Parking Structure Construction	—	—	—	—
Parking Structure Construction	Worker	25.0	18.5	LDA,LDT1,LDT2
Parking Structure Construction	Vendor	5.00	10.2	HHDT,MHDT
Parking Structure Construction	Hauling	0.00	20.0	HHDT
Parking Structure Construction	Onsite truck	—	—	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	10.0	18.5	LDA,LDT1,LDT2

Utility Trenching	Vendor	5.00	10.2	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	Onsite truck	—	—	HHDT
Finish/Landscaping	—	—	—	—
Finish/Landscaping	Worker	20.0	18.5	LDA,LDT1,LDT2
Finish/Landscaping	Vendor	10.0	10.2	HHDT,MHDT
Finish/Landscaping	Hauling	0.00	20.0	HHDT
Finish/Landscaping	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	321,206	107,069	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Asphalt Demolition	0.00	0.00	0.00	1,286	—
Site Preparation	0.00	1,286	9.38	0.00	—
Rough Grading	0.00	400	15.0	0.00	—
Fine Grading	0.00	0.00	82.5	0.00	—
Asphalt Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Other Non-Asphalt Surfaces	0.00	0%
Enclosed Parking with Elevator	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	0.00	532	0.03	< 0.005
2028	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMt/Weekday	VMt/Saturday	VMt/Sunday	VMt/Year
Total all Land Uses	740	668	556	256,751	5.44	4.91	4.09	1,888

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMt/Weekday	VMt/Saturday	VMt/Sunday	VMt/Year
Total all Land Uses	740	668	556	256,751	5.44	4.91	4.09	1,888

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
321205.5	107,069	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	1,058,923	532	0.0330	0.0040	0.00

Other Non-Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00
Enclosed Parking with Elevator	117,498	532	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	1,058,923	532	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00
Enclosed Parking with Elevator	117,498	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	3,421,875	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	3,421,875	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	113	—
Other Non-Asphalt Surfaces	0.00	—
Enclosed Parking with Elevator	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	113	—
Other Non-Asphalt Surfaces	0.00	—
Enclosed Parking with Elevator	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
---------------------	---	--------	-------	------	------	------	------

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
----------------	-----------	-------------	----------------	---------------	------------	-------------

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
----------------	-----------	-------------	----------------	---------------	------------	-------------

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
----------------	-----------	----------------	---------------	----------------	------------	-------------

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
----------------	-----------	--------	--------------------------	------------------------------	------------------------------

5.17. User Defined

Equipment Type	Fuel Type
----------------	-----------

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
-----------	--------	------------------------------	------------------------------

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
-----------	--------	------------------------------	------------------------------

8. User Changes to Default Data

Screen	Justification
Land Use	Used client provided site plans.
Construction: Construction Phases	Used project provided information.
Construction: Off-Road Equipment	Used client provided information for construction equipment, quantity, and hours. Defaults used for HP and load factor.

Construction: Trips and VMT	Information for Worker, Vendor, and Haul trips provided by applicant. Trips lengths and vehicle class are defaults.
Operations: Hearths	No fireplaces proposed.
Operations: Energy Use	Project does not use natural gas. Convert to electricity usage.
Operations: Water and Waste Water	Information taken from Partner Energy, 2021 report completed for the project.
Construction: Off-Road Equipment EF	Used emission factors for crushing equipment for year closest to construction period.
Construction: Dust From Material Movement	Updated to watering 2x a day

ATTACHMENT C

CLIMATE ACTION + ADAPTATION PLAN CONSISTENCY REVIEW CHECKLIST

LONG BEACH DEVELOPMENT SERVICES | PLANNING BUREAU

Climate Action + Adaptation Plan Consistency Review Checklist

Purpose of the Climate Action + Adaptation Plan Consistency Review Checklist

In November 2020, the City of Long Beach adopted the Climate Action + Adaptation Plan (CAAP), which is a comprehensive planning document outlining the City's proposed approach both to address climate impacts on the city and to reduce the City's impact on the climate by reducing greenhouse gas (GHG) emissions.

The CAAP includes 21 priority GHG emission reduction "Mitigation Actions"¹ that shall be implemented for the City to achieve its proportional share of State GHG emission reductions for the near-term target year 2030 (referred to herein as *CAAP Actions*). These actions are organized into three sectors: 1) Building Energy; 2) Waste; and 3) Transportation. The CAAP also includes 40 "Adaptation Actions" that are identified to improve the ability of Long Beach and its residents and businesses to adapt to climate change, and related impacts now and in the future.² These actions are organized into four climate impacts: 1) Extreme Heat; 2) Air Quality; 3) Drought; and 4) Sea level rise and flooding.

The purpose of the Climate Action + Adaptation Plan Consistency Review Checklist (referred to herein as the *CAAP Checklist*) is to:

1. Require projects to implement relevant GHG emission reduction actions from the CAAP.
2. Require new development projects to implement relevant Adaptation Actions from the CAAP.
3. Provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).

The CAAP will also help the City comply with various local, regional, state, and federal regulations to significantly reduce GHG emissions. The City is obligated under CEQA, Assembly Bill 32 (The California Global Warming Solutions Act of 2006), Senate Bill (SB) 375 (The Sustainable Communities and Climate Protection Act of 2008), and various California Executive

¹ It should be noted that the CAAP's "mitigation actions" are not mitigation measures as defined by CEQA; they are actions to "mitigate" GHG emissions. This document refers to these as "CAAP Actions" throughout.

² Adaptation actions were developed based on the 2018 Long Beach Climate Stressors Review (Appendix D to the CAAP) and the Long Beach Climate Change Vulnerability Assessment Results (Appendix C to the CAAP).

Orders to do its part to reduce GHG emissions. Generally, statewide targets aim to reduce emissions to 1990 levels by 2020, to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of greenhouse gases. The CAAP itself, the CAAP Checklist (this document), and the adopted programmatic Environmental Impact Report (EIR) for the CAAP together meet all requirements of §15183.5(b) contained in the CEQA Guidelines. Accordingly, the CAAP represents the City of Long Beach's qualified climate action plan in compliance with CEQA.

CEQA Compliance and Background Information

The City's near-term 2030 target was selected based on guidance provided in CARB's 2017 California Climate Change Scoping Plan and was developed to demonstrate consistency with the statewide 2030 target.³ The City's 2030 target is established on a per service population (SP)⁴ basis and aims to achieve emissions rates of 3.04 metric tons of carbon dioxide equivalent (MTCO₂e) per SP (MTCO₂e/SP). This compares to the City's 2030 business-as-usual forecast of 3.34 MTCO₂e/SP. Based on the City's SP growth estimates, the 2030 target emissions level is 1,984,272 MTCO₂e per year. GHG reductions of approximately 192,659 MTCO₂e will be required to achieve this target, or an overall reduction of approximately 0.3 MTCO₂e/SP.

As described in the CAAP, these GHG reductions will occur through a combination of City initiatives in various plans and policies and will provide reductions from both existing and new developments. The CAAP Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the CAAP Checklist is a critical implementation tool in the City's overall strategy to reduce GHG emissions. Implementation of applicable CAAP Actions in new development projects will help the City achieve incremental reductions toward its target.

Projects that are consistent with the demographic forecasts and land use assumptions used in the CAAP (i.e., consistent with the City's General Plan) can utilize the CAAP Checklist to demonstrate consistency with the CAAP, and if consistent, can tier from the existing programmatic environmental review contained in the adopted Environmental Impact Report (EIR) for the CAAP. In doing so; pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b); a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable. This approach is consistent with the recommendations of the Association of Environmental Professionals (AEP) Climate Change Committee (2016) for tiering from qualified GHG reduction plans that demonstrate substantial

³ City of Long Beach, July 2020, *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #3*.

⁴ Service population = total population plus employment.

progress toward meeting the next milestone Statewide planning reduction target (i.e., a 40 percent reduction below 1990 levels by 2030 as set forth by SB 32).⁵

This CAAP Checklist provides a mechanism for projects to specifically identify “those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project” per §15183.5(b)(2)) of the CEQA Guidelines.

GHG emissions associated with construction from a land use development project are generally orders of magnitude lower than the operational emissions. This is because construction emissions are typically short in duration compared to the project’s overall lifetime. Therefore, construction emissions can be assessed qualitatively as part of related CEQA GHG emissions analysis. However, some projects may have long construction periods or entail substantial excavation and grading that could result in construction-related GHG emissions that may be considered significant. Thus, the City retains the discretion on a project-by-project basis to consider whether a project’s construction-related GHG emissions could be cumulatively considerable and require more detailed quantitative CEQA GHG emissions analysis and mitigation.

Projects that are not consistent with the CAAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this CAAP Checklist to the extent feasible, as defined by CEQA and subject to the City’s discretion.⁶ Cumulative GHG impacts would be significant for any project that is not consistent with the CAAP.

As required by CEQA Guidelines Section 15183.5(b)(1)(E), the City will monitor strategy implementation and make updates, as necessary, to maintain an appropriate trajectory to the 2030 GHG target. CAAP updates will occur approximately every 5 years and can be scheduled to align with other City milestones, such as General Plan Element updates or budgetary cycles. If regular monitoring shows the CAAP is on track toward the GHG target, then CAAP updates may not be necessary. The City will also develop a comprehensive CAAP update following the current 2030 target year to provide greater analysis of the actions and implementation steps necessary to achieve the City’s 2045 carbon neutrality goal. The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAAP or local, State, or federal law.

Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*, provides the quantitative basis for the CAAP Action consistency requirements. This document demonstrates how, based on substantial evidence, implementing these requirements on a project-by-project basis will collectively achieve the CAAP’s target

⁵ Association of Environmental Professionals, 2016, *Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*, October 18, available at https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf.

⁶ CEQA Guidelines Section 21061.1 defines feasible as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.”

emissions level for new development, as required by CEQA Guidelines Section 15183.5(b)(1)(D).

CAAP Checklist Submittal Requirements

The CAAP Checklist is required to accompany the City’s Environmental Determination Application Checklist for all projects and plans subject to CEQA review, whether supported by private or government (local or State) funding, proposed within the City limits. The CAAP Checklist is designed to assist the project applicant in identifying the minimum GHG emission reduction actions and other applicable sustainability-focused requirements specific to a proposed project or plan. However, it may be necessary to supplement the completed CAAP Checklist with supporting materials, calculations, or certifications to demonstrate compliance with the CAAP Actions and other applicable sustainability-focused requirements. The CAAP Checklist will be included in the respective project or plan conditions of approval.

Consistency Checklist Applicability

The CAAP Checklist is only required for discretionary projects⁷ that are subject to and not exempt from CEQA. Projects that are exempt from CEQA are deemed to be consistent with the CAAP, and no further review is necessary, with the exception of the Class 32 “In-Fill Development Projects” categorical exemption (CEQA Guidelines Section 15332), for which Projects are required to demonstrate consistency with the CAAP through this Consistency Review Checklist.

Instructions for Consistency Checklist

Project applicants shall complete the following steps to demonstrate conformance with the City of Long Beach Climate Action + Adaptation Plan for the proposed project.

Step 1. Demonstrate consistency with the City’s General Plan (Table 1)

Step 2. Determine if project screens out of CAAP Action consistency (Table 1)

Step 3. Demonstrate consistency with the CAAP GHG Emission Reduction Actions (Table 1)

Step 4. Identify alternative project emission reduction measures and additional GHG reductions (Table 2)

Step 5. Demonstrate consistency with the CAAP Adaptation Actions (Table 3)

All projects must complete **Step 1. General Plan Consistency**, **Step 2. CAAP Action Consistency Screening**, **Step 3. CAAP Action Consistency Checklist**, and **Step 5. Adaptation Action**

⁷ In this context a project is any action that meets the definition of a “Project” in Section 15378 of the State CEQA Guidelines.

Consistency Checklist. Projects that propose alternative GHG emission reduction measures must also complete **Step 4. Alternative Project Measures and Additional GHG Reductions.**

The following process, illustrated in **Figure 1**, explains how to demonstrate a plan/project's consistency with the CAAP's GHG emissions reduction actions (*CAAP Actions*) and the CAAP's *Adaptation Actions* and, thereby, tier from the adopted EIR for the CAAP.

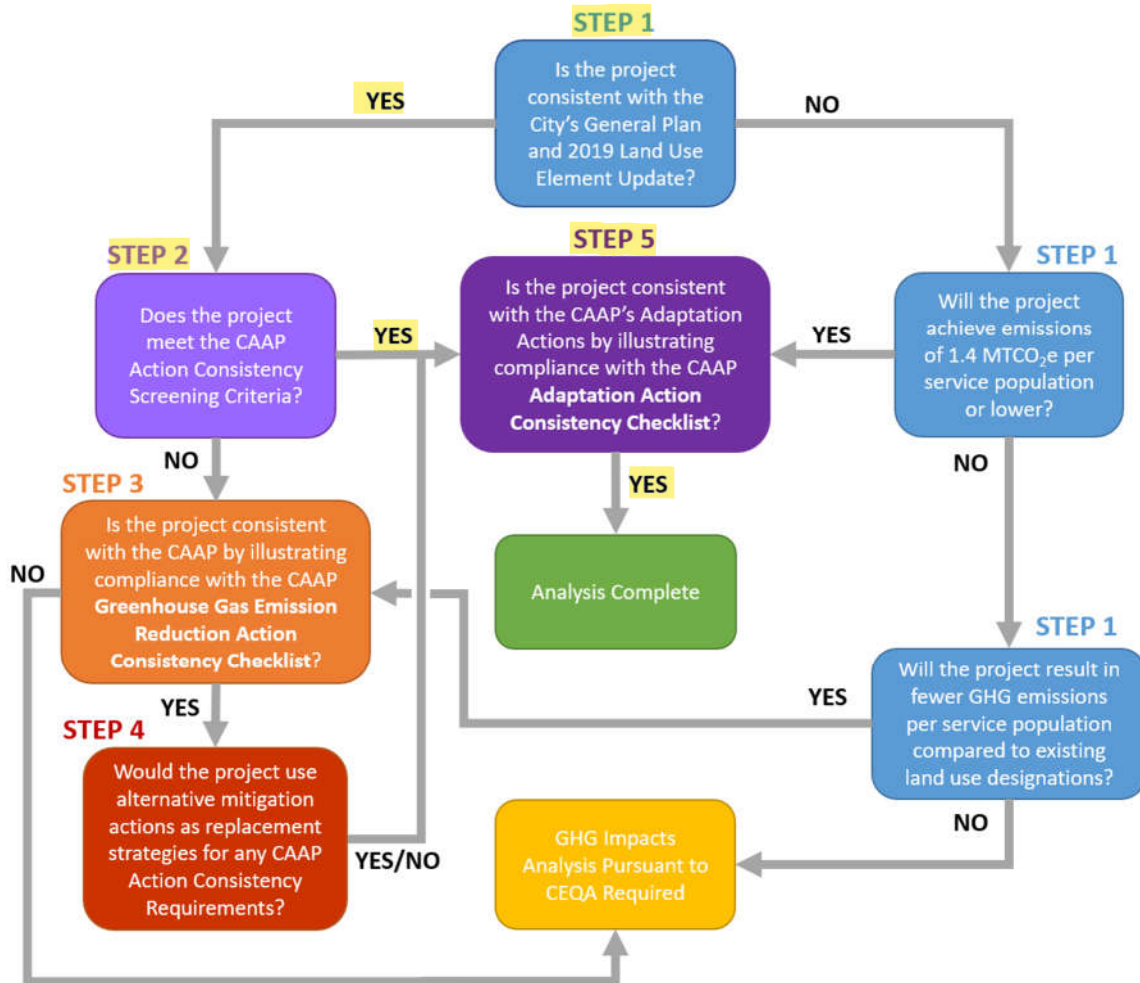


Figure 1
Determining Consistency with the City's Climate Action + Adaptation Plan

Step 1: Demonstrate consistency with the City's General Plan

All projects must demonstrate consistency with the City's General Plan and the existing land use designation of the 2019 Land Use Element (LUE). Alternatively, if a project is not consistent with the land use designation of the 2019 LUE, the project must identify an alternative compliance mechanism. Complete the *General Plan and 2019 Land Use Element Consistency* section of **Table 1 General Plan and CAAP Action Consistency Checklist** below.

The process for determining general plan consistency (included in Table 1) is as follows:

1. Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element? If yes, move to **Step 2** below. If no:
2. Does the project achieve emissions of 1.4 MTCO₂e per service population⁸ or less? If yes, the project is considered consistent with the CAAP and the analysis is complete (no project-specific GHG impact analysis would be required). If not:
3. Does the project result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site? If yes, move to **Step 2** below. If no, the proposed project may not tier from the CAAP's EIR and must prepare a comprehensive project-specific analysis of GHG emissions and impacts and incorporate the measures in this Checklist to the extent feasible.

If the project is not consistent with the existing land use designation of the 2019 LUE (#1 above), the applicant must submit a comprehensive quantitative project-specific analysis of all GHG emissions, consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development, to demonstrate that the alternative compliance mechanisms are met (#2, #3, and #4 above).

Please see Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation* for additional discussion.

Step 2: Determine if project screens out of CAAP Action consistency

Certain projects may screen out of the CAAP Action Consistency Checklist if they meet certain criteria. These criteria are designed to ensure high efficiency and low GHG emissions and describe projects that would generally be consistent with the CAAP's GHG emission reduction actions (CAAP Actions) for new development. Complete the *CAAP Action Screening Criteria* section of **Table 1** below.

⁸ The Service Population for a project is the project's total anticipated residential population plus total anticipated employment provided by the project. For example, if a project would construct 100 housing units at an average occupancy of 2.5 people per unit, the total population would be 250; if the project would support 50 new jobs, the project's service population would therefore be 250 + 50 = 300.

1. If the project would achieve emissions of 1.4 MTCO₂e per service population or less, the project is considered consistent with the CAAP Actions and the analysis is complete (no project-specific GHG analysis would be required).

Additionally, projects may skip completion of the *Transportation* subsection of the *CAAP Action Screening Criteria* section of Table 1 below if they meet one of the following criteria:

1. Located in a state-defined Transit Priority Area or High Quality Transit Area (HQTa)
2. Includes local-serving retail (e.g., grocery stores, pharmacies, or restaurants) less than 50,000 square feet.
3. Includes 100% affordable housing (excluding manager's units)
4. Would result in fewer than 110 daily trips per day.

If the project meets one of these criteria, please complete the *Building Energy* and *Waste* sections of the CAAP Checklist.

All projects that meet these screening criteria for CAP Action Consistency must still complete **Step 3. CAAP Adaptation Action Consistency**, as provided in Table 3.

Step 3: Demonstrate consistency with CAAP GHG Emission Reduction Actions

Table 1 identifies the CAAP Action consistency requirements for projects. Projects must demonstrate consistency with the CAAP Action requirements listed in Table 1 or document why the strategies are not applicable or are infeasible.⁹ The corresponding CAAP Actions are indicated in the table to provide additional context. The full text of the GHG emission reduction actions are provided in Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

All applicants shall complete the following steps for the *Building Energy*, *Waste*, and *Transportation* sections of **Table 1** below:

1. Review the project consistency options described in the column titled “*CAAP Action Consistency Requirement*”.
2. Use the check boxes in the column titled “Project Consistency” to indicate if the “Project Complies,” the requirement is “Not Applicable,” the “Project Does Not Comply,” or if there is an “Alternative Measure Proposed.”
3. Provide a qualitative analysis of the proposed project’s compliance with the CAAP Action requirements in the column titled “Description of Project Measure(s) / Documentation of Compliance.” This will be the basis for CEQA analysis to demonstrate compliance with the CAAP and by extension, with SB 32. The qualitative analysis should provide:

⁹ Please note that the CAAP Action requirements are not mitigation measures as defined by CEQA.

- a. A description of which consistency options are included as part of the proposed project, or;
- b. A description of why the consistency requirement is not applicable to the proposed project, or;
- c. A description of why the consistency options are infeasible. If applicants select ‘Project Does Not Comply’ or ‘Alternative Measure Proposed’, they must complete Table 2 to document what alternative project measures will be implemented to achieve a similar level of GHG reduction and how those reduction estimates were calculated.

The CAAP Action consistency requirements are listed as either “Tier 1” or “Tier 2.” These two levels are defined as follows:

Tier 1: Required for all discretionary projects to demonstrate consistency with the CAAP.

Tier 2: Encouraged for all discretionary projects to the maximum extent feasible. Although these are not required, projects are strongly encouraged to implement as many of these as feasible.

Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*, provides the quantitative basis for the CAAP Action consistency requirements.

Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions

Projects that propose alternative GHG emission reduction measures to those identified in Table 1 or propose to include additional GHG emission reduction measures beyond those described in Table 1 shall provide a summary explanation of the proposed measures and demonstrate GHG reductions achievable through the proposed measures.¹⁰ Documentation for these alternative or additional project measures shall be documented in **Table 2 Applicant Proposed Alternative Project Emission Reduction Measures**. Any applicants who select ‘Project Does Not Comply’ or ‘Alternative Measure Proposed’ in Table 1 must complete the following steps for Table 2.

1. In the column titled “Description of Alternative / Replacement Measure” provide a qualitative description of what measure will be implemented, why it is proposed, and how it will reduce GHG emissions.
2. In the column titled “Description of GHG Reduction Estimate” demonstrate how the alternative project measure would achieve the same or greater level of GHG emission reductions as the CAAP Action requirement that it replaces. Documentation and calculation files must be attached separately.

¹⁰ Please note that the alternative GHG emission reduction measures are not mitigation measures as defined by CEQA.

In the column titled “Proposed Measure Implementation” identify how the measure will be implemented: incorporated as part of the project design or as an additional measure that is not part of the project (e.g., an offsite emission reduction program sponsored by the applicant).

Carbon offset credits are not permitted to be used as alternative project emission reduction measures.

Step 5: Demonstrate consistency with the CAAP Adaptation Actions

Table 3 *CAAP Adaptation Action Consistency Checklist* identifies the CAAP Adaptation Action consistency requirements for projects. Projects must demonstrate consistency with the CAAP Adaptation Action requirements listed in Table 3 or document why the strategies are not applicable or are infeasible. The corresponding CAAP Adaptation Actions are indicated in the table to provide additional context. The full text of the adaptation actions are provided in Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

All applicants shall complete the following steps for **Table 2** below:

1. Review the project consistency options described in the column titled “*CAAP Adaptation Action Consistency Requirement*”.
2. Use the check boxes in the column titled “Project Consistency” to indicate if the “Project Complies,” the requirement is “Not Applicable,” or the “Project Does Not Comply.”
3. Provide a qualitative analysis of the proposed project’s compliance with the CAAP Adaptation Action requirements in the column titled “Description of Project Measure(s) / Documentation of Compliance.” This will be the basis for CEQA analysis to demonstrate compliance with the CAAP and by extension SB 32. The qualitative analysis should provide:
 - a. A description of which consistency requirements are included as part of the proposed project, or;
 - b. A description of why the consistency requirements are not applicable to the proposed project, or;
 - c. A description of why the consistency requirements are infeasible.

CAAP Consistency Review Checklist

Table 1 *General Plan and CAAP Action Consistency Checklist* allows the applicant to demonstrate compliance with the City’s General Plan and the CAAP’s GHG emission reduction actions. This table addresses **Step 1. General Plan Consistency**, **Step 2. CAAP Action Consistency Screening**, and **Step 3. CAAP Action Consistency Checklist**. All projects are required to complete this checklist.

Table 2 *Applicant Proposed Alternative Project Emission Reduction Measure* allows the project applicant to document alternative GHG emission reduction measures utilized to demonstrate compliance with the Table 1 CAAP Action consistency requirements. This table addresses **Step 4. Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions**. Only projects proposing to use alternative GHG emission reduction measures are required to complete this checklist.

Table 3 *CAAP Adaptation Action Consistency Checklist* allows the applicant to demonstrate compliance with the CAAP's Adaptation Actions. This table addresses **Step 5. Demonstrate consistency with the CAAP Adaptation Actions**. All projects are required to complete this checklist.

TABLE 1
CAAP GREENHOUSE GAS EMISSION REDUCTION ACTION CONSISTENCY CHECKLIST

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
STEP 1: General Plan and 2019 Land Use Element Consistency		
<p>1. The Project is Consistent with the City's General Plan Land Use Element</p> <p>The growth projections outlined in the 2019 General Plan Land Use Element were used in the City's CAAP to estimate citywide GHG emissions over time. Therefore, new development projects must be consistent with the Land Use Element to be consistent with the CAAP. In order for City staff to determine a project's consistency with the Land Use Element, please answer the following question and provide explanation with supporting documentation.</p> <p>Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element?</p> <p>If "Yes," proceed to the "CAAP Action Consistency" section below.</p> <p>If "No," proceed to Item 2.</p>	<p><i>Describe how the project is consistent with the City's 2019 General Plan Land Use Element. Provide additional supporting documentation as an attachment as needed.</i></p> <p>OR,</p> <p><i>Explain why the project is not consistent with the City's 2019 General Plan Land Use Element, and whether the project would include a general plan amendment.</i></p> <p>The Project site is currently located in the SP-1-TN zone and has a PlaceType designation of TOD-M. The Project proposes construction of a six-story affordable housing residential building with 153 units, which is an allowable use under both the SP-1-TN zone and TOD-M PlaceType. As such, the proposed project is consistent with the City's General Plan Land Use Element and therefore can proceed to the "LB CAP Action Consistency" section below.</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
<p>2. The Project Achieves emissions of 1.4 MTCO₂e per service population or less</p> <p>Does the project achieve emissions of 1.4 MTCO₂e per service population or less? The project must conduct a comprehensive quantitative project-specific analysis of all GHG emissions, consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development, to demonstrate that the project achieves this efficiency level.</p> <p>If "Yes," the project is consistent with the CAAP and no additional analysis is needed (no project-specific GHG impact analysis would be required).</p> <p>If "No," proceed to Item 3.</p>	<p><i>If "Yes", attach to this checklist the estimated project emissions and emissions per service population. If the proposed project is determined to result in GHG emissions less than 1.4 MTCO₂e per service population, the project is consistent with the CAAP and the analysis is complete (no project-specific GHG impact analysis would be required). Provide supporting calculation files and documentation for this analysis.</i></p> <p>OR,</p> <p><i>Explain why the project would not achieve GHG emissions less than 1.4 MTCO₂e per service population. Provide supporting calculation files and documentation for this analysis.</i></p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
<p>3. I Project Results in Fewer GHG Emissions per Service Population Compared to Existing Land Use Designations</p> <p>The project must achieve one of the following options.</p> <p>1. Does the project result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site? The</p>	<p><i>If "Yes" to number 1, attach to this checklist the estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation. If the proposed project is determined to result in fewer GHG emissions per service population than the existing designations would produce, proceed to the "CAAP Action Consistency" section of this</i></p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>applicant must conduct a comprehensive project-specific analysis of all GHG emissions for both the project and the future no-project development, consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development, to demonstrate that the project achieves this emissions level.</p> <p>If "Yes," proceed to the "CAAP Action Consistency" section below.</p> <p>If "No," proceed to number 2.</p> <p>2. If there isn't a project-specific GHG emissions analysis available, then the project would likely result in fewer GHG emissions per service population than would existing land use designations at the project site by incorporating key land use design elements. Would the project implement at least <u>one</u> of the following elements?</p> <p>a. The project would result in a higher density of housing and / or jobs located within 0.5 miles of a transit station than was than was contemplated in the General Plan.</p> <p>b. The project includes a mix of uses (i.e., residential, retail, commercial) and is located in a Transit Priority Area or a High Quality Transit Area.</p> <p>c. The project includes more affordable housing units than was contemplated in the General Plan and is located within 0.5 miles of a transit station.</p> <p>d. The project includes local-serving retail less than 50,000 square feet.</p> <p>If "Yes," proceed to the "CAAP Action Consistency" section below.</p> <p><i>If "No," the proposed project may not tier from this document and must prepare a comprehensive project-specific analysis of GHG emissions and impacts and incorporate the measures in the CAAP Checklist to the extent feasible.</i></p>	<p><i>checklist. Provide supporting calculation files and documentation for this analysis.</i></p> <p><i>OR,</i></p> <p><i>If "Yes" to number 2, describe how the project achieves one of the required elements. Provide supporting documentation.</i></p> <p><i>OR,</i></p> <p><i>If "No" to both number 1 and number 2, explain why the project would not achieve the same or lower GHG emissions per service population than the existing designations, and why the project does not achieve one of the required elements. Prepare a comprehensive project-specific analysis of GHG emissions and impacts, pursuant to all CEQA guidelines and the City's CEQA approach and incorporate the measures in this Checklist to the extent feasible.</i></p>	
STEP 2: CAAP Action Screening Criteria		
<p>Certain projects may screen out of the CAAP Checklist if they meet the following screening criteria:</p> <p>1. Would the project achieve emissions of 1.4 MTCO₂e per service population or less?</p>	<p><i>If "Yes" to #1, attach to this checklist the estimated project emissions and emissions per service population. If the proposed project is determined to result in GHG emissions less than 1.4 MTCO₂e per service population, the project is consistent with the CAAP and the analysis is complete (no project-</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p>

Based on the 2.5 people per unit multiplier provided in the LB CAP, the Project's service population would be 293. As demonstrated in the Project's CalEEMod output, Project operation and amortized construction emissions would result in approximately 385.4 MTCO₂e/year. As such, the Project would result in approximately 0.98MTCO₂e per service population. This value is less than the 1.4 MTCO₂e per service population screening threshold; as such, the Project would be considered consistent with the CAP Actions.

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>If "Yes", the project is consistent with the CAAP and no additional analysis is needed (no project-specific GHG impact analysis would be required).</p> <p>If "No," proceed to <i>Building Energy</i> below.</p>	<p><i>specific GHG impact analysis would be required). Provide supporting calculation files and documentation for this analysis.</i></p> <p>OR,</p> <p>Complete the "<i>Building Energy</i>," "<i>Transportation</i>," and <i>Waste</i>" sections of this checklist.</p>	<input type="checkbox"/> Project Does Not Comply
STEP 3: CAAP Action Consistency		
Building Energy		
<p>1. <u>TIER 1: Zero-Carbon Electricity</u></p> <p>For all projects except heavy industry (but including light industrial projects), the project must utilize 100% zero-carbon electricity on-site. The project must comply with one of the following options:</p> <ol style="list-style-type: none"> 1. Install on-site renewable energy systems or participate in a community solar program to supply 100% of the project's estimated energy demand to the maximum extent feasible. 2. Participate in Southern California Edison at the Green Rate level (i.e., 100% carbon-free electricity) for all electricity accounts associated with the project until which time SCE provides 100% carbon-free electricity for all accounts by default. 3. A combination of #1 and #2 above such that 100% of the project's electricity is zero-carbon. <p>Supports CAAP Measures: BE-1, BE-2, BE-3</p>	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p> <p>Based on the response to Step 2, above, the Project would result in approximately 0.98MTCO₂e per service population. This value is less than the 1.4 MTCO₂e per service population screening threshold; as such, the Project would screen out of CAP Action Consistency. Moreover, Step 4 would not be applicable to the Project, as demonstrated by the flowchart on Page 7. As such, this analysis continues in Step 5.</p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed
<p>2. <u>TIER 1: MUNICIPAL PROJECTS ONLY: Reduce Energy Use and Supply the Project with Renewable Electricity</u></p> <p>The Project must incorporate the following design elements to the maximum extent feasible:</p> <ol style="list-style-type: none"> 1. Incorporate strategic energy management programs to reduce building energy demands. 2. Energy efficiency design features to reduce electricity and natural gas energy use beyond Title 24 Building Energy requirements. 3. Install on-site renewable energy systems, such as rooftop solar PV. 	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>4. Participate in Southern California Edison at the Green Rate level (i.e., 100% carbon-free electricity) for all electricity accounts associated with the project until which time SCE provides 100% carbon-free electricity for all accounts by default.</p> <p>Supports CAAP Measures: BE-6</p>		
<p>3. <u>TIER 1:</u> Comply with all City building energy codes and ordinances</p> <p>The Project must comply with all applicable City building energy codes and ordinances at the time of project approval. This includes, but is not limited to, any requirements for electrification, energy use intensity factors, zero-net-energy construction, CalGreen Tier 2 or other energy measures, or LEED requirements.</p> <p>Supports CAAP Measures: BE-7</p>	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>
<p>4. <u>TIER 2:</u> Building Energy Efficiency</p> <p>This action applies only to projects that include a retrofit of an existing building. If the proposed project does not include a retrofit, select "Not Applicable" in the Project Conformance column.</p> <p>Projects are encouraged to incorporate energy efficiency measures into the design, which can reduce carbon emissions while also reducing future operational costs through the following:</p> <ol style="list-style-type: none"> 1. Incorporate strategic energy management programs to reduce building energy demands. 2. Conduct an energy audit or benchmarking analysis to identify potential energy savings opportunities and implement such opportunities. 3. Achieve CalGreen Tier 2 or voluntary building energy measures as they apply to the retrofit. 4. Reduce or eliminate the use of natural gas in place of electricity use (i.e., replace existing natural gas appliances with electric alternatives) 5. Replace existing appliances with higher-efficiency models 6. Install high-efficiency appliances/fixtures to reduce water use, and/or include water-efficient landscape design 	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>7. Participate in SoCalREN, SCE, or other energy efficiency programs</p> <p>8. Conduct other energy efficiency retrofits</p> <p>9. Achieve zero-net-energy</p> <p>Supports CAAP Measures: BE-4, BE-5</p>		
Waste		
<p>5. <u>TIER 1</u>: Recyclable Materials Recycling</p> <p>The project must comply with all state and local requirements for recycling, also including but not limited to, Chapter 8.60 Solid Waste, Recycling, and Litter Prevention and Organic Waste Disposal Reduction in the City's Municipal code. The project must also:</p> <ol style="list-style-type: none"> 1. Comply with all Mandatory Construction & Demolition (C&D) Recycling Program Requirements, including Section 18.67.100. 2. Provide substantial storage, collection, and loading of recyclables in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes and amount of collection containers for recyclables. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants. 3. Ensure that all projects include space for multi-stream collection containers in any location where a solid waste container is traditionally housed. This includes both outdoor collection containers serviced by a waste hauler or indoor collection containers utilized by occupants. The project must provide educational material and training to occupants and tenants in how to properly separate recyclables from all other solid waste and place recyclables in a separate container designated for recycling. 4. Ensure that all project occupants and tenants separate recyclables from all other refuse and place recyclables in a separate container designated for recycling. 	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>5. Ensure containers are audited annually to ensure proper service levels and to check for contamination. Report findings back to occupants within 30 days and to the City as requested.</p> <p>6. Work with waste hauler to provide educational material to tenants at least on an annual basis.</p> <p>7. Provide compliance data to the City as required for any current auditing program.</p> <p>Supports CAAP Measures: W-1</p>		
<p>6. <u>TIER 1:</u> Organics Composting</p> <p>The project must comply with all state and local requirements for composting and organic waste collection, including but not limited to, Chapter 8.60 Solid Waste, Recycling, and Litter Prevention and Organic Waste Disposal Reduction in the City's Municipal code. The project must also:</p> <ol style="list-style-type: none"> 1. Provide proper storage, collection, and loading of organics in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes of collection containers for organics. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants. 2. Ensure that all projects include space for multi-stream collection containers for both recycling and organics in any location where a solid waste container is traditionally housed. This includes both outdoor collection containers serviced by a waste hauler or indoor collection containers utilized by occupants. The project must provide educational material and training to occupants and tenants in how to properly separate organics from all other solid waste and place organics in a separate container designated for organics. 3. Ensure that all project occupants and tenants will separate compostables from all other refuse and place compostables in a separate container designated for composting. 4. Ensure containers are audited annually to ensure proper service levels and to check for contamination. Report findings back to occupants within 30 days and to the City as requested. 	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
5. Work with waste hauler to provide educational material to tenants at least on an annual basis. 6. Provide compliance data to the City as required for any current auditing program. Supports CAAP Measures: W-2, W-3		
7. TIER 2: Incorporate On-site Composting, Mulching, and/or Anaerobic Digestion The project may incorporate organic waste processing capabilities, such as composting, mulching, or anaerobic digestion facilities (where applicable). Collaborate with agencies to share organic processing information with interested parties. Supports CAAP Measures: W-4	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed
Transportation		
8. TIER 2: Meets Transportation Screening Criteria Does the project meet <u>one</u> of the following transportation screening criteria? 1. Is the project located in a Transit Priority Area or High Quality Transit Area? 2. Does the project include local-serving retail (e.g., grocery stores, pharmacies, or restaurants) less than 50,000 square feet? 3. Does the project include 100 percent affordable housing units(excluding the Manager's unit)? 4. Will the project result in less than 110 total daily vehicle trips at full buildout? If "Yes," skip checklist items #9 though #14 and proceed to checklist item #15 (<i>Comply with the City's Transportation Impact Guidelines</i>) below. If "No," proceed to checklist item #6 below. Supports CAAP Measures: T-1, T-2, T-3, T-5, T-6, T-7, T-8, T-9	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>9. <u>TIER 1:</u> Trip Reduction Features to Reduce Vehicle Miles Traveled</p> <p>The project must incorporate vehicle trip reduction features into the project design or as mitigation measures. These features must achieve a minimum five percent reduction in vehicle trips and VMT as compared to the project without such vehicle trip reduction features, as estimated through practices backed by substantial evidence with cited reduction potential in the TIA guidelines Appendix A. This can be achieved through the implementation of a project-specific TDM Plan (see checklist item #13), offering transit subsidies, incorporating pedestrian and bicycle infrastructure (see checklist items #10 and #11), implementing parking restrictions or pricing, or including other features and measures to reduce vehicle trips.</p> <p>Supports CAAP Measures: T-1</p>	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>
<p>10. <u>TIER 1:</u> Incorporate Pedestrian Infrastructure</p> <p>The project must incorporate pedestrian infrastructure into its design:</p> <ol style="list-style-type: none"> 1. Pedestrian facilities and connections to public transportation consistent with the City's Mobility Element, CX3 Pedestrian Plan, and any other relevant governing plan 2. Increase sidewalk coverage to improve pedestrian access 3. Improve degraded or substandard sidewalks 4. Maximize shade for pedestrians through tree planting and maintenance 5. Incorporate best practices to ensure pedestrian infrastructure is contiguous and links externally with existing and planned pedestrian facilities; best practices include high-visibility crosswalks, pedestrian hybrid beacons, and other pedestrian signals, mid-block crossing walks, pedestrian refuge islands, speed tables, bulb-outs (curb extensions), curb ramps, signage, pavement markings, pedestrian-only connections and districts, landscaping, and other improvements to pedestrian safety 6. Minimize barriers to pedestrian access and interconnectivity, such as walls, landscaping buffers, slopes, and unprotected crossings 	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
Supports CAAP Measures: T-2		
11. TIER 1: Incorporate Bicycle Infrastructure The project must incorporate bicycle infrastructure into its design: <ol style="list-style-type: none"> 1. Bicycle facilities for new and expanded buildings, new dwelling units, change of occupancy, increased of use intensity, and added off-street vehicle parking spaces 2. Provide short and long-term (secure) bicycle parking for at least 5% of motorized vehicle capacity and nothing less than CalGREEN requirements, whichever is more restrictive 3. Bicycle facilities consistent with the City's Bicycle Master Plan, Urban Design Element, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen 	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed
Supports CAAP Measures: T-3		
12. TIER 1: Incorporate Electric Vehicle Charging Infrastructure The project must comply with any CalGREEN requirement, City ordinance, building code, or condition of approval that requires a certain amount of EV charging infrastructure and readiness. This may include minimum requirements for EV charging stations, EV-capable parking spaces, and EV-ready parking spaces.	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed
Supports CAAP Measures: T-5		
13. TIER 1: Comply with City TDM Ordinance The Project must comply with the City's TDM ordinance at the time of project approval. This may include preferential carpool/vanpool parking, bicycle parking, and shower facilities and locker rooms; trip reduction plans; transit-supportive infrastructure development; and similar strategies. Comply with any applicable VMT reduction target and incorporate any required monitoring mechanisms for development, subject to the ordinance.	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<input type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <input type="checkbox"/> Alternative Measure Proposed
Supports CAAP Measures: T-7		
14. TIER 1: Comply with the City's Transportation Impact Guidelines	<p><i>Describe which project consistency options from the leftmost column you are implementing.</i></p>	<input type="checkbox"/> Project Complies

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
<p>The project must comply with the City's current Transportation Impact (TIA) Guidelines. Projects may screen out if they meet certain criteria, such as being located in a transit priority area or local-serving retail development less than 50,000 square feet. For projects which don't screen out must meet the VMT efficiency metrics identified by the TIA Guidelines (e.g., 11.8 daily VMT per capita for residential projects and 18.0 daily VMT per capita for office projects).</p> <p>Supports CAAP Measures: T-9</p>	<p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>
<p>15. <u>TIER 2</u>: High-Density, Mixed-Use, Transit-Oriented, Walkable Infill Project Design</p> <p>Projects should maximize the following characteristics whenever feasible:</p> <ol style="list-style-type: none"> 1. Located in a transit priority area or transit corridor 2. Includes local-serving retail (e.g., grocery stores, pharmacies, or restaurants) 3. Includes 100 percent affordable housing units or an otherwise high level of affordable housing as defined by the City for the project site 4. Includes a mix of land uses 5. Includes shared and reduced parking strategies, such as shared parking facilities, carpool/vanpool-only spaces, shuttle facilities, EV-only spaces, and reduced parking below allowable amount 6. Does not provide more parking than required <p>Supports CAAP Measures: T-6, T-8</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p><input type="checkbox"/> Alternative Measure Proposed</p>

SOURCE: Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

Based on the response to Step 2, above, the Project would result in approximately 0.98MTCO₂e per service population. This value is less than the 1.4 MTCO₂e per service population screening threshold; as such, the Project would screen out of CAP Action Consistency. Moreover, Step 4 would not be applicable to the Project, as demonstrated by the flowchart on Page 7. As such, this analysis continues in Step 5.

TABLE 2
STEP 4: CAAP GREENHOUSE GAS REPLACEMENT MEASURES

Description of Proposed Alternative / Replacement Measure	Description of GHG Reduction Estimate	Proposed Measure Implementation
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	<input type="checkbox"/> Part of Design <input type="checkbox"/> Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	<input type="checkbox"/> Part of Design <input type="checkbox"/> Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	<input type="checkbox"/> Part of Design <input type="checkbox"/> Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	<input type="checkbox"/> Part of Design <input type="checkbox"/> Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	<input type="checkbox"/> Part of Design <input type="checkbox"/> Additional Measure

Measure Description: <i>[Describe the proposed project measure and why it is proposed]</i> Supports CAAP Measures: <i>[CAAP Measure(s)]</i>	<i>emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	
Replacement for CAAP Consistency Requirement #: <i>[Number]</i> Emissions Sector: <i>[Building energy, transportation, waste, or other sector]</i> Measure Description: <i>[Describe the proposed project measure and why it is proposed]</i> Supports CAAP Measures: <i>[CAAP Measure(s)]</i>	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	<input type="checkbox"/> Part of Design <input type="checkbox"/> Additional Measure

SOURCE: SOURCE: Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation.*

TABLE 3
STEP 5: CAAP ADAPTATION ACTION CONSISTENCY CHECKLIST

CAAP Adaptation Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
Extreme Heat		
1. Incorporate Cool Roofs, Cool Walls, Reflective Streets, Cool Surfaces, and Shade Canopies The project incorporates the following features into its design, but not less than the California Energy Code: 1. Cool roofs and/or walls in place of dark roofs and/or conventional walls 2. Cool pavements and reflective street materials 3. Shade canopy installations 4. Other heat island mitigation design features Supports CAAP Measures: EH-1, EH-2	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply The Project would comply with the California Energy Code. The Project would also include the installation of multiple private open spaces that would include a variety of shade canopies throughout the Project site.
2. Incorporate Tree Plantings and Expands Urban Forest Cover The project enhances and expands urban forest cover and vegetation by planting trees and other vegetation. All trees and vegetation planted must be drought-tolerant or California native trees & plants. Supports CAAP Measures: EH-3	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply The Project would incorporate drought-tolerant and native trees and plants throughout the Project Site.
3. Incorporate Bus Shelter Amenities For any project that includes the installation of a new bus shelter, the project must include bus shelter amenities such as shade structures. Supports CAAP Measures: EH-7	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply The Project would install a new bus shelter; this would include the installation of a shade shelter.

Air Quality		
4. Install Photocatalytic Tiles The project includes the installation of photocatalytic tiles on outdoor surfaces, particularly in areas of the City with the poorest air quality. Supports CAAP Measures: AQ-1	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input type="checkbox"/> Project Complies <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <i>The Project proposes future roof solar panel areas, equating to approximately 15% of the roof-area. This would offset energy usage at this site and help contribute a reliable and renewable energy grid. Due to the limited market accessibility for photocatalytic tiles, the use of photocatalytic tiles is not feasible and this LB CAP Development Checklist requirement is not applicable.</i>
5. Include Urban Agriculture The project includes urban agriculture in the form of community or private gardens. Supports CAAP Measures: AQ-2	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply <i>The Project would involve the installation of a vegetable garden along the northern site boundary.</i>
6. Use Electric Lawn and Garden Equipment, Outdoor Power Equipment, and Other Small Equipment The project prohibits the use of gasoline-powered small equipment, including lawn and garden equipment and outdoor power equipment, for all tenants and owners. The project provides educational materials to tenants regarding the SCAQMD Electric Lawn and Garden Equipment Incentive and Exchange Program, Commercial Lawn & Garden Battery Buy-Down Rebate Program, and Residential Lawn Mower Rebate Program as well as the new requirements of AB1346. This requirement must be stipulated in the contract specifications for the project's future tenants and any landscaping contracts for the property or tenants. Supports CAAP Measures: AQ-4	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i> OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i> <i>The Project Applicant, and any potential landscaping contracts for the subject property, shall utilize electric lawn and garden equipment, outdoor power equipment, and other small equipment or landscape management and site maintenance.</i>	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply
Drought		
7. Implement Water Use Efficiency and Water Conservation	<i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i>	<input checked="" type="checkbox"/> Project Complies

<p>The project incorporates water use efficiency and conservation measures, including:</p> <ol style="list-style-type: none"> 1. CalGreen Tier 1 and Tier 2 voluntary water conservation measures 2. Low-flow or high-efficiency water fixtures 3. Water-efficient landscapes with lower water demands than required by the DWR 2015 Model Water Efficient Landscape Ordinance (MWEL0) 4. Drought-tolerant and native plant species only 5. Other applicable strategies to reduce water use <p>Supports CAAP Measures: DRT-1</p>	<p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p>The Project would include the installation of low flow sprinkler heads and drip, automated faucets, and high efficiency toilets, where applicable. Additionally, the Project would plant native and drought tolerant vegetation with lower demands than required by MWEL0.</p>
<p>8. Incorporate Green Infrastructure and Green Streets</p> <p>The project shall incorporate green infrastructure such as permeable pavement, bioretention areas, bioswales, or vegetated strips.</p> <p>Supports CAAP Measures: DRT-3</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input checked="" type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p>The Project would incorporate green infrastructure such as vegetated strips, where feasible.</p>
<p>9. Use Recycled Water and Greywater for Non-Potable Uses; includes Rainfall Capture</p> <p>The project uses recycled water and/or greywater for non-potable uses and incorporates water reuse strategies onsite, such as rainfall capture systems. The project would:</p> <ol style="list-style-type: none"> 1. Require use of reclaimed / recycled water and/or grey water for outdoor uses 2. Install residential greywater systems that meet appropriate regulatory standards 3. Install rainfall capture systems 4. Install dual plumbing for the use of recycled water <p>Supports CAAP Measures: DRT-4, DRT-5</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p>

Sea Level Rise and Flooding		
<p>10. Comply with all City Floodplain and Sea Level Rise Regulations</p> <p>The project complies with all City and FEMA floodplain regulations as necessary to limit, elevate, or provide floodproofing standards in areas designated as vulnerable to flooding in order to minimize physical damage to development. This includes compliance with all applicable FEMA, California Building Code, City Building Code Chapter 18.40 and Floodplain Ordinance requirements.</p> <p>The project also complies with all applicable sea level rise regulations and ordinances, such as the Local Coastal Program.</p> <p>The project applicant must notify all residents, tenants, and occupants if the project is located on a FEMA floodplain map and a sea level rise inundation map and shall provide these maps to residents, tenants, and occupants.</p> <p>Supports CAAP Measures: FLD-1, FLD-2</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p> <p>The Project would implement Drought Adaptation Action #10 (Comply with all City Floodplain and Sea Level Rise Regulations) The Project would comply with all City and Federal Emergency Management Act (FEMA) floodplain regulations as necessary to limit, elevate, or provide floodproofing standards in areas designated as vulnerable to flooding in order to minimize physical damage to development. This includes compliance with all applicable FEMA, California Building Code, City Building Code Chapter 18.40 and Floodplain Ordinance requirements. The Project would also comply with all applicable sea level rise regulations and ordinances, as applicable.</p>	<p><input checked="" type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p>
<p>11. Comply with the City's Current Stormwater Management Plan</p> <p>The project must comply with the City's Current Stormwater Management Plan and all related ordinances related to stormwater management and sea level rise scenarios evaluated by the City.</p> <p>Supports CAAP Measures: FLD-5</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input checked="" type="checkbox"/> Project Complies</p> <p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p>The Project would comply with the City's current Stormwater Management Plan and all related ordinances related to stormwater management and sea level rise scenarios evaluated by the City.</p>
<p>12. Ensure that all critical infrastructure in the sea level rise vulnerability zone is elevated, relocated, or floodproofed.</p> <p>For any project related infrastructure or infrastructure improvements, the project must sufficiently elevate, relocate, or install sufficient floodproofing techniques for all critical infrastructure in the City's sea level rise vulnerability zone pursuant to all City requirements. The project uses floodproofing techniques as necessary.</p> <p>Supports CAAP Measures: FLD-10</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p> <p>OR,</p> <p><i>Describe why this action is not applicable to your project.</i></p> <p>OR,</p> <p><i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> Project Does Not Comply</p> <p>Drought Adaptation Action #12 (Ensure that all critical infrastructure in the sea level rise vulnerability zone is elevated, relocated, or floodproofed) is only applicable to projects within the sea level rise (SLR) vulnerability zone; the Project is not within the SLR vulnerability zone. As such, this action is not applicable to the Project.</p>
<p>13. Adapt Street Hardscapes and Waterfront Streets and Paths</p>	<p><i>Describe which, if any, project consistency options from the leftmost column you are implementing.</i></p>	<p><input type="checkbox"/> Project Complies</p> <p><input checked="" type="checkbox"/> Not Applicable</p>

Drought Adaptation Action #13 (Adapt Street Hardscapes and Waterfront Streets and Paths) is only applicable to projects related street improvements within the SLR vulnerability zone. The Project is not street improvement project. As such, this measure is not applicable.

For any project related street improvements within the SLR vulnerability zone, the project must consider elevating and extending street hardscapes such as curbs to eliminate gaps that could become flood pathways, including those identified in the CAAP. Supports CAAP Measures: FLD-14, FLD-15	OR, <i>Describe why this action is not applicable to your project.</i> OR, <i>Describe why such actions are infeasible and identify the alternative measure proposed as a replacement strategy (provide additional documentation as described below)</i>	<input type="checkbox"/> Project Does Not Comply
---	---	--

SOURCE: Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

LONG BEACH DEVELOPMENT SERVICES | PLANNING BUREAU

Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation

Introduction

In November 2020, the City of Long Beach adopted the Climate Action + Adaptation Plan (CAAP), which is a comprehensive planning document outlining the City's proposed approach both to address climate impacts on the city and to reduce the City's impact on the climate by reducing greenhouse gas (GHG) emissions. The CAAP demonstrates how the City will achieve its proportional share of State GHG emission reductions by 2030.

The purpose of the Climate Action + Adaptation Plan Consistency Review Checklist (referred to herein as the *CAAP Checklist*) is to provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA). This technical support document describes the process used to develop the CAAP Checklist and provides justification for the project-specific consistency requirements included therein. It specifically provides substantial evidence that implementing these requirements on a project-by-project basis will collectively achieve the CAAP's target emissions level for new development, as required by CEQA Guidelines Section 15183.5(b)(1)(D). New development can contribute its fair-share of GHG reductions by complying with CAAP mitigation actions that were determined to be applicable through the checklist development process. The following sections provide additional information about the steps used to determine the applicability of individual actions to new development projects in the City.

CEQA Compliance and Background Information

The City's near-term 2030 target was selected based on guidance provided in CARB's 2017 California Climate Change Scoping Plan and was developed to demonstrate consistency with the statewide 2030 target.¹ The City's 2030 target is established on a per service population (SP) basis and aims to achieve emissions rates of 3.04 metric tons of carbon dioxide equivalent

¹ City of Long Beach, July 2020, *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #3*.

(MTCO₂e) per SP (MTCO₂e/SP). This compares to the City’s 2030 business-as-usual forecast of 3.34 MTCO₂e/SP. Based on the City’s SP growth estimates, the 2030 target emissions level is 1,984,272 MTCO₂e per year. Annual GHG reductions of approximately 192,659 MTCO₂e by 2030 will be required to achieve this target, or a reduction of approximately 0.3 MTCO₂e/SP.

As described in the CAAP, these GHG reductions will occur through a combination of City initiatives in various plans and policies and will provide reductions from both existing and new developments. The CAAP Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the CAAP Checklist is a critical implementation tool in the City’s overall strategy to reduce GHG emissions. Implementation of applicable CAAP Actions in new development projects will help the City achieve incremental reductions toward its target.

Projects that are consistent with the demographic forecasts and land use assumptions used in the CAAP (i.e., consistent with the City’s General Plan) can utilize the CAAP Checklist to demonstrate consistency with the CAAP, and if consistent, can tier from the existing programmatic environmental review contained in the adopted Environmental Impact Report (EIR) for the CAAP. In doing so; pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b); a project’s incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable. This approach is consistent with the recommendations of the Association of Environmental Professionals (AEP) Climate Change Committee (2016) for tiering from qualified GHG reduction plans that demonstrate substantial progress toward meeting the next milestone Statewide planning reduction target (i.e., a 40 percent reduction below 1990 levels by 2030 as set forth by SB 32).²

This CAAP Checklist for new development provides a mechanism for projects to specifically identify “those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project” per §15183.5(b)(2).

GHG emissions associated with construction from a land use development project are generally orders of magnitude lower than the operational emissions. This is because construction emissions are typically short in duration compared to the project’s overall lifetime. Therefore, construction emissions can be assessed qualitatively as part of related CEQA GHG emissions analysis. However, some projects may have long construction periods or entail substantial excavation and grading that could result in construction-related GHG emissions that may be considered significant. Thus, the City retains the discretion on a project-by-project basis to consider whether a project’s construction-related GHG emissions could be cumulatively considerable and require more detailed quantitative CEQA GHG emissions analysis and mitigation.

Projects that are not consistent with the CAAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions

² Association of Environmental Professionals, 2016, *Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*, October 18, available at https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf.

and incorporation of the measures in this CAAP Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

As required by CEQA Guidelines Section 15183.5(b)(1)(E), the City will monitor strategy implementation and make updates, as necessary, to maintain an appropriate trajectory to the 2030 GHG target. CAAP updates will occur approximately every 5 years and can be scheduled to align with other City milestones, such as General Plan updates to the Land Use and Mobility Elements or budgetary cycles. If regular monitoring shows the CAAP is on track toward the GHG target, then CAAP updates may not be necessary. The City will also develop a comprehensive CAAP update following the current 2030 target year to provide greater analysis of the actions and implementation steps necessary to achieve the City's 2045 carbon neutrality goal. The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAAP or local, State, or federal law.

Climate Action + Adaptation Plan Summary

The CAAP includes a baseline inventory of citywide production-based³ GHG emissions for 2010; a business-as-usual (BAU) emissions forecast for 2030, 2040, and 2050;⁴ a calculation of the City's target GHG emissions for 2030 and its aspirational GHG goal for 2045; and an evaluation of the GHG emission reductions needed in each target year from implementation of local actions.⁵

In 2015, the City's production-based GHG emissions totaled 3,100,468 metric tons of carbon dioxide equivalent (MTCO₂e) per year in 2015, which equates to 6.6 MTCO₂e per Long Beach resident and 5.0 MTCO₂e per service population (SP) (i.e., residents plus employees). BAU emissions are estimated to be 2,176,931 MTCO₂e in 2030, which equates to 3.3 MTCO₂e/SP. BAU emissions would be 1,732,030 MTCO₂e in 2040 (2.6 MTCO₂e/SP) and 1,491,905 MTCO₂e in 2050 (2.2 MTCO₂e/SP).

The City's near-term 2030 target was selected based on guidance provided in CARB's 2017 California Climate Change Scoping Plan and was developed to demonstrate consistency with the

³ The production-based inventory includes emissions associated with activities taking place within the city that generate GHG emissions which occur inside the city boundary (such as building natural gas combustion) as well as outside the city boundary (such as building electricity consumption, where the electricity is generated at a power plant located outside of the City). This inventory includes "jurisdictional emissions" – those emissions sources over which the City and community have some amount of influence. This differs from the CAAP's "consumption-based" inventory which accounts for emissions inside and outside of the City that occur from consumptive activities in the City, such as emissions generated in the production and use of goods and services by households.

⁴ The BAU forecast indicates how emissions would increase if no additional actions were taken by the City to reduce emissions. This accounts for the growth in population, housing, employment and building square footage that is expected for the City through the year 2045. The BAU forecast does account for the expected impacts of foreseeable federal, state, and regional actions, based on the latest information from CARB and the 2017 Climate Change Scoping Plan. This includes the state's Renewables Portfolio Standard (RPS), the Pavley vehicle emission standards and Advanced Clean Cars, the Low Carbon Fuel Standard, and the effect of SCAG 2016 Regional Transportation Plan/Sustainable Community Strategy on land use changes, vehicle trips, and VMT.

⁵ City of Long Beach, 2020, *Climate Action + Adaptation Plan Appendix A Greenhouse Gas Inventory Methodology and 2030 Reduction Target Pathway*, November 23, available at https://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/caap/lb-caap-proposed-plan-app-a-_dec-14, accessed December 2021.

statewide 2030 target.⁶⁻⁷ The City’s 2030 target is established on a per service population (SP) basis and aims to achieve emissions rates of 3.04 MTCO₂e/SP. This compares to the City’s 2030 BAU forecast of 3.34 MTCO₂e/SP. Based on the City’s SP growth estimates, the 2030 target emissions level is 1,984,272 MTCO₂e/yr. GHG reductions of approximately 192,659 MTCO₂e will be required to achieve this target (a reduction of approximately 0.3 MTCO₂e/SP).

The City also used the CAAP to begin initial evaluation of a long-term aspirational GHG reduction goal and has begun considering the strategies that will be required to achieve it. The City has set an aspirational goal to achieve net carbon neutrality citywide by 2045, which is consistent with California Executive Order B-55-18, which calls for statewide net carbon neutrality in the same year.

The CAAP includes 21 priority GHG emission reduction “Mitigation Actions”⁸ that shall be implemented for the City achieve its proportional share of State GHG emission reductions for the near-term target year 2030 (referred to herein as *CAAP Actions*). These actions are organized into three sectors: 1) Building Energy; 2) Waste; and 3) Transportation.

Table A *CAAP Baseline Inventory, BAU Forecasts, and Emission Reduction Targets* presents the City’s GHG emissions inventory, BAU forecast, and target levels as evaluated in the CAAP.

TABLE A
CAAP BASELINE INVENTORY, BAU FORECASTS, AND EMISSION REDUCTION TARGETS

Category	GHG Emissions (MTCO ₂ e)		
	2015	2030	2045 ^a
GHG Emissions (2015 Baseline and BAU Forecasts)	2,799,123	2,176,931	1,513,047
CAAP Target Level: Emissions Per SP	-	3.04	0
CAAP Target Level: Mass Emissions	-	1,984,272	0
CAAP Reductions Needed	-	192,659	1,513,047
CAAP Estimated Reductions	-	363,250	n/a
Total Emissions after CAAP Implementation: Mass Emissions	-	1,813,682	n/a
Total Emissions after CAAP Implementation: Emissions Per SP	5.0	2.78	n/a

NOTES:

^a The CAAP’s 2045 target is aspirational in nature and not the primary reduction goal of the CAAP and the City. In addition, forecasting the CAAP’s ability to reduce GHG emissions out to 2045 is speculative given the long timeframe (more than 20 years), uncertainties in future technology, and emissions modeling limitations. As such, the CAAP did not forecast emission reductions out to 2045.

SOURCE: City of Long Beach, 2020, *Climate Action + Adaptation Plan*, November, available at <https://www.longbeach.gov/lbds/planning/caap/>, accessed October 2021.

⁶ California Air Resources Board, 2017, *California’s 2017 Climate Change Scoping Plan*, November, available at <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents>, accessed October 2021.

⁷ City of Long Beach, July 2020, *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #3*.

⁸ It should be noted that the CAAP’s “mitigation actions” are not mitigation measures as defined by CEQA; they are actions to “mitigate” GHG emissions. This document refers to these as “CAAP Actions” throughout.

By meeting the 2030 target, the City will meet its proportional share of the 2030 state target identified in SB 32. However, full implementation of all 21 priority actions will not be enough to achieve carbon neutrality in 2045. If emission reductions from these actions were maximized by 2045, total emissions would still be approximately 1.1 million MTCO₂e based on preliminary estimates. As a result, additional action will be needed to achieve the City's ambitious carbon neutrality goal. However, future actions anticipated by the state and possible federal initiatives would reduce the need for local measures and help ensure broader participation in emission reduction efforts. If CARB adopts a recommendation for a percentage reduction for local governments for future years, the City will amend its targets accordingly.

The CAAP also includes 40 "Adaptation Actions" that are identified to improve the ability of Long Beach and its residents and businesses to adapt to climate change, and related impacts now and in the future.⁹ These actions are organized into four climate impacts: 1) Extreme Heat; 2) Air Quality; 3) Drought; and 4) Sea level rise and flooding.

CAAP Consistency Checklist Components

As noted above, the CAAP Checklist provides a streamlined review process for the GHG emissions analysis of proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to CEQA, per section 15183.5 of the CEQA Guidelines. The following sections describe the components of the CAAP Checklist and technical support information for its development. It serves to provide substantial evidence that the requirements placed on new development are sufficient to ensure consistency with the City's CAAP and achieve the CAAP's target emissions level for new development.

Land Use Consistency

The first step in the CAAP Consistency Checklist is to demonstrate consistency with the City's General Plan and the existing land use designation of the 2019 Land Use Element (LUE). The GHG emissions forecasts in the CAAP were developed using various data sources for each emissions sector. For example, population forecasts were used to project residential electricity-related emissions; employment was used to project commercial, institutional, and industrial electricity-related emissions; the 2018 California Gas Report¹⁰ was used to project natural gas-related emissions; transportation-related emissions were projected using regional VMT data from the Southern California Associated of Governments (SCAG) 2012 Regional Transportation Plan / Sustainable Community Strategy (RTP/SCS) Regional Travel Demand model¹¹ and CARB's Emission FACTors 2014 (EMFAC2014) model.

⁹ Adaptation actions were developed based on the 2018 Long Beach Climate Stressors Review (Appendix D to the CAAP) and the Long Beach Climate Change Vulnerability Assessment Results (Appendix C to the CAAP).

¹⁰ California Gas and Electric Utilities, *2018 California Gas Report*, available at https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf, accessed December 2021.

¹¹ For more information, see <https://scag.ca.gov/trip-based-model>

Table B *CAAP Socioeconomic and Building Square Footage Data* presents the population, housing, employment, and building square footage data used in the CAAP’s emissions forecast and emission reduction calculations.

TABLE B
CAAP SOCIOECONOMIC AND BUILDING SQUARE FOOTAGE DATA

Category	2015	2030
Population	468,911	480,424
Employment	155,402	172,297
Service Population (Population + Employment)	624,313	652,721
Households	166,782	182,247
Single-Family	64,061	65,039
Multifamily	102,721	117,208
Nonresidential square footage	69,232,878	77,771,354
Commercial	21,153,178	22,187,152
Office	8,213,696	9,936,986
Industrial	18,269,678	23,520,644
Institutional	21,596,326	22,126,572
Nonresidential square footage	166,782	182,247

SOURCE: City of Long Beach, 2020, *Climate Action + Adaptation Plan*, November, available at <https://www.longbeach.gov/lbds/planning/caap/>, accessed October 2021; City of Long Beach.

The forecasts were based on the 2019 Land Use Element (LUE published in 2015, revised land use maps published in 2018, project adopted in 2019) and 2013 Mobility Elements of the City’s General Plan. The City reviewed the assumptions used to forecast emissions in the City’s CAAP and developed a series of questions that allow the City to assess a project’s consistency with the land use assumptions used in the CAAP. This step is intended to provide the substantial evidence that a project that is consistent with the CAAP’s GHG projections would not result in a cumulatively considerable GHG impact if otherwise consistent with the CAAP. In general, for the CAAP to be applicable to a project, the project must be consistent with the CAAP’s forecasts. If a project is consistent with the CAAP’s forecasts, the project’s growth was accounted for in the CAAP’s BAU emissions projection. This in turn means that if the project is consistent with the CAAP Actions, implementing the CAAP would result in overall GHG emissions that would be less than the CAAP’s identified GHG targets for the City, and would therefore be less than significant, as set forth in the Subsequent Environmental Impact Report for the CAAP.

See *Step 1: Demonstrate consistency with the City’s General Plan* below for detailed instructions for determining land use consistency.

Not all projects that are inconsistent with existing General Plan and LUE would be inconsistent with the CAAP’s emission reduction targets and actions. For example, if a project achieves less GHG emissions per service population than the future no-project alternative at the project site, it would still be within the projections assumed in the CAAP and can move forward to Step 2 of the

Checklist. Estimated GHG emissions for the project would need to be provided to support this conclusion. As another example, if a project includes a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing land use designations, it would still be within the projections assumed in the CAAP and can move forward to Step 2 of the Checklist. Estimated GHG emissions under the existing and proposed designations would need to be provided to support this conclusion. These alternative options are explained below in *Step 1: Demonstrate consistency with the City's General Plan*.

CAAP Mitigation Action Consistency

The CAAP identifies specific goals, actions, and targets supporting each of the 21 priority CAAP Actions. The CAAP Actions include a combination of ordinances, City Council policies, resolutions, programs, and incentives, as well as outreach and education activities. As the CAAP is implemented, each CAAP Action will be assessed and monitored. The CAAP also included implementing actions for each CAAP Action; these implementing actions would work together to achieve the overall goals and targets of each CAAP Action and thereby reduce GHG emissions to the target levels.

As described in the CAAP, there is an existing framework of federal, state, regional, and local regulations that contribute to reducing GHG emissions. Some of these actions are already included in the City's BAU forecast. However, federal, state, and regional actions by themselves would not achieve the City's target for 2030. Therefore, local actions that reduce emissions from both the built environment and new development would be necessary. While the City will work to achieve reductions outlined in the CAAP through planning processes and new ordinances, new development can do its fair share in helping the City achieve its targets by incorporating specific project design features and other measures consistent with the CAAP. This also provides new development with the benefit of using CEQA streamlining provisions for addressing its GHG impacts, as discussed in the *CEQA Compliance and Background Information* section above.

The CAAP's 2015 baseline includes the effect of regulations that were in place at that time. The 2030 forecast, however, accounts for existing (implemented since 2015) and reasonably foreseeable state programs. For example, projected emissions in the stationary energy sector include reductions in electricity and natural gas use due to implementation of the 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6) and some fuel switching. Similarly, projected emissions from the transportation sector were estimated using emission factors from the EMFAC2014 model which includes projected fleet turnover and implementation of Pavley fuel efficiency standards in future years. The gap in emission reductions need to achieve the CAAP's 2030 target that remains after the projected emissions are adjusted for known state actions demonstrates the need for local action.

Given this, the CAAP identified actions that would exceed existing state or local regulatory requirements already assumed in the CAAP's BAU forecast. Many of these actions would apply to new development and were therefore included in the CAAP Checklist. The CAAP Checklist therefore addresses CAAP Actions that would be additional to the requirements of existing state

and local codes. If a new project incorporates all CAAP Action requirements listed in CAAP Checklist, it would not hinder the City's ability to achieve its 2030 reduction target but rather would contribute to the City's ability to meet its overall CAAP targets.

The CAAP also identifies implementing actions for each overall CAAP Action. The overall intent of the CAAP Action and implementing actions provide the basis for the identified CAAP Action requirements listed in CAAP Checklist. Details on each requirement are provided in the following sections. The CAAP Checklist will be updated by the City as needed to incorporate new GHG reduction techniques or to comply with later amendments to the CAAP or local, state, or federal law. Certain CAAP Action requirements listed in CAAP Checklist may otherwise become mandatory through future updates to state and local codes or through adoption of local ordinances. If the CAAP performance and monitoring process (see CAAP Chapter 8) reveals the need for further GHG emission reductions to stay on track to meet the City's 2030 reduction target, the CAAP Checklist may be updated to include additional applicable measures for new development.

See *Step 2: Determine if project screens out of CAAP Action consistency* and *Step 3: Demonstrate consistency with CAAP GHG Emission Reduction Actions* below for instructions for demonstrating consistency with the CAAP Actions and for additional detail on the CAAP Action consistency requirements for new development and how these requirements align with the CAAP Mitigation Actions.

CAAP Adaptation Action Consistency

As discussed above, the CAAP also includes 40 Adaptation Actions that are identified to improve the ability of Long Beach and its residents and businesses to adapt to climate change. These actions establish an initial roadmap to withstand rising temperatures, flooding associated with sea level rise and intense storm events, and drought among others.

Projects must demonstrate consistency with the CAAP Adaptation Action requirements or document why the actions are not applicable or are infeasible. Many of the Adaptation Actions may not apply directly to a development project, such as elevating all critical infrastructure in the sea level rise vulnerability zone. However, all projects must implement all applicable and feasible CAAP Adaptation Action consistency requirements to ensure consistency with the CAAP towards adapting to climate change and its related impacts as much as possible.

Implementation of the CAAP Adaptation Action consistency requirements would not directly contribute toward the City's ability to reduce GHG emissions and meet its emission reduction targets. Nevertheless, projects must still implement all applicable and feasible CAAP Adaptation Action consistency requirements to demonstrate their consistency with the CAAP as a whole.

See *Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions* below for additional detail on the CAAP Adaptation Action consistency requirements for new development and how these requirements align with the CAAP Adaptation Actions.

CAP Consistency Checklist Steps

Project applicants shall complete the following steps to demonstrate conformance with the City of Long Beach Climate Action + Adaptation Plan for the proposed project.

Step 1. Demonstrate consistency with the City's General Plan (CAAP Checklist Table 1)

Step 2. Determine if project screens out of CAAP Action consistency (CAAP Checklist Table 1)

Step 3. Demonstrate consistency with the CAAP GHG Emission Reduction Actions (CAAP Checklist Table 1)

Step 4. Identify alternative project emission reduction measures and additional GHG reductions if necessary (CAAP Checklist Table 2)

Step 5. Demonstrate consistency with the CAAP Adaptation Actions (CAAP Checklist Table 3)

All projects must complete **Step 1. Demonstrate consistency with the City's General Plan**, **Step 2. Determine if project screens out of CAAP Action consistency**, **Step 3. Demonstrate consistency with CAAP GHG Emission Reduction Actions**, and **Step 5. Demonstrate consistency with the CAAP Adaptation Actions**. Projects that propose alternative GHG emission reduction measures must also complete **Step 4. Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions**.

Step 1: Demonstrate consistency with the City's General Plan

All projects must demonstrate consistency with the City's General Plan and the existing land use designation of the 2019 LUE. This represents **Step 1** of the CAAP Checklist. Alternatively, if a project is not consistent with the land use designation of the 2019 LUE, the project must identify an alternative compliance mechanism. As described in the CAAP Checklist, projects must answer the following questions:

1. Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element?
2. If no to #1, does the project achieve emissions of 1.4 MTCO₂e per service population or less?
3. If no to #1 and #2, does the project result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site?

For question #1, the demographic forecasts and land use assumptions of the CAAP are based on the 2019 Land Use and 2013 Mobility Elements of the City's General Plan.

However, the 2019 LUE is the City's current Land Use element, and therefore all projects must demonstrate consistency with the 2019 LUE to be permitted without a general plan amendment. Further, the slight difference in population and employment numbers would likely not inhibit the

CAAP from achieving its target emissions level, as was demonstrated above for VMT. Accordingly, the analysis of the project's GHG emissions in its CEQA document should include a reference to the project's consistency with the existing land use designation of the 2019 LUE.

For question #2, projects that are not consistent with the land use designation of the 2019 LUE can demonstrate an emissions efficiency level of 1.4 MTCO₂e per service population instead. This level is low enough that the project would be fully consistent with the CAAP, even if it is not consistent with the land use designation of the 2019 LUE. For evidence supporting this conclusion, please see the *GHG Emissions Less than 1.4 MTCO₂e per Service Population* section below.

For question #3, projects that are not consistent with the land use designation of the 2019 LUE, and cannot demonstrate an emissions efficiency level of 1.4 MTCO₂e per service population, the project can instead demonstrate that they would result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site. In other words, the project would not be more GHG intensive than what would occur for a project consistent with the 2019 LUE. Therefore, even though the project's emissions aren't specifically included in the CAAP's emissions forecast, the project would produce equal or fewer GHG emissions per service population than the equivalent 2019 LUE-consistent project, and therefore be consistent with the CAAP. Projects would still have to complete the CAAP Checklist (**Step 2**).

If the project answers "no" to all three questions above (not consistent with the land use designation of the 2019 LUE, cannot demonstrate an emissions efficiency level of 1.4 MTCO₂e per service population, , and cannot demonstrate an emissions level per service population lower than the future no-project development), then the project cannot use the CEQA Checklist to tier from the adopted EIR for the CAAP. Instead, the project's GHG emissions must be evaluated under a project-specific impact analysis pursuant to all CEQA requirements and incorporate the measures in the CAAP Checklist to the extent feasible.

Step 2: Determine if project screens out of CAAP Action consistency

Certain projects may screen out of the CAAP Checklist if they meet certain criteria. These criteria are designed to ensure high efficiency and low GHG emissions and describe projects that would generally be consistent with the CAAP's GHG emission reduction actions for new development. This represents **Step 2** of the CAAP Checklist.

As described in the CAAP Checklist, if the project can achieve emissions of 1.4 MTCO₂e per service population or less, the project is considered consistent with the CAAP Actions and the analysis is complete.

Additionally, projects may skip completion of the Transportation subsection of the CAAP Action Screening Criteria section of Table 1 if they meet one of four transportation screening criteria.

These screening options are discussed in detail below.

GHG Emissions Less than 1.4 MTCO₂e per Service Population

If projects can quantitatively demonstrate that they will achieve a certain efficiency emissions level, and that efficiency emissions level is consistent with the CAAP's overall target for citywide emissions as it applies to new development, then the project would be considered consistent with the CAAP. This efficiency emissions level was calculated to be 1.4 MTCO₂e per service population (SP).

This efficiency emissions level was calculated using the following approach:

1. Estimated emissions from the land use sectors of the City's 2030 BAU forecast, because these are the emission sectors that would apply to new development. Emissions for the following sources were removed: Oil & Gas refining (Thums facility), tidelands flaring, agriculture, Port-related emissions (including diesel heavy-duty truck emissions), freight rail, Metro rail, harbor craft, cruise ships, and airport ground support equipment. The resulting land-use-based emissions of 1,687,782 MTCO₂e represent 78 percent of total citywide emissions in 2030.
2. Calculated the CAAP's target reductions for the land use sector only by scaling total citywide reductions needed to achieve the CAAP's target (192,659 MTCO₂e) by the land use emissions fraction (78%) = 149,369 MTCO₂e.
3. Calculated the citywide target level for land use emissions by subtracting the land use target reductions calculated above from the 2030 BAU land use emissions = 1,538,412 MTCO₂e.
4. Because new development will naturally be more efficient than existing development, given new building energy standards, compliance with TIA guidelines, etc., it was assumed that new development would be 15% more efficient than existing development. This was based on the TIA's required reduction in daily VMT of 15% for residential and office projects (compared to regional average daily VMT) and data from the UCLA Energy Atlas for the City of Long Beach which indicates that post-1990 homes are approximately 15% more energy efficient than pre-1990 homes (more recent building vintage data was not available from UCLA).
5. Calculated the portion of the land use emissions target that would be achieved through existing development based on the 15% factor = 1,624,933 MTCO₂e; calculated the portion of the land use target that would be achieved through new development based on the 15% factor = 62,848 MTCO₂e.
6. Isolated the CAAP's reduction actions that apply to new land use development (see Table C below) = 21,840 MTCO₂e. Subtracted this value from the new development target level = 41,007 MTCO₂e to get the proportion of reductions that would come through CAAP actions.
7. Divided this value by the growth in service population from 2015-2030 (28,408) to determine the efficiency level required of new development = 1.44 MTCO₂e/SP.

Therefore, the efficiency level of 1.4 MTCO₂e/SP (rounded down from 1.44) represents the average emissions level per service population that new land use development would have to achieve to be consistent with the CAAP's target level and emission reduction actions. This efficiency level is therefore used as an alternative compliance approach to completing the CAAP

Consistency Checklist for new projects. This level represents *average efficiency emissions* and does not mean that all projects would have to achieve these emissions to be consistent with the CAAP; only that if a project achieves this emissions level, it is considered consistent with the CAAP for CEQA tiering purposes.

Transportation Screening Criteria

Certain projects may screen out of the *Transportation* requirements of the CAAP Checklist if they meet one of the following criteria:

1. Located in a Transit Priority Area or High Quality Transit Area (HQTA) as defined by Southern California Association of Governments (SCAG).¹²
2. Includes local-serving retail (e.g., grocery stores, pharmacies, or restaurants) less than 50,000 square feet.
3. Includes 100% affordable housing
4. Would result in fewer than 110 daily trips per day.

These screening criteria represent characteristics that are desirable from a GHG emission reduction perspective, as envisioned by the CAAP and consistent with the screening criteria developed by the State of California for implementing SB743 to reduce vehicle miles traveled (VMT). Projects that meet these criteria are assumed to result in reduced transportation activity and significantly lower mobile source GHG emissions than the citywide average development and would therefore be consistent with the CAAP's transportation actions.

Any project which meets these criteria would still need to demonstrate consistency with the building energy and waste CAAP Actions by completing the *Building Energy* and *Waste* sections of the CAAP Checklist.

Transit Priority Area or HQTA

Projects located in a Transit Priority area or HQTA would have relatively low mobile source emissions on a per-capita basis compared to projects not located in these areas. The determination that these projects would screen out of the CAAP Checklist for transportation is based on the Long Beach TIA Guidelines and CEQA Guidelines Section 15064.3, Subsection (b), which states that “generally, [land use] projects within one-half mile of either an existing major transit stop or an existing high quality transit corridor should be presumed to cause a less than significant transportation impact.” Figure 4 of the Long Beach TIA Guidelines displays the transit priority areas of Long Beach based on the California PRC definitions for major transit stops or high-

¹² SCAG defines a HQTA as an area within one half-mile of a well-served transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours. For more information, see: <https://gisdata-scag.opendata.arcgis.com/datasets/43e6fef395d041c09deacb369a513ca1/explore?location=34.152977%2C-117.742800%2C9.85>

quality transit corridors. Any project located in these transit priority areas will be presumed to be consistent with the CAAP's transportation actions, unless the project:

- Has an overall Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site);
- Is inconsistent with the Long Beach Land Use Element or the SCAG RTP/SCS; or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

A higher-density project located within a transit priority area could help the City achieve its VMT and mode share goals even though it would be inconsistent with the growth projections in the CAAP, whereas a higher-density project in a more remote location may not provide the same benefit. Projects in transit priority areas can support the CAAP by increasing the capacity for transit-supportive residential and/or employment densities. Projects can increase walking opportunities in a transit priority area by implementing pedestrian improvements through provision of multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries) and features for walkability as identified in the proposed project circulation system.

Although a project that increases density in a transit priority area (compared to existing land use designations) may lead to a short-term increase GHG emissions at the project site, the project is likely to reduce automobile trips in the long-term and produce related benefits. Higher density generally reduces the distance people travel and provides greater options for the mode of travel they choose. Transit ridership increases with density, justifying enhanced transit service.¹³ The City can make progress towards its GHG reduction targets by accommodating growth in a more efficient manner, such as via higher density development in transit priority areas.

Local-Serving Retail

As discussed in the Long Beach TIA Guidelines, retail development that is 50,000 square feet (sf) or less is likely to be local-serving and tends to shorten trips within Long Beach. Therefore, any retail project 50,000 square feet or less will be presumed to be consistent with the CAAP's transportation actions (related to CEQA Guidelines Section 15064.3, subdivision (b)).

High Level of Affordable Housing

As discussed in the Long Beach TIA Guidelines, affordable residential development in areas with inadequate affordable housing has the potential to shorten commute distances and/or increase the

¹³ California Air Pollution Control Officers Association, Sacramento Metropolitan Air Quality Management District, and ICF, *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, Final Draft, December 2021, available at <https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod>. Accessed March 2022.

proportion of residents using transit, which would reduce VMT. Residential projects (or the residential portion of mixed-use projects) with 100 percent affordable dwelling units will be presumed to be consistent with the CAAP's transportation actions (pursuant to CEQA Guidelines Section 15064.3, subdivision (b)).

Fewer than 110 Trips per Day

According to the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA*, projects which would have fewer than 110 trips per day could be presumed to have a less than significant transportation impact related to CEQA Guidelines Section 15064.3, subdivision (b).¹⁴ Therefore, these projects would be presumed to be consistent with the CAAP's transportation actions.

Step 3: Demonstrate consistency with CAAP GHG Emission Reduction Actions

All projects must demonstrate consistency with the CAAP Action requirements listed in CAAP Checklist Table 1 or document why the strategies are not applicable or are infeasible. However, if a project achieves emissions of 1.4 MTCO₂e per service population or less as discussed in Step 1 above, the project would be consistent with the CAAP's target level and emission reduction actions and would not have to complete CAAP Checklist Table 1. All other projects must complete CAAP Checklist Table 1.¹⁵ This represents **Step 3** of the CAAP Checklist.

The CAAP Action consistency requirements are listed as either "Tier 1" or "Tier 2." These two levels are defined as follows:

Tier 1: Required for all discretionary projects to demonstrate consistency with the CAAP.

Tier 2: Encouraged for all discretionary projects to the maximum extent feasible. Although these are not required, projects are strongly encouraged to implement as many of these as feasible.

In order to demonstrate consistency with the proposed CAAP, future projects would implement both mandatory (Tier 1) and encouraged (Tier 2) measures that support the CAAP Actions and would achieve the City's GHG emissions targets.

All projects are required to complete Tier 1 measures. Tier 1 measures are required because they are either: 1) quantified as part of the City's GHG reduction pathway for new development; or 2) required through ordinance, building code, or other city planning requirements (such as the

¹⁴ The OPR Technical Advisory states the following: "CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact."

¹⁵ Projects that meet certain transportation screening criteria, as discussed in the Step 2 *Transportation Screening Criteria* section above, may skip the *Transportation* section of CAAP Checklist.

Bicycle Master Plan). Tier 1 measures required for the Building and Energy sector include zero-carbon electricity, building energy efficiency, municipal project energy efficiency measures and solar PV installations, and compliance with building energy codes and ordinances. Tier 1 measures for the Transportation sector include trip reduction features to reduce vehicle miles traveled (VMT), incorporation of pedestrian, bicycle, and electric vehicle charging infrastructure, and compliance with the City's Transportation Demand Management (TDM) Ordinance and Traffic Impact Analysis (TIA) Guidelines. Tier 1 measures required for the Waste sector include recyclable materials recycling and organics composting. If a project does not include specific Tier 1 measures, quantifiably equivalent measures for GHG emission reductions must be provided for the project to be considered consistent with the proposed CAAP (see section *Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions* below).

All projects are encouraged to complete Tier 2 measures, but they are not required. Tier 2 measures were not quantified as part of the City's GHG reduction pathway for new development. There are no Tier 2 measures identified for the Building and Energy sector. Tier 2 measures for the Transportation Sector include meeting the Transportation Screening Criteria and High-Density, Mixed-Use, Transit-Oriented, Walkable Infill Project Design. Tier 2 measures for the Waste sector include incorporation of on-site composting, mulching, and/or anaerobic digestion.

Tier 1 Measures: Quantitative Consistency Requirements

This section addresses each required Tier 1 CAAP consistency checklist item for new development that relates to a CAAP action that was quantified for GHG emission reductions in the CAAP. These items are mandatory for all projects. For each checklist item listed below, this document provides the quantitative basis behind the requirements for new development and demonstrates new development's "fair share" of the CAAP's mitigation of GHG emissions as stipulated by the California Supreme Court in *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204 (commonly referred to as "Newhall Ranch"), in CARB's 2017 Scoping Plan-Identified VMT Reductions And Relationship To State Climate Goals document, and in CEQA Guidelines Section 15130(a)(3).^{16,17,18}

¹⁶ In Newhall Ranch, the court said, "Indeed, to proceed in this manner is consistent with CEQA's "inherent recognition ... that if a plan is in place to address a cumulative problem, a new project's incremental addition to the problem will not be 'cumulatively considerable' if it is consistent with the plan and is doing its fair share to achieve the plan's goals." (Addressing the Significance of Greenhouse Gas Emissions, supra, 4 Golden Gate U. Envtl. L.J. at pp. 210–211.)"

¹⁷ "It is reasonable for new development to achieve a fair share of per capita VMT and GHG emissions reductions necessary to achieve statewide climate goals and to continue to work towards additional VMT and GHG emissions reductions through other measures." California Air Resources Board, *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*, January 2019, available at <https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate>, accessed August 2020.

¹⁸ CEQA Guidelines Section 15130(a)(3) state that "An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable."

Table C CAAP Action Consistency: New Development Contributions presents a summary of the specific requirements and performance standards for new development for the five quantified CAAP Actions. The table also presents total emission reductions achieved by new development for each measure and compares this to the total emission reduction necessary from all development (existing and new) citywide by 2030.

TABLE C
CAAP ACTION CONSISTENCY: NEW DEVELOPMENT CONTRIBUTIONS

Sector, CAAP Action Consistency Requirement, and CAAP Action	Summary of New Development Consistency Requirements	2030 GHG Emission Reductions (MTCO ₂ e)			Percent New Development of Total GHG Reduction
		New Development	Existing Development	Total	
Building Energy					
1. Zero-Carbon Electricity					
BE-1: Provide access to renewably generated electricity (SCE Green-Rate) ^a	100% zero-carbon electricity	16,650	9,680	26,330	63%
BE-2: Increase use of solar power					
Waste					
5. Recyclable Materials Recycling					
W-1: Ensure compliance with state law recycling program requirements for multi-family and commercial property recycling programs	Comply with all state and local requirements for recycling and mandate recycling onsite	2,240	43,100	45,330	5%
6. Organics Composting					
W-2: Develop an organic waste collection program for City-serviced accounts.	Comply with all state and local requirements for organic waste collection and mandate compostable material separation onsite	1,960	37,770	39,730	5%
Transportation					
9. Trip Reduction Features to Reduce Vehicle Miles Traveled					
T-1: Increase frequency, speed, connectivity, and safety of transit options	Five percent reduction in vehicle miles traveled (VMT)	990	4,340	5,330	19%
Total		21,840	94,890	116,730	19%

NOTES:

^a In the CAAP, BE-1 includes emission reductions from SCE's commitment to an 80 percent carbon free energy supply by 2030 (which would occur independent of CAAP implementation outside of the City's jurisdiction), and also accounts for a proportion of SCE accounts in Long Beach enrolling in SCE's Green Rate program (within control of the City). The emission reductions presented in this table include only the portion of BE-1 associated with additional enrollment in SCE's Green Rate program, since all development will benefit from changes to SCE's default energy supply mix.

SOURCE: City of Long Beach, 2020, *Climate Action + Adaptation Plan*, November, available at <https://www.longbeach.gov/lbds/planning/caap/>, accessed October 2021; City of Long Beach.

Table C illustrates that with the CAAP Action consistency requirements included in the CAAP Checklist, new development would contribute nearly 22,000 MTCO₂e of GHG emission reductions in 2030, representing 19 percent of the total reductions attributed to these five measures in the CAAP. Because new development only accounts for four percent of the total citywide service population in 2030, the 19% represents new developments' fair share contribution toward the CAAP's emission reduction estimates. In other words, on a per-SP basis, new development is achieving nearly *five times* more GHG emission reductions than existing development.

As discussed above, other quantified CAAP measures (T-4: Implement the Port of Long Beach Clean Air Action Plan; BE-6: Perform municipal energy and water audits; and BE-8: Identify and implement short-term measures to reduce emissions related to oil and gas extraction) would not apply to new development and their implementation would be independent of actions taken by new development.

CAAP Checklist Table 1, Step 3: #1. Zero-Carbon Electricity

This checklist item requires that new development use 100% carbon-free electricity for all electricity usage onsite. This can be achieved through onsite solar PV or other onsite renewable energy generation, through enrollment in SCE's Green Rate program (or other available carbon-free electricity service at the time of project application), or some combination of the two.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

The CAAP includes the following actions related to zero-carbon electricity for new development:

- **BE-1: Provide access to renewably generated electricity.** Explore and pursue various options to increase the community's access to renewable electricity that exceeds the State's Renewables Portfolio Standard in the near-term.
- **BE-2: Increase use of solar power.** Incentivize and facilitate an increase in solar power infrastructure installation and usage
- **BE-3: Promote community solar and microgrids.** Leverage partnerships and private developers to expand participation in community solar programs. Identify optimum locations and funding mechanisms for implementing microgrid pilot projects.

The CAAP calculated GHG emission reductions for BE-1 and BE-2 (no reductions were calculated for BE-3). For BE-1, the CAAP assumed that SCE would reduce the carbon intensity of their retail electricity supply by 80% by 2030. This would occur independent of City and project applicant action and would result in 169,921 MTCO₂e of emission reductions. The CAAP also assumed a 10 percent participation rate in SCE's Green Rate program for all residential and commercial accounts in the City. This amounts to 83,332 megawatt hours (MWh) of carbon-free electricity supplied to residential accounts and 76,394 MWh of carbon-free electricity supplied to commercial accounts, resulting in 19,041 MTCO₂e of emission reductions. The total citywide emission reduction for BE-1 is 188,963 MTCO₂e.

For BE-2, the CAAP assumed that 5 percent of the 91,992 maximum rooftop PV solar coverage potential would install solar PV for a total of 4,600 solar PV systems. At the time the CAAP was prepared, the City of Long Beach had 1,469 roofs with solar PV installations. 5 percent coverage would result in 3,131 new solar PV installations. The CAAP used an average system size of 6.8 kW DC and an average annual generation of 10,400 kilowatt hours (kWh). All data and factors in this calculation was based on Google's Project Sunroof dashboard.¹⁹ The total citywide emission reduction for BE-2 is 3,881 MTCO₂e.

Because checklist item #1 requires new development to source 100 percent of its electricity from carbon-free sources; whether from onsite solar (BE-2) or carbon-free electricity through SCE or possibly in the future through a Community Choice Aggregation program (BE-1), a separate emission reduction contribution analysis for each of these two CAAP measures for new development is not needed. Therefore, this document calculated reductions from the combination of BE-1 and BE-2 implemented for new development, as required by checklist item #1. The calculation steps are as follows:

1. The CAAP projects growth in electricity use from 2015-2030 as 19,970 MWh for residential development, 85,529 MWh for commercial development, and 153,269 MWh for industrial development.
2. For industrial electricity use, only light industrial uses were accounted for in this calculation (conservatively assuming heavy industry would be exempt from the measure due to potential infeasibility). It was assumed that 25% of total industrial development (and electricity use) would be due to light industrial uses, or 38,317 MWh.
3. Although this checklist item requires 100 percent carbon-free electricity, it was assumed that some new development would be exempt or there would be less than 100 percent compliance with this measure. It was conservatively assumed that 95% of all new electricity use associated with new residential, commercial, and light industrial development would be carbon-free. This amounts to 136,626 total MWh supplied by carbon-free sources.
4. The 2030 emission rate for SCE-provided electricity, after SCE reduces the carbon intensity of their retail electricity supply, is 0.1192 MTCO₂e per MWh. By applying this rate to the total amount of carbon-free electricity provided through BE-1 and BE-2 for new development, the total emission reduction is 16,650 MTCO₂e.

The CAAP estimated that BE-1 and BE-2 combined would reduce emissions citywide by 192,840 MTCO₂e. However, when accounting only for the portion of BE-1 associated with enrollment in SCE's Green Rate program (because the reduction in SCE's standard electricity intensity would occur independent of CAAP implementation outside of the City's jurisdiction), the total reduction is 22,923 MTCO₂e. Based on the assumptions above for new development, the reduction for implementation of checklist item #1 would be 16,650 MTCO₂e. This represents 63 percent of the total citywide reduction for BE-1 and BE-2. Since electricity consumption associated with new

¹⁹ Google, *Google Project Sunroof: Estimated rooftop solar potential of Long Beach, CA*, Last Updated November 2018, available at <https://sunroof.withgoogle.com/data-explorer/place/ChIJWdeZQOjKwoARqo8qxPo6AKE/>, accessed March 2022.

development represents only 8 percent of the City's total electricity consumption in 2030, the 63 percent value represents new developments' fair share contribution toward BE-1 and BE-2.

CAAP Checklist Table 1, Step 3: #5. Recyclable Materials Recycling

This checklist item requires that new development comply with all state and local requirements for recycling, including the mandatory commercial and multifamily recycling ordinance. It also requires that projects; (1) provide for the storage, collection, and loading of recyclables in a manner that is convenient for all users of the building; (2) make efforts to ensure that all project occupants and tenants will separate recyclables from all other refuse and place recyclables in a separate container designated for recycling; and (3) provide compliance data to the City as required for any current auditing program.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

This checklist item addresses the following CAAP action:

- **W-1: Ensure compliance with state law recycling program requirements for multifamily and commercial property recycling programs.** Adopt a mandatory commercial recycling ordinance that includes enforcement mechanisms to ensure that on-site recycling collection is provided at multifamily and commercial properties and that the City is in compliance with state laws.

The CAAP calculated GHG reductions for W-1 assuming a citywide reduction in paper and cardboard landfilling of 75 percent from the multifamily residential and commercial sectors. This represents a reduction in 8,264 tons of paper and cardboard landfilled from the multifamily sector and a reduction in 41,948 tons of paper and cardboard landfilled from the commercial sector. The landfilling emission rate is 0.90 MTCO_{2e} per ton, so the total reduction is 45,340 MTCO_{2e}.

GHG emission reductions associated with paper and cardboard recycling for new development were calculated as follows:

1. The total tonnage of paper and cardboard landfilling for new development was calculated by taking the growth in paper and cardboard landfilling from 2015 to 2030; this value is 480 tons for multifamily development and 2,434 tons for commercial development.
2. It was assumed that new development could achieve slightly better diversion than existing development, given opportunities to educate new occupants and tenants about recycling and by providing new collection bins immediately. A reduction of 85 percent was selected for new development.
3. The total tonnage of paper and cardboard landfilling reduced for new development was then calculated for both multifamily and commercial waste; this amounts to 408 tons for multifamily and 2,069 tons commercial.

4. Using the average landfilling emission rate of 0.90 MTCO₂e per ton, the GHG emission reduction is 370 MTCO₂e for multifamily and 1,870 MTCO₂e for commercial; the total reduction is 2,240 MTCO₂e

The CAAP estimated that W-1 would reduce emissions citywide by 45,335 MTCO₂e. The contribution from new development would therefore represent 4.9 percent of the total citywide reduction for W-1. Since paper and cardboard landfilling associated with new development represents 4.4 percent of the City's total paper and cardboard landfilling in 2030, the 4.9 percent contribution from new development exceeds the citywide average contribution and represents a fair share.

CAAP Checklist Table 1, Step 3: #6. Organics Composting

This checklist item requires that new development comply with all state and local requirements for composting and organic waste collection, including the mandatory commercial and multifamily organic waste collection ordinance. It also requires that projects (1) provide for the storage, collection, and loading of recyclables and solid waste in a manner that is convenient for all users of the building; (2) make efforts to ensure that all project occupants and tenants will separate compostables from all other refuse and place compostables in a separate container designated for composting; and (3) provide compliance data to the City as required for any current auditing program.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

This checklist item addresses the following CAAP action:

- **W-2: Develop an organic waste collection program for City-serviced accounts.** Develop an organic waste collection program and educational campaign for properties serviced by the City to divert organic waste from landfills.
- **W-3: Partner with private waste haulers to expand organic waste collection community-wide.** Adopt a mandatory commercial and multifamily organic waste collection ordinance and partner with the City's franchise waste haulers to ensure organics collection service is provided community-wide.

The CAAP calculated GHG reductions for W-2 assuming a citywide reduction in landfilling of organics (food, park, and wood) of 75 percent from the multifamily residential and commercial sectors. This represents a reduction in 3,695 tons of organics landfilled from the multifamily sector and a reduction in 20,937 tons of organics landfilled from the commercial sector. The landfilling emission rate for organics is 0.44 MTCO₂e per ton for multifamily organics and 0.47 MTCO₂e per ton for commercial organics, so the total reduction is 39,730 MTCO₂e.

GHG emission reductions associated with organics composting for new development were calculated as follows:

1. The total tonnage of organics landfilling for new development was calculated by taking the growth in organics landfilling from 2015 to 2030; this value is 832 tons for multifamily development and 5,870 tons for commercial development.
2. It was assumed that new development could achieve slightly better diversion than existing development, given opportunities to educate new occupants and tenants about recycling and by providing new collection bins immediately. A reduction of 85 percent was selected for new development.
3. The total tonnage of organics landfilling reduced for new development was then calculated for both multifamily and commercial waste; this and amounts to 707 tons for multifamily and 3,488 tons commercial.
4. Using the average landfilling emission rate of 0.44 MTCO₂e per ton for multifamily organics and 0.47 MTCO₂e per ton for commercial organics, the GHG emission reduction is 310 MTCO₂e for multifamily and 1,650 MTCO₂e for commercial; the total reduction is 1,960 MTCO₂e

The CAAP estimated that W-2 would reduce emissions citywide by 39,734 MTCO₂e. The contribution from new development would therefore represent 4.9 percent of the total citywide reduction for W-2. Since organics landfilling associated with new development represents 4.4 percent of the City's total organics landfilling in 2030, the 4.9 percent contribution from new development exceeds the citywide average contribution, representing a fair share.

CAAP Checklist Table 1, Step 3: #9. Trip Reduction Features to Reduce Vehicle Miles Travelled

This checklist item requires that new development achieve a five percent reduction in vehicle trips and VMT compared to the project without such vehicle trip reduction features. This could be achieved by a number of actions and design features, such as through a TDM plan.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

This checklist item addresses the following CAAP action:

- **T-1: Increase frequency, speed, connectivity, and safety of transit options.** Continue development and implementation of additional water use efficiency and conservation programs to help reduce water use.

The CAAP calculated GHG emission reductions for T-1 assuming a citywide reduction in light-duty VMT of one percent. This would be a result of implementation of transit system and ridership improvements.

Transit improvements would influence vehicle travel patterns for both existing and new development, but new development has the opportunity to better utilize transit improvements than much of the existing built environment in the City. For example, new development can locate

jobs and residents near transit, offer transit subsidies, limit available parking, offer parking cash-out, and provide other design features and incentives to maximize transit use by future occupants and customers of the project site.

Because of this, new development would be required to reduce total VMT by five percent compared to the project without such vehicle trip reduction features. This could be achieved by a number of actions and design features, such as through a TDM plan.

GHG emission reductions associated with a five percent reduction in VMT from new development were calculated as follows:

1. The CAAP projects that in 2030, the average daily light-duty VMT per service population would be 11.0 miles. This actually represents a 17 percent reduction in the 2015 value of 13.2 daily light-duty VMT per service population based on a variety of factors and regulations including the RTP/SCS.
2. It was assumed that new development would already be more efficient than existing development for transportation. Using compliance with the City's TIA Guidelines document as a proxy, on average, new development would result in 15 percent less VMT per service population than existing development. This means that new development would have to achieve a value of 9.4 daily light-duty VMT per service population (on average).
3. Based on this, new development from 2015 to 2030 would produce approximately 266,000 daily VMT (9.4 multiplied by 28,408 new service population).
4. A five percent reduction in 266,000 daily VMT is equal to approximately 13,000 daily VMT. The BAU emission rate for light-duty vehicles is 214.78 grams CO₂e per VMT. Therefore, a five percent reduction in VMT for new development would result in 990 MTCO₂e of emission reductions.

The CAAP estimated that T-1 would reduce emissions citywide by 5,230 MTCO₂e. The contribution from new development would therefore represent 19 percent of the total citywide reduction for T-1. Since new service population associated with new development represents only 4 percent of the City's service population in 2030, the 19 percent value represents new developments' fair share contribution toward T-1.

It should also be noted that the CAAP's BAU emissions forecast for the on-road transportation sector indicates that citywide light-duty vehicle VMT would decline by 15 percent from the 2015 baseline year value of 8.2 million daily VMT to the 2030 target year value of 7.2 million daily VMT. The BAU forecast was prepared using VMT projections from the SCAG 2012 RTP/SCS Regional Travel Demand model, as discussed above in the *Modeling Methods for Vehicle Miles Traveled* section below. The SCAG model assumes implementation of the 2012 RTP/SCS, which includes numerous transportation investments and improvements such as new bus rapid transit routes and extensions, new light rail routes and extensions, new and expanded bus service, Metrolink extensions of commuter rail, various active transportation strategies such as increasing

bikeways, various TDM strategies to reduce solo driving, high-occupancy vehicle lane network expansions, and many others.²⁰ This means that new development would have to do more than achieve a five percent reduction in vehicle trips and VMT in order to be consistent with the SCAG 2012 RTP/SCS, and the additional reductions quantified for the CAAP.

Modeling Methods for Vehicle Miles Traveled

After the modeling for the CAAP was conducted, the City adopted the Land Use Element (LUE) update (December 2019) and the Traffic Impact Analysis (TIA) Guidelines (June 2020). Both the LUE and TIA rely on updated socioeconomic projections and updated SCAG Regional Travel Demand modeling when compared to the CAAP due to when the analysis work was completed. Specifically, the CAAP relied on the SCAG 2012 RTP/SCS,²¹ which was the most updated available data at the time the analysis was done, while both the 2019 LUE and the 2020 TIA Guidelines relied on SCAG's 2016 RTP/SCS.²²

In order to demonstrate that these differences in available data sources would not inhibit the CAAP from achieving its 2030 GHG reduction targets, a modeling exercise was conducted. Data from the transportation modeling conducted for the 2019 LUE shows that total citywide daily vehicle miles traveled (VMT) would be 9.2 million compared to the CAAP's value of 8.0 million. This represents a 15 percent increase in VMT when comparing the 2019 LUE with the CAAP, and a 14 percent increase in daily VMT per service population (12.8 vs. 11.0). If the CAAP were updated using the 2019 LUE's VMT data and the same on-road vehicle emission factors from the CAAP, total 2030 emissions would increase by 42,000 MTCO₂e. This would increase the GHG emission reductions needed to achieve the CAAP's target of 1,984,272 MTCO₂e from 192,659 MTCO₂e to 234,214 MTCO₂e. Because the CAAP achieves total reductions of 393,250 MTCO₂e, the target would still be achieved with 129,000 MTCO₂e to spare.

Therefore, the difference in modeling methods between the 2019 LUE and the CAAP does not hinder the CAAP's ability to achieve the citywide GHG emissions reduction target.

It should also be noted that the VMT modeling conducted for the 2020 TIA Guidelines also relies on different modeling methods than the CAAP uses to estimate light-duty VMT and associated mobile source emissions. The 2020 TIA Guidelines used a "home-based trip" approach to model regional average light-duty VMT per capita for Los Angeles County and a "work-based trip" approach to model regional average light-duty VMT per employee for Los Angeles County. This means all trips originating from home or work are captured in the model, which represents travel associated with a specific land use type (like residential or office). These values are 13.9 daily light-duty VMT per capita (home-based) and 18.0 daily light-duty VMT per employee (work-based). These regional average values are used as thresholds for analyzing new project VMT generation (e.g., for new residential projects, 15 percent below the regional average VMT per

²⁰ Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy*, April 2012, available at <http://libraryarchives.metro.net/DPGTL/scag/2012-2035-regional-transportation-plan.pdf>, accessed December 2021.

²¹ For more information, see <https://scag.ca.gov/trip-based-model>

²² Southern California Association Of Governments, *SCAG Regional Travel Demand Model And 2012 Model Validation*, March 2016, available at https://scag.ca.gov/sites/main/files/file-attachments/scag_rtdm_2012modelvalidation.pdf?1605571641, accessed December 2021.

capita value of 13.9 [11.8], would constitute a less-than-significant transportation impact under CEQA).

The CAAP's VMT modeling is based on a total trip generation approach using the origin-destination method embodied in the SCAG model. This approach accounts for all trip types that residents, employees, and customers take within the City, and includes all trips with an origin and/or a destination within City boundaries. This is the standard modeling approach conducted for citywide GHG inventories and climate action plans, as recommended by accepted community GHG inventory protocols including the ICLEI U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories.^{23,24} This differs from the TIA modeling which accounts for land-use driven trips such as home-based and work-based trips.

Although the TIA applied the results from a different base year model than the CAAP, the ability of the CAAP to achieve its 2030 target emissions level is not compromised by this difference. This is because the CAAP continues to account for all travel and network effects in the city to generate emissions and reductions, while the TIA was focused on the effects of specific land use types on VMT. Projects would also have to comply with both the TIA guidelines and the CAAP Checklist to have a less-than-significant impact on transportation and climate change under CEQA.

Tier 1 Measures: Qualitative Consistency Requirements

This section addresses each required Tier 1 CAAP consistency checklist item for new development that relates to a CAAP action that was not quantified for GHG emission reductions in the CAAP. These items are mandatory for all projects. For each checklist item listed below, this document provides the basis behind the requirements for new development.

CAAP Checklist Table 1, Step 3: #2. MUNICIPAL PROJECTS ONLY: Reduce Energy Use and Supply the Project with Renewable Electricity

This checklist item only applies to municipal projects. The CAAP calculated GHG emission reductions for municipal energy sources associated with energy efficiency, solar PV installations, and carbon-free electricity purchases. The CAAP does not calculate GHG emission reductions separately for existing municipal facilities and new municipal facilities.

This checklist item addresses the following CAAP action:

- **BE-6: Perform municipal energy and water audits.** Establish a municipal building/facility energy and water audit program, establish targets for decreasing annual energy use, and track progress.

²³ ICLEI – Local Governments for Sustainability USA, 2019, *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions*, Version 1.2, available at <https://iclei.usa.org/us-community-protocol/>

²⁴ World Resources Institute, C40 Cities Climate Leadership Group and ICLEI – Local Governments for Sustainability USA, 2021, *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories*, Version 1.1, available at <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>.

The CAAP calculated emission reductions associated with energy efficiency for Street and Park Lights and window efficiency at the Houghton Community Center. To ensure consistency with this, the CAAP checklist requires that all new municipal projects incorporate energy efficiency design features to reduce electricity and natural gas energy use beyond Title 24 Building Energy requirements.

The CAAP calculated emission reductions for solar PV installations based on PV systems installed at 13 City facilities²⁵ for a total of 8,834 kW of solar capacity installed. To ensure consistency with this, the CAAP checklist requires that all new municipal projects must install on-site renewable energy systems, such as rooftop solar PV.

For carbon-free electricity purchases, the CAAP assumed that 100% of electricity used for buildings and facilities, street lights & traffic signals, and water & wastewater would be supplied from carbon-free sources. To ensure consistency with this, the CAAP checklist requires that all new municipal projects participate in Southern California Edison's Green Rate level (i.e., 100% carbon-free electricity) for all electricity accounts associated with the project until which time SCE provides 100% carbon-free electricity for all accounts by default.

These requirements ensure that all new municipal projects would be consistent with CAAP Action BE-6.

CAAP Checklist Table 1, Step 3: #3. Comply with all City building energy codes and ordinances

All projects must comply with all applicable City building energy codes and ordinances at the time of project approval. This includes, but is not limited to, any requirements for electrification, energy use intensity factors, zero-net-energy construction, CalGreen Tier 2 or other energy measures, or LEED requirements. All projects must comply with these requirements as a matter of City and State building code. These are standard requirements independent of the CAAP.

This checklist item addresses the following CAAP action:

- **BE-7: Update building codes to reduce emissions in new residential and commercial buildings.** Identify and implement building energy code options to establish incentives and/or requirements for all electric residential and commercial buildings.

Supporting actions in the CAAP for BE-7 include:

- BE-7.1: Evaluate a range of reach code components that incentivize between 50 and 100 percent of all new commercial and residential buildings to be 100 percent electric, and conduct an analysis of the cost-effectiveness of various measures.
- BE-7.2: Establish an outreach strategy to engage stakeholders in reach code development.

²⁵ Facilities include ECOC, Main Health Dept. Building, Public Works Yard, East Division Police Sub-Station, LBGO Headquarters, Airport Parking Garage (Lot B), City Place Lot A, City Place Lot B, City Place Lot C, Pike Parking Structure, Aquarium Parking Structure, Convention Center, and Pier A West.

The CAAP does not quantify the benefits of a reach code or require that new development comply with such reach code. However, should the city adopt a reach code in the future, all new development would be required to comply with the reach code once it is in effect.

CAAP Checklist Table 1, Step 3: #10. Incorporate Pedestrian Infrastructure

This checklist item requires that new development incorporate pedestrian infrastructure into its design. Specifically, the project must provide pedestrian facilities and connections to public transportation consistent with the City's Mobility Element, CX3 Pedestrian Plan, and any other relevant governing plan. The project must also incorporate additional pedestrian infrastructure, as detailed in the CAAP Checklist. The CAAP did not specifically quantify emission reductions for these actions though the reduction in VMT attributed to action T-1 is supported by these actions.

This checklist item addresses the following CAAP action:

- **T-2: Expand/improve pedestrian infrastructure citywide.** Ensure safe and convenient pedestrian infrastructure is provided citywide, including uninterrupted sidewalk connections, adequate lighting and visibility, shading, and safe intersections.

CAAP Checklist Table 1, Step 3: #11. Incorporate Bicycle Infrastructure

This checklist item requires that new development incorporate bicycle infrastructure into its design. Specifically, the project must provide bicycle facilities consistent with the City's Mobility Element, Bicycle Master Plan, Urban Design Element, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen. The project must also incorporate additional bicycle infrastructure, as detailed in the CAAP Checklist. The CAAP did not specifically quantify emission reductions for these actions, though the reduction in VMT attributed to action T-1 is supported by these actions.

This checklist item addresses the following CAAP action:

- **T-3: Increase bikeway infrastructure.** Expand the bikeway system and associated infrastructure throughout the city in order to encourage safe and convenient use of active and sustainable travel modes.

CAAP Checklist Table 1, Step 3: #12. Incorporate Electric Vehicle Charging Infrastructure

All projects must comply with any City ordinance, building code, or condition of approval that requires a certain amount of EV charging infrastructure and readiness. This may include minimum requirements for EV charging stations, EV-capable parking spaces, and EV-ready parking spaces. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP action:

- **T-5: Develop an Electric Vehicle Infrastructure Master Plan.** Develop an EV infrastructure plan that aligns with county-wide efforts to guide investment and policy

decisions that will result in a distributed network of EV chargers to incentivize and facilitate EV ownership and use.

CAAP Checklist Table 1, Step 3: #13. Comply with City TDM Ordinance

This checklist item requires that all new projects comply with the City's TDM ordinance at the time of project approval. This may include preferential carpool/vanpool parking, bicycle parking, and shower facilities and locker rooms; trip reduction plans; transit-supportive infrastructure development; and similar strategies. The project must comply with any applicable VMT reduction target and incorporate any required monitoring mechanisms for development, subject to the ordinance.

This checklist item addresses the following CAAP action:

- **T-7: Update the Transportation Demand Management Ordinance.** Update and implement a transportation demand management (TDM) ordinance that encourages travel by transit, vanpool/carpool, and bicycle.

CAAP Checklist Table 1, Step 3: #14. Comply with the City's Transportation Impact Guidelines

This checklist item requires that all projects comply with the City's current TIA Guidelines. Projects may screen out if they meet certain criteria, such as being located in a transit priority area or local-serving retail development less than 50,000 square feet. Projects that don't screen out of the Transportation Screening Criteria must meet the VMT efficiency metrics identified by the TIA Guidelines (e.g., 11.8 daily VMT per capita for residential projects and 18.0 daily VMT per capita for office projects). The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP action:

- **T-9: Integrate SB 743 planning with CAAP process.** Evaluate the effectiveness of VMT reductions resulting from SB 743 compliance in achieving the City's GHG reduction target.

Tier 2 Measures: Qualitative Consistency Requirements

This section addresses each encouraged Tier 2 CAAP consistency checklist item for new development that relates to a CAAP action that was not quantified for GHG emission reductions in the CAAP. These items are encouraged for all projects as feasible. For each checklist item listed below, this document provides the basis behind the recommendations for new development.

CAAP Checklist Table 1, Step 3: #4. Building Energy Efficiency

This checklist item only applies only to projects that include a retrofit of an existing building. All projects are encouraged to incorporate energy efficiency measures into their design, which can reduce carbon emissions while also reducing future operational costs. The CAAP Checklist includes a number of items, including energy audits and benchmarking, CalGreen Tier 2 or voluntary building energy measures, electrification, the use of efficient appliances, energy

efficiency retrofits, and net-zero energy. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP actions:

- **BE-4: Develop a residential and commercial energy assessment and benchmarking program.** Develop an energy assessment and benchmarking program for commercial and residential properties to identify opportunities for energy efficiency and evaluate options to increase energy efficiency retrofits.
- **BE-5: Provide access to energy efficiency financing, rebates, and incentives for building owners.** Identify funding sources to increase energy efficiency improvements in the community's existing building stock and develop an outreach strategy to promote opportunities to all segments of the community.

CAAP Checklist Table 1, Step 3: #7. Incorporate On-site Composting, Mulching, and/or Anaerobic Digestion

This checklist item encourages projects to incorporate organic waste processing capabilities, such as composting, mulching, and anaerobic digestion facilities (where applicable), and to collaborate with agencies to share organic processing information with interested parties. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP action:

- **W-4: Identify organic waste management options.** Evaluate organic waste collection and processing options, including composting, mulching, and anaerobic digestion, and develop a plan to implement feasible options.

CAAP Checklist Table 1, Step 3: #8. Meets Transportation Screening Criteria

This item is discussed above in the *Transportation Screening Criteria* section above (Step 2). As discussed above, these screening criteria represent characteristics that are desirable from a GHG emission reduction perspective, as envisioned by the CAAP. Projects that meet these criteria are assumed to result in reduced transportation activity and significantly lower mobile source GHG emissions than the citywide average development and would therefore be consistent with the CAAP's transportation actions.

CAAP Checklist Table 1, Step 3: #15. High-Density, Mixed-Use, Transit-Oriented, Walkable Infill Project Design

This checklist item encourages projects to be located in a transit priority area or transit corridor, include local-serving retail, include affordable housing, include a mix of uses, and include shared and reduced parking strategies, among other items. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP actions:

- **T-6: Increase employment and residential development along primary transit corridors.** Identify land use and/or zoning changes to expand TOD opportunities along the city's primary transit corridors. Pursue strategies to increase affordable housing in these areas.
- **T-8: Update the Transportation Demand Management Ordinance.** Use the City's land use authority to increase development density particularly near transit, and provide a mix of land uses, such that residents and employees in the city can easily access goods, services, and entertainment via transit or active transportation modes.

All projects must also achieve a five percent reduction in vehicle trips and VMT compared to the project without such vehicle trip reduction features (CAAP Checklist item #9), incorporate electric vehicle charging infrastructure, comply with the City's TDM ordinance, and comply with the City's current TIA Guidelines.

Other CAAP Actions Not Applicable to New Development

The CAAP included two quantified actions that would not apply to new development:

- **BE-8: Identify and implement short-term measures to reduce emissions related to oil and gas extraction.** Implement the suite of near-term measures included in the CAAP Oil and Gas Technical Memorandum to reduce oil and gas extraction emissions per the memorandum.
- **T-4: Implement the Port of Long Beach Clean Air Action Plan.** Implement the Port of Long Beach Clean Trucks Program, which is described in the San Pedro Bay Ports Clean Air Action Plan, to reduce the GHG emissions associated with goods movement through trucks serving the Port of Los Angeles and Port of Long Beach.

New projects would not have to comply with these CAAP actions because they are not directed at discretionary projects. Action BE-8 applies to oil and gas extraction operations while action T-4 applies to the Port of Long Beach's operational activities.

Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions

Projects that propose alternative GHG emission reduction measures to those identified in Step 3 above (CAAP Checklist Table 1) or propose to include additional GHG emission reduction measures beyond those described in Step 3 above shall provide a summary explanation of the proposed measures and demonstrate GHG reductions achievable through the proposed measures. These alternative or additional project measures shall be documented in CAAP Checklist Table 2. This process represents **Step 4** of the CAAP Checklist.

Alternative actions must be additional beyond anything quantified for GHG emission reductions in the CAAP and must be additional to any requirements at the federal, state, regional, or local level. These actions must be physical design features to be included on the project plans and/or construction contracts. All alternative actions must be real, permanent, quantifiable, verifiable,

enforceable, and additional.²⁶ All alternative actions must achieve the same or greater level of GHG emission reductions as the required Tier 1 CAAP Action(s) that they are replacing. This will ensure that projects which cannot (or choose not to) comply with certain Tier 1 CAAP Actions will still be consistent with the CAAP's target emissions level for new development and would not inhibit the CAAP from achieving its citywide emission reduction target for 2030.

For each alternative measure proposed, the project must quantitatively demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions. This includes supporting quantification documentation (such as Microsoft Excel and CalEEMod modeling files), assumptions, and reference material. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions. All documentation submitted by the project applicant for alternative actions is subject to city verification and approval.

At this time, carbon offset credits are not permitted to be used as alternative project emission reduction measures. The city retains discretion to permit carbon offset credits in the future.

Step 5: Demonstrate consistency with the CAAP Adaptation Actions

Projects must demonstrate consistency with the CAAP Adaptation Action requirements (CAAP Checklist Table 3) or document why the actions are not applicable or are infeasible. This represents **Step 5** of the CAAP Checklist.

All Adaptation Actions are encouraged to be incorporated into future discretionary projects, as applicable. However, many of these actions may be implemented by the City or other agencies and may not all be subject to CEQA. The Adaptation Actions in the CAAP are described for citywide implementation at a programmatic level, and the CAAP Checklist translates those actions into recommendations for strategies that may be incorporated at the project level for future developments.

CAAP Checklist Table 3: #1. Incorporate Cool Roofs, Cool Walls, Reflective Streets, Cool Surfaces, and Shade Canopies

This checklist item addresses the following CAAP actions:

- **EH-1: Increase Presence of Cool Roofs and Cool Walls.** Increase the installation of cool roofs and cool walls to keep buildings and neighborhoods cooler.
- **EH-2: Increase the Presence of Reflective Streets, Cool Surfaces, and Shade Canopies.** Treat paved surfaces such as streets, parking lots, and playgrounds with reflective surfaces and install shade canopies to reduce urban heat.

²⁶ Definitions for these terms are generally as set forth in both subdivisions (d)(1) and (d)(2) of California Health and Safety Code §38562.

CAAP Checklist Table 3: 2. Incorporate Tree Plantings and Expands Urban Forest Cover

This checklist item addresses the following CAAP actions:

- **EH-3: Enhance and Expand Urban Forest Cover and Vegetation.** Expand and enhance urban forest cover and vegetation to mitigate urban heat island conditions.

CAAP Checklist Table 3: 3. Incorporate Bus Shelter Amenities

This checklist item addresses the following CAAP actions:

- **EH-7: Provide Bus Shelter Amenities.** Provide more bus shelter amenities to help prevent health effects from long sun exposure and to incentivize usage of public transportation.

CAAP Checklist Table 3: 4. Install Photocatalytic Tiles

This checklist item addresses the following CAAP actions:

- **AQ-1: Incentivize Installation of Photocatalytic Tiles.** Support the installation of photocatalytic tiles to improve air quality.

CAAP Checklist Table 3: 5. Include Urban Agriculture

This checklist item addresses the following CAAP actions:

- **AQ-2: Encourage Urban Agriculture Practices that Reduce Air Quality Pollution.** Continue to incentivize urban agriculture practices and projects in community and home gardens that increase local food production and reduce air quality impacts from food transportation.

CAAP Checklist Table 3: 6. Use Electric Lawn and Garden Equipment, Outdoor Power Equipment, and Other Small Equipment

This checklist item addresses the following CAAP actions:

- **AQ-4: Electrify Small Local Emitters, Such as Lawn and Garden Equipment, Outdoor Power Equipment, and Others.** Support the replacement of small, fossil-fuel-powered engine equipment with electric-powered equipment.

CAAP Checklist Table 3: 7. Implement Water Use Efficiency and Water Conservation

This checklist item addresses the following CAAP actions:

- **DRT-1: Continue Development And Implementation Of Water Use Efficiency Programs And Implement Additional Water Conservation Programs.** Continue development and implementation of additional water use efficiency and conservation programs to help reduce water use.

CAAP Checklist Table 3: 8. Incorporate Green Infrastructure and Green Streets

This checklist item addresses the following CAAP actions:

- **DRT-3: Expand Usage of Green Infrastructure And Green Streets.** Incorporate green infrastructure and green streets to diversify water supply, increase natural and stormwater capture, prevent urban runoff, reduce the demand on existing infrastructure, reduce the heat island effect, and increase sustainability and resiliency.

CAAP Checklist Table 3: 9. Use Recycled Water and Greywater for Non-Potable Uses; includes Rainfall Capture

This checklist item addresses the following CAAP actions:

- **DRT-4: Expand Usage of Recycled Water and Greywater for Non-Potable Use.** Increase and incentivize recycled water and greywater use to establish a more diverse water supply portfolio.
- **DRT-5: Incorporate Increased Rainfall Capture and Other Actions to Maximize Local Water Supplies and Offset Imported Water.** Increase and incentivize rainfall capture and other actions to establish a more diverse water supply portfolio and maximize local water supplies from stormwater capture, recycled water, and groundwater.

CAAP Checklist Table 3: 10. Comply with all City Floodplain and Sea Level Rise Regulations

This checklist item addresses the following CAAP actions

- **FLD-1: Update and Augment Floodplain Regulations as Necessary.** Update and augment floodplain regulations as necessary to limit, elevate, or provide floodproofing standards for development in areas designated as vulnerable to flooding in order to minimize physical damage to development.
- **FLD-2: Incorporate Sea Level Rise Language into Citywide Plans, Policies, and Regulations.** Incorporate sea level rise adaptation into relevant plans, policies, and regulations (e.g., the General Plan, neighborhood plans, Local Coastal Program, design standards for capital projects)

CAAP Checklist Table 3: 11. Comply with the City's Current Stormwater Management Plan

This checklist item addresses the following CAAP actions:

- **FLD-5: Update the City's Existing Stormwater Management Plan.** Update the City's existing Stormwater Management Plan to account for flood risks associated with climate change and develop a funding/implementation plan for fully fund storm drain and pump station improvements.

CAAP Checklist Table 3: 12. Ensure that all critical infrastructure in the sea level rise vulnerability zone is elevated

This checklist item addresses the following CAAP actions:

- **FLD-10: Relocate/Elevate Critical Infrastructure.** Carry out more detailed studies to assess the need to raise or relocate critical infrastructure outside of the sea level rise vulnerability zone.

CAAP Checklist Table 3: 13. Elevate Street Hardscapes and Waterfront Streets and Paths

This checklist item addresses the following CAAP actions:

- **FLD-14: Elevate street hardscapes.** Street hardscapes such as curbs could be elevated and extended to eliminate gaps that could become flood pathways.
- **FLD-15: Elevate streets/pathways.** Waterfront streets and paths may need to be elevated to protect transportation routes and provide flood protection for infrastructure behind the road/path.

ATTACHMENT D
NOISE AND VIBRATION TECHNICAL REPORT

March 2021 | Noise and Vibration Technical Study

14th & Long Beach Boulevard Affordable Housing Project

for Pacific6 Enterprises

Prepared for:

Pacific6 Enterprises

Contact: John C. Molina
211 E. Ocean Blvd., Suite 550
Long Beach, California 90802
562.600.7226

Prepared by:

PlaceWorks

Contact: Izzy Garcia, Associate
3 MacArthur Place, Suite 1100
Santa Ana, California 92707
714.966.9220
info@placeworks.com
www.placeworks.com



Table of Contents

Section	Page
1. INTRODUCTION.....	1
1.1 PROJECT LOCATION.....	1
1.2 PROJECT DESCRIPTION.....	1
1.3 NOISE TERMINOLOGY AND DESCRIPTORS.....	5
2. REGULATORY SETTING	11
2.1 STATE.....	11
2.2 LOCAL.....	12
3. ENVIRONMENTAL SETTING.....	15
3.1 EXISTING NOISE ENVIRONMENT	15
3.2 SENSITIVE RECEPTORS	16
4. CEQA THRESHOLDS	17
4.1 NOISE THRESHOLDS.....	17
4.2 SIGNIFICANCE THRESHOLDS	17
5. ENVIRONMENTAL IMPACTS	19
5.1 SUMMARY OF IMPACTS IDENTIFIED WITH THE 2016 CERTIFIED EIR.....	19
5.2 METHODOLOGY	20
5.3 IMPACTS.....	20
5.4 ADOPTED MITIGATION MEASURES APPLICABLE TO THE PROPOSED PROJECT	26
6. REFERENCES.....	29

APPENDICES

Appendix A. Noise and Vibration

Table of Contents

List of Figures

Figure		Page
Figure 1	Aerial Photograph.....	3

List of Tables

Table		Page
Table 1	Noise Perceptibility.....	7
Table 2	Typical Noise Levels	9
Table 3	Human Reaction to Typical Vibration Levels.....	10
Table 4	Recommended Criteria for Maximum Acceptable Noise Levels ¹	13
Table 5	Long Beach Exterior Noise Standards	13
Table 6	Proposed Project Related Construction Noise, dBA L _{eq}	22
Table 7	Net Traffic Noise Increases	22
Table 8	Proposed Project's Vibration Levels (in in/sec PPV).....	25
Table 9	Proposed Project's Construction Vibration Levels (in VdB)	25

1. Introduction

This Noise and Vibration Technical Study is prepared for Pacific6 Enterprises to evaluate the potential noise and vibration impacts pursuant to the California Environmental Quality Act (CEQA) from the development and operation of the proposed residential mixed-use buildings (Proposed Project) in the City of Long Beach. Specifically, the technical study is prepared to support an Addendum to the Midtown Specific Plan Environmental Impact Report certified in 2016 (2016 Certified EIR). For purposes of this technical study, buildout of the Midtown Specific Plan is the Approved Project and serves as the CEQA baseline for the Addendum. The Approved Project allows up to 401 units and 319,000 square feet of commercial uses in Transit Node District 7 (TND7).¹ Additionally, it also contemplates partial closure of 14th Street for parklets.

1.1 PROJECT LOCATION

The 1.54-acre project site is on 14th Street, west of Long Beach Boulevard, in the City of Long Beach (City), Los Angeles County, California, and is within TND7 of the Midtown Specific Plan. As shown in Figure 1, *Aerial Photograph*, the site is bounded by industrial uses to the north, multifamily residential to the west, industrial uses and Long Beach Boulevard to the east, and retail use and 14th Street to the south. The 1.09-acre portion of the project site north of East 14th Street is currently vacant, paved, and used as parking. The 0.45-acre portion of the project site south of East 14th Street, formerly occupied by a recently demolished fast-food building, is also currently vacant.

1.2 PROJECT DESCRIPTION

Pacific6 Enterprises is proposing to develop a mixed-use and mixed-income affordable housing community on the approximately 1.54-acre project site. The Proposed Project would develop two buildings (the East Building and West Building), with a cumulative area of 183,075 building square feet that would provide a total of 160 dwelling units (DU), 4,000 square feet of commercial space, and up to 104 parking spaces over 1.09 acres of the project site. The East Building would be constructed first. It would be eight levels and 116,645 square feet. This structure would traverse both the east and west portions of the 1.09-acre project site and would include parking for both the East and West Buildings. The East Building includes 35,365 square feet of parking on the ground floor and level two (L2). The East Building would provide 85 dwelling units on the second (L2) through seventh levels (L7). The West Building would be constructed on the eastern portion of the site, on top of the ground floor of the East Building (i.e., above the western-portion parking garage). It would include five levels (four levels on top of the parking garage) and be 66,430 square feet and encompass 4,000 square feet of commercial uses on the ground floor. The West Building would provide 75 dwelling units on the second (L2) through fifth levels (L5). Overall, both proposed buildings would be all-electric buildings, with no combustion

¹ Overall, the Transit Node District supports compact, transit-oriented mixed-use and residential development centered on the three Metro Blue Line stations. This district is characterized by intense building types, including mid- and low-rise podium, mixed-use flex blocks, liners, stacked flats, and live-work units.

1. Introduction

sources used for space heating, water heating, or cooking. In addition, a 133-kilowatt rooftop photovoltaic (PV) system would be installed, which would provide 205,954 kilowatt hours per year (kWh/yr) of renewal electricity for the Proposed Project.

The Proposed Project also includes development of the 14th Street Parklet on the remaining 0.45-acre site abutting the southeast corner of the project site. This portion of the project requires coordination with the City's Parks, Recreation and Marine; Development Services; and Public Works Departments. Creation of the park site would require vacating a portion of 14th Street along the project boundary to expand the site. The passive park would include a wood pavilion with stage, picnic tables, and a concrete plaza.

Transit improvements include a new enhanced bus island at the northwest corner of 14th Street and Long Beach Boulevard to be used by Long Beach Transit, Metro, and other regional transit providers. The bus island would include a transit shelter, furniture, landscaping, and real-time transit schedule information, located adjacent to the expanded 14th Street Park and ground floor retail space within the Project. Additionally, the proposed parklet would retain a 20-foot-wide paved pathway on the north side that would support bicycle movement and emergency vehicle access.

Figure 1 - Aerial Photograph



--- Project Boundary

0 100
Scale (Feet)



Source: Nearmap, 2020

PlaceWorks

1. Introduction

This page intentionally left blank.

1. Introduction

1.3 NOISE TERMINOLOGY AND DESCRIPTORS

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

The following are brief definitions of terminology used in this document:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μ Pa).
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second (1×10^{-6} in/sec).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the “intrusive sound level.” The L_{90} is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”
- **Maximum Sound Level (L_{max}).** The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

1. Introduction

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

1.3.1 Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1, *Noise Perceptibility*, presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually not discernible (even under ideal conditions). A 3 dBA change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dBA is readily discernible to most people in an exterior environment, and a 10 dBA change is perceived as a doubling (or halving) of the sound.

1. Introduction

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: California Department of Transportation (Caltrans). 2013a, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration (predominantly, in a person's chest cavity). Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise.

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2 , L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

1. Introduction

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as “spreading loss.” For a single-point source, sound levels decrease by approximately 6 dBA for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 78 dBA, and at 200 feet it would be 72 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dBA for each doubling of distance over a reflective (“hard site”) surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dBA for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2, *Typical Noise Levels*, shows typical noise levels from familiar sources.

1. Introduction

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
Very Remote & Unpopulated Area Nighttime		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013a, September. Technical Noise Supplement ("TeNS").

1.3.2 Characteristics of Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square

1. Introduction

root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3, *Human Reaction to Typical Vibration Levels*, displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020b, April. *Transportation and Construction Vibration Guidance Manual*. Prepared by ICF International.

2. Regulatory Setting

To limit people's exposure to physically and/or psychologically damaging as well as intrusive noise levels, federal, state, and local agencies have established standards and ordinances to control noise. Potential noise and vibration impacts were evaluated based on the Approved Project (Midtown Specific Plan EIR) baseline and the applicable noise standards from the City of Long Beach to determine the net change in construction and operational noise impacts due to implementation of the Proposed Project.

Federal Regulations

US Department of Housing and Urban Development

The US Department of Housing and Urban Development (HUD) has set the goal of 65 dBA L_{dn} as a desirable maximum exterior standard for residential units developed under HUD funding (This level is also generally accepted within the State of California). Although HUD does not specify acceptable interior noise levels, standard construction of residential dwellings typically provides 20 dBA or more of attenuation with the windows closed. Based on this premise, the interior L_{dn} should not exceed 45 dBA.

2.1 STATE

2.1.1 California Building Code

The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, Section 1207.11.2, Allowable Interior Noise Levels, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

Structures with habitable rooms that are near major transportation noise sources within the 60 dBA CNEL noise contour require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants of new the residential projects are required to submit an acoustical report in areas where noise and land use compatibility is a concern. The report is required to analyze exterior noise sources affecting the proposed dwelling site, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measured or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be inoperable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary, to provide a habitable interior environment.

2. Regulatory Setting

The California Green Building Standards Code (CALGreen) has requirements for insulation that affect exterior-interior noise transmission for nonresidential structures. Pursuant to CALGreen Section 5.507.4.1, Exterior Noise Transmission, an architectural acoustics study may be required when a project site is within a 65 dBA CNEL or Ldn noise contour of an airport, freeway or expressway, railroad, industrial source or fixed-guideway source. Where noise contours are not readily available, if buildings are exposed to a noise level of 65 dBA L_{eq} during any hour of operation, specific wall and ceiling assembly and sound-rated windows may be necessary to reduce interior noise to acceptable levels.

2.2 LOCAL

2.2.1 City of Long Beach General Plan

The City's General Plan Noise Element includes an assessment of the existing community noise environment, including surveys of residents, and an action plan for achieving goals for the future noise environment within the City. The Noise Element aims to protect the health and well-being of the City's residents by establishing and preserving quiet environments within the City. Applicable goals from the General Plan Noise Element to the Proposed Project are:

- To attain a healthier and quieter environment for all its citizens while maintaining a reasonable level of economic progress and development.
- To protect and preserve both the property rights of owners and the right to quietness of the citizenry at large.
- To make the City a quieter, more pleasant place in which to live.
- To diminish the transportation roar that impacts on the population.
- To respond to demands for a reasonably quiet environment which is compatible with both existing ambient noise levels and continuing building and industrial development.
- To reduce both noise exposure to the population and noise level outputs generated by the population.
- To attain the lowest possible level of harmful effects of noise on the people by the implementation of information, monitoring, and advisory programs.

Maximum acceptable noise levels by land use and time of day are summarized in Table 4, *Recommended Criteria for Maximum Acceptable Noise Levels*, per the Long Beach General Plan Noise Element.

2. Regulatory Setting

Table 4 Recommended Criteria for Maximum Acceptable Noise Levels¹

Receiving Land Use District	Outdoor			Indoor
	Maximum Single Hourly Peak ^{1,2}	L ₁₀ ²	L ₅₀ ³	L _{dn} ⁵
Residential (7:00 AM – 10:00 PM) ⁴	70	55	45	45
Residential (10:00 PM – 7:00 AM) ⁴	60	45	35	35
Commercial (anytime)	75	65	55	See Table note 6
Industrial (anytime)	85	70	60	See Table note 6

Source: City of Long Beach General Plan Noise Element, Table 11

¹ Based on existing ambient level ranges in Long Beach.² Noise levels that exceed ten percent of the time.³ Noise levels that exceed fifty Percent of the time.⁴ Includes all residential categories and all noise sensitive land uses such as hospitals, schools, etc.⁵ Day/night average sound level. The 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime levels.⁶ Since different types of commercial and industrial activities appear to be associated with different noise levels, identification of a maximum indoor level for activity interferences is infeasible.

2.2.2 City of Long Beach Municipal Code

Chapter 8.80 (Noise) of the Long Beach Municipal Code (LBMC) provides regulations to control unnecessary, excessive, and annoying noise and vibration in the City. Exterior noise limits based on land use are shown in Table 5, *Long Beach Exterior Noise Limits*.

Table 5 Long Beach Exterior Noise Standards

Receiving Land Use District	Noise Level, dBA ^{1,2}	
	7:00 AM to 10:00 PM	10:00 PM to 7:00 AM
District One	50	45
District Two	60	50
District Three	65	65
District Four	70	70
District Five	Regulated by other agencies and laws	

Source: City of Long Beach Municipal Code, Chapter 8.80, *Noise*.

Note: District One is predominantly residential with other land use types; District Two is predominantly commercial with other land use types; Districts Three and Four are predominantly industrial with other land use types; District Five covers the airport, freeways, and waterways regulated by other agencies. Districts Three and Four limits are intended primarily for use at their boundaries rather than for noise control within those districts.

¹ If the alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the noise levels shall be reduced by 5 dBA.

² Noise levels may not exceed the noise standard:

- for a cumulative period of more than thirty minutes in any hour (L50);
- plus 5 dBA for a cumulative period of more than fifteen minutes in any hour (L25);
- plus 10 dBA for a cumulative period of more than five minutes in any hour (L8);
- plus 15 dBA for a cumulative period of more than one minute in any hour (L1); or
- plus 20 dBA for any period of time (Lmax).

2. Regulatory Setting

In addition to the residential noise standards outlined above, Section 8.80.130, *Disturbing Noises Prohibited*, of the City's Municipal Code states that it is unlawful to make any loud, unnecessary, and unusual noise which disturbs the peace or quiet, or which causes discomfort or annoyance to any reasonable person, regardless of whether the noise level exceeds the standards specified above.

Section 8.80.200, *Noise Disturbances-Acts Specified*, of the City's Municipal Code prohibits loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 PM and 7:00 AM that causes a noise disturbance across a residential property line or at any time violates the standards in Table 5.

Construction Noise

Under Section 8.80.202, *Construction Activity, Noise Regulations*, the City prohibits construction activities from 7:00 PM to 7:00 AM Monday through Friday (including federal holidays), and before 9:00 AM or after 6:00 PM on Saturdays that produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity. Construction is prohibited on Sundays unless a permit has been issued.

Vibration

According to Section 8.80.200 (Noise Disturbances-Acts Specified) of the City's Municipal Code, it is illegal to operate any device that creates vibration above the vibration perception threshold of an individual at the property boundary of the source if on private property, or at 150 feet from the source in a public space. For the purposes of this section, "vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such directed means as, but not limited to, sensation by touch or visual observation of moving objects.

HVAC

Air conditioning or air refrigerating equipment noise standards are enforced by the LBMC Section 8.80.200(N). Equipment installed after January 1, 1980 shall not exceed:

- 55 dBA, at any point on neighboring property line, five feet above grade level, no closer than three feet from any wall.
- 50 dBA, outside the neighboring living area window nearest the equipment location, not more than three feet from the window opening, but at least three feet from another surface.

3. Environmental Setting

3.1 EXISTING NOISE ENVIRONMENT

The 1.54-acre project site is at 1401 Long Beach Boulevard at the northwest corner of Long Beach Boulevard and 14th Street. The project site is bounded by Long Beach Boulevard to the east, 14th Street to the south, a four-story apartment building and parking structure to the west and northwest, and commercial uses (Horn's Collision Center, Sam's Auto Body) to the north. Metro's A Line (formerly known as the Blue Line) is at street level and runs within the Long Beach Boulevard median. The Anaheim Street station is 0.2 mile south of the site. The vacated North Palmer Court alleyway bisects the east and west portions of the 1.09-acre-parcel. The entire site is currently vacant, paved, and used as parking. The Proposed Project also includes improvements on a 0.45-acre (19,700 square feet) area south of the project site. This site is proposed by the City as a park. It was formerly occupied by a fast-food building, which has been demolished. This site also includes the 14th street right-of-way (ROW) and the former fast-food parcel—though the City of Long Beach has already secured environmental review and clearances for developing a park on this parcel.

The existing noise environment in the Project Area is primarily influenced by traffic noise on Long Beach Boulevard and 14th Street and rail noise from the Metro A Line. Secondary noise characteristics of the site include noise associated with the surrounding businesses such as Horn's Collision Center and Sam's Auto Body adjacent to the north, and outdoor activities associated with the recreational uses to the south of the proposed mixed-use development and west of the proposed parklet. According to the General Plan Noise Element Update Existing Conditions Report, traffic noise contours show the project site to be within the 60 and 65 dBA Ldn noise contours.

As a result of the California Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association (CBLA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478) issued December 17, 2015), it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. The direct effects of exterior noise from nearby noise sources relative to land use compatibility of a future project as a result of the Proposed Project is no longer typically a required topic for impact evaluation under CEQA. Generally, no determination of significance is required except for certain school projects, project's affected by airport noise, and project's that would exacerbate existing conditions (i.e., projects that would have a significant operational impact). Though the Proposed Project would place residences within the "Conditionally Acceptable" range per the State's noise and land use compatibility standards, no CEQA impact determination is needed. However, as required by Mitigation Measure N-5 of the 2016 Certified EIR, the project applicant shall submit an acoustical report prepared to the satisfaction of the City of Long Beach Development Services Department. The report shall demonstrate that the residential development will be sound-attenuated to meet City interior standards, specifically to meet the 45 dBA CNEL interior noise levels, as required by the California Building Code and California Noise Insulation Standards (Title 24 and 25 of the California Code of Regulations).

3. Environmental Setting

3.2 SENSITIVE RECEPTORS

Certain land uses are particularly sensitive to noise and vibration, including residential, schools, hospitals, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety.

The nearest existing sensitive receptors to the project site include multifamily residential uses adjacent to the west and the Grace Presbyterian Church to the southwest. Other, more distant sensitive receptors in the vicinity of the project include single-family and multifamily residential to the north and south, and Un Mundo De Amigos Preschool to the northeast.

4. CEQA Thresholds

4.1 NOISE THRESHOLDS

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

- N-1 Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- N-2 Generation of excessive groundborne vibration or groundborne noise levels.
- N-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, if the project would expose people residing or working in the project area to excessive noise levels.

4.2 SIGNIFICANCE THRESHOLDS

Traffic Noise

A significant impact could occur if the proposed development would result in an increase of 5 dBA but the resultant noise level remains within the objectives of the City's General Plan of 65 dBA CNEL at a noise-sensitive location, or if an increase of 3 dBA would occur and the resultant noise level meets or exceeds 65 dBA CNEL.

Construction Noise

The City of Long Beach does not have an established criterion for construction noise, nor was one established in the Approved Project. The FTA provides criteria for acceptable construction noise levels and recommends a daytime noise threshold of 80 dBA $L_{eq}(8hr)$ for residential uses. For the purposes of this analysis, the FTA criterion is applied to nearby sensitive receptors to determine impact significance.

Stationary Noise

As discussed above in Section 2, *Regulatory Setting*, the City's noise ordinance establishes exterior noise levels based on receiving land use. For the purposes of this analysis, these exterior noise standards are used to determine impact significance at nearby sensitive receptors.

4. CEQA Thresholds

Vibration

As stated in the Approved Project, the FTA criteria for human annoyance of 78 VdB and structural damage of 0.20 inches per second peak particle velocity (in/sec PPV) are used as thresholds to determine impact significant at nearby sensitive receptors.

5. Environmental Impacts

5.1 SUMMARY OF IMPACTS IDENTIFIED WITH THE 2016 CERTIFIED EIR

Construction Noise

The Approved Project found that the Midtown Specific Plan area is made up of residential, commercial, and medical uses. Construction of individual developments under the Approved Project would temporarily increase the noise ambient in the vicinity of future developments and existing sensitive uses. Because construction activities associated with any individual development project under the Approved Project may occur near noise-sensitive receptors and disturbances may occur for prolonged periods of time, construction noise impacts were found to be significant and unavoidable even with implementation of Mitigation Measure N-1.

Traffic Noise

The Approved Project found that impacts associated with traffic noise to be less than significant. Traffic noise increases due to implementation of the Approved Project would be up to 1 dBA CNEL in an existing environment of 68.5 dBA CNEL. No roadway segments were found to result in a traffic noise increase greater than 5 dBA or to experience substantial noise increases greater than 3 dBA resulting in noise levels at or greater than 65 dBA CNEL.

Stationary Noise

The Approved Project found that stationary noise sources such as heating ventilation and air conditioning equipment (HVAC) would not substantially increase the noise environment and, in addition, are regulated by the City's Municipal Code. Therefore, stationary noise impacts associated with implementation of the Approved Project were found to be less than significant.

Vibration

Construction Vibration

Construction vibration impacts were found to potentially exceed the FTA criterion of 78 VdB for human annoyance and 0.20 in/sec PPV. However, with implementation of Mitigation Measure N-2 of the Approved Project, vibration impacts were found to be reduced to less than significant.

Operational Vibration

The Approved Project found operational vibration impacts to be potentially significant. However, with implementation of Mitigation Measure N-4 of the Approved Project, impacts were found to be reduced to less than significant.

5. Environmental Impacts

Transportation-Related Vibration

The Approved Project found roadway routes within the Project Area were not expected to generate excessive vibration and traffic-induced vibration levels and would be less than significant. The Approved Project stated that according to Caltrans the highest traffic-generated vibration levels are along freeways and state routes. Vibration levels measured on the freeway shoulders have never exceeded 0.08 in/sec PPV (which is the level coinciding with maximum recommended safe exposure level for historic buildings).

Under the Approved Project, the Metro Green Line was planned to be expanded within the Midtown Specific Plan area, potentially adding new sensitive receptors adjacent to the Green Line railway. The Approved Project found that vibration associated with railroad operations to be significant. However, with implementation of Mitigation Measure N-3 of the Approved Project, impacts were found to be reduced to less than significant.

Airport Noise Exposure

The Initial Study for the Approved Project determined that because there are no private airstrips adjacent to or within the vicinity of the project site, that no impact with regard to exposure of excessive aircraft noise to people residing or working in the Project Area would occur.

5.2 METHODOLOGY

Daily trip generation associated with the Proposed Project (Fehr & Peers 2020) is used in this analysis to estimate traffic noise increases when compared to the Approved Project baseline. The Approved Project daily trips baseline are compared logarithmically to the Proposed Project daily trips [$10 \cdot \log(\text{Proposed Project daily} / \text{Approved Project daily trip})$] trips to determine the traffic noise increases. The construction noise analysis uses the Roadway Construction Noise Model (RCNM) based on CalEEMod equipment mix defaults verified by the Applicant to determine construction noise levels. The simultaneous use of the top three loudest pieces of equipment for each construction activity is modeled from the acoustical center of the construction site to the nearest sensitive receptor property line. Groundborne vibration and vibration noise is determined using FTA methodology and reference vibration levels for typical construction equipment (FTA 2018).

5.3 IMPACTS

This section discusses the project-specific impacts related to noise and vibration.

NOISE-1	Construction activities would result in temporary noise increases in the vicinity of the Proposed Project that would not exceed standards. [Threshold N-1]
----------------	---

Construction Vehicles

The transport of workers and materials to and from the construction site would incrementally increase noise levels along Long Beach Boulevard. Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA (Lmax) at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived. Based on CalEEMod construction defaults, the Proposed Project would generate up to 133 combined temporary worker and vendor and 10 daily haul trips (the haul trips would be during a

5. Environmental Impacts

separate phase). The addition of these construction trips on the road would be temporary and would not substantially increase ambient noise levels when compared to the thousands of existing daily trips along Long Beach Boulevard. The traffic noise increase would be less than 0.1 dBA CNEL. Therefore, the Proposed Project would not result in new or greater significant impacts than the Approved Project.

Construction Equipment

Noise generated by on-site construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each phase of construction involves different types of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest several pieces of equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction phase is determined by combining the L_{eq} contributions from the top three loudest pieces of equipment used at a given time, while accounting for the ongoing time-variations of noise emissions (commonly referred to as the usage factor). Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on what specific activity is being performed at any given moment.

Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site (site of each development phase) with different loads and power requirements. The City of Long Beach does not have an established construction noise threshold. Therefore, the FTA criterion of 80 dBA L_{eq} is used to determine impact significance at and off-site receptors.

Under the Approved Project, construction-related noise was found to be significant and unavoidable. Project level details were not known at the time of the 2016 Certified EIR and noise levels were anticipated to range between 71 dBA L_{max} and 101 dBA L_{max} at a distance of 50 feet. Construction noise levels associated with the Proposed Project were modeled using RCNM from the acoustical center of the construction site to the nearest sensitive receptors. Results are summarized in Table 6, *Proposed Project Related Construction Noise, dBA L_{eq}* . Construction noise levels due to the Proposed Project would not be significantly greater than that analyzed in the Approved Project and would be below the FTA 80 dBA $L_{eq}(8 \text{ hr})$ threshold.

5. Environmental Impacts

Table 6 Proposed Project Related Construction Noise, dBA L_{eq}

Construction Activity Phase	RCNM output noise level - 50 feet	Un Mundo de Amigos Preschool to northeast - 450 feet	Grace Presbyterian Church to southwest - 460 feet	Residential to west - 190 feet	Exceeds 80 dBA L _{eq} (8 hr) Threshold?
Asphalt Demolition	85	66	66	74	No
Site Prep/Rough Grading	85	66	65	73	No
Parking/Building Construction	83	63	63	71	No
Utility Trenching	77	58	57	65	No
Paving	85	66	66	73	No
Finish/Landscaping	77	58	57	65	No
Architectural Paving	74	55	54	62	No

Notes: Calculations performed with the FHWA's RCNM software are included in Appendix A.

Distance to sensitive receivers measured from the construction site's acoustical center to receptor property line.

NOISE-2 Project implementation would result in long-term operation-related noise that would not exceed local standards. [Threshold N-1]

Mobile-Source Noise Impacts

The Approved Project included three roadway segments in the vicinity of the Proposed Project: Pacific Avenue from 16th Street to 15th Street, Atlantic Avenue from 16th Street to 15th Street, and Long Beach Boulevard from 11th Street to 10th Street. Existing Plus Project ADT volumes at these roadway segments ranged between 13,800 and 20,500 ADT. The Proposed Project is anticipated to generate 855 daily trips. To calculate the net traffic noise increase between the Proposed Project and the Approved Project, the 855 daily trips are added to the Approved Baseline No Project ADT scenario and compared logarithmically to the Approved Baseline No Project Plus Proposed Project ADT scenario. Table 7, *Net Traffic Noise Increases*, shows the net change in trips and the resulting traffic noise increases to be up to 0.2 dBA CNEL. Therefore, project related traffic noise would not exceed the 3 dBA threshold for existing noise environments greater than 65 dBA CNEL, and the Proposed Project would not result in new or greater impacts than the Approved Project.

Table 7 Net Traffic Noise Increases

Roadway Segment	2016 Certified EIR No Project ADT	2016 Certified EIR Plus Approved Project ADT	Proposed Project Daily Trip Generation ¹	2016 Certified EIR No Project Plus Proposed Project ADT	Net Daily Segment Volume Increase	Net Increase, dBA CNEL
Pacific Ave - 16th to 15th	12,952	13,800	855	13,807	7	<0.1
Atlantic Ave - 16th to 15th	19,672	20,500	855	20,527	27	<0.1
Long Beach Blvd - 11th to 10th	17,835	17,900	855	18,690	790	0.2

Source: Fehr & Peers 2020

¹ Daily trip generation of 855 applied to all segments for conservative approach.

5. Environmental Impacts

Stationary-Source Noise Impacts

Stationary noise impacts were found to be less than significant under the Approved Project and are regulated by the City of Long Beach Municipal Code.

Loading and Unloading

The Proposed Project is a mixed-use project with both residential and retail components. Minimal loading and unloading activities would be associated with the retail uses. Loading and unloading equipment would be subject to limited hours of 7:00 AM to 10:00 PM from the City's Municipal Code. No major loading or industrial loading activities would be associated with the Proposed Project and impacts would not be greater than analyzed in the Approved Project.

Mechanical Equipment

The Approved Project determined that noise associated with air condition units would be less than significant. The Proposed Project would include use of rooftop HVAC systems for the mixed-use buildings. HVAC equipment would be located no closer than 40 feet from the nearest receptor property line. HVAC equipment would also be shielded via a parapet wall, penthouse structure, or roof forms that would obstruct line-of-sight to nearby receptors. This would result in noise attenuation of at least 5 dBA. Typical HVAC noise is approximately 72 dBA at a distance of 3 feet. At 40 feet, HVAC noise would attenuate to approximately 45 dBA (with the 5 dBA reduction from parapet wall or screening structure). HVAC noise would, therefore, not exceed the Municipal Code air conditioning and air refrigeration noise standards of:

- 55 dBA at any point on neighboring property line, five feet above grade level, no closer than three feet from any wall.
- 50 dBA outside the neighboring living area window nearest the equipment location, not more than three feet from the window opening, but at least three feet from any other surface.

Outdoor Common Areas

The Project proposes outdoor roof decks on the eastern building, adjacent to Long Beach Boulevard. The dominant noise source associated with the proposed roof deck is speech from persons talking. A typical conversation between two people at a distance of 6 feet is approximately 54 dBA (Engineering ToolBox, 2005). The nearest noise sensitive receptor to the roof deck area is the apartment building approximately 180 feet to the west. At a distance of 180 feet, noise levels would attenuate to 25 dBA or less. This would not exceed the City of Long Beach daytime and nighttime noise standard of 50 dBA under the District One land use (Table 5).

14th Street Parklet

The Proposed Project includes the development of a 0.45-acre parklet abutting the southeast corner of the project site. The primary noise sources associated with the passive park would be from foot traffic and use of the wood pavilion stage, picnic tables, and the concrete plaza. The pavilion stage would not have a permanent installation of sound amplification equipment. The nearest sensitive receptor to the passive park is the

5. Environmental Impacts

apartment building approximately 250 feet to the northwest across 14th Street. Noise levels associated with operation of the passive park would be similar existing noise levels associated with the 14th Street Fitness Park, plaza, and basketball courts directly across from the residential building. The proposed passive park would be east of these existing uses, placing it further from the nearest sensitive receptors. Therefore, noise from the proposed parklet would be the same or less than existing noise levels associated with outdoor recreational uses.

NOISE-3	The project would create short-term or long-term groundborne vibration and groundborne noise. [Threshold N-2]
----------------	--

Operational Vibration

Roadway-Related Vibration Impacts

The Proposed Project would not introduce substantial roadway vibration sources. As cited in the Approved Project, “vibrations measured on freeway shoulders (five meters from the centerline of the nearest lane) have never exceeded 0.08 inches per second, with the worst combinations of heavy trucks. This level coincides with the maximum recommended safe level for ruins and ancient monuments (and historic buildings).”

Railway-Related Vibration Impacts

The Proposed Project does not propose new rail lines nor the expansion of rail lines. The mix-use project would place sensitive receptors near existing rail, however, per *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal. 4th 369 (No. S 213478), noise compatibility for onsite sensitive receptors is no longer the purview of CEQA.

Construction Vibration Impacts

Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

Table 8, *Proposed Project's Vibration Levels (in/sec PPV)*, summarizes vibration levels for typical construction equipment at a reference distance of 25 feet. Typical construction equipment can generate vibration levels ranging up to 0.21 in/sec PPV at 25 feet. Vibration levels at a distance greater than 25 feet would attenuate to 0.2 in/sec PPV or less.

The Approved Project found impacts related to construction vibration to be significant and unavoidable. Stating that construction could generate substantial vibration levels with vibration levels as high as 1.518 in/sec PPV (used to assess architectural damage) and 112 VdB (used to assess vibration annoyance) for pile driving. It is not anticipated that the Proposed Project will require pile driving.

5. Environmental Impacts

Under the Proposed Project, the nearest structures to construction activities are the apartment building to the west and the parking structure to the north. Both are within 15 feet of anticipated paving areas. Paving typically requires the use of a vibratory roller, which would result in vibration levels of up to 0.452 in/sec PPV at the nearest sensitive receptors. However, with implementation of Mitigation Measure N-2 from the Approved Project, if vibration levels could exceed 0.20 in/sec PPV, alternative equipment, such as a static roller, shall be used. Therefore, vibration levels would not exceed 0.20 in/sec PPV and impacts would not be greater than that analyzed in the Approved Project.

Table 8 Proposed Project's Vibration Levels (in/sec PPV)

Equipment	FTA Reference PPV (in/sec) at 25 feet	PPV (in/sec) at 15 feet West - Residential uses
Vibratory Roller	0.21	0.452
Large Bulldozer	0.089	0.191
Loaded Trucks	0.079	0.164
Jackhammer	0.035	0.075
Small Bulldozer	0.003	0.006

Source: FTA, 2018. *Transit Noise and Vibration Impact Assessment*, September.

For vibration annoyance, average attenuated VdB at sensitive receptors are determined by measuring the distance from the acoustical center of the construction site to the receptor property line, as construction equipment is mobile throughout the site. The nearest sensitive receptor is the apartment building to the west. Table 9, *Proposed Project's Construction Vibration Levels (VdB)*, shows vibration levels for typical construction equipment at a reference distance of 25 feet and at the nearest sensitive receptors. As shown in the table, the Proposed Project would not exceed established thresholds from the Approved Project.

Table 9 Proposed Project's Construction Vibration Levels (VdB)

Construction Equipment	FTA Reference VdB at 25 feet	Un Mundo de Amigos Preschool – northeast at 450 feet	Worship – southwest at 460 feet	Residential – west at 190 feet	Exceeds 78 VdB Threshold?
Vibratory Roller	94	56	56	68	No
Hoe Ram	87	49	49	61	No
Large Bulldozer	87	49	49	61	No
Caisson Drilling	87	49	49	61	No
Loaded Trucks	86	48	48	60	No
Jackhammer	79	41	41	53	No
Small Bulldozer	58	20	20	32	No

Notes: Calculations are included in Appendix A.

Distance to sensitive receivers measured from the construction site's acoustical center to receptor property line.

5. Environmental Impacts

NOISE-4	The proximity of the project site to an airport or airstrip would not result in exposure of future resident and/or workers to excessive airport-related noise. [Threshold N-3]
----------------	---

The Approved Project found the nearest airport to the Midtown Specific Plan area to be the Long Beach Airport, approximately 1.8 miles to the northeast. Other airstrips in the area included Goodyear Blimp Base and Compton Airport, approximately 5.6 miles and 6.1 miles northwest, respectively. Under the Proposed Project, the nearest airport would remain Long Beach Airport at approximately 2.5 miles to the northeast. The Proposed Project would be approximately 0.7 miles farther from the Long Beach Airport than previously analyzed.

5.4 ADOPTED MITIGATION MEASURES APPLICABLE TO THE PROPOSED PROJECT

This section includes the mitigation measures identified in the 2016 Certified EIR. Revisions to the mitigation measures where appropriate to reflect the Proposed Project are identified in ~~strike through~~ for deletion and double underline for addition.

N-1 Prior to issuance of demolition, grading and/or building permits for development projects accommodated by the Midtown Specific Plan, a note shall be provided on development plans which indicates that during grading, demolition, and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction-related noise:

- Construction activity is limited to the daytime hours between 7 AM to 7 PM on Monday through Friday and 9 AM to 6PM on Saturday, as prescribed in the City's Municipal Code. Construction is prohibited on Sundays.
- All internal combustion engines on construction equipment and trucks are fitted with properly maintained mufflers.
- Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling is located as far as feasible from nearby noise-sensitive receptors.
- Construction traffic shall be limited to the haul routes established by the City of Long Beach.

N-2 Prior to issuance of a building permit for any development project requiring pile driving, paving, or blasting during construction, the project applicant/developer shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. The maximum levels shall not exceed 0.2 inches/second, which is the level that can cause architectural damage for typical residential construction. If maximum levels would exceed these thresholds, alternative uses such static rollers, non-explosive blasting, and drilling piles as opposed to pile driving shall be used.

5. Environmental Impacts

- N-3 Prior to the issuance of building permits for development projects accommodated by the Midtown Specific Plan, if proposed vibration-sensitive land uses are located within 200 feet of any railroad line, the property owner/developer shall retain an acoustical engineer to conduct an acoustic analysis that includes a vibration analysis for potential impacts from vibration generated by operation of the rail line. Mixed-use buildings shall be designed to eliminate vibration amplifications due to resonances of floors, walls, and ceilings. The detailed acoustical analysis shall be submitted to the City of Long Beach Development Services Department prior to issuance of building permits and shall demonstrate that the vibration levels would be below 65, 72, or 75 VdB, which are the Federal Transit Administration's rail-focused groundborne vibration criteria for Category 1, 2, and 3 land uses, respectively. Category 1 uses are buildings where vibration would interfere with interior operations; Category 2 uses are residences and buildings where people normally sleep; and Category 3 uses are institutional land uses with primarily daytime use.
- N-4 Prior to issuance of a building permit for projects involving the development of new industrial uses within 200 feet of any existing residential use or Development District 3 of the Midtown Specific Plan, the property owner/developer shall retain an acoustical engineer to conduct an acoustic analysis that includes a vibration analysis for potential impacts from vibration generated by industrial activities. The detailed acoustical analysis shall be submitted to the City of Long Beach Development Services Department for review and shall demonstrate that the vibration levels to any nearby residential use would be below 78 VdB during the daytime (7 AM to 10 PM) and 72 VdB during the nighttime (10 PM to 7 AM), which are the Federal Transit Administration's daytime and nighttime criteria to regulate general vibration impacts at affected residential uses.
- N-5 Prior to issuance of a building permit for residential development projects accommodated by the Midtown Specific Plan, the project applicant/developer shall submit a final acoustical report prepared to the satisfaction of the City of Long Beach Development Services Department. The report shall demonstrate that the residential development will be sound-attenuated against present and projected noise levels, including roadway, railway, aircraft, helicopter, and stationary sources (e.g., industrial, commercial, etc.) to meet City interior standards. Specifically, the report shall demonstrate that the proposed residential design will result in compliance with the 45 dBA CNEL interior noise levels, as required by the California Building Code and California Noise Insulation Standards (Title 24 and 25 of the California Code of Regulations). The project applicant/developer shall submit the final acoustical report to the City of Long Beach Development Services Department for review and approval. Upon approval by the City, the project's acoustical design features shall be incorporated into construction of the proposed development project.

5. Environmental Impacts

This page intentionally left blank.

6. References

- Airnav, LLC. 2020. Airport Information. Accessed December 30, 2020. <http://www.airnav.com/airports>.
- California Department of Transportation (Caltrans). 2013a, September. *Technical Noise Supplement ("TeNS")*. Prepared by ICF International. Available at: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf
- . 2020b, April. *Transportation and Construction Vibration Guidance Manual*. Prepared by ICF International. <https://dot.ca.gov/programs/environmental-analysis/noise-vibration/guidance-manuals>
- Engineering ToolBox. 2005 (Engineering ToolBox, 2005). Voice Level at Distance. Accessed December 29, 2020. https://www.engineeringtoolbox.com/voice-level-d_938.html
- Federal Highway Administration. 2006. *Roadway Construction Noise Model (RCNM), Version 1.1*. Available at: https://www.fhwa.dot.gov/Environment/noise/construction_noise/rcnm/
- Fehr & Peers. 2020. *Technical Memorandum for 14th & Long Beach Boulevard Affordable Housing Project Traffic Assessment*.
- Federal Transit Administration. 2018, September. *Transit Noise and Vibration Impact Assessment Manual*. US Department of Transportation.
- Harris, Cyril M. 1998. *Handbook of Acoustical Measurements and Noise Control*. 3rd edition. Woodbury, NY: Acoustical Society of America.
- Long Beach, City of. 2018. General Plan Noise Element Update, Existing Conditions Report. <http://www.longbeach.gov/lbds/planning/advance/general-plan/noise-element/>
- Long Beach, City of. May 2020. City of Long Beach Municipal Code. https://library.municode.com/ca/long_beach/codes/municipal_code?nodeId=TTT8HESA_CH8.80
NO
- Long Beach, City of. 1975, March 25. Noise Element, Long Beach General Plan.

6. References

This page intentionally left blank.

APPENDIX A

NOISE AND VIBRATION

LOCAL REGULATIONS AND STANDARDS

**CITY OF LONG BEACH
GENERAL PLAN
NOISE ELEMENT 1975**

<https://www.longbeach.gov/lbcd/planning/advance/general-plan/>

CHAPTER 8.80 - NOISE

8.80.010 - Policy.

- A. In order to control unnecessary, excessive and annoying noise and vibration in the City, it is declared to be the policy of the City to prohibit such noise and vibration generated from or by all sources as specified in this Chapter. It shall be the policy of the City to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the City where noise levels are above acceptable values.
- B. It is determined that certain noise levels and vibrations are detrimental to the public health, welfare and safety, and are contrary to the public interest. Therefore, the City Council does ordain and declare that creating, maintaining, causing or allowing to be created, caused or maintained, any noise or vibration in a manner prohibited by or not in conformity with the provisions of this Chapter is a public nuisance and shall be punishable as such.
- C. The City Council in adopting this Chapter is aware of the areas of noise control which are preempted by other jurisdictions. Enforcement of these regulations is understood by the City Council to be restricted, in addition to other limitations, by the following:
 - 1. It is not the intent of this Chapter to control aircraft noise at the Long Beach Airport. Federal law controls noise levels of aircraft in flight; and where federal preemption does not apply to aircraft on the ground, the appropriate provisions of the California Noise Law (Title 4, California Administrative Code, Subchapter 6) would be applicable to deal with this subject matter.
 - 2. Local noise control of motor vehicles or motorboats operating on public rights-of-way is preempted by State or federal laws and regulations.
 - 3. Noise in occupational environments is controlled by the California Department of Industrial Relations, whose Division of Industrial Safety enforces the 1973 California Occupational Safety and Health Act (CALOSHA).

(Ord. C-5371 § 1 (part), 1977: prior code § 4430)

8.80.020 - Definitions.

All terminology used in this Chapter, if not defined in this Section, shall have the same meaning as defined by applicable publications of the American National Standards Institute (ANSI), or its successor body.

- 1. "A-weighted sound level" means the sound pressure level in decibels as measured on a sound level meter using the A-weighting network. The level so read is designated dB(A) or dBA.
- 2. "Agricultural property" means a parcel of real property which is not developed for any use other than agricultural purposes. Its size shall be construed to be a minimum of ten (10) contiguous acres.
- 3. "Ambient noise level" means the composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
- 4. "Commercial area" means any area occupied by businesses which sell, rent, trade, or store goods, or which provide a service.
- 5. "Commercial purpose" means the use, operation or maintenance of any sound amplifying equipment for the purpose of advertising any business, goods, or services, or for the purpose of attracting the attention of the public, or soliciting patronage of customers to any performance, show, entertainment, exhibition,

or event, or for the purpose of demonstrating such sound equipment.

6. "Construction" means any site preparation, assembly, erection, substantial repair, alteration, or similar action, but excluding demolition.
7. "Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.
8. "Decibel (dB)" means a unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is twenty (20) micropascals (twenty (20) micronewtons per square meter).
9. "Demolition" means any dismantling, intentional destruction or removal of structures, utilities, public or private right-of-way surfaces or similar property.
10. "Emergency" means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage which demands immediate action.
11. "Emergency work" means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency.
12. "Fixed noise source" means a stationary device which creates sound while fixed or motionless, including, but not limited to, residential, agricultural, industrial, and commercial machinery and equipment, pumps, fans, compressors, air conditioners, and refrigeration equipment.
13. "Gross vehicle weight rating (GVWR)" means the value specified by the manufacturer as the recommended maximum loaded weight of a single motor vehicle. In cases where trailers and tractors are separable, the gross combination weight rating, which is the value specified by the manufacturer as the recommended maximum loaded weight of the combination vehicle shall be used.
14. "Impulsive sound" means sound of short duration, usually less than one (1) second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions, drop forge impacts, and the discharge of firearms.
15. "Industrial area" means any area occupied by land uses whose primary operation involves manufacturing, assembling, processing, or otherwise treating raw materials, semifinished products, or finished products, for packaging and distribution to either wholesale or retail markets.
16. "Intrusive noise" means that noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence, and tonal or informational content as well as the prevailing ambient noise level.
17. "Licensed" means the issuance of a formal license or a permit by a City authority; or, where no permits or licenses are issued, the sanctioning of the activity by the City as noted in the public record.
18. "Mobile noise source" means any noise source other than a fixed noise source.
19. "Motor carrier vehicle engaged in interstate commerce" means any vehicle for which regulations apply pursuant to Section 18 of the Federal Noise Control Act of 1972 (P. L. 92-574), as amended, pertaining to motor carriers engaged in interstate commerce.
20. "Motor vehicle" includes any and all self-propelled vehicles as defined in the California Motor Vehicle Code, including all on-highway type motor vehicles subject to registration under said code, and all off-highway type motor vehicles subject to identification under said code.
21. "Motorboat" means any vessel which operates on water and which is propelled by a motor, including, but not limited to, boats, barges, amphibious craft, waterski-towing devices and hovercrafts.
22. "Muffler or sound dissipative device" means a device for abating the sound of escaping gases of an

internal combustion engine.

23. "Noise" means any sound which annoys or disturbs humans or which causes or tends to cause an adverse psychological or physiological effect on humans.
24. "Noise control office" means the City agency designated by the City Manager having the lead responsibility and authority to enforce this Chapter and to grant variances.
25. "Noise control officer" means the City official appointed by the City Manager to direct the noise control office.
26. "Noise disturbance" means any sound which (a) endangers or injures the safety or health of humans or animals, or (b) annoys or disturbs a reasonable person of normal sensitivities, or (c) endangers or injures personal or real property.
27. "Noise sensitive zone" means any area designated pursuant to Section 8.80.030 for the purpose of insuring exceptional quiet.
28. "Noise source" means a disturbance-causing operation which originates from a single unit or noise generating mechanism which operates simultaneously. Example of a single noise source is the combination of motor, pump, and compressor; oil drilling rig; or a power plant with several boilers.
29. "Noise zone" means defined areas or regions of a generally consistent land use community wherein the ambient noise levels are generally similar (within a range of five (5) decibels). Typically, most sites within any given noise zone will be of comparable proximity to major noise sources.
30. "Noncommercial purpose" means the use, operation or maintenance of any sound equipment for other than a commercial purpose, including, but not limited to, philanthropic, political, patriotic and charitable purposes.
31. "Person" means any individual, association, partnership or corporation, and includes any officer, employee, department, agency or instrumentality of a State or any political subdivision of a State.
32. "Powered model vehicle" means any self-propelled airborne, waterborne, or land-borne plane, vessel or vehicle which is not designed to carry persons, including, but not limited to, any model airplane, boat, car or rocket.
33. "Public right-of-way" means any street, avenue, boulevard, highway, sidewalk or alley or similar place which is owned or controlled by a governmental entity.
34. "Public space" means any real property or structures thereon which are owned or controlled by a governmental entity.
35. "Pure tone" means any sound which can be distinctly heard as a single pitch or a set of single pitches. For the purposes of this Chapter, a pure tone shall exist if the one-third ($1/3$) octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two (2) contiguous one-third ($1/3$) octave bands by five (5) decibels for center frequencies of five hundred (500) hertz and above and by eight (8) decibels for center frequencies between one hundred sixty (160) and four hundred (400) hertz and by fifteen (15) decibels for center frequencies less than or equal to one hundred twenty-five (125) hertz.
36. "Real property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one (1) person from that owned by another person, but not including intra-building real property divisions.
37. "Residential area" means any area wherein the dominant land use is devoted to maintenance, preservation, or propagation of residential dwelling units.

38. "RMS sound pressure" means the square root of the time averaged square of the sound pressure, denoted
39. "Sound" means an oscillation in pressure, particle displacement, particle velocity or other physical parameter, in a medium with internal forces that causes compression and rarefaction of that medium. The description of sound may include any characteristic of such sound, including duration, intensity and frequency.
40. "Sound amplifying equipment" means any machine or device for the amplification of the human voice, or music, or any other sound, excluding standard automobiles when used and heard only by the occupants of the vehicle in which the device is installed and, as used in this Chapter, warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.
41. "Sound level" means the weighted sound pressure level obtained by the use of a sound level meter and frequency weighting network, such as A, B or C, as specified in American National Standards Institute specifications for sound level meters (ANSI S1.4-1971 or the latest approved revision thereof). If the frequency weighting employed is not indicated, the A-weighting shall apply.
42. "Sound level meter" means an instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement of sound levels, which satisfies the requirements pertinent for type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.
43. "Sound pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given point in space, as produced by sound energy.
44. "Sound pressure level" means twenty (20) times the logarithm to the base ten of the ratio of the RMS sound pressure to the reference pressure of twenty (20) micropascals ($20 \times 10^{-6} \text{ N/M}^2$). The sound pressure level is denoted L_p or SPL and is expressed in decibels.
45. "Sound truck" means any motor vehicle or any other vehicle, regardless of motive power, whether in motion or stationary, having mounted thereon, or attached thereto, any sound amplifying equipment.
46. "Vibration" means mechanical motion of the earth or ground, building, or other type of structure, induced by the operation of any mechanical device or equipment located upon or affixed thereto. For purposes of this Chapter, the magnitude of the vibration shall be stated as the acceleration in "g" units (1 g is equal to 32.2 ft/sec^2 , $9.81 \text{ meters/sec}^2$).
47. "Weekday" means any day, Monday through Friday, which is not a federal holiday.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.1)

8.80.030 - Administration and enforcement.

The noise control program established by this Chapter shall be administered by the noise control office as designated by the City Manager. An official within the noise control office shall be appointed as the Noise Control Officer and shall be a person with sufficient knowledge of environmental acoustics to enforce noise regulations.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.2 (a))

8.80.040 - Noise control office—Powers.

In order to implement and enforce this Chapter and for the general purpose of noise abatement and control, the noise control office shall have, in addition to any other authority vested in it, the power to:

- A. Studies. Conduct, or cause to be conducted, studies, research, and monitoring related to noise, including joint investigation with public or private agencies, and make application for and accept grants;
- B. Education.
 - 1. Conduct programs of public education regarding:
 - a. The cause and effect of noise and general methods of abatement and control of noise, and
 - b. The actions prohibited by this Chapter and the procedures for reporting violations, and
 - 2. Encourage the participation of public interest groups in related public information efforts,
 - 3. Provide for training of field inspectors and other technical personnel concerned with noise abatement (in conformance with standards for technical qualifications as established by the State Office of Noise Control).
- C. Coordination and Cooperation.
 - 1. Coordinate the noise control activities of all municipal departments,
 - 2. Cooperate where practicable with all appropriate State and federal agencies,
 - 3. Cooperate or combine where practicable with appropriate County and municipal agencies,
 - 4. Advise on the availability of low noise emission products for replacement or retrofit of existing or planned City owned or operated equipment,
 - 5. Enter into contract with the approval of the City Manager for the provision of technical and enforcement services;
- D. Actions of Other Departments. Request any other department or agency responsible for a proposed or final standard, regulation or similar action to consult on the advisability of revising the action, if there is reason to believe that the action is not consistent with this Chapter;
- E. Public and Private Projects. On all public and private projects which are likely to cause sound in violation of this Chapter and which are subject to mandatory review or approval by other departments or agencies, or which under the environmental review process are judged to be likely to violate these regulations:
 - 1. Review to determine compliance with the intent and provisions of this Chapter,
 - 2. Recommend sound analysis which identify existing and projected noise sources and associated sound levels,
 - 3. Recommend usage of adequate measures to avoid violation of any provision of this Chapter;
- F. Inspections. Upon presentation of proper credentials, enter and/or inspect any private property, place, report, or records at any time when granted permission by the owner, or by some other person with apparent authority to act for the owner. When permission is refused or cannot be obtained, a search or inspection warrant may be obtained from a court of competent jurisdiction upon showing of probable cause to believe that a violation of this Chapter may exist. Such inspection may include administration of any necessary tests;
- G. Product Performance Standard Recommendations. Develop and recommend (to the City Council or other City agency) provision regulating the use and operation of any product, including the description of maximum sound emission levels of such product, but not in such a manner as to conflict with federal or State new product regulations;
- H. Noise Sensitive Zone Recommendation and Enforcement. Prepare recommendations to be approved by the City Council, for the designation of noise sensitive zones which contain noise sensitive activities and to enforce the provisions of Sections 8.80.150 through 8.80.180 on City Council designated noise

sensitive zones;

- I. Noise Zone Definition. Prepare recommendations, based upon noise survey data and analytical studies, to be approved by the City Council, for the designation of zones of similar ambient environmental noise within regions of generally consistent land use. These zones shall be identified in terms of their day and nighttime ambient noise levels by the classifications given in Section 8.80.160, Table A;
- J. Zoning Changes. Prior to the approval of any zoning change:
 - 1. Review the noise impact of the zoning change by identifying existing and projected noise sources and the associated sound levels,
 - 2. Require usage of adequate measures on noise sources identified in subdivision 1 of this subsection which will be in violation of any provision of this Chapter.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.2 (b))

8.80.050 - Noise Control Officer—Duties.

In order to effectively implement and enforce this Chapter, the Noise Control Officer shall, within a reasonable time:

- A. Investigate and Pursue Violations. Investigate and pursue possible violations of this Chapter;
- B. Delegation of Authority. Delegate functions, where appropriate under this Chapter, to personnel within the noise control office and to other departments, subject to the approval of the City Manager;
- C. Community Noise Element.
 - 1. Assist in the preparation or revision thereof of the City noise element of the general plan as required by Government Code Section 65302 (g), following guidelines set forth by the State Office of Noise Control,
 - 2. Assist in or review the total transportation planning of the City, including planning for new roads and highways, bus routes, airports, and other systems for public transportation, to insure that proper consideration is taken with regard to the impact of sound levels and that the policies set forth in the noise element are adhered to,
 - 3. Provide ongoing assistance to local agencies in determining possible mitigating measures for current or future noise problems;
- D. Airport Noise Exposure. Assist the department of aeronautics in developing a plan for noise compatible land use in the vicinity of the Long Beach Airport and maintain consistency with the provisions and policies of the noise element of the general plan;
- E. State and Federal Laws and Regulations.
 - 1. Prepare and publish with the approval of the City Council a list of those products manufactured to meet specified noise emission limits under federal, State or community law for which tampering enforcement will be conducted, and
 - 2. Make recommendations for modification or amendments to this Chapter to insure consistency with all State and federal laws and regulations;
- F. Administer Grants, Funds and Gifts. Administer noise program grants, funds and gifts from public and private sources, including the State and federal governments;
- G. Monitoring Responsibilities. Notwithstanding the preemption by federal and State agencies of the enforcement powers over certain activities, such as those at the Long Beach Airport and at the Long

Beach Marine Stadium, the Noise Control Officer shall monitor noise generated by such preempted activities and report any violations of State or federal regulations to the appropriate enforcement agencies and to the City Council.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.2 (c))

8.80.060 - City departments—Policy conformance.

All departments shall, to the fullest extent consistent with their authorities under other ordinances administered by them, carry out their programs in such a manner as to further the policies stated in Section 8.80.010.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (a))

8.80.070 - City departments—Cooperation.

All departments shall cooperate with the noise control office to the fullest extent in enforcing the noise regulations of this Chapter.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (b))

8.80.080 - City departments—Legal compliance.

All departments engaged in any activities which result or may result in the emission of noise, shall comply with federal and State laws and regulations, as well as the provisions of this Chapter, respecting the control and abatement of noise to the same extent that any person is subject to such laws and regulations.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (c))

8.80.090 - City departments—Project approval.

Each department whose duty it is to review and approve new projects or changes to existing projects that result, or may result, in the emission of noise shall consult with the noise control office prior to any such approval.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (d))

8.80.100 - City departments—Review of actions.

If at any time the Noise Control Officer has reason to believe that a standard, regulation, or action or proposed standard, regulation or action of any department respecting noise does not conform to the intent of Section 8.80.010, he may request such department to review and report to him on the advisability of revising such standard or regulation to conform.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (e))

8.80.110 - City departments—Contract compliance.

Any written agreement, purchase order, or instrument whereby the City is committed to the expenditure of funds in return for work, labor, services, supplies, equipment, materials, or any combination of the foregoing, shall not be entered into unless such agreement, purchase order, or instrument contains provisions requiring that any equipment or activities which are subject to the provisions of this Chapter will be operated, constructed, conducted, or manufactured without causing violation of this Chapter.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (f))

8.80.120 - City departments—Low noise emission product use.

Any product which has been certified by the Administrator of the United States Environmental Protection Agency pursuant to Section 15 of the Noise Control Act of 1972 as a low noise emission product and which is determined to be suitable for use as a substitute shall be used in preference to any other product where economically feasible.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.3 (g))

8.80.130 - Disturbing noises prohibited.

- A. Notwithstanding any other provision of this Chapter, and in addition thereto, it is unlawful for any person to willfully make or continue, or cause to be made or continued, a loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes any discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.
- B. The standards which shall be considered in determining whether a violation of the provisions of this Section exist shall include, but not be limited to the following:
 - 1. The sound level of the objectionable noise;
 - 2. The sound level of the ambient noise;
 - 3. The proximity of the noise to residential sleeping facilities;
 - 4. The nature and zoning of the area within which the noise emanates;
 - 5. The density of the inhabitation of the area within which the noise emanates;
 - 6. The time of day or night the noise occurs;
 - 7. The duration of the noise and its tonal, informational or musical content;
 - 8. Whether the noise is continuous, recurrent, or intermittent;
 - 9. Whether the noise is produced by a commercial or noncommercial activity.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.4)

8.80.140 - Noise measurement procedure.

The measurement procedure presented in this Section assumes that personnel performing the noise measurements have been trained in the use of the instruments and in interpretation of measured data. Upon receipt of a complaint from a citizen, the Noise Control Officer, or his agent, equipped with sound level measurement equipment satisfying the requirements specified in Section 8.80.020, shall investigate the complaint. The investigation shall consist of a measurement and the gathering of data to adequately define the noise problem as specified in the California Office of Noise Control Model Enforcement Manual, and shall include the following:

- A. Nonacoustic Data.
 - 1. Type of noise source;
 - 2. Location of noise source relative to complainant's property;
 - 3. Time period during which noise source is considered by complainant to be intrusive;
 - 4. Total duration of noise produced by noise source;
 - 5. Date and time of noise measurement survey.

- B. Procedure. Utilizing the A weighting scale of the sound level meter and the slow meter response, the noise level shall be measured at a position or positions along the complainant's property line closest to the noise source or at the boundary line where the noise level is at a maximum. In general, the microphone shall be located five feet above the ground; ten feet (10') or more from the nearest reflective surface, where possible. However, in those cases where elevation is deemed appropriate, the latter shall be utilized. If the noise complaint is related to interior noise, noise measurements shall be made at a point at least four feet (4') from the wall, ceiling or floor nearest the windows with windows in the normal seasonal configuration. Calibration of the instrument being used shall be performed immediately prior to and following the recording of any noise data utilizing the acoustic calibrator.

(Ord. C-5371 § 1 (part), 1977; prior code § 4430.5)

8.80.150 - Exterior noise limits—Sound levels by receiving land use district.

- A. The noise standards for the various land use districts identified by the noise control office as presented in Table A in Section 8.80.160 shall, unless otherwise specifically indicated, apply to all such property within a designated district.
- B. No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the City or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:
1. The noise standard for that land use district as specified in Table A in Section 8.80.160 for a cumulative period of more than thirty (30) minutes in any hour; or
 2. The noise standard plus five (5) decibels for a cumulative period of more than fifteen (15) minutes in any hour; or
 3. The noise standard plus ten (10) decibels for a cumulative period of more than five (5) minutes in any hour; or
 4. The noise standard plus fifteen (15) decibels for a cumulative period of more than one (1) minute in any hour; or
 5. The noise standard plus twenty (20) decibels or the maximum measured ambient, for any period of time.
- C. If the measured ambient level exceeds that permissible within any of the first four (4) noise limit categories in Subsection B of this Section, the allowable noise exposure standard shall be increased in five (5) decibels increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category in Subsection B of this Section, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.
- D. If the measurement location is on a boundary between two (2) different districts, the noise level limit applicable shall be the arithmetic mean of the two (2) districts.
- E. If possible, the ambient noise shall be measured at the same location along the property line utilized in Subsection B of this Section, with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, then the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance such that the offending noise from the source is inaudible. If the difference between the noise levels with noise source operating and not operating is six (6) decibels or greater, then the noise measurement of the alleged source can be considered valid with a small correction applied to account for the contribution of the ambient noise. The correction is to be applied in accordance with data shown in Table B in Section 8.80.160.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.6 (a))

8.80.160 - Exterior noise limits—Correction for character of sound.

In the event that alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the standard limits set forth in Table A shall be reduced by five (5) decibels.

Table A
EXTERIOR NOISE LIMITS

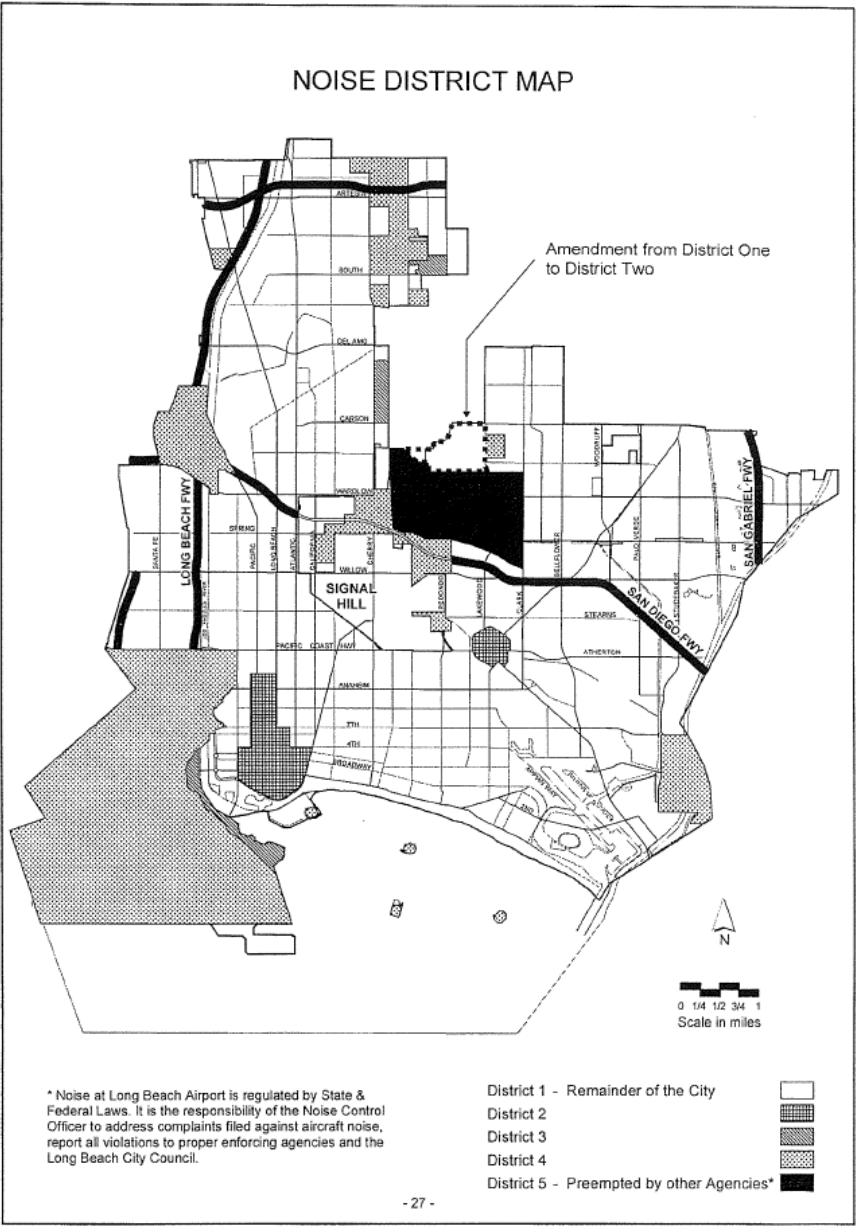
Receiving Land Use District*	Time Period	Noise Level** (dBA)
District One	Night:	
	10:00 p.m.—7:00 a.m.	45
	Day:	
	7:00 a.m.—10:00 p.m.	50
District Two	Night:	
	10:00 p.m.—7:00 a.m.	55
	Day:	
	7:00 a.m.—10:00 p.m.	60
District Three	Any time	65
District Four	Any time	70
District Five	Regulated by other agencies and laws	
*District One:	Predominantly residential with other land use types also present	
District Two:	Predominantly commercial with other land use types also present	
Districts Three and Four:	Predominantly industrial with other land types use also present	

District Five:	Airport, freeways and waterways regulated by other agencies	
----------------	---	--

** Districts Three and Four limits are intended primarily for use at their boundaries rather than for noise control within those districts.

Table B
BACKGROUND NOISE CORRECTION

Difference between total noise and background noise alone (decibels)	Amount to be subtracted from
6—8	1
9—10	.5



(ORD-09-0030, § 1(exh. A), 2009; Ord. C-7959 § 1 (exh. A), 2004; Ord. C-5371 § 1 (part), 1977: prior code § 4430.6(b))

8.80.170 - Interior noise limits—Maximum sound levels.

- A. The interior noise standards for various land use districts as presented in Table C shall apply, unless otherwise specifically indicated, within structures located in designated zones with windows in their normal seasonal configuration.

TABLE C

Receiving Land Use District	Type of Land Use	Time Interval	Allowable Interior Noise Level (dBA)
All	Residential	10:00 p.m.—7:00 a.m.	35
		7:00 a.m.—10:00 p.m.	45

All	School	7:00 a.m.—10:00 p.m. (While school is in session)	45
Hospital, designated quiet zones and noise sensitive zones		Any time	40

- B. No person shall operate, or cause to be operated, any source of sound indoors at any location within the incorporated limits of the City or allow the creation of any indoor noise which causes the noise level when measured inside the receiving dwelling unit to exceed:
1. The noise standard for that land use district as specified in Table C for a cumulative period of more than five (5) minutes in any hour; or
 2. The noise standard plus five decibels (5 dB) for a cumulative period of more than one (1) minute in any hour; or
 3. The noise standard plus ten decibels (10 dB) or the maximum measured ambient, for any period of time.
- C. If the measured indoor ambient level exceeds that permissible within any of the first two (2) noise limit categories in this Section, the allowable noise exposure standard shall be increased in five decibel (5 dB) increments in each category as appropriate to reflect the indoor ambient noise level. In the event the indoor ambient noise level exceeds the third noise limit category, the maximum allowable indoor noise level under said category shall be increased to reflect the maximum indoor ambient noise level.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.7(a))

8.80.180 - Interior noise limits—Correction for character of sound.

In the event the alleged offensive noise contains a steady audible tone such as a whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech conveying information content, the standard limits set forth in Table C in Section 8.80.170 shall be reduced by five decibels (5 dB).

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.7(b))

8.80.190 - Noise disturbances—Prohibited.

No person shall unnecessarily make, continue or cause to be made or continued, any noise disturbance.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.8(a))

8.80.200 - Noise disturbances—Acts specified.

The following acts, and the causing or permitting thereof, are declared to be in violation of this Chapter:

- A. Radios, television sets, musical instruments and similar devices. Operating, playing or permitting the operation or playing of any radio, television set, phonograph, drum, musical instrument, or similar device

which produces or reproduces sound:

1. Between the hours of ten p.m. and seven a.m. the following day in such a manner as to create a noise disturbance across a residential or commercial real property line or at any time to violate the provisions of Sections 8.80.150 or 8.80.170 except for activities for which a variance has been issued by the noise control office,
 2. In such a manner as to exceed the levels set forth in Table A in Section 8.80.160, measured at a distance of at least fifty feet (50') (fifteen (15) meters) from such device operating on a public right-of-way or public space;
- B. Loudspeakers (amplified sound). Using or operating for any purpose any loudspeaker, loudspeaker system, or similar device between the hours of ten p.m. and seven a.m. the following day, such that the sound therefrom creates a noise disturbance across a residential real property line, or at any time violates the provisions of Sections 8.80.150 or 8.80.170, except for any noncommercial public speaking, public assembly or other activity for which a variance has been issued by the noise control office;
- C. Street sales. Offering for sale, selling anything or advertising by shouting or outcry within any residential or commercial area or noise sensitive zone of the City except by variance issued by the noise control office. The provisions of this subsection shall not be construed to prohibit the selling by outcry of merchandise, food and beverages at licensed sporting events, parades, fairs, circuses or other similar licensed public entertainment events;
- D. Animals and birds. Owning, possessing or harboring any animal or bird which frequently or for continued duration howls, barks, meows, squawks, or makes other sounds which create a noise disturbance across a residential or commercial real property line or within a noise sensitive zone. This provision shall not apply to public zoos;
- E. Loading and unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of ten p.m. and seven a.m. the following day in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of Sections 8.80.150 and 8.80.170;
- F. Repealed;
- G. Vibration. Operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at one hundred fifty feet (150') (forty-six (46) meters) from the source if on a public space or public right-of-way. For the purposes of this subsection, "vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such directed means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be .001 g's in the frequency range 0—30 hertz and .003 g's in the frequency range between thirty and one hundred hertz;
- H. Explosives, firearms and similar devices. Using or firing explosives, firearms, firecrackers or similar devices such that the sound therefrom creates a noise disturbance across a real property line, or within a noise sensitive zone, public space or public right-of-way, without first obtaining a variance issued by the noise control office or other appropriate regulatory agency;
- I. Powered model vehicles. Operating or permitting the operation of powered model vehicles:
1. Between the hours of seven p.m. and seven a.m. the following day so as to create a noise disturbance across a residential or commercial real property line or at any time to violate the provisions of Sections 8.80.150 or 8.80.170,

2. In such a manner as to exceed the levels set forth in Table A in Section 8.80.160 measured at a distance of one hundred feet (100') (thirty (30) meters) from any point on the path of a vehicle operating on public space or way;
- J. Stationary nonemergency signaling devices.
1. Sounding or permitting the sounding of any electronically amplified signal from any stationary bell, chime, siren, whistle, or similar device, intended primarily for nonemergency purposes, from any place, for more than ten (10) seconds in any hourly period,
 2. Houses of religious worship and chimes in the civic center shall be exempt from the operation of this provision,
 3. Sound sources covered by this provision and not exempted under Subsection 8.80.200.J.2 of this Section may be exempted by a variance issued by the noise control office;
- K. Emergency signaling devices.
1. The intentional sounding or permitting the sounding outdoors of any fire, burglar or civil defense alarm, siren, whistle or similar stationary emergency signaling device, except for emergency purposes or for testing, as provided in Subsection 8.80.200.K.2 of this Section,
 2. a. Testing of a stationary emergency signaling device shall not occur before seven a.m. or after seven p.m. Any such testing shall only use the minimum cycle test time. In no case shall such test time exceed ten (10) seconds,
b. Testing of the complete emergency signaling system, including the functioning of the signaling device and the personnel response to the signaling device shall not occur more than once in each calendar month. Such testing shall not occur before seven a.m. or after ten p.m. The time limit specified in Subsection 8.80.200.K.2.a of this Section shall not apply to such complete system testing,
 3. Sounding or permitting the sounding of any exterior burglar or fire alarm unless such alarm is automatically terminated within fifteen (15) minutes of activation;
- L. Noise sensitive zones.
1. Creating or causing the creation of any sound within any noise sensitive zone, so as to exceed the specified land use noise standards set forth in Sections 8.80.150 and 8.80.170, or
 2. Creating or causing the creation of any sound within or adjacent to any noise sensitive zone containing a hospital, nursing home, school, court or other designated use so as to interfere with the functions of such activity or annoy the patients or participants of such activity;
- M. Domestic power tools.
1. Operating or permitting the operation of any mechanically powered saw, sander, drill, grinder, lawn or garden tool, or similar tool between ten p.m. and seven a.m. the following day so as to create a noise disturbance across a residential or commercial real property line,
 2. Any motor, machinery, pump, etc., shall be sufficiently enclosed or muffled and maintained so as not to create a noise disturbance,
 3. Operating leaf blowers, consisting of portable power equipment used in any landscape maintenance, construction, property repair or property maintenance for the purpose of blowing, dispersing or redistributing dust, dirt, leaves, grass clippings, cuttings, or trimmings from plants, trees or other debris is unlawful if operated within any residential area or in any nonresidential area within four hundred feet (400') of any residential area in the City between the hours after eight p.m.

and before eight a.m. Monday through Friday, after five p.m. and before nine a.m. on Saturdays, and after five p.m. and before eleven a.m. on Sundays and legal holidays. Notwithstanding the provisions of Section 8.80.380, violations of this Subsection 8.80.200.M.3 shall be infractions except as specifically provided in this Section. The first violation in any one (1) year period shall be subject to a fine of fifty dollars (\$50.00); a second violation in any one (1) year period shall be subject to a fine of seventy-five dollars (\$75.00); a third violation in any one (1) year period shall be subject to a fine of one hundred dollars (\$100.00). A fourth or subsequent violation of this Subsection in any one (1) year period may be filed as a misdemeanor. Notwithstanding the provisions of any other Section in this Chapter, the provisions of this subsection may be enforced by a Police Officer;

- N. Air-conditioning or air refrigerating equipment. Operating or permitting the operation of any air-conditioning or air refrigerating equipment in such a manner as to exceed any of the following sound levels measured as specified in the American Society of Heating, Refrigeration and Air Conditioning Engineers Code of Recommended Practices:

Measurement Location	Units Installed Before 1-1-80 dB (A)	Units Installed On Or After 1-1-80 dB (A)
Any point on neighboring property line, five feet above grade level, no closer than three feet from any wall	60	55
Center of neighboring patio five feet above grade level, no closer than three feet from any wall	55	50
Outside the neighboring living area window nearest the equipment location, not more than three feet from the window opening, but at least three feet from any other surface	55	50

In case of conflict, the interior noise standards as specified in Section 8.80.170 shall nonetheless apply;

- O. Places of public entertainment. Operating or permitting to be operated any loudspeaker or other source of sound in any place of public entertainment that exceeds the levels shown in Table D at any point normally occupied by a customer, without a conspicuous and legible sign stating

"WARNING, SOUND LEVELS WITHIN MAY CAUSE PERMANENT HEARING IMPAIRMENT."

Table D
MAXIMUM LEVELS ALLOWED IN PLACES
OF PUBLIC ENTERTAINMENT

Duration Per Day Continuous Hours	Noise Level dB (A)
-----------------------------------	--------------------

8	85
6	86
4	88
3	89
2	91
1 ½	92
1	94
½	97
¼ or less	100

P. Tampering. The following acts or the causing thereof are prohibited:

1. The removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any noise control device or element of design or noise label of any product identified under Subsection 8.80.040.G and Subsection 8.80.050.C. The Noise Control Officer may, by regulation, list those acts which constitute violation of this provision,
2. The use of a product, identified under Subsection 8.80.040.G and Subsection 8.80.050.C, which has had a noise control device or element of design or noise label removed or rendered inoperative with knowledge that such action has occurred.

(Ord. C-7745 § 1, 2001; Ord. C-7175 § 1, 1994; Ord. C-6474 § 2, 1988; Ord. C-6036 § 1, 1984; Ord. C-5371 § 1 (part), 1977: prior code § 4430.8(b))

8.80.202 - Construction activity—Noise regulations.

The following regulations shall apply only to construction activities where a building or other related permit is required or was issued by the Building Official and shall not apply to any construction activities within the Long Beach harbor district as established pursuant to Section 201 of the City Charter.

- A. Weekdays and federal holidays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of seven p.m. and seven a.m. the following day on weekdays, except for emergency work authorized by the Building Official. For purposes of this Section, a federal holiday shall be considered a weekday.
- B. Saturdays. No person shall operate or permit the operation of any tools or equipment used for

construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of seven p.m. on Friday and nine a.m. on Saturday and after six p.m. on Saturday, except for emergency work authorized by the Building Official.

- C. Sundays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity at any time on Sunday, except for emergency work authorized by the Building Official or except for work authorized by permit issued by the Noise Control Officer.
- D. Owner's/employer's responsibility. It is unlawful for the landowner, construction company owner, contractor, subcontractor or employer of persons working, laboring, building, or assisting in construction to permit construction activities in violation of provisions in this Section.
- E. Sunday work permits. Any person who wants to do construction work on a Sunday must apply for a work permit from the Noise Control Officer. The Noise Control Officer may issue a Sunday work permit if there is good cause shown; and in issuing such a permit, consideration will be given to the nature of the work and its proximity to residential areas. The permit may allow work on Sundays, only between nine a.m. and six p.m., and it shall designate the specific dates when it is allowed.
- F. Enforcement. Notwithstanding the provisions of Sections 8.80.370 and 8.80.380, this Section may be enforced by a Police Officer.

Any person who violates any provision of this Section is guilty of a misdemeanor and shall be fined in an amount not to exceed five hundred dollars (\$500.00), or be imprisoned for a period not to exceed one hundred eighty (180) days, or by both such fine and imprisonment. Each day that a violation occurs shall constitute a separate offense and shall be punishable as such.

Whenever an employee is prosecuted for a violation of this noise control ordinance, the court shall, at the request of the employee, take appropriate action to make the landowner, construction company owner, contractor, subcontractor or employer a codefendant.

(Ord. C-6488 § 1, 1988; Ord. C-6474 § 1, 1988)

8.80.210 - Refuse collection vehicles.

No person shall collect refuse with a refuse collection vehicle between the hours of seven p.m. and seven a.m. the following day in a residential area or noise sensitive zone.

(Ord. C-5371 § 1 (part), 1981: prior code § 4430.9(a))

8.80.220 - Motor vehicle horns.

It is unlawful for any person within the City to sound a vehicular horn within any residential zone except as a warning signal, as provided in the Vehicle Code of the State.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.9(b))

8.80.230 - Recreational motorized vehicles operating off the public right-of-way.

No person shall operate or cause to be operated any recreational motorized vehicle off a public right-of-way in such a manner that the sound level emitted therefrom violates the provisions of Sections 8.80.150 and 8.80.170. This Section shall apply to all recreational motorized vehicles, whether or not duly licensed and registered, including, but not limited to, commercial or noncommercial racing vehicles, motorcycles, go-carts, amphibious craft, campers, and dune buggies, but not including motorboats.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.9(c))

8.80.240 - Vehicle, motorboat or aircraft repair and testing.

- A. Repairing, rebuilding, modifying or testing any motor vehicle, motorboat or aircraft in such a manner as to create a noise disturbance across a residential real property line, or at any time to violate the provisions of Sections 8.80.150 or 8.80.170 shall not be permitted except where said activities are directly related to officially sanctioned events.
- B. This provision shall not apply to aircraft within the airport property or within any other aviation-related property abutting it.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.9(d))

8.80.250 - Exemption—Emergencies.

The provisions of this Chapter shall not apply to:

- A. The emission of sound for the purpose of alerting persons to the existence of an emergency; or
- B. The emission of sound in the performance of emergency work.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10(a))

8.80.260 - Exemption—Oil and gas wells.

The provisions of this Chapter shall not apply to:

- A. Normal well servicing, remedial or maintenance work performed within an existing well which does not involve drilling or redrilling and which is restricted to the hours between seven a.m. and seven p.m., exclusive of weekends and holidays, in residential areas;
- B. Any drilling or redrilling work which is done in full compliance with Subsection 8.80.040.E and Sections 8.80.060 through 8.80.120, and with the soundproofing and all other requirements of Section 12.32.030.

(Ord. C-5576 § 1, 1980; Ord. C-5371 § 1 (part), 1977: prior code § 4430.10(b))

8.80.270 - Exemption—Warning devices.

Warning devices necessary for the protection of public safety as, for example, police, fire and ambulance sirens and train horns shall be exempted from the provisions of this Chapter.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10(c))

8.80.280 - Exemption—Entertainment events.

The provisions of this Chapter shall not apply to occasional outdoor or indoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a permit or license or other entitlement issued by the City relative to the staging of said events.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10 (d))

8.80.290 - Exemption—From exterior noise standards.

The provisions of Section 8.80.150 shall not apply to activities covered by the following Sections:

- A. Section 8.80.200 C, street sales;
- B. Section 8.80.200 D, animals and birds;
- C. Section 8.80.200 J, stationary nonemergency signaling devices;
- D. Section 8.80.200 K, emergency signaling devices;
- E. Section 8.80.200 M, domestic power tools;
- F. Section 8.80.200 N, air conditioning or air refrigerating equipment; and
- G. Section 8.80.210, refuse collection vehicles.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10 (e))

8.80.300 - Abatement of nonconforming industrial noise sources.

- A. Intent. It is the intent of this Section to recognize that the eventual abatement, as expeditiously and as fairly as possible, of existing noise sources that are not in conformity with the provisions of this Chapter is as important as the prohibition of new noise sources that would violate the provisions of this Chapter. It is the intent of this Section that any abatement of nonconforming industrial noise sources shall be effected so as to avoid any undue hardship.
- B. Abatement. All existing nonconforming industrial noise sources shall be granted an amortization period of ten (10) years from the effective date of this Chapter to bring their existing facilities into compliance with this Chapter; provided, that:
 - 1. They are located in industrial districts delineated in the City zoning ordinance or are located in accordance with a valid special use permit at the time of adoption of this Chapter;
 - 2. They are not changed to another industrial use during the amortization period;
 - 3. They are not altered so as to increase or intensify their noise generation;
 - 4. If they are structurally expanded during the amortization period, the new portion must immediately meet the standards of this Chapter;
 - 5. If they should be rebuilt after damage or destruction of more than fifty percent (50%) of the preexisting value, they must be rebuilt in such a manner as to immediately meet the standards of this Chapter.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10 (f))

8.80.310 - Exemption—Federal or State preempted activities.

The provisions of this Chapter shall not apply to any other activity to the extent regulation thereof has been preempted by State or federal law.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10(g))

8.80.320 - Conflicting regulations.

- A. These regulations are not intended to abrogate or impair the provisions of any other section of this Code which is not in conflict with the provisions of this Chapter. However, where these regulations are more restrictive than those of other laws, regulations or covenants, these regulations shall control.
- B. Upon written request, the noise control office is authorized to issue official interpretations of this Chapter without public hearing.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10 (h))

8.80.330 - Exemption—Public health, welfare and safety activities.

The provisions of this Chapter shall not apply to construction maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare and safety, including, but not limited to, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, vacuuming catchbasins, repairing of damaged poles, removal of abandoned vehicles, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.10 (i))

8.80.340 - Variance—Exemption from regulations.

- A. The Noise Control Officer is authorized to grant variances for exemption from any provision of this Chapter, subject to limitations as to area, noise levels, time limits, and other terms and conditions as the Noise Control Officer determines are appropriate to protect public health, safety and welfare from the noise emanating therefrom. This Section shall in no way affect the obligation to obtain any permit or license required by law for such activities.
- B. Any person seeking a variance shall file an application with the noise control office. The application shall contain information which demonstrates that bringing the source of sound or activity for which the variance is sought into compliance with this Chapter would create an unreasonable hardship on the applicant, on the community, or on other persons. The application shall be accompanied by a fee in the amount set by resolution of the City Council. A separate application shall be filed for each noise source; provided, however, that several fixed sources on a single property may be combined into one (1) application. Notice of an application for a variance shall be published according to rules established by the noise control office; all residents whom the Noise Control Officer determines may be adversely affected by the noise shall be notified. Any individual who claims to be adversely affected by the issuance of the variance may file a statement with the noise control office containing any information to support his claim. If at any time the Noise Control Officer finds that a sufficient controversy exists regarding an application, a public hearing will be held.
- C. In determining whether to grant or deny the application, the Noise Control Officer shall balance the hardship on the applicant, the community, or other persons by not granting the variance against the adverse impact on the health, safety and welfare of persons affected, the adverse impact on property affected, and any other adverse impact by granting the variance. Applicants for variances and persons contesting variances may be

required to submit such information as the noise control office may reasonably require. In granting or denying an application, the Noise Control Officer shall keep a public record of the decision and the reasons for denying or granting the variance.

- D. A variance shall be granted by written notice to the applicant containing all necessary conditions, including a time limit on the permitted activity. The variance shall not become effective until all conditions are agreed to by the applicant. Noncompliance with any condition of the variance shall terminate the variance.
- E. The term of a variance may not exceed three hundred sixty-five (365) days from the date of issuance. An application for extension of time limits specified in a variance or for modification of other substantial conditions shall be treated as an application for a new variance.
- F. The Noise Control Officer will issue guidelines defining the procedures to be followed in applying for a variance and the criteria to be considered in deciding whether to grant a variance.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.11(a))

8.80.350 - Variance—Time to comply.

Within ninety (90) days following the effective date of this Chapter, the owner of any commercial or industrial source of sound may apply to the noise control office for a time variance to comply with the provisions of this Chapter. The Noise Control Officer shall have the authority, consistent with these Sections 8.80.340 through 8.80.360, to grant a time variance (not to exceed one hundred eighty (180) days from the effective date of this Chapter). The same procedures and considerations by the Noise Control Officer as provided in Section 8.80.340 shall likewise apply.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.11(b))

8.80.360 - Variance—Appeal to decision.

Within ten (10) days after notice by the Noise Control Officer or denial or conditional approval of a variance, or within ten (10) days after the effective date of the revocation of a variance by the Noise Control Officer, the affected person may appeal to the City Council, in writing. The City Council, after notice and a public hearing, may sustain, reverse or modify the decision of the Noise Control Officer; such order may be made subject to specified conditions.

- A. Filing Fee. The appeal shall be filed in triplicate with the City Clerk at the City Hall, 333 West Ocean Boulevard, Long Beach, California, along with the payment of a fee in the amount set by resolution of the City Council. A copy of the appeal shall also be served on the Noise Control Officer.
- B. Contents of Appeal. An appeal to review a denial or conditional approval of a variance shall contain the application, a copy of the Noise Control Officer's action setting forth the reasons for the denial or the conditions of the approval, and the reasons for appeal. An appeal to review a variance revocation shall include a copy of the variance, the Noise Control Officer's revocation notice, and his reasons for revocation, and the reasons for appeal.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.11(c))

8.80.370 - Violation—Presumed.

Any noise exceeding the level limit which can be attributed to a specific facility in a designated noise district as specified in Sections 8.80.150 through 8.80.180, or the prohibited actions specified in Sections 8.80.190 and 8.80.200 shall be presumed to be a violation of the provisions of these regulations. Enforcement of noise control regulations shall be

undertaken only upon receipt of a written sworn complaint made by a person who resides or owns property within the noise district into which the alleged noise intrudes.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.12(a))

8.80.380 - Violation—Penalty.

Any person found in violation of any of the provisions of this Chapter upon a documented determination and the failure to comply with an abatement order or other notice issued by the Noise Control Officer and subsequently convicted in a court of competent jurisdiction for such violation will be deemed guilty of a misdemeanor and shall be fined in an amount not to exceed five hundred dollars (\$500.00), or be imprisoned for a period not to exceed one hundred eighty (180) days, or by both such fine and imprisonment. Each day (after the Noise Control Officer has made a documented determination and has issued an abatement order) that a violation is permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.12(b))

8.80.390 - Violation—Abatement order.

- A. Except as provided in Subsection 8.80.390.B, in lieu of issuing a notice of violation as provided in Section 8.80.400, the Noise Control Officer may issue an order requiring the abatement of a sound source alleged to be in violation within a reasonable time period and according to guidelines adopted by the noise control office.
- B. An abatement order shall not be issued for any violation when the Noise Control Officer or other enforcement agency has reason to believe that there will not be compliance with an abatement order.
- C. No further action shall be taken in the event that the cause of the violation has been removed and the condition abated or fully corrected within the time period specified in the written notice.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.12(c))

8.80.400 - Violation—Notice.

Except where a person is acting in good faith to comply with an abatement order issued pursuant to Subsection 8.80.390.A, violation of any provision of this Chapter shall be cause for a notice of violation to be issued by the Noise Control Officer or other responsible enforcement official according to procedures which the noise control office may prescribe. Thereafter, the City may resort to any other appropriate legal action as provided by law.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.12(d))

8.80.410 - Violation—Additional remedies.

As an additional remedy, the operation or maintenance of any device, instrument, vehicle or machinery in violation of any provision of this Chapter, which operation or maintenance causes or creates sound levels or vibration exceeding the allowable limits as specified in this Chapter, shall be deemed and is declared to be a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction. Additionally, no provision of this Chapter shall be construed to impair any common law or statutory cause of action, or legal remedy therefrom, of any person for injury or damage arising from any violation of this Chapter or from other law.

(Ord. C-5371 § 1 (part), 1977: prior code § 4430.12(e))

CONSTRUCTION NOISE MODELING

Report date: 12/28/2020
Case Description: PAC6-01

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Asphalt Demo	Residential	60.0	55.0	50.0

Description	Impact Device	Spec	Actual	Receptor	Estimated	
		Usage (%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw	No	20		89.6	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

[illegible]

Report date: 12/28/2020
Case Description: PAC6-01

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Site Prep/Rough Grading	Residential	60.0	55.0	50.0

		Spec	Actual	Receptor	Estimated	
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Grader	No	40	85.0	50.0	0.0	
Dozer	No	40	81.7	50.0	0.0	
Tractor	No	40	84.0	50.0	0.0	

[illegible]

Report date: 12/28/2020
Case Description: PAC6-01

Description	Baselines (dBA)				
	Land Use	Daytime	Evening	Night	
Parking/Building Construction	Residential	60.0	55.0	50.0	

Description	Impact Device	Spec	Actual	Receptor	Estimated
		Usage (%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)
Crane	No	16	80.6	50.0	0.0
Generator	No	50	80.6	50.0	0.0
Tractor	No	40	84.0	50.0	0.0

[illegible]

Report date: 12/28/2020
Case Description: PAC6-01

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Utility Trenching	Residential	60.0	55.0	50.0

		Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance
Description	Device	(%)	(dBA)	(dBA)	(feet)
					Shielding
					(dBA)
Excavator	No	40	80.7	50.0	0.0

[illegible]

Report date: 12/28/2020
Case Description: PAC6-01

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Paving	Residential	60.0	55.0	50.0

Description	Impact Device	Spec Usage	Actual Lmax	Receptor Lmax	Estimated Distance	Shielding
		(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver	No	50	77.2	50.0	0.0	
Pavement Scarafier	No	20		89.5	50.0	0.0
Tractor	No	40	84.0	50.0	0.0	

[illegible]

Report date: 12/28/2020
Case Description: PAC6-01

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Finishing Landscaping	Residential	60.0	55.0	50.0

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Excavator	No	40	80.7	50.0	0.0	

[illegible]

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/28/2020

Case Description: PAC6-01

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Architectural Coating	Residential	60.0	55.0	50.0

Equipment

		Spec	Actual	Receptor	Estimated	
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
-----	-----	-----	-----	-----	-----	-----
Compressor (air)	No	40		77.7	50.0	0.0

Results

[illegible]

Noise Modeling of Stationary Noise at Noise-Sensitive Uses

HVAC Noise at Residential 40 feet West											
Noise Source	Noise Level 3 ft @	New Number of Noise Sources	Combined Noise Levels (Leq) 3 ft @	Noise Level at Nearest Far Field Distance (10 ft)	Utilization	Ground Factor	Hard (0) or Soft Site	Origin Distance	Distance to Property Line	Estimated Shielding Factor (dBA)	Calculated Noise Levels w/ Utilization (Leq, dBA)
HVAC units	72.0	162	94.1	88.9	100%	Hard Ground	0	10	165.5294536	-15	49

*150

* Distance for HVAC takes into account vertical differential between the rooftop (70 feet) and the ground level (0 feet)

Transformer Noise at Residential 15 feet West										
Noise Source	Noise Level @ 60 m	Number of Noise Sources	Combined Noise Levels (Leq) @ 60 m	Utilization	Ground Factor	Hard (0) or Soft Site	Origin Distance (converted from meters to feet)	Distance to Property Line	Estimated Shielding Factor (dBA)	Calculated Noise Levels w/ Utilization (Leq, dBA)
Transformer	53.0	1	53.0	50%	Hard Ground	0	197	19.20937271	-15	55

*15

* Distance for transformer takes into account vertical differential between the top of the transformer (5 feet) and the mid-level of the adjacent apartment building (17 feet), which has a height of 35 feet .

Ground Factor	
Hard Ground	0
Soft Ground	0.66

1401 Long Beach Blvd

Roadway Segment	Noise Element	24-hour Traffic Volume			Vehicle Fleet Mix									Noise Level (CNEL or Ldn) at Distance from Roadway Centerline													
		Existing	Future Without Project	Future With Project	Existing			Future Without Project			Future With Project			Existing				Future No Project				Future With Project				Change From Existing	Change due to Project
					Autos	Medium Tru.	Heavy Tru.	Autos	Medium Tru.	Heavy Tru.	Autos	Medium Tru.	Heavy Tru.	50.0 Feet	60 CNEL	65 CNEL	70 CNEL	50.0 Feet	60 CNEL	65 CNEL	70 CNEL	50.0 Feet	60 CNEL	65 CNEL	70 CNEL		
Long Beach Blvd	35	17,835	17,900	18,609	97%	2%	1%	97%	2%	1%	97%	2%	1%	69.1	204	95	44	69.2	204	95	44	69.3	209	97	45	0.2	0.2

Assumptions:

Simplified to 2 lanes 6.1 meters= 20.0
future 6.1 meters= 20.0
Noise path decay parameter for hard site

Calculations using methods of Federal Highway Administration *Highway Traffic Noise Prediction Model*,
December, 1978. Baseline California vehicle noise levels from Caltrans, TAN 95-03, 1995

Source of standard assumptions:
24-hour distribution of traffic volumes:
70% day (7-7), 15% evening (7-10), 15% night (10-7)
Analysis of L.A. County 24-hour traffic counts for selected arterial streets
conducted by Pat Mann for Inglewood Noise Element, 1974
Truck Mix

ARB standard fleet mix for air quality analysis
Heavy trucks for noise model includes heavy diesel tractor-trailers only
Medium trucks for noise model includes buses and bobtail trucks
Autos includes cars, vans, pickups and light trucks

Site parameter: 0.0
HALFSEP 1/2 lane separation 6.1
HALFSEPFUT 1/2 lane separation (future) 6.1

Lane separation:
consider
moving lanes
only
2 + + 4 + <-----> +
6 + <-----> +
8 + <-----> +

California base noise levels:
Autos 5.2+38.8 Log10 (speed, mi/hr) = -2.8 + 38.8 Log10 (speed, km/hr)
Light trucks: 35.3 + 25.6 Log10 (speed, mi/hr) = 30 + 25.6 Log10 (speed, km/hr)
Heavy trucks: 25-31 mi/hr: 51.9 + 19.2 Log10 (speed, mi/hr) = 47.9 + 19.2 Log10 (speed, km/hr)
35-65 mi/hr: 50.4 + 19.2 Log10 (speed, mi/hr) = 46.4 + 19.2 Log10 (speed, km/hr)
31-35 mi/hr: straight line interpolation between above two curves

ATTACHMENT E
TRAFFIC MEMORANDUM

TECHNICAL MEMORANDUM

Date: January 14, 2021
To: Brian Ulaszewski, LEED AP, City Fabrick
From: Paul Herrmann, PE and Michael Kennedy, AICP
Subject: 14th & Long Beach Boulevard Affordable Housing Project Traffic Assessment

LB20-0020

This technical memorandum presents the traffic assessment for the proposed redevelopment project located on a vacant site at the northwest corner of 14th Street and Long Beach Boulevard in Long Beach, California. The proposed project consists of affordable housing units and commercial space. This memorandum presents the trip generation of the existing and proposed site, an assessment of Vehicle Miles Traveled (VMT), and a site access assessment.

Project Description

The proposed project consists of 160 apartment units and approximately 4,000 square feet of commercial use. All 160 units are designated as affordable housing with approximately 50 percent of the units dedicated for permanent supportive housing. The commercial space is flexible and could contain any of the following uses:

- In-line retail/shops/quick-serve
- Offices for nonprofit organizations
- Wellness center operated through nonprofit center (small fitness center, yoga/dance studio, meditation space, etc.)
- Small family health clinic (not urgent care)
- Social enterprise
- Community Space/amenities (meeting rooms, gather spaces, co-working, etc)

Trip Generation

Trip generation rates from *Trip Generation, 10th Edition* (Institute of Transportation Engineers [ITE], 2017) were used to estimate the number of trips associated with the Project. The Multi-Family (Mid-Rise) land use type (Code 221) was determined to be the most appropriate trip generation rate to represent the project's residential component. Several other ITE residential trip rates were referenced, including Mid-Rise Residential with First Floor Commercial (Code 231) and Affordable Housing – Income Limits (Code 223), along with affordable housing trip generation data collected in Los Angeles. These rates and trip generation estimates are included in **Attachment A**. Using the Multi-Family (Mid-Rise) rates is considered the most

conservative approach as these are highest trip rates of the options. Of the available trip rates, this rate was also calculated using the most robust sample size and available data.

The commercial component of the project has not been finalized so the generic Shopping Center (Code 820) was chosen to represent the project's commercial component. Several other ITE residential trip rates were referenced, including Clinic (Code 630), Health/Fitness Club (Code 492) and Recreational Community Center (Code 495). These rates and trip generation estimates are included in **Attachment A**. Using any of these codes would not dramatically alter the results of the trip generation assessment as the commercial component of the Project represents a small portion of the Project¹.

The commercial component of the project is anticipated to be complimentary to the residential component and an assumed internalization of 10% was applied to reduce the net external commercial trips. The Project is also within a Transit Priority Area (TPA) with access to the Metro Blue Line and Long Beach Transit Lines 1, 46 51, 60, and 232. Given the access to these transit options and the typical lower vehicle ownership rates associated with affordable housing, a 15% transit credit was applied to the trip generation estimate.²

The Project trip generation estimates are presented in **Table 1**. As noted below, the project is expected to generate 855 daily, 52 AM peak hour, and 71 PM peak hour net external trips.

TABLE 1 – Project Trip Generation Estimates

Land Use	Units	ITE Code	Quantity	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Apartments	DUs	221	160	870	15	43	58	43	27	70
Retail	KSF	820	4.00	151	2	2	4	7	8	15
Subtotal				1,021	17	45	62	50	35	85
Internal Capture Reductions (10%)				(15)	0	0	0	(1)	(1)	(2)
Transit Credit (15%)				(151)	(3)	(7)	(10)	(7)	(5)	(12)
Net External Trips				855	14	38	52	42	29	71

Notes:

1. KSF = 1,000 square feet, DUs = Dwelling Units
Source: Fehr & Peers, 2020

Midtown Specific Plan Consistency

As shown in **Figure 1**, the Project is located within the Transit Node District 7 of the Midtown Specific Plan. The Project is consistent with the Midtown Specific Plan and the growth studied in the EIR Traffic Study assumed more multi-family units than currently proposed by the Project or other approved projects. The Midtown Specific Plan EIR studied the previously adopted land use plan against the

¹ AM peak hour trip generation would be higher by approximately ten total trips if Code 630 were used instead of Code 820, however the PM peak hour and daily trip generation would not change significantly, and the overall conclusions of the trip generation assessment would not be affected.

² Please note that the Midtown Specific Plan EIR Traffic Study assumed the following reductions in net external trip generation for the Transit Node District 7 due to internal capture between land uses and access to transit: 31% daily trip reduction, 42% AM peak hour trip reduction, 47% PM peak hour trip reduction.

proposed specific plan land use. The planned development in Transit Node District 7 included 401 multi-family dwelling units. The project proposes 160 multi-family dwelling units. The only other entitled project within Transit Node District 7 is the 65-unit project at 1400 Long Beach Boulevard. These projects are within the proposed 401 units proposed as part of Transit Node District 7.

The net number of trips studied due to development within the Transit Node District 7 was 3,371 daily trips, 336 AM peak hour trips and 99 PM peak hour trips. The project would add 855 daily, 52 AM peak hour, and 71 PM peak hour trips. The nearest study intersection from the Midtown Specific Plan EIR is Long Beach Boulevard at Anaheim Street, which is forecast to operate at LOS A in the AM peak hour and LOS C in the PM peak hour under Year 2035 With Project conditions. As the planned development and resulting trip generation are below the assumed conditions in the Midtown Specific Plan, no effects on local intersection LOS are expected.

The Project is not anticipated to generate more trips than was studied in the Midtown Specific Plan EIR. The addition of Project trips is not anticipated to degrade nearby intersection operations. The Project is therefore within the allowance of the Midtown Specific Plan EIR.

VMT Assessment

SB 743, signed by the Governor in 2013, has directed the Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts under CEQA. The Final OPR Technical Advisory was released in December 2018 and identified VMT as the preferred metric for transportation impact analysis for California Environmental Quality Act (CEQA) assessment. The City of Long Beach adopted local guidelines for VMT assessment in June 2020.

Since the proposed Project is a mixed-use project, the draft City guidelines indicate the land uses should be evaluated separately, or predominant land use should be used to evaluate the potential VMT impacts of the Project. For the purposes of this evaluation the land uses were evaluated separately. The draft City guidelines includes a list of screening criteria that screen projects from project-level assessment under the presumption that those projects will result in a less-than-significant impact. The following is from the draft City guidelines regarding residential project screening:

"The OPR Technical Advisory on Evaluating Transportation Impacts in CEQA states that residential and office projects that have similar density, mix of uses, and transit accessibility as surrounding similar uses will likely have similar VMT generation as those uses. Therefore, maps showing VMT-efficient areas can be used to screen residential and office projects from further analysis. Figure 2 presents a map of VMT per capita for all existing Long Beach residential areas. These data were obtained from the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) travel demand model... In these green areas, projects with similar characteristics to the surrounding development would be presumed to have a less than significant transportation impact."

The Project is located in a “green” area for VMT per capita, which indicates that the apartments would be eligible for screening in a VMT efficient area as projects in those areas are assumed to generate VMT per capita more than 15 percent below the regional average. VMT maps are included as **Figure 2** and **Figure 3**.

In addition to low-VMT area screening, the Project is eligible for project type screening since it is 100 percent affordable housing:

“Affordable residential development in areas with inadequate affordable housing has the potential to shorten commute distances and/or increase the proportion of residents using transit, which would reduce VMT. Residential projects (or the residential portion of mixed-use projects) with 100 percent affordable dwelling units will be presumed to have a less than significant transportation impact related to CEQA Guidelines Section 15064.3, subdivision (b).”

The commercial space would qualify as local-serving retail under 50,000 square feet according to the following regarding retail project screening:

“Retail development that is 50,000 square feet (sf) or less is likely to be local-serving and tends to shorten trips within Long Beach. Therefore, any retail project 50,000 sf or less will be presumed to have a less than significant transportation impact related to CEQA Guidelines Section 15064.3, subdivision (b).”

Projects located within a TPA may also be screened from a full VMT assessment. A TPA is defined as a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor per the definitions below³. The project site is located within a half mile of a high-quality transit corridor and within a half mile of a major transit stop. The Long Beach TPA map is included as **Figure 4**.

Projects can be presumed less-than-significant and screened from further VMT analysis when it meets the requirements outlined in the City’s guidelines for TPA screening. The project’s ability to be screened from VMT assessment is summarized below in **Table 2**.

TABLE 2 - VMT Transit Priority Area Screening Criteria

Criteria	Project Eligibility
Project is located within a half mile of high-quality transit	As shown in Figure 4, the project is located within a half mile of high-quality transit

³ Pub. Resources Code, § 21064.3 - ‘Major transit stop’ means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

Pub. Resources Code, § 21155 - For purposes of this section, a ‘high-quality transit corridor’ means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

Project has a minimum FAR of 0.75	Project has a FAR of greater than 0.75. FAR was calculated by the following formula: (Total usable square footage of the proposed building/Total land area of project parcels). The project site is 1.09 acres and proposes a building with 184,725 square feet (or 4.24 acres) of rentable area. This results in a FAR of 3.89
Project shall not supply more parking than is required by the City code	Project proposes parking supply below what is required by the City Code
Project is consistent with the RTP/SCS land use assumptions	The land use growth assumed in the RTP/SCS includes an increase in multi-family housing units in the project location greater than the number of multi-family housing units proposed, which indicates the project is consistent with the RTP/SCS.
Project does not replace affordable housing with market-rate housing units	The existing project site is vacant, there are no existing affordable housing units on the Project site which would be replaced. The project is proposing 100% affordable housing be constructed on the site.

Source: Fehr & Peers, 2020

Given that the retail land use is local-serving retail under 50,000 square feet, the location of the project is within identified VMT-efficient areas for VMT per capita, the housing units are 100 percent affordable housing, and the project is located in a TPA, this project should be screened from a full VMT assessment under the presumption that it will result in **a less-than-significant impact**.

Site Access Review

Pedestrian Access

Pedestrian access is provided by sidewalks adjacent to the Project. The Project is proposing sidewalk improvement on 14th Street and Long Beach Boulevard. A parklet is proposed adjacent to the Project on 14th Street.

Bicycle Access

14th Street, adjacent to the Project, is a Bike Boulevard. The next nearest bicycle facilities are Class III bike routes on Pacific Avenue and Pacific Coast Highway. The City has Active Transportation Plan (ATP) grant applications for a bike boulevard on Pine and Class IV transformation on Pacific Avenue. Long Beach Boulevard is proposed to be a Class III bike route. The Project proposes secure bike parking in the building and convenient bike racks within the streetscape.

Transit Access

A transit stop for the Metro Blue Line is located just south of Anaheim Street approximately 800' south of the Project. Transit stops for Long Beach Transit Lines are located on each side of Long Beach Boulevard within 300' of the project.

Vehicle Access

Vehicle access to the proposed site will be provided through the parking garage access driveway on Long Beach Boulevard. This will be a right-in/right-out driveway. The proposed design is considered the preferred access in order to separate vehicles from bicyclists and pedestrians on 14th Street.

Project Enhancements

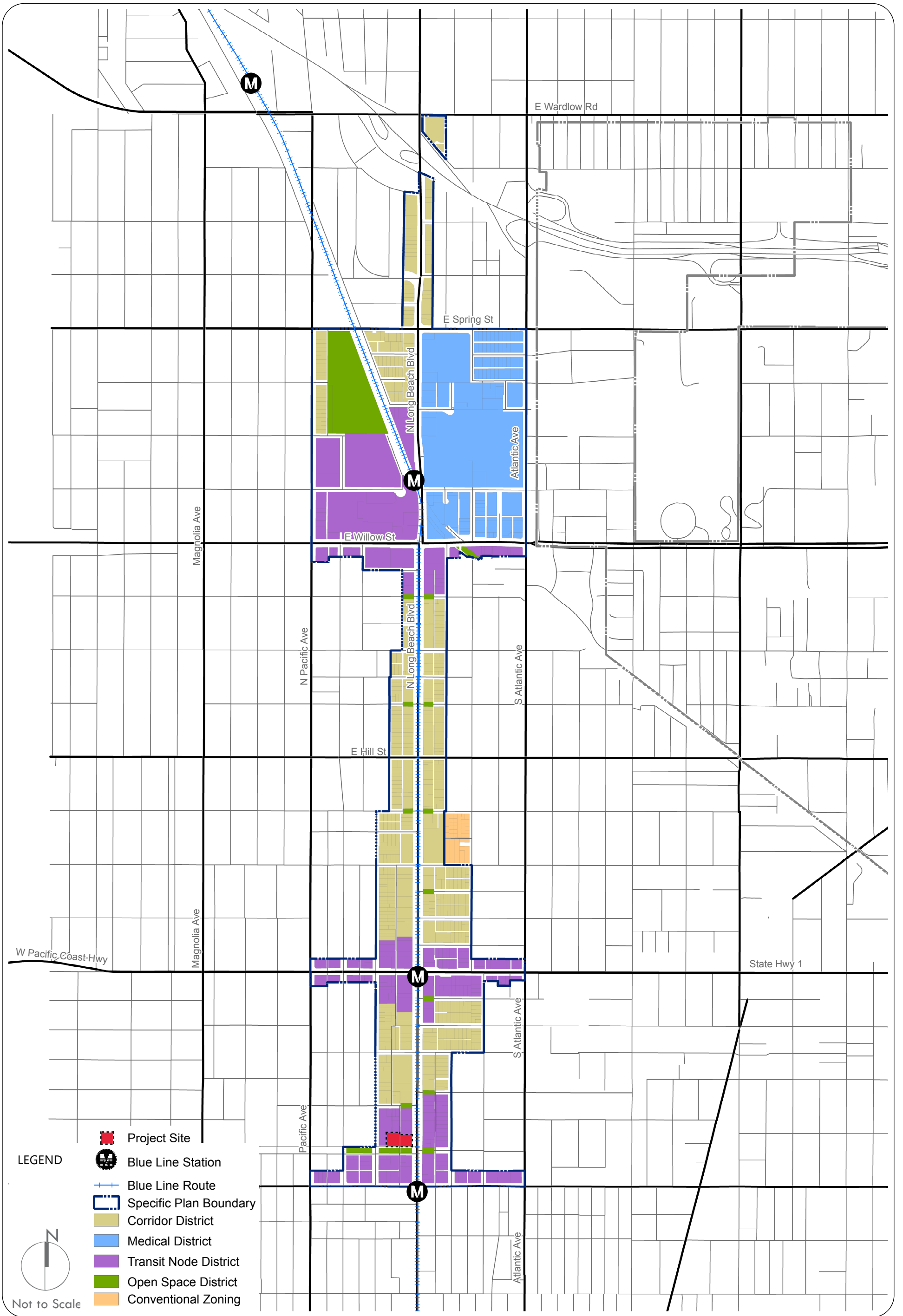
The development team and City are pursuing Affordable Housing and Sustainable Communities (AHSC) Program funding for additional bicycle, transit, and pedestrian enhancements. These tentatively include:

- New bike boulevard on Linden Avenue
- Pedestrian enhancements along 14th Street Park
- New bus island for future cycle track at northwest corner of 14th Street and Long Beach Boulevard

The Project does not conflict with any of these existing facilities or proposed facilities.

Attachments

- Figure 1 – Project Location
- Figure 2 – Long Beach Existing VMT per Population Compared to Regional Average
- Figure 3 – Long Beach Existing VMT per Employee Compared to Regional Average
- Figure 4 – Long Beach Transit Priority Areas
- Attachment A – Trip Generation Rates



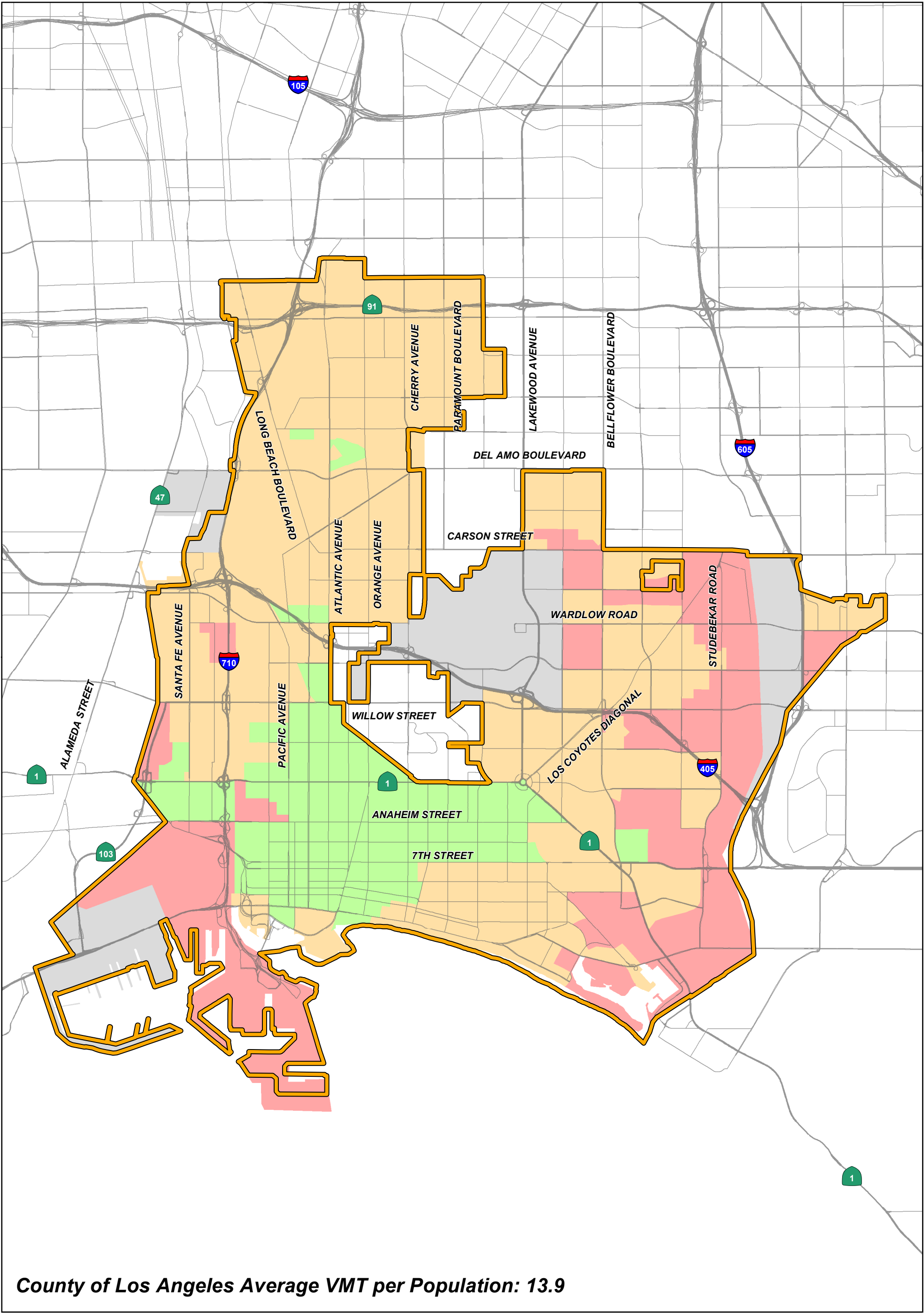
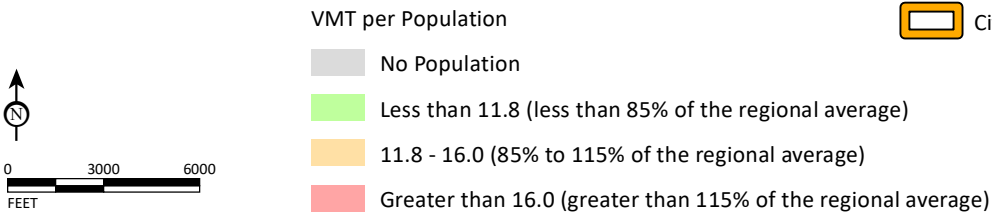


FIGURE 2



City of Long Beach

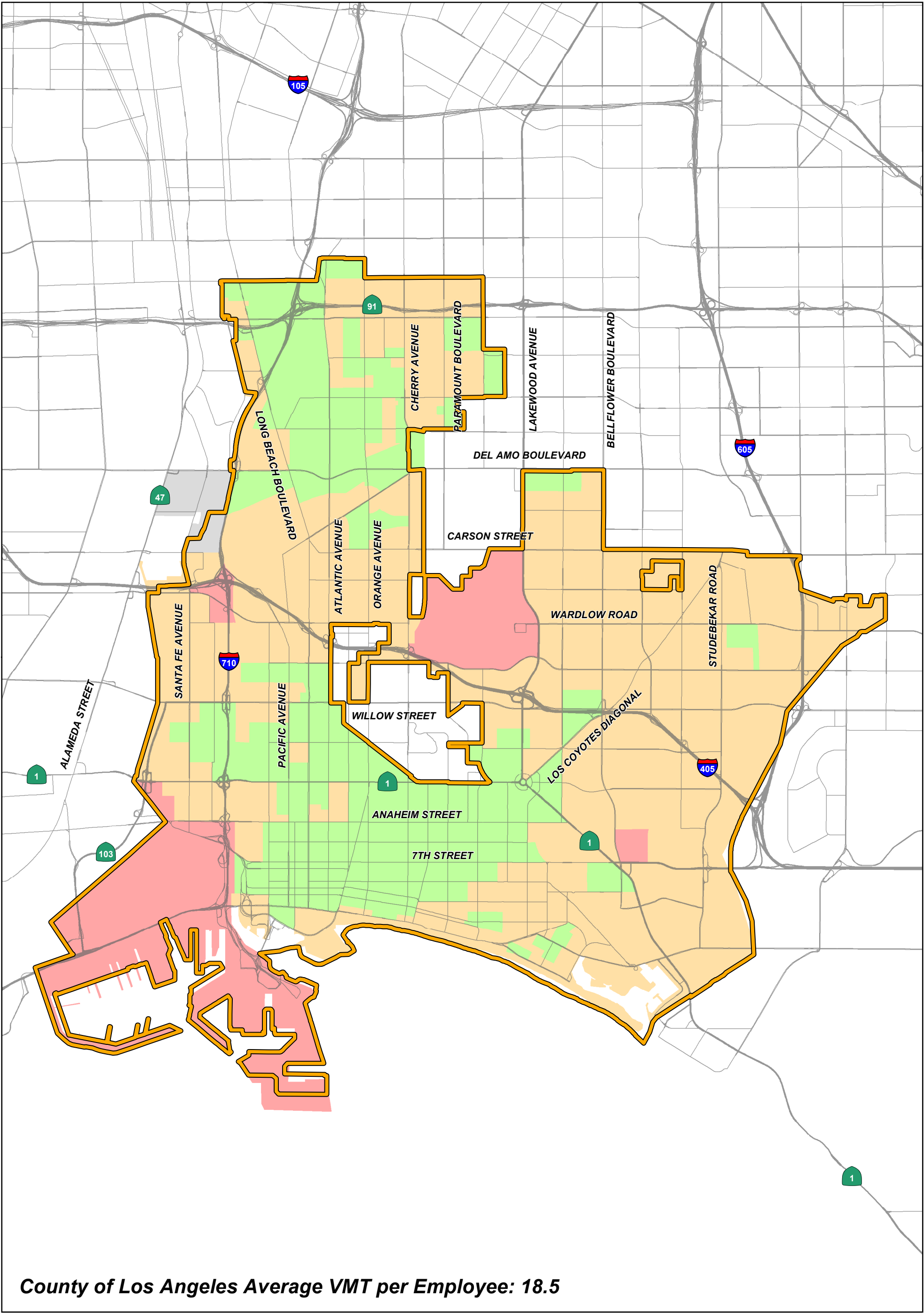
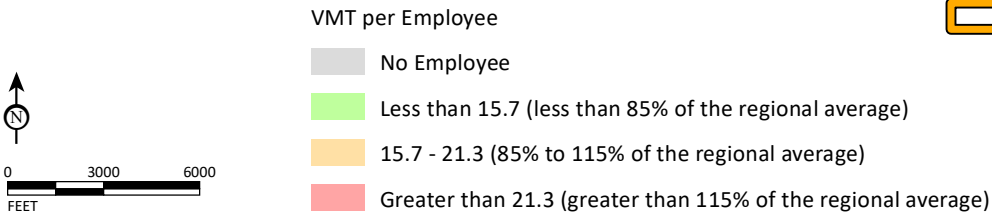
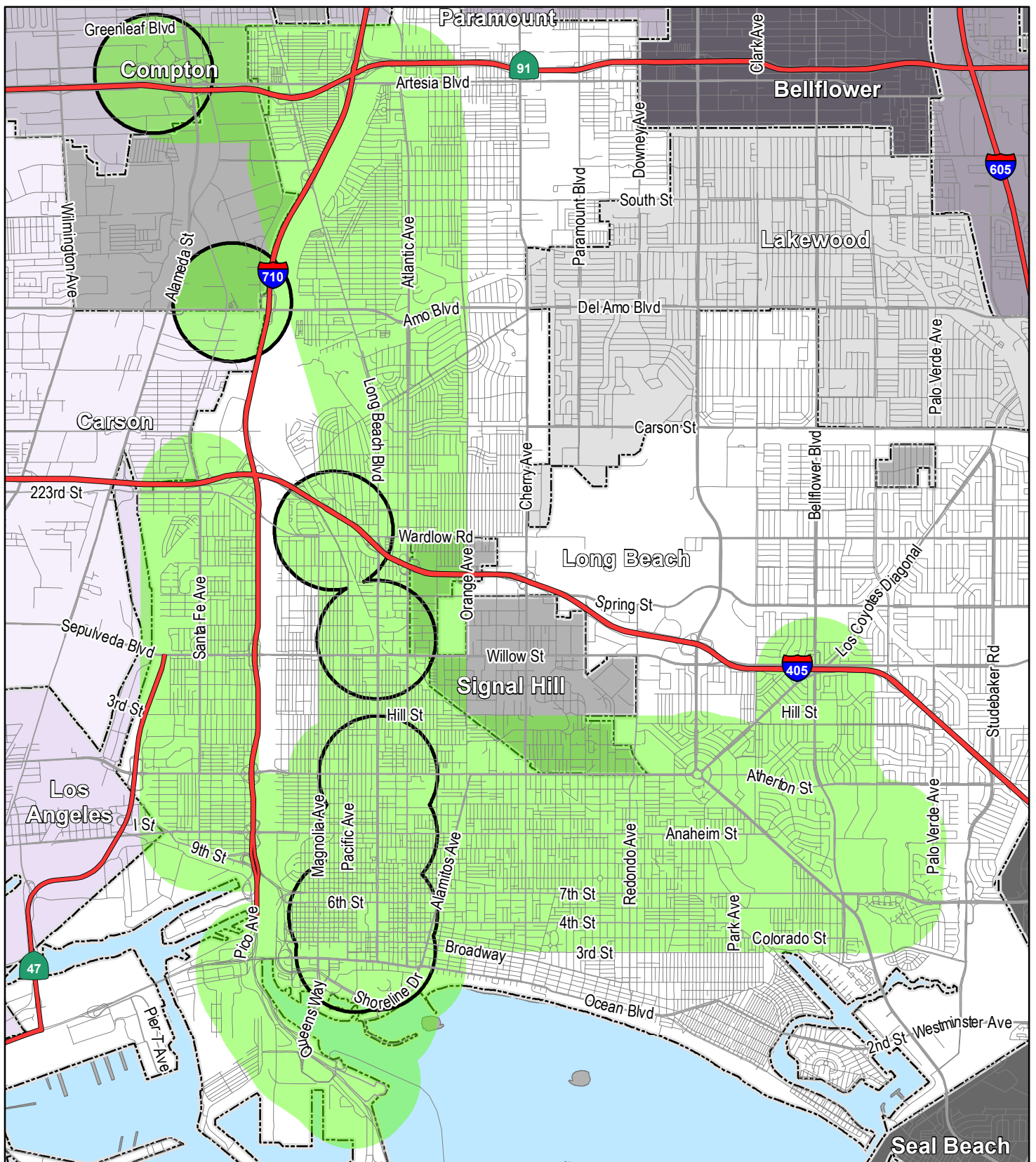


FIGURE 3



Traffic Impact Analysis Guidelines

Existing VMT per Employee Compared to Regional Average



LEGEND

- Half mile from High Quality Transit Corridor or Major Transit Stop
- Half mile from Major Transit Stop



0 3000 6000
FEET

SOURCE: Esri (2008); City of Long Beach (3/16/2020)

I:\CLB1904.09\GIS\MXD\LB_TPA.mxd (5/28/2020)

FIGURE 4

Attachment A
TRIP GENERATION RATES
14TH STREET AND LONG BEACH BOULEVARD MIXED-INCOME COMMUNITY

Land Use Type	ITE Land Use Code	Size	Trip Generation Rates [a]									Estimated Trip Generation								
			Daily Rate	AM Peak Hour			PM Peak Hour			Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips						
				Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total				
Residential Types																				
Multifamily Housing (Mid-Rise)	221	160 DUs	5.44	0.36	26%	74%	0.44	61%	39%	870	15	43	58	43	27	70				
Mid-Rise Residential with First Floor Commercial	231	160 DUs	3.44	0.30	28%	72%	0.36	70%	30%	550	13	35	48	41	17	58				
Affordable Housing - Income Limits	223	211 Bedrooms	-	0.45	70%	30%	0.27	50%	50%	-	67	28	95	29	29	57				
Affordable Housing - LA Study	LA	160 DUs	4.16	0.49	37%	63%	0.35	56%	44%	666	29	49	78	31	25	56				
Commercial Types																				
Shopping Center	820	4.0 ksf	37.75	0.94	62%	38%	3.81	48%	52%	151	2	2	4	7	8	15				
Clinic	630	4.0 ksf	38.16	3.69	78%	22%	3.28	29%	71%	153	12	3	15	4	9	13				
Health/Fitness Club	492	4.0 ksf	-	1.31	51%	49%	3.45	57%	43%	-	3	2	5	8	6	14				
Recreational Community Center	495	4.0 ksf	28.82	1.76	66%	34%	2.31	47%	53%	115	5	2	7	4	5	9				

Notes:

- 1 ksf = 1,000 square feet
- 2 Affordable Housing - Income Limits does not have daily rates or PM peak hour distribution (50% was assumed). Health/Fitness Club does not have a daily rate.