

Appendix A2
Air Dispersion Modeling

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1.0 Introduction

This appendix describes the methods and results of air dispersion modeling that predict the ground-level concentrations of criteria pollutants from construction and operation of the Berths 121-131 Container Terminal at the West Basin Intermodal Container Transfer Facility (WBICTF). The analysis modeled the following concentrations:

- 1-hour and annual nitrogen dioxide (NO₂);
- 1-hour and 8-hour carbon monoxide (CO);
- 24-hour and annual particulate matter less than ten microns (PM₁₀); and
- 24-hour particulate matter less than 2.5 microns (PM_{2.5}).

The following scenarios were analyzed:

- **Proposed Project:** this scenario represents activity associated with construction and operation of the wharf at Berths 126-129 and the WBICTF rail yard/backlands improvements, as well as future operational activities. Future regulations that affect various emission sources are taken into account.
- **Proposed Mitigated Project:** this scenario represents activity associated with the Proposed Project after application of mitigation measures proposed in the EIR/EIS for construction and operation. Future regulations that affect various emission sources and additional proposed mitigations are taken into account.
- **Alternative 1 No Project:** this scenario represents activity associated with operation at projected activity levels in the future, assuming that no project elements are constructed, and that the berths and railyard at the Berths 121-131 terminal continue to operate. Future regulations that affect various emission sources are taken into account.
- **Alternative 2 No Federal Action:** this scenario represents activity associated with construction and operation of the WBICTF rail yard improvements only, and future terminal operations. Future regulations that affect various emission sources are taken into account.
- **Alternative 2 Mitigated No Federal Action:** this scenario represents activity associated with the No Federal Action after application of mitigation measures proposed in the EIR/EIS for construction and operation.

Air quality impacts under CEQA of project scenarios described above were analyzed relative to the following two baseline scenarios:

- **Baseline:** sometimes referred to as “CEQA baseline”, this baseline scenario represents recorded actual activity and throughput of terminal operations in 2019. Emission factors reflect age of the equipment, vessel and truck fleet as well as local, federal and state regulations in place at the time.
- **Floating Future Baseline:** this baseline scenario assumes 2019 activity levels throughout the future years. However, effects of future regulations on the various emission sources and normal turn-over of equipment are taken into account. That is, mass emissions of individual future years would typically decrease over time due to regulatory effects and the fact that activity parameters do not provide an increasing effect, but rather remain flat. A floating baseline is conservatively used

for health risk assessment. Details of the health risk assessment methodology is provided in Appendix A3.

A third baseline is evaluated against the Proposed Project (unmitigated and mitigated) scenario to estimate air quality impacts under NEPA:

NEPA Baseline: Unlike the CEQA baseline, which is defined by conditions at a point in time, the NEPA baseline is dynamic and it includes increases in operations for each study year (2028, 2036, 2050, 2055, and 2062) which are projected to occur absent a federal permit. The NEPA baseline, for purposes of this Draft EIS/EIR, is the same as the No Federal Action Alternative (Alternative 2); hence Alternative 2 annual emissions are used to represent the NEPA baseline for health risk calculations. The No Federal Action Alternative includes only backlands improvements to the intermodal railyard at WBCT that could be implemented in the absence of a USACE permit but with local approval. More details on the definition of the NEPA baseline can be found in section 3.2.4.1 of Chapter 3. Details of the baseline, Proposed Project and Alternative scenarios are provided in Chapter 2 and detailed emissions associated with each scenario are provided in appendix A1.

The air dispersion modeling methodology was performed using the U.S. Environmental Protection Agency's (USEPA) AERMOD Modeling system, version 24142, based on the Guideline on Air Quality Models (40 Code of Federal Regulation [CFR], Part 51, Appendix W, November 2024). NO₂, COPM₁₀, and PM_{2.5} were modeled for the Unmitigated and Mitigated Proposed Project, CEQA baseline, No Federal Action, and No Project scenarios. The predicted ground-level concentrations were compared to the relevant South Coast Air Quality Management District (SCAQMD) air quality significance thresholds to determine ambient air quality impacts. Note that SO₂ is not modeled. The primary source of SO₂ emissions during construction is exhaust from construction equipment. As state and federal regulations (California Ocean-Going Vessel Fuel Regulation SCAQMD Rule 431.2) require the use of low sulfur fuels, SO₂ emissions are expected to be insignificant. For this reason, SO₂ emissions from construction of the Proposed Project are not expected to cause or contribute to any exceedance of National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS).

2.0 Estimation of Emissions Used in the Air Dispersion Modeling

2.1 Construction Emission Sources

2.1.1 Emission Source Identification

Construction activities would use the following equipment:

- Off-road construction equipment: exhaust emissions from diesel-fueled land-based equipment and marine-based equipment (dredging and pile driving equipment);

- On-road construction vehicles (haul trucks, delivery trucks): Heavy duty diesel trucks. Truck emissions include engine exhaust, tire wear, brake wear, and road dust;
- New cranes delivery ship exhaust emissions include hoteling and maneuvering within harbour and
- Harbor craft: exhaust emissions from assist tugboats (used to position dredging barges and scows) and dive boats.
- Worker vehicles: Gasoline worker vehicle emission sources include engine exhaust, tire wear, brake wear, and road dust.

In accordance with SCAQMD guidance, only onsite construction emission sources were modeled for criteria pollutant impacts (SCAQMD 2005). Onsite emission sources included diesel engine exhaust from land and marine heavy construction equipment, haul trucks traveling and idling onsite, new crane delivery cargo ship auxiliary engines and boilers while hoteling at berth, harbor craft used in dredging and pile driving, and fugitive dust.

The Proposed Project construction plan estimates that 260,000 cubic yards (cy) of dredged material will tentatively be disposed by truck in an upland facility and 50,000 cy could be removed by ocean disposal via tug and barge. The construction emissions modeled for air dispersion and health risk represent this scenario. This scenario was found to be a more conservative scenario in terms of emissions than full removal of dredged material from the site by truck disposal to an upland facility. This finding reflects the reduction in truck emissions factors as trucks turn over to newer model years with cleaner emissions standards. By contrast, ocean-going vessels, barges and tugs do not turn over as quickly and are not subject to as stringent emission standards. As a consequence, assuming a mix of land-based and ocean-based disposal of dredge material represents a more conservative scenario for purposes of air quality analysis than a 100 percent land-based disposal scenario.

2.1.2 Derivation of Peak 1-Hour, 8-Hour, and Annual Emissions

As described in Appendix A1, emission inventories were developed for each year of the construction period (2026-2027) according to the activities in the construction schedule shown SCAQMD 2005 or the Proposed Project Alternative 2 construction plan in Appendix A1. Construction was assumed for the purposes of this analysis to be 2026 and 2027, which was reasonable at the time analysis commenced; this assumption is conservative because if construction were to occur later, emissions would be less because of the likely phase-in of cleaner equipment.

Annual construction emissions were estimated through a bottom-up approach. First, the daily emissions for each source/equipment were determined based on the daily working hours of the sources involved in each construction activity/subphase of the schedule; secondly, daily emissions by source and construction activity were multiplied by the working days to obtain total mass emissions for each sub-phase from the schedule. Finally, the sub-phase emissions were allocated to construction years 2026 and 2027 according to the schedule to arrive at annual total mass emissions. The peak day of each year was derived by overlapping daily emissions from each subphase according to the schedule and selecting the combination with highest emissions of key criteria pollutants (NO_x, VOC, PM₁₀). Peak 8-hr and peak 1-hr emissions were selected based on the 1-hr and 8-hr peak activity overlap of pieces of equipment involved during the selected peak day. Details of

this calculation are in AppendixA1 of this EIS/EIR where a summary of construction emissions from the proposed Project with and without mitigation and the No Federal Action Alternative 2 (also the NEPA Baseline) can be found. The No Project Alternative 1 has no construction activities and therefore was not modeled for construction years.

The Berths 121-131 Container Terminal would continue to operate during construction; construction and operational activities would overlap during this time. Total Proposed Project emissions from overlapping construction and operational activities are presented to show the overall impacts of the proposed Project. AppendixA1 of this EIS/EIR presents a summary of operational emissions occurring during construction years 2026 and 2027 used in the air dispersion modeling of the Proposed Project with and without mitigation and No Federal Action alternative with and without mitigation (also the NEPA Baseline).

2.2 Operational Emission Sources

2.2.1 Emission Source Identification

The following operational emission sources were modeled in AERMOD:

- Container ships transiting between the SCAQMD overwater boundary and the terminal (about 40 nautical miles), maneuvering within harbour, anchoring while waiting for an available berth, and hoteling while at berth. Ship exhaust emission sources include propulsion engines, auxiliary engines, and boilers.
- Tugboats used to assist ships while arriving and departing the Port. Tugboat activity is assumed to take place within the harbor, during vessel maneuvering, (i.e. within the limits of Angel's gate). Tugboat emission sources include propulsion and auxiliary engines.
- Locomotives performing switching activities at the on-dock rail yard; and line-haul locomotives moving and idling at the on-dock rail yard, and line-haul transit to and from the yard through the part of the Alameda corridor within the modeling domain. Locomotive emission sources include engine exhaust.
- Cargo handling equipment working both on-terminal grounds and handling Berths 121-131-related containers at the on-dock rail yard. Cargo handling equipment emission sources include engine exhaust.
- Trucks idling at the in-gate, out-gate, and on-terminal; driving on-terminal; and driving off-terminal along the primary truck routes. Truck emission sources include engine exhaust, tire wear, brake wear, and road dust.
- Worker vehicles driving both on- and off-terminal. Worker vehicle emission sources include engine exhaust, tire wear, brake wear, and road dust.

2.2.2 Derivation of Peak 1-Hour, 8-Hour, and Annual Emissions

AppendixA1 describes the methodology for estimating annual, peak day, peak 8-hour, and peak 1-hour emissions associated with terminal operations. In general, peak day emissions were calculated for each source category (container ships, tugboats, locomotives, cargo handling equipment, trucks, and worker vehicles) based on expected maximum daily activity levels within the annual period being modeled. Peak 1-hour and 8-hour emissions were calculated as described in Appendix A1 and modeled directly in AERMOD. Peak 1-

hour and 8-hour emissions for cargo handling equipment, trucks, and worker vehicles were based on daily by-hour activity profiles for each source.

3.0 Dispersion Modeling Approach

3.1 Dispersion Model Selection and Inputs

Air dispersion modeling was performed using the USEPA AERMOD dispersion model, version 24142 (USEPA, 2017), based on the *Guideline on Air Quality Models* (USEPA, 2024). The AERMOD model is a steady-state, multiple source, Gaussian dispersion model designed for applications which include areas of ground elevations that exceed emission source stack heights. Selection of the AERMOD model is well suited for this analysis because it is (1) accepted by the modeling community and regulatory agencies due to its ability to provide reasonable results for large industrial projects with multiple emission sources, (2) the model can handle various sources types, including point, area, line, and volume, and (3) AERMOD has been approved by the USEPA and SCAQMD for analysis of mobile sources.

3.1.1 Construction Emission Source Representation

During project construction, the hoteling new crane delivery ship was modeled as a point source positioned in the expected docking locations. All other construction sources, including harbor craft, offroad construction equipment, trucks, and fugitive dust, were modeled as poly-area sources covering the portions of the construction site where those sources would be active. Table A2-1 presents source parameters used in the dispersion modeling for project construction. The source parameters are consistent with those developed and used in prior LAHD NEPA/CEQA documents (LAHD, 2008; LAHD, 2011).

Table A2-1. AERMOD Source Release Parameters – Construction Sources

Source Description	AERMOD Source Type	Release Height (m)	Initial Vertical Dimension (m) ^a	Exit Velocity (m/s)	Exit Temperature (K)	Stack Diameter (m)
New cranes delivery ship hoteling – auxiliary engines/boilers	point	44.5/39.9	--	7.50/18.24	583/559	0.54/0.49
Harbor craft	poly-area	15.20	3.53	--	--	--
Offroad construction equipment	poly-area	4.57	1.06	--	--	--
Haul/delivery trucks idling and transiting onsite ^b	poly-area	4.57	1.06	--	--	--
Construction fugitive dust	poly-area	1.0	0.23	--	--	--

Notes:

a. The initial vertical dimension of the plume (oz) was estimated by dividing the initial vertical thickness by 4.3 for elevated releases and by 2.15 for ground-based releases.

b. Release height and initial vertical dimension are consistent with prior LAHD documents (LAHD, 2008; LAHD, 2011).

3.1.2 Operational Emission Source Representation

The following identifies how operational emission sources were represented in AERMOD:

- Container ships in transit were simulated as a series of separated volume sources extending from Berths 126 and 131 to the South Coast Air Basin (SCAB) overwater boundary. Volume source spacing was 100 meters within the harbor, 500 meters in the precautionary zone, 1,000 meters between the precautionary zone and 20 nautical miles from Point Fermin, and 2,000 meters between 20 nautical miles and the SCAB overwater boundary. Transit emissions were apportioned based on arrival and departure statistics for the terminal from baseline vessel call records.
- Container ships hotelling at berth were modeled as point sources located adjacent to Berths 126 and 131.
- Container ships at anchorage were modeled as an area source within the harbor. Based on a historical average, anchorage annual frequency was assumed as 3% of the total annual calls in future years. The duration of anchorage was also derived from the same historical data and was roughly equal to 10 hours. Future year peak days were assumed to include one anchorage event in order to represent a higher emissions-intensive worst-case scenario. Details of these emissions assumptions can be found in Appendix A1.
- Tugboats were modeled as a series of separated volume sources extending from Berths 126 and 131 to the Port breakwater. The volume source spacing was 100 meters.
- Locomotives were modeled as a series of contiguous line sources along the arriving and departing routes as well as within the on-dock rail yard. Locomotives were modeled as far north as Sepulveda Blvd, about 4.5 miles northeast of the terminal.
- Cargo handling equipment was modeled as area sources positioned over most of the YM terminal ground and the on-dock rail yard.
- Trucks driving and idling on-site were modeled as area sources positioned over the in-gate, out-gate, and terminal.
- Trucks and worker vehicles driving off-site were modeled as a series of contiguous line sources along the primary travel routes. Travel routes and trips were derived from the transportation modeling study that is part of this EIR/EIS, described in detail in Appendix E1 Travel Demand Modeling. Vehicle off-site emissions were modeled as far north as Sepulveda Blvd, about 4.5 miles northeast of the terminal.
- Worker vehicles on-site were modeled as area sources positioned over the entrance roads and on-terminal parking lots.

Table A2-2 presents source parameters used in the dispersion modeling of operational emissions. The source parameters are consistent with those developed and used in prior LAHD NEPA/CEQA documents for container terminals (LAHD 2008; LAHD 2011; LAHD 2014). The locations of the emission sources as modeled are shown in Figures A2-1 through A2-3.

Table A2-2. AERMOD Source Release Parameters – Operational Sources

Source Description	AERMOD Source Type	Release Height (m) ^a	Initial Vertical Dimension (m) ^b	Stack Exit Velocity (m/s)	Stack Exit Temp. (K)	Stack Inside Diameter (m)
Ships – Fairway and Precautionary Area Transit	Volume	49.10	11.42	--	--	--
Ships – Harbor Transit	Volume	59.10	13.74	--	--	--
Ships – Turning and Docking Near-Berth	Volume	78.60	18.28	--	--	--
Ships - At Berth – Main and Auxiliary Engines	Point	44.5	--	7.5	583	0.6
Ships - At Berth – Boilers	Point	39.9	--	18.2	559	0.5
Ships - At Anchorage	Area	44.50	10.35	--	--	--
Tugboats	Volume	15.20	3.53	--	--	--
Locomotives - Offsite – Day ^c	Line	5.60	2.60	--	--	--
Locomotives - Offsite – Night	Line	14.60	6.79	--	--	--
Locomotives - Onsite – Day	Line	6.64	3.08	--	--	--
Locomotives - Onsite – Night	Line	13.60	6.31	--	--	--
Cargo Handling Equipment (except RTGs)	Area	4.57	1.06	--	--	--
Rubber Tired Gantry (RTG) Cranes	Area	12.50	2.91	--	--	--
Trucks	Area, Line ^d	4.57	1.06	--	--	--
Worker Vehicles	Area, Line ^d	0.61	0.14	--	--	--

Notes:

a. The release height for point sources in this table represents the actual release height of the exhaust above ground (or water, in this case). AERMOD then accounts for additional plume rise due to the upward momentum and buoyancy of the stack exhaust gas, based on the exit velocity, exit temperature, and stack diameter. By contrast, AERMOD does not calculate any additional plume rise for volume, area, and line sources. Therefore, the release heights presented in this table for volume, area, and line sources have been adjusted higher than the actual exhaust release heights in many cases to account for a nominal amount of plume rise due to upward momentum and buoyancy of the stack exhaust gas.

b. The initial vertical dimension of the plume (σ_z) was determined by dividing the initial vertical thickness by 4.3 for elevated releases and by 2.15 for ground-based releases.

c. Locomotive plume heights were derived from the *Roseville Rail Yard Study* (CARB, 2004). The plume heights vary by day versus night due to differences in atmospheric stability conditions.

d. Trucks and worker vehicles were modeled with area sources on-site and line sources off-site.

e. Source parameters are consistent with prior LAHD CEQA documents for container terminals (LAHD 2008; LAHD 2011; LAHD 2014).

Figure A2-1. AERMOD Source Representation – Far Field

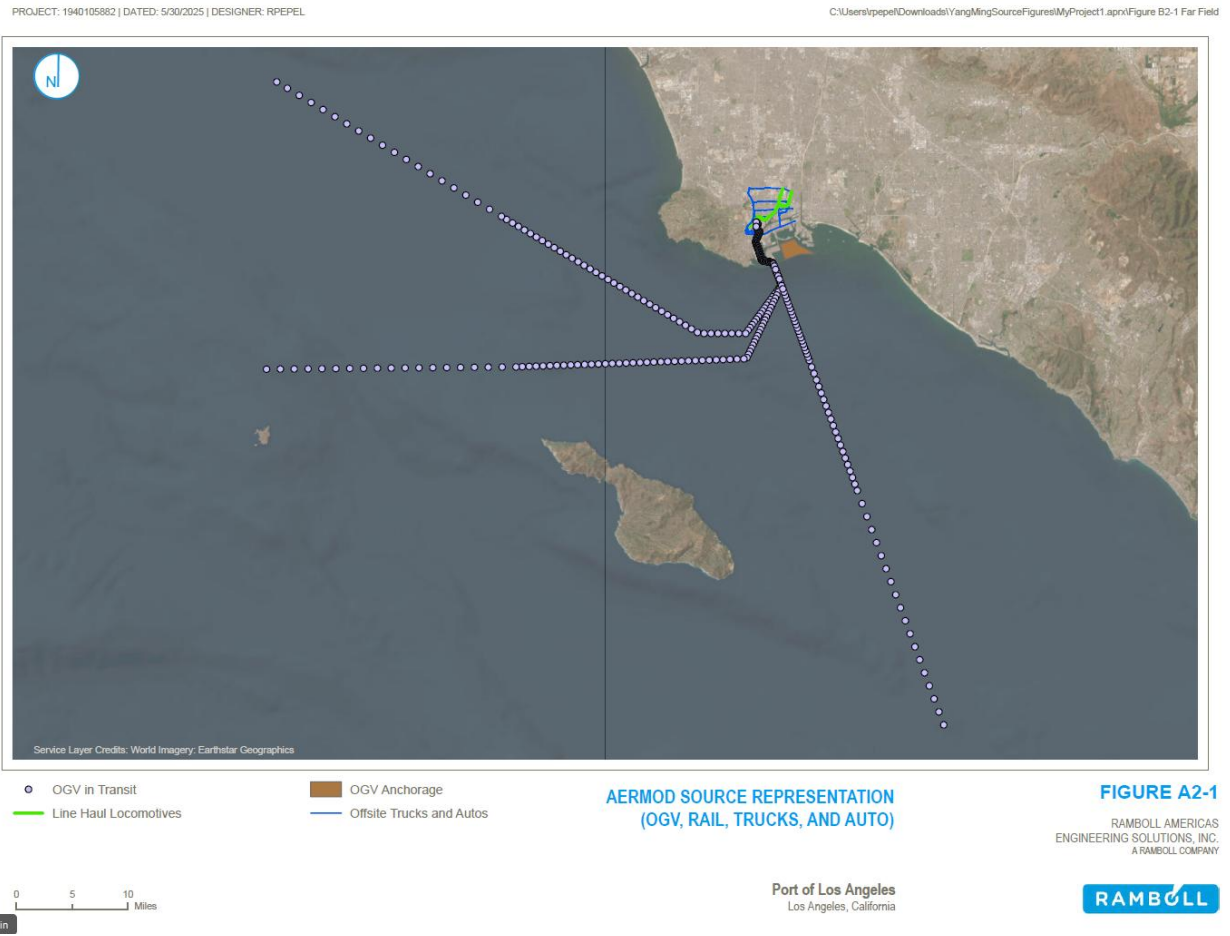


Figure A2-2. AERMOD Source Representation – Near Field

PROJECT: 1940105882 | DATED: 5/30/2025 | DESIGNER: RPEPEL

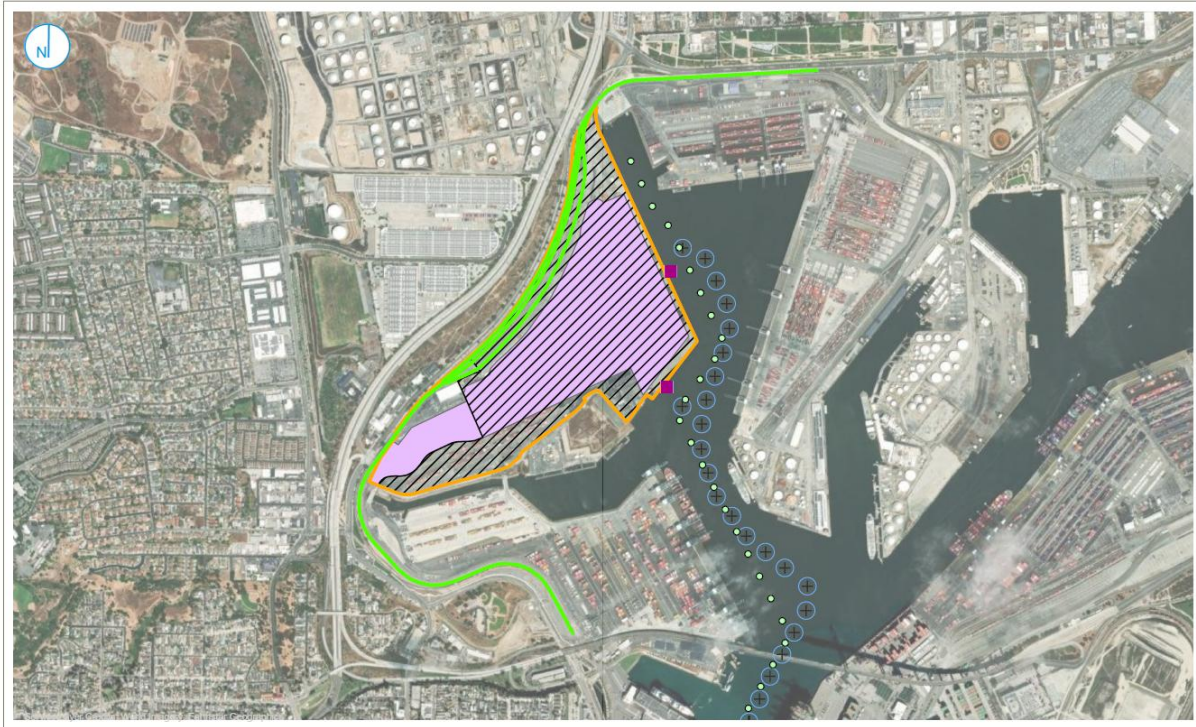
C:\Users\rpepel\Downloads\YangMingSourceFigures\MyProject1.aprx\Figure B2-2 Near Field



Figure A2BA2-3. AERMOD Source Representation – On-Site Sources

PROJECT: 1940105882 | DATED: 5/30/2025 | DESIGNER: RPEPEL

C:\Users\rpepel\Downloads\YangMingSourceFigures\MyProject1.aprx\Figure B2-3



- OGV Hotelling
- OGV Maneuvering
- Tugboats

- CHE
- Site Boundary
- Switch Locomotives

**AERMOD SOURCE REPRESENTATION
(OGV, CHE, RAIL, AND TRUCKS)**

FIGURE A2-3
RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

0 750 1,500 Feet

Port of Los Angeles
Los Angeles, California



3.1.3 Meteorological Data

The complex interaction of the ocean, land, and Palos Verdes hills near the Port may result in significant variations in wind patterns over relatively short distances (LAHD 2010). POLA and POLB currently operate monitoring stations that collect meteorological data from several locations within and near port boundaries. For this dispersion analysis, the meteorological data collected at the Wilmington Community Station, located at Saints Peter and Paul School (SPPS) from 2012 to 2016, was used for dispersion modeling. SPPS is located about 1 mile northeast of the Berths 121-131 and is considered the most representative meteorological station for the terminal in accordance with the “Sphere of Influence” analysis conducted by POLA and POLB in 2010 (LAHD 2010). For project-to-project consistency, this meteorological period has been used in numerous recent POLA and POLB EIRs.

3.1.4 Model Options

Regulatory default technical options were selected in AERMOD for all pollutants except NO₂ in accordance with USEPA modeling guidance (USEPA, 2024). Consistent with SCAQMD AERMOD modeling guidance (SCAQMD 2025), and EPA guidance (SCAQMD, 2012b; USEPA, 2010; USEPA, 2011a; USEPA, 2014; USEPA 2025a), the conversion of NO_x to NO₂ in ambient air was simulated in AERMOD using the Tier 2 Ambient Ratio Method (ARM) with USEPA default NO_x to NO₂ conversion factors.

As recommended by the SCAQMD, all sources were modeled with urban dispersion coefficients. An urban population of 9,862,049, representative of Los Angeles County, was used in AERMOD. Receptor and source base elevations were determined from USGS National Elevation Dataset (NED) files using AERMAP, version 24142 (USEPA 2024). All coordinates were referenced to UTM NAD83, Zone 11.

3.1.5 Temporal Distribution Assumptions

For dispersion modeling purposes, operational emissions were assumed to occur during the times specified in Table A2-3. Emissions were assumed to be uniformly distributed during the specific time periods described in the table. The temporal distribution assumptions are identical for the baseline, proposed project and alternatives scenarios.

Table A2-3. Temporal Distribution of Emissions in AERMOD

Source Description	Temporal Distribution			
Construction				
Construction activities on land	7 a.m. – 7 p.m.			
Construction activities over water – Dredging, OGVs, Tugs	24 hours per day			
Operations				
Container Ships	24 hours per day			
Tugboats	24 hours per day			
Locomotives	24 hours per day			
Cargo Handling Equipment ^a	Same distribution as trucks			
Trucks - 2019 ^b	12AM - 1AM	4.47%	Noon - 1 PM	5.07%
	1 - 2 AM	3.51%	1 - 2 PM	6.83%
	2 - 3 AM	1.19%	2 - 3 PM	6.51%

Source Description	Temporal Distribution			
	3 - 4 AM	0.39%	3 - 4 PM	6.05%
	4 - 5 AM	0.54%	4 - 5 PM	4.48%
	5 - 6 AM	0.60%	5 - 6 PM	2.64%
	6 - 7 AM	0.67%	6 - 7 PM	6.02%
	7 - 8 AM	1.21%	7 - 8 PM	6.73%
	8 - 9 AM	5.20%	8 - 9 PM	5.53%
	9 - 10 AM	5.92%	9 - 10 PM	5.52%
	10 - 11 AM	5.82%	10 - 11 PM	3.63%
	11 - Noon	6.21%	11PM - 12AM	5.24%
Trucks – 2026, 2027, 2028, 2036, 2050, 2055, 2062	12AM - 1AM	2.07%	Noon - 1 PM	5.66%
	1 - 2 AM	1.62%	1 - 2 PM	7.59%
	2 - 3 AM	0.56%	2 - 3 PM	7.28%
	3 - 4 AM	2.33%	3 - 4 PM	6.73%
	4 - 5 AM	4.09%	4 - 5 PM	5.06%
	5 - 6 AM	4.56%	5 - 6 PM	1.63%
	6 - 7 AM	5.03%	6 - 7 PM	2.76%
	7 - 8 AM	4.64%	7 - 8 PM	3.11%
	8 - 9 AM	6.08%	8 - 9 PM	2.54%
	9 - 10 AM	6.60%	9 - 10 PM	2.55%
	10 - 11 AM	6.48%	10 - 11 PM	1.68%
11 - Noon	6.94%	11PM - 12AM	2.40%	
Worker Vehicles	Same distribution as trucks			

Notes:

^a The temporal distribution for cargo handling equipment is the same as the truck distribution since a correlation exists between cargo handling and drayage truck visits.

^b The temporal distribution for trucks was provided by the traffic study. Temporal distributions were dependent on the year of operation.

^c Overwater construction would only happen in the Project. The NFA scenario construction occurs in the railyard only

3.1.6 Receptor Locations

Cartesian coordinate receptor grids were used to provide adequate spatial coverage surrounding the Project area to assess ground-level pollution concentrations, identify the extent of impacts, and identify maximum impact locations. AERMOD modeling was conducted with a 22-by-22 kilometer (km) coarse grid, with receptors placed 1,000 meters (m) apart, centered over the Project site. Embedded within this receptor grid was a 9 km-by-12 km grid of receptors, placed 500 m apart. An inner grid of receptors, placed 250 m apart, covered an area of 7.5 km by 10.5 km. Receptors with 25-m resolution were also placed on residential parcels within 500 m of the Berths 121-131 facility as well as within 100 m of all modeled roadways.

In addition to the gridded receptor sets, previously identified sensitive receptors near the Berths 121-131 facility were also included. These receptors included schools, daycares, hospitals, recreational facilities, parks, and convalescent homes. Receptors were also located at 20-m spacing along the Berths 121-131 facility fence line.

Figures A2-4 and A2-5 show the receptors used in AERMOD for criteria pollutants.

Figure A2-4. AERMOD Modeled Receptor Grids

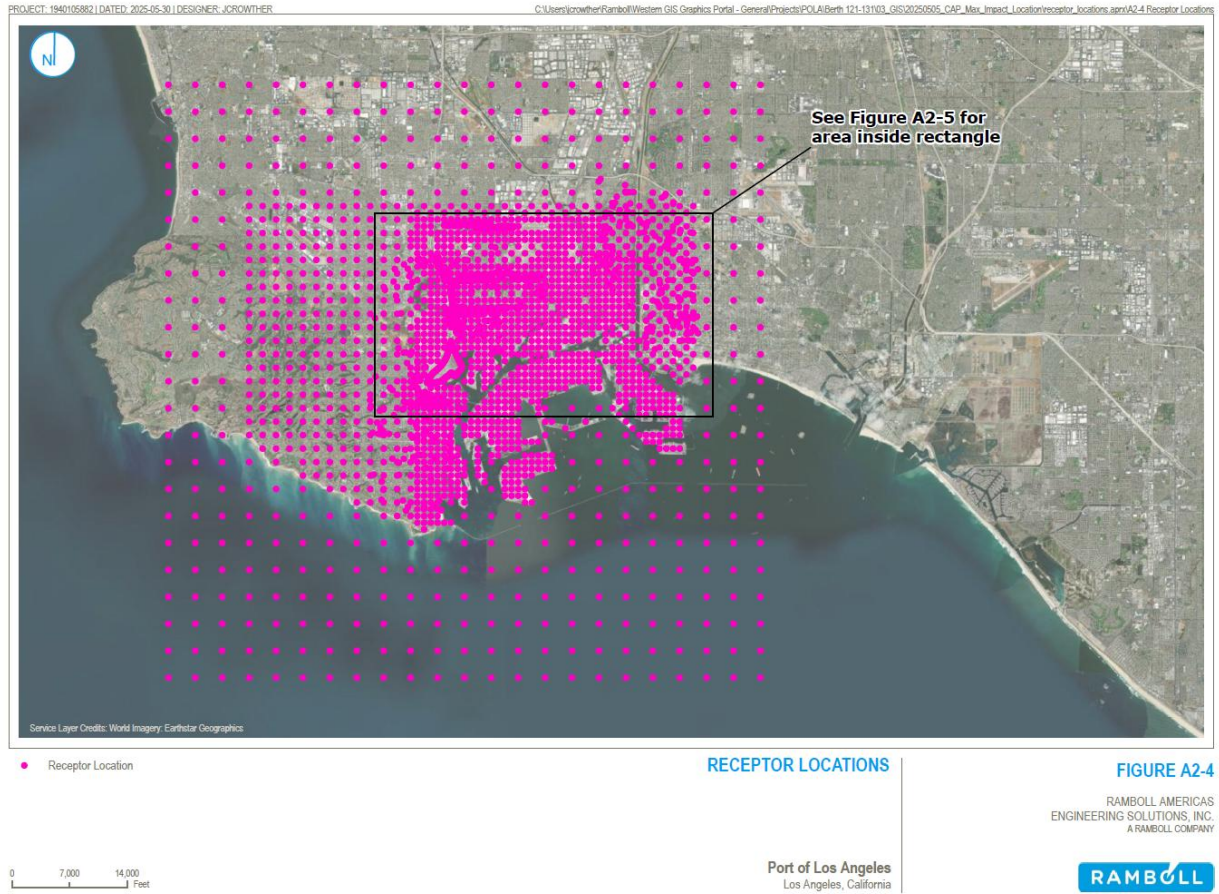
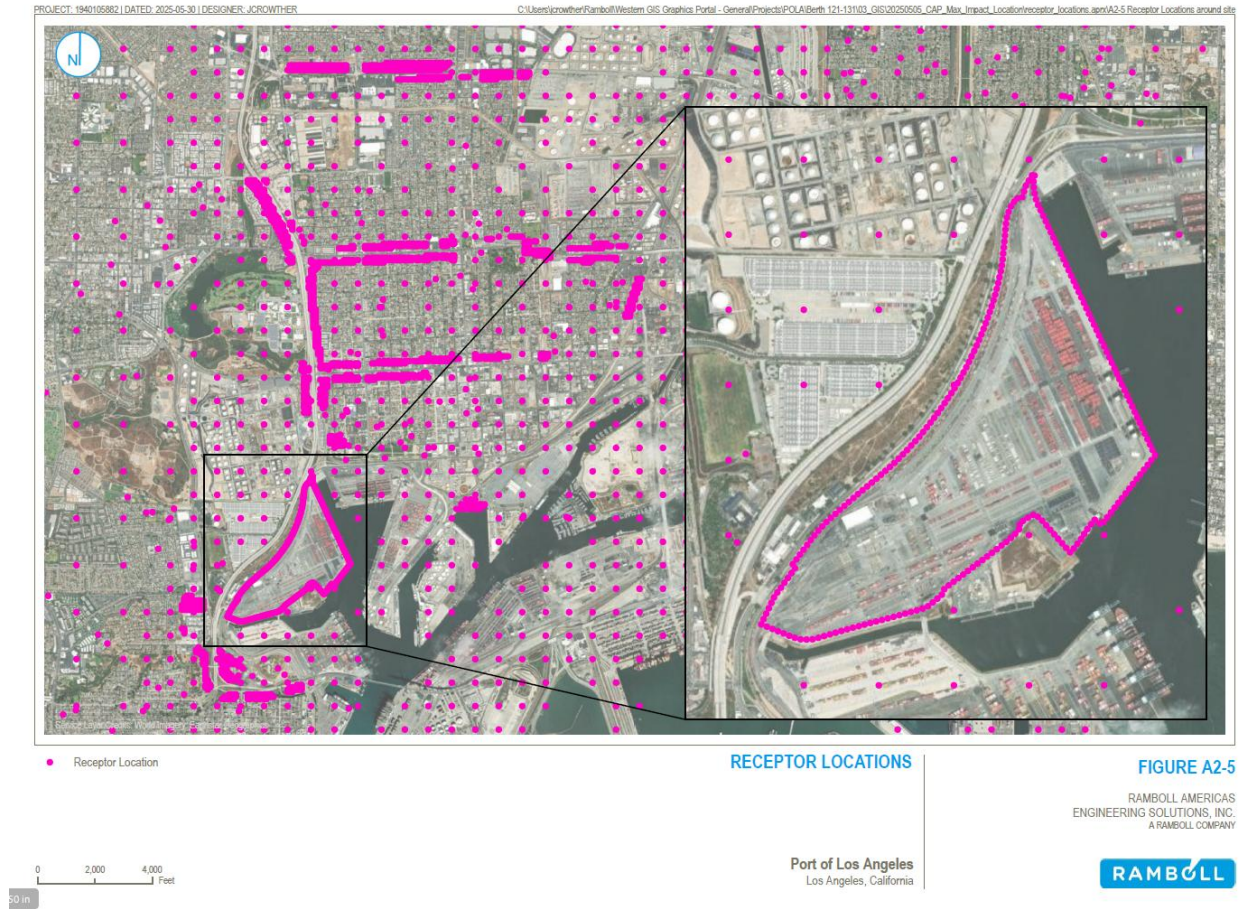


Figure A2-5. AERMOD Fine and Coarse Grid Receptors (Near Field)



3.2 Methodology for Determination of Impacts

NO₂, PM₁₀ and PM_{2.5} concentrations associated with the Proposed Project, No Federal Action Alternative, and No Project Alternative were modeled for each analysis year (2026, 2027, 2028, 2036, 2050, 2055, and 2062). The pollutant concentrations modeled by AERMOD were compared to the significance thresholds in Table A2-4 to assess impacts.

3.2.1 Methodology for NO₂ and CO

The significance concentration thresholds for NO₂ and CO are absolute thresholds based on the ambient air quality standards. Therefore, the change in modeled Project concentrations relative to existing conditions is determined at each receptor, and the value at the receptor with the highest change in concentration is added to the ambient background concentration to yield a total concentration. The background concentration represents the maximum ambient concentration in the vicinity of the project site excluding the incremental contribution from the Proposed Project, No Federal Action Alternative, or No Project Alternative. Ambient background concentrations were obtained from the Wilmington Community Station using the most recent 3-year period of recorded data publicly available, May 2022 through April 2024. A2-5 shows the derivation of the background concentrations.

Because the Wilmington Community Station is part of POLA's site-specific monitoring network, it was assumed that the station captures the existing air quality effects of the Berths 121-131 Terminal. Therefore, the change in Proposed Project, No Federal Action Alternative, or No Project Alternative concentrations relative to existing conditions was determined by subtracting modeled Baseline concentrations from the modeled scenario concentrations (the Baseline represents existing conditions in 2019). Significance is determined by comparing the total concentrations (i.e., change in scenario concentrations plus background) to the thresholds. The Port's approach for determining total concentrations – that is, adding the site-specific background concentration to modeled scenario concentration minus modeled existing concentration – was endorsed by the SCAQMD (SCAQMD 2012a and SCAMQD 2012b).

To be consistent with the federal 1-hour NO₂ standard, the modeled federal 1-hour NO₂ concentrations represent the 98th percentile (8th highest) of the annual distribution of daily maximum 1-hour concentrations. Although compliance with the federal 1-hour NO₂ standard is based on a three-year average of the 98th percentile 1-hour concentrations, the EPA states that the use of one or more years of available site-specific meteorological data serves as an unbiased estimate of the 3-year average for purposes of modeling demonstrations of compliance with the NAAQS (EPA, 2010). All other modeled pollutant concentrations, including the state 1-hour NO₂ concentration, represent the highest concentrations over the entire year of meteorological data.

3.2.2 Methodology for PM₁₀ and PM_{2.5}

The significance concentration thresholds for PM₁₀ and PM_{2.5} are incremental thresholds. Concentration increments relative to baseline are compared directly to the thresholds without adding background concentrations. Therefore, Proposed Project, No Federal Action Alternative, and No Project Alternative impacts were determined by subtracting modeled Baseline concentrations from modeled Proposed Project, No Federal Action Alternative, and No Project Alternative concentrations (project minus baseline) at each

receptor. Significance is determined by comparing the modeled receptor with the greatest increment to the thresholds. Proposed Project, No Federal Action Alternative, and No Project Alternative concentration increments relative to the Baseline were determined and compared to the significance thresholds separately.

Table A2-4. SCAQMD Significance Thresholds for Operations

Air Pollutant ^a	Ambient Concentration Threshold
Construction	
Nitrogen Dioxide (NO₂)^b	
1-hour average (Federal) ^c	0.100 ppm (188 µg/m ³)
1-hour average (State)	0.18 ppm (338 µg/m ³)
Annual average (Federal)	0.0534 ppm (100 µg/m ³)
Annual average (State)	0.030 ppm (57 µg/m ³)
Particulates (PM₁₀ or PM_{2.5})^d	
24-hour average (PM ₁₀ and PM _{2.5})	10.4 µg/m ³
Annual average (PM ₁₀ only)	1.0 µg/m ³
Operation	
Nitrogen Dioxide (NO₂)^b	
1-hour average (federal) ^c	0.100 ppm (188 µg/m ³)
1-hour average (state)	0.18 ppm (338 µg/m ³)
Annual average (federal)	0.0534 ppm (100 µg/m ³)
Annual average (state)	0.030 ppm (57 µg/m ³)
Particulates (PM₁₀ or PM_{2.5})^d	
24-hour average (PM ₁₀ and PM _{2.5})	2.5 µg/m ³
Annual average (PM ₁₀ only)	1.0 µg/m ³

Notes:

^a Emissions of sulfates and lead would be negligible; thus, concentration standards would not be exceeded. The NO₂ thresholds are absolute thresholds; the maximum predicted Project impact is added to the background concentration and compared to the threshold.

^b To evaluate proposed project impacts on ambient NO₂ levels, the analysis included the use of both the current SCAQMD 1-hour NO₂ threshold (0.18 ppm) and the newer, more stringent 1-hour federal ambient air quality standard (0.100 ppm). To attain the federal standard, the 3-year average of the 98th percentile of the daily maximum 1-hour averages at a receptor must not exceed 0.100 ppm.

^c Federal 1-hour average NO₂ concentration is based on the NAAQS because it is more stringent than the SCAQMD thresholds.

^d The PM₁₀ and PM_{2.5} thresholds are incremental thresholds; the maximum Project impact relative to baseline is compared to these thresholds without adding a background concentration.

Sources:

SCAQMD 2025; USEPA 2025b.

Table A2-5. Background Concentrations Measured at the Wilmington Community Station

Pollutant	Averaging Period	Monitored Concentration (ppm) ^{a,e}			Background Concentration ^c	
		2022	2023	2024	(ppm)	($\mu\text{g}/\text{m}^3$) ^d
NO ₂	1-Hour State	060	052	053	060	113
	1-Hour Federal ^b	0.055	0.052	0.048	0.052	97
	Annual	0.014	0.013	0.012	0.014	26
CO	1-Hour	7.7	5.1		7.7	8,821
	8-Hour		2.4	1.9	2.4	2,749

Notes:

a. All reported values represent the highest recorded concentration during the year unless otherwise noted.

b. The background concentration reported for the federal 1-hour NO₂ standard represents the three-year average (2022-2024) of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations.

c. The background concentration for the 1-hour federal NO₂ concentration is three-year averages. The background concentrations for all other pollutants or averaging periods are the maximum of the concentrations for the 3 reported years.

d. The concentration in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) is calculated as follows: $\mu\text{g}/\text{m}^3 = \text{ppm} \times \text{MW} / 0.02445$. The molecular weights (MW) are 28.01 for CO and 46.0055 for NO₂.

e. The years reported in this table represent the following 12-month periods: Year 2022 represents May 2021 - April 2022, Year 2023 represents May 2022 - April 2023, and Year 2024 represents May 2023 - April 2024.

Source: Leidos, Inc., 2022, 2023, 2024.

3.3 Predicted Air Quality Impacts

3.3.1 Proposed Project

3.3.1.1 Construction Impacts

Construction impacts were evaluated for the unmitigated and mitigated proposed Project under CEQA and under NEPA. Federal 1-hour NO₂ impacts were modeled to represent the 98th percentile of the daily maximum 1-hour averages. Background concentrations for NO₂ and CO were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School). Concentration increments represent the modeled scenario minus the CEQA or NEPA baseline. Due to maximum modeled baseline and modeled scenario concentrations potentially occurring at different receptors, scenario and baseline concentrations may not necessarily subtract to equal the presented increment. For simplification, only the increment is presented in the tables below. Additionally, exceedances of a SCAQMD threshold are indicated in bold.

The following tables summarize the AERMOD dispersion modeling results of both mitigated and unmitigated proposed Project construction emissions under CEQA & NEPA. The Berths 121-131 Container Terminal would continue to operate during construction of the proposed Project; construction and operational activities would overlap during this time. Total proposed Project emissions from overlapping construction and operational

activities are presented to show the overall impacts of the proposed Project. AERMOD dispersion modeling results of mitigated and unmitigated proposed Project overlapping construction and operational emissions are also presented. NO₂ and CO incremental concentrations due to construction were added to background concentrations and compared to the SCAQMD thresholds. The AERMOD modeling results for PM₁₀ and PM_{2.5} represent the incremental increases due to the project and were compared directly to the SCAQMD thresholds without adding a background concentration.

Table A2-6. Maximum Off-Site Ambient CO Concentrations - Proposed Project Construction without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year ^a	Background Concentration ^b (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^c (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	884	9,705	23,000	No
		2027	8,821	144	8,965	23,000	No
	8-hour	2026	2,749	458	3,207	10,000	No
		2027	2,749	27	2,776	10,000	No

^a Since the Project's construction activities will be overlapped with operations in 2026 and 2027, combined Project's construction and operation NO₂ impacts were modeled for 2026 and 2027. Please refer to Table A2-10 for the NO₂ impacts. NO₂ modeling was not performed for construction only. The combined impact represents the worst-case scenario and allow AERMOD to model all contemporaneous NO_x sources to predict the ambient NO_x/NO₂ ratio accurately using Ambient Ratio Method (ARM) for NO₂ modeling.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-7. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Construction without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	26.9	10.4	Yes
		2027	0.98	10.4	No
	Annual	2026	4.8	1	Yes
		2027	0.06	1	No
PM _{2.5}	24-hour	2026	24.5	10.4	Yes
		2027	0.90	10.4	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-8. Maximum Off-Site Ambient CO Concentrations - Proposed Project Construction with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	524	9,345	23,000	No
		2027	8,821	129	8,950	23,000	No
	8-hour	2026	2,749	238	2,988	10,000	No
		2027	2,749	24	2,774	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-9. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Construction with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	3.2	10.4	No
		2027	0.5	10.4	No
	Annual	2026	0.4	1	No
		2027	0.02	1	No
PM _{2.5}	24-hour	2026	2.8	10.4	No
		2027	0.4	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-10. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Overlapping Construction and Operation without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^c (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^{d,f} (µg/m ³)	Total Concentration ^e (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^b	2026	97	700	797	188	Yes
		2027	97	37	134	188	No
	State 1-hour ^b	2026	113	817	930	339	Yes
		2027	113	44	157	339	No
	Annual	2026	26	130	157	57	Yes
		2027	26	-0.02	26	57	No

^a Exceedances of the thresholds are indicated in bold.

^b The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^c The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^d The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^e The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^f A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-11. Maximum Off-Site Ambient CO Concentrations - Proposed Project Overlapping Construction and Operation without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ($\mu\text{g}/\text{m}^3$)	Maximum Unmitigated Modeled Project Concentration Increment ($\mu\text{g}/\text{m}^3$)	Total Concentration ($\mu\text{g}/\text{m}^3$)	Significance Threshold ($\mu\text{g}/\text{m}^3$)	Threshold Exceeded ?
CO	1-hour	2025	4,894	1,176	9,998	23,000	No
		2026	4,894	498	9,319	23,000	No
	8-hour	2025	2,563	632	3,381	10,000	No
		2026	2,563	254	3,003	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-12. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Overlapping Construction and Operation without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment ($\mu\text{g}/\text{m}^3$) ^{a,b}	Significance Threshold ($\mu\text{g}/\text{m}^3$) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	26.3	10.4	Yes
		2027	0.4	10.4	No
	Annual	2026	4.6	1	Yes
		2027	0.01	1	No
PM _{2.5}	24-hour	2026	24.2	10.4	Yes
		2027	0.5	10.4	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-13. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Overlapping Construction and Operation with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^c (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^{d,f} (µg/m ³)	Total Concentration ^e (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded ?
NO ₂	Federal 1-hour ^b	2026	97	100	197	188	Yes
		2027	97	36	133	188	No
	State 1-hour ^b	2026	113	121	234	339	No
		2027	113	41	154	339	No
	Annual	2026	26	4.2	31	57	No
		2027	26	-0.02	26	57	No

^a Exceedances of the thresholds are indicated in bold.

^b The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^c The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^d The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^e The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^f A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-14. Maximum Off-Site Ambient CO Concentrations - Proposed Project Overlapping Construction and Operation with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	816	9,637	23,000	No
		2027	8,821	485	9,306	23,000	No
	8-hour	2026	2,749	419	3,168	23,000	No
		2027	2,749	253	3,003	23,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-15. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Overlapping Construction and Operation with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	2.6	10.4	No
		2027	0.08	10.4	No
	Annual	2026	0.28	1	No
		2027	0.005	1	No
PM _{2.5}	24-hour	2026	2.4	10.4	No
		2027	0.08	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-16. Maximum Off-Site Ambient CO Concentrations - Proposed Project Construction without Mitigation under NEPA

Pollutant ^a	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^c (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	874	9,695	23,000	No
		2027	8,821	142	8,963	23,000	No
	8-hour	2026	2,749	456	3,205	23,000	No
		2027	2,749	26	2,776	23,000	No

^a Since the Project's construction activities will be overlapped with operations in 2026 and 2027, combined Project's construction and operation NO₂ impacts were modeled for 2026 and 2027. Please refer to Table A2-20 for the NO₂ impacts. NO₂ modeling was not performed for construction only. The combined impact represents the worst-case scenario and allow AERMOD to model all contemporaneous NO_x sources to predict the ambient NO_x/NO₂ ratio accurately using Ambient Ratio Method (ARM) for NO₂ modeling.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

Table A2-17. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Construction without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Maximum Unmitigated Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	27	10.4	Yes
		2027	1	10.4	No
	Annual	2026	4.8	1	Yes
		2027	0.1	1	No
PM _{2.5}	24-hour	2026	24	10.4	Yes
		2027	0.9	10.4	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-18. Maximum Off-Site Ambient CO Concentrations - Proposed Project Construction with Mitigation under NEPA

Pollutant ^a	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^c (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	514	9,335	23,000	No
		2027	8,821	128	8,949	23,000	No
	8-hour	2026	2,749	236	2,986	23,000	No
		2027	2,749	24	2,773	23,000	No

^a Since the Project's construction activities will be overlapped with operations in 2026 and 2027, combined Project's construction and operation NO₂ impacts were modeled for 2026 and 2027. Please refer to Table A2-23 for the NO₂ impacts. NO₂ modeling was not performed for construction only. The combined impact represents the worst-case scenario and allow AERMOD to model all contemporaneous NO_x sources to predict the ambient NO_x/NO₂ ratio accurately using Ambient Ratio Method (ARM) for NO₂ modeling.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-19. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Construction with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Maximum Mitigated Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	3.2	10.4	No
		2027	0.5	10.4	No
	Annual	2026	0.4	1	No
		2027	0.02	1	No
PM _{2.5}	24-hour	2026	2.8	10.4	No
		2027	0.4	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-20. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Overlapping Construction and Operation without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^c (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^{d,f} (µg/m ³)	Total Concentration ^e (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour	2026	97	749	847	188	Yes
		2027	97	71	168	188	No
	State 1-hour	2026	113	863	976	339	Yes
		2027	113	82	195	339	No
	Annual	2026	26	137	163	57	Yes
		2027	26	-0.002	26	57	No

^a Exceedances of the thresholds are indicated in bold.

^b The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^c The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^d The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^e The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^f A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-21. Maximum Off-Site Ambient CO Concentrations - Proposed Project Overlapping Construction and Operation without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^{b,d} (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	444	9,265	23,000	No
		2027	8,821	-5	8,817	23,000	No
	8-hour	2026	2,749	196	2,946	10,000	No
		2027	2,749	-1	2,749	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-22. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Overlapping Construction and Operation without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Maximum Unmitigated Modeled Project Concentration Increment (µg/m ³) ^{a,b,d}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	26	10.4	Yes
		2027	0.3	10.4	No
	Annual	2026	5	1	Yes
		2027	-0.0001	1	No
PM _{2.5}	24-hour	2026	24	10.4	Yes
		2027	0.5	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-23. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Overlapping Construction and Operation with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^c (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^{d,f} (µg/m ³)	Total Concentration ^e (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^b	2026	97	150	247	188	Yes
		2027	97	61	158	188	No
	State 1-hour ^b	2026	113	168	281	339	No
		2027	113	69	181	339	No
	Annual	2026	26	10	36	57	No
		2027	26	-0.003	26	57	No

^a Exceedances of the thresholds are indicated in bold.

^b The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^c The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^d The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^e The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^f A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-24. Maximum Off-Site Ambient CO Concentrations - Proposed Project Overlapping Construction and Operation with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^{b,d} (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	86	8,907	23,000	No
		2027	8,821	-5	8,817	23,000	No
	8-hour	2026	2,749	-1	2,749	10,000	No
		2027	2,749	-1	2,749	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-25. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Overlapping Construction and Operation with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Maximum Mitigated Modeled Project Concentration Increment (µg/m ³) ^{a,b,d}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	3	10.4	No
		2027	0.02	10.4	No
	Annual	2026	0.3	1	No
		2027	-0.0001	1	No
PM _{2.5}	24-hour	2026	2	10.4	No
		2027	0.1	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

The following figures display the locations of the peak AERMOD dispersion modeling results of both mitigated and unmitigated proposed Project pollutant increment concentrations under CEQA and NEPA. The Berths 121-131 Container Terminal would continue to operate during construction of the proposed Project; construction and operational activities would overlap during this time. Total proposed Project emissions from overlapping construction and operational activities are presented to show the overall impacts of the proposed Project. Peak locations of AERMOD dispersion modeling results of both mitigated and unmitigated proposed Project overlapping construction and operational concentrations are also presented. The receptor locations with modeled concentration increments less than zero are not shown.

Figure A2-6. Maximum Off-site Ambient CO Concentrations – Proposed Project Construction without Mitigation under CEQA

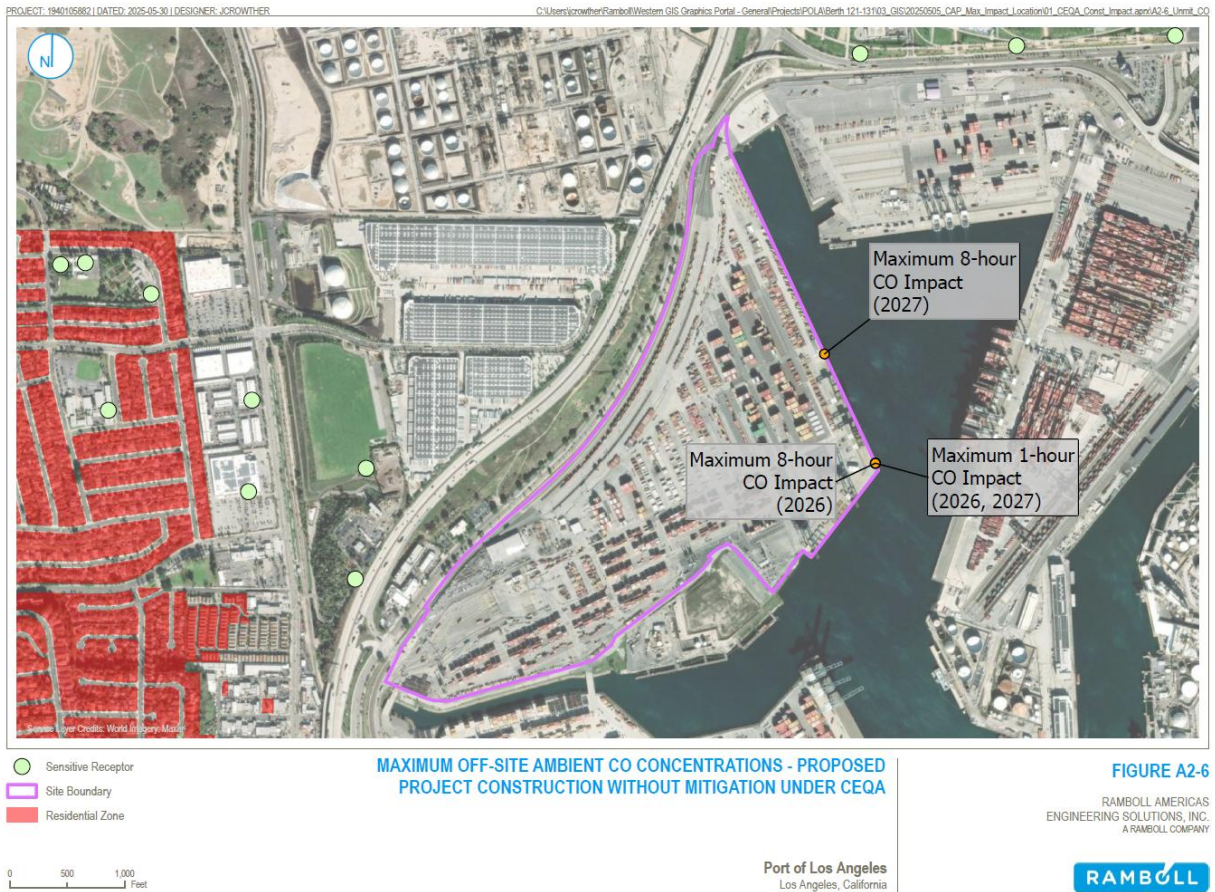


Figure A2-7. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Construction without Mitigation under CEQA

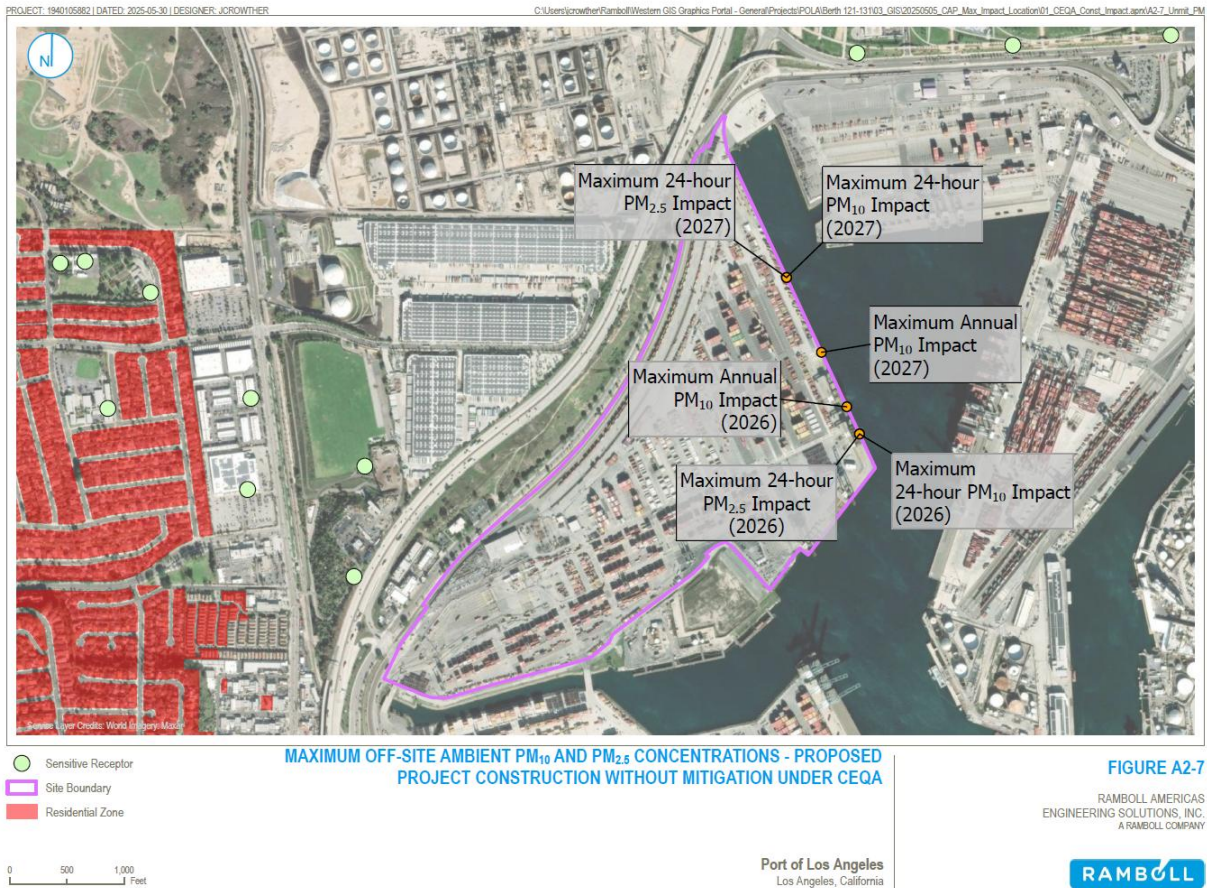


Figure A2-8. Maximum Off-site Ambient CO Concentrations

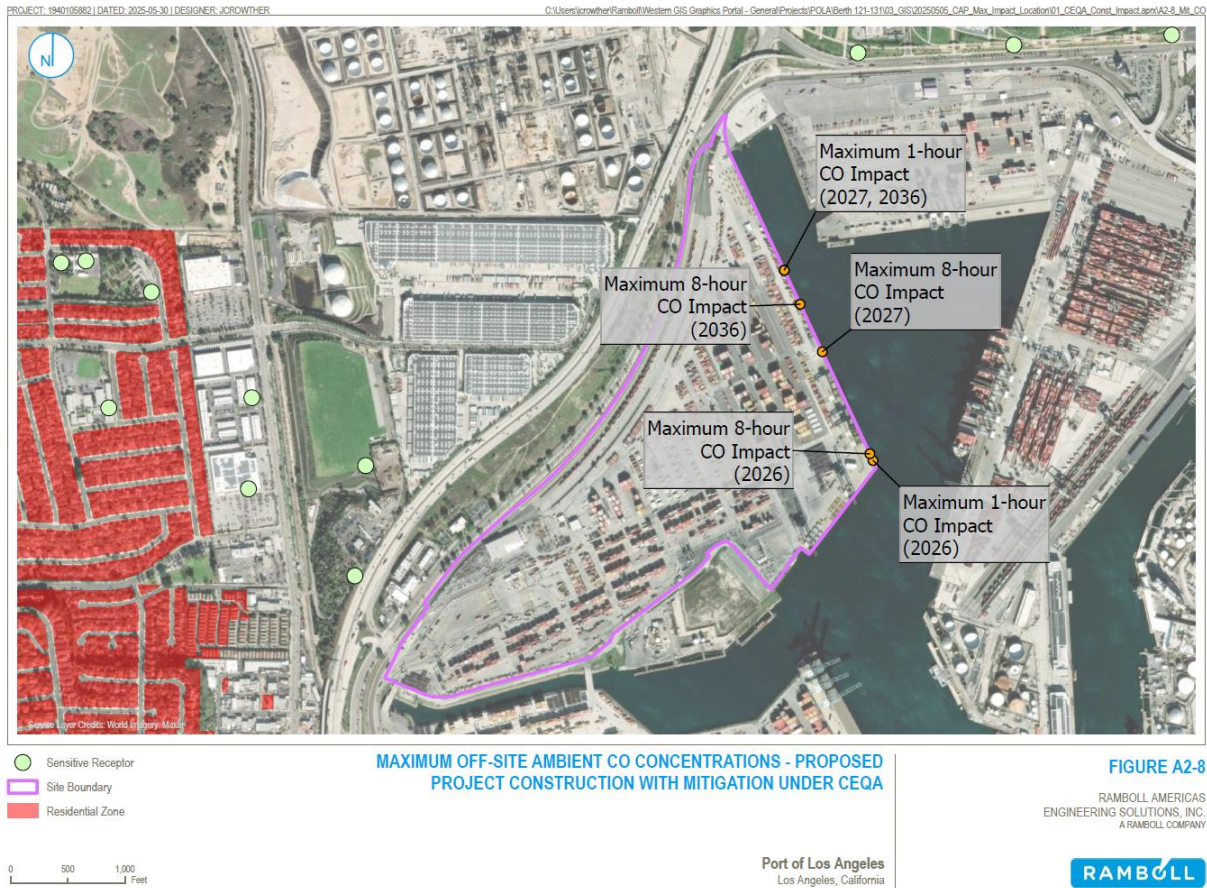


Figure A2-9. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Construction with Mitigation under CEQA

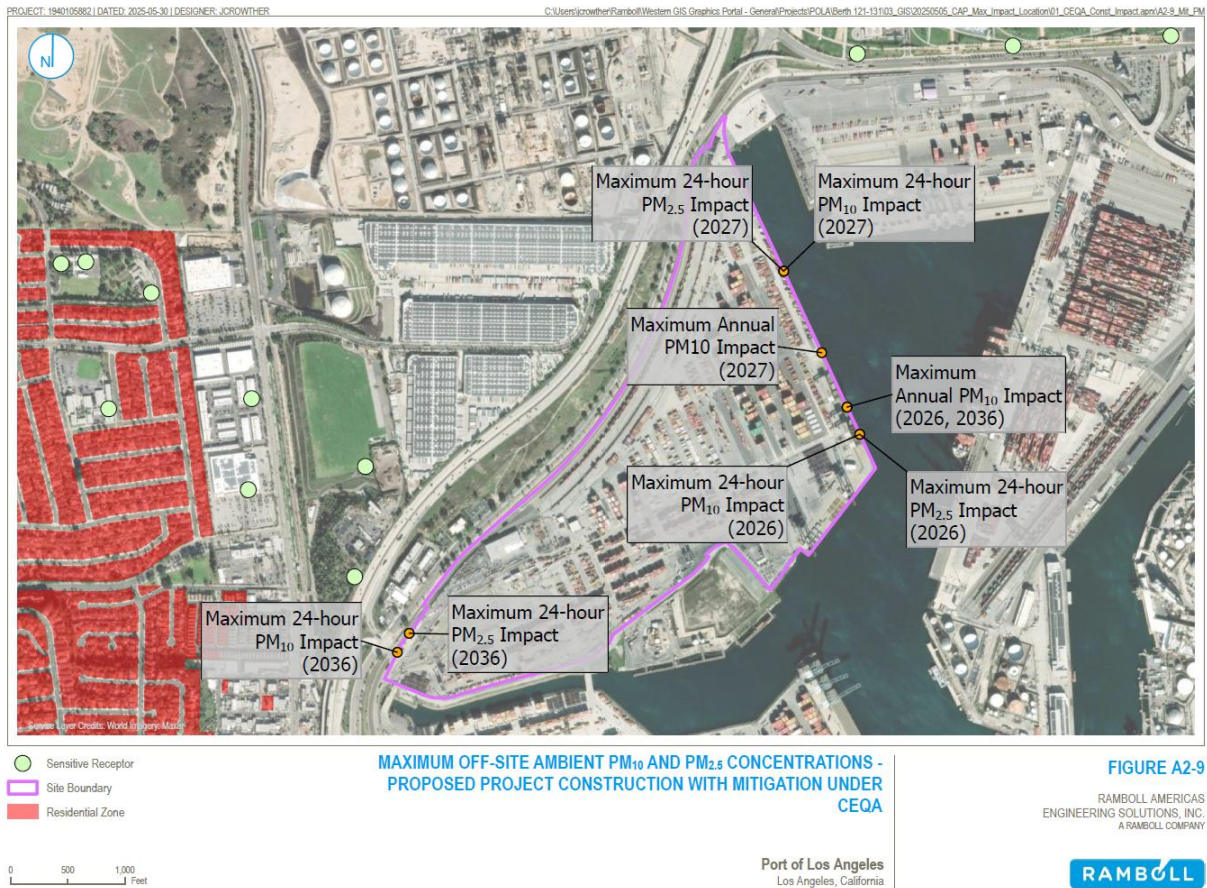


Figure A2-10. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Overlapping Construction and Operation without Mitigation under CEQA

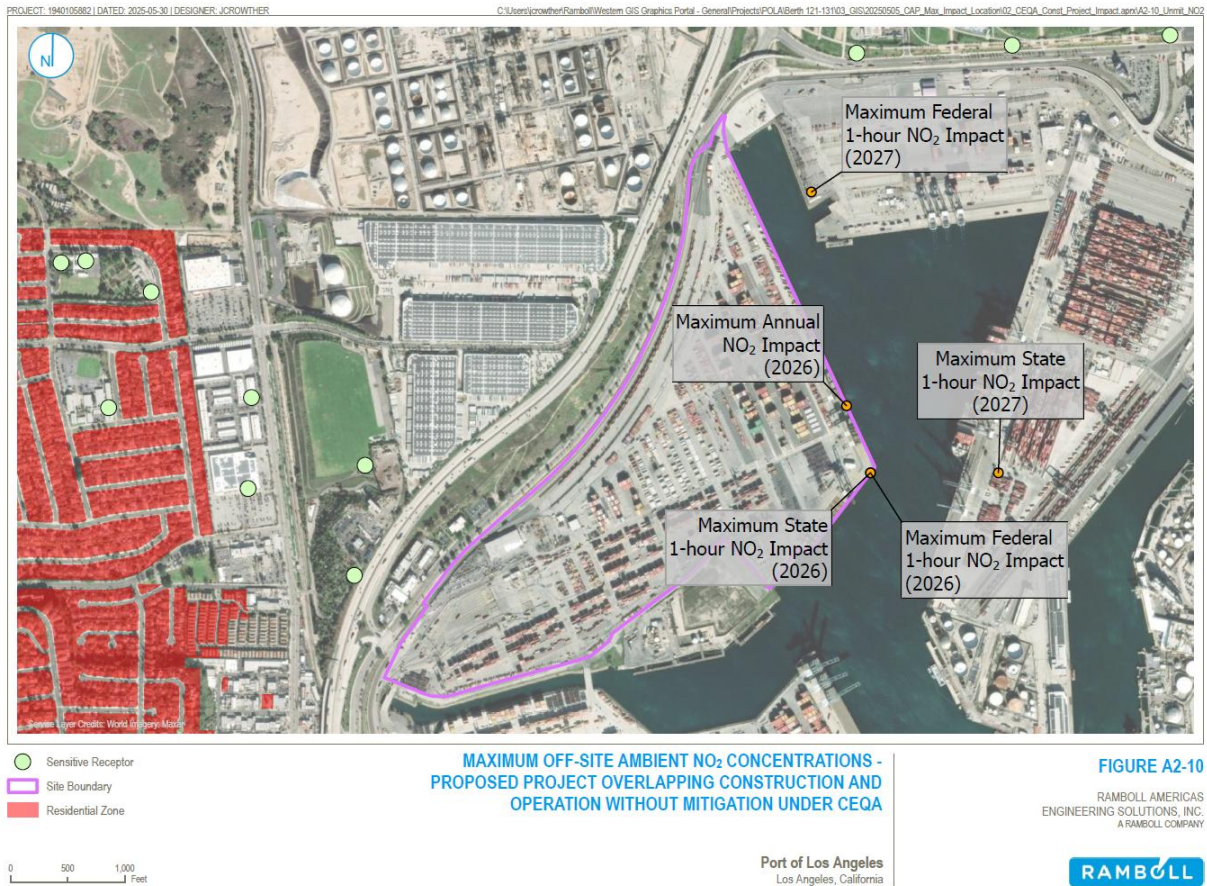


Figure A2-11. Maximum Off-site Ambient CO Concentrations – Proposed Project Overlapping Construction and Operation without Mitigation under CEQA

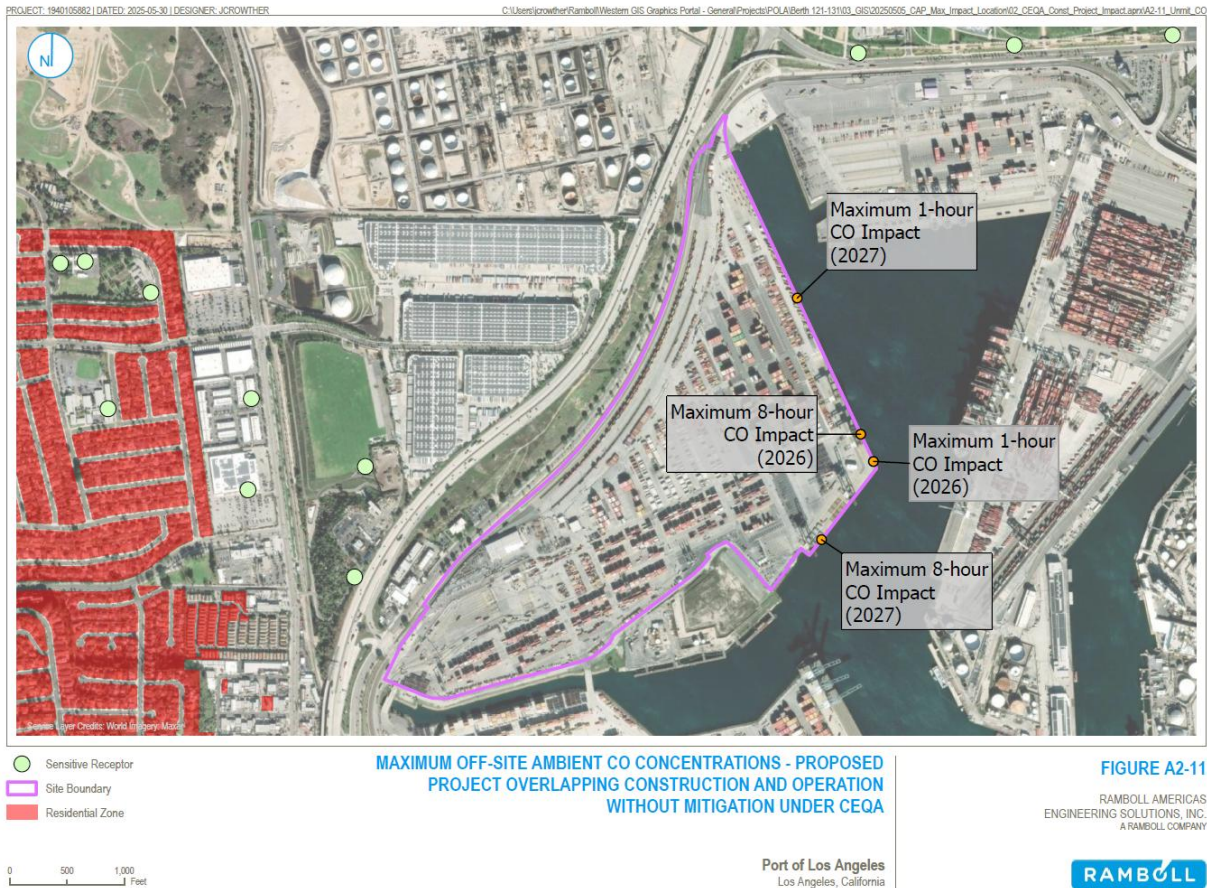


Figure A2-12. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Overlapping Construction and Operation without Mitigation under CEQA

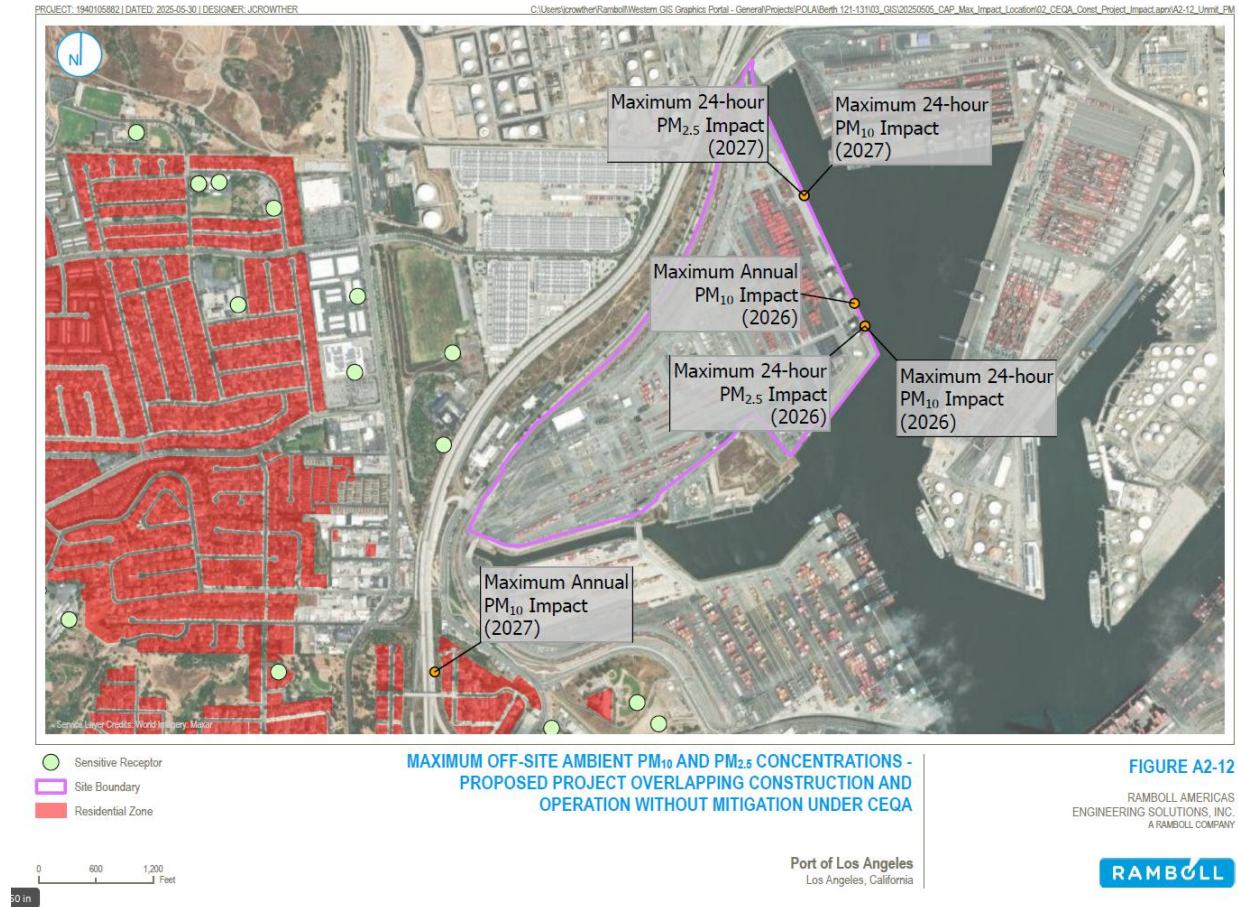


Figure A2-13. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Overlapping Construction and Operation with Mitigation under CEQA

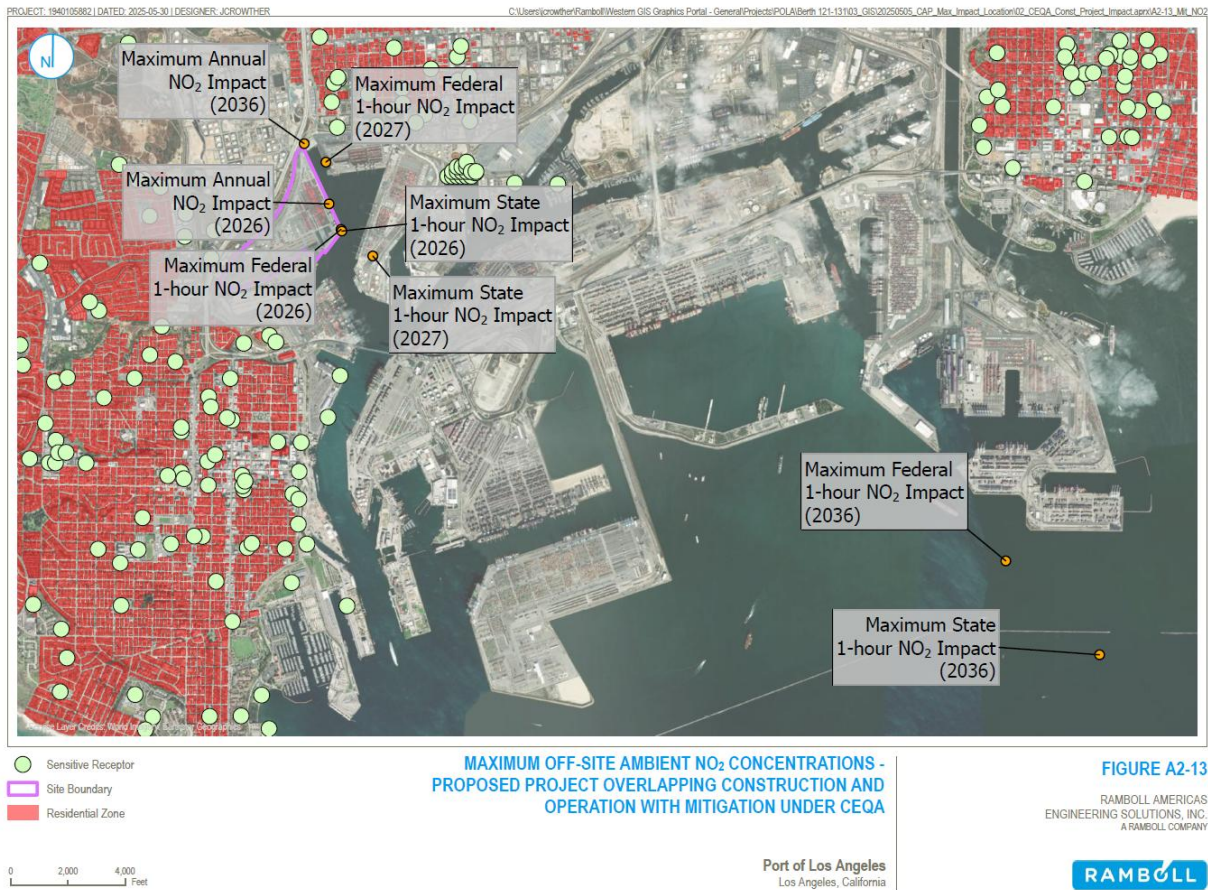


Figure A2-14. Maximum Off-site Ambient CO Concentrations – Proposed Project Overlapping Construction and Operation with Mitigation under CEQA

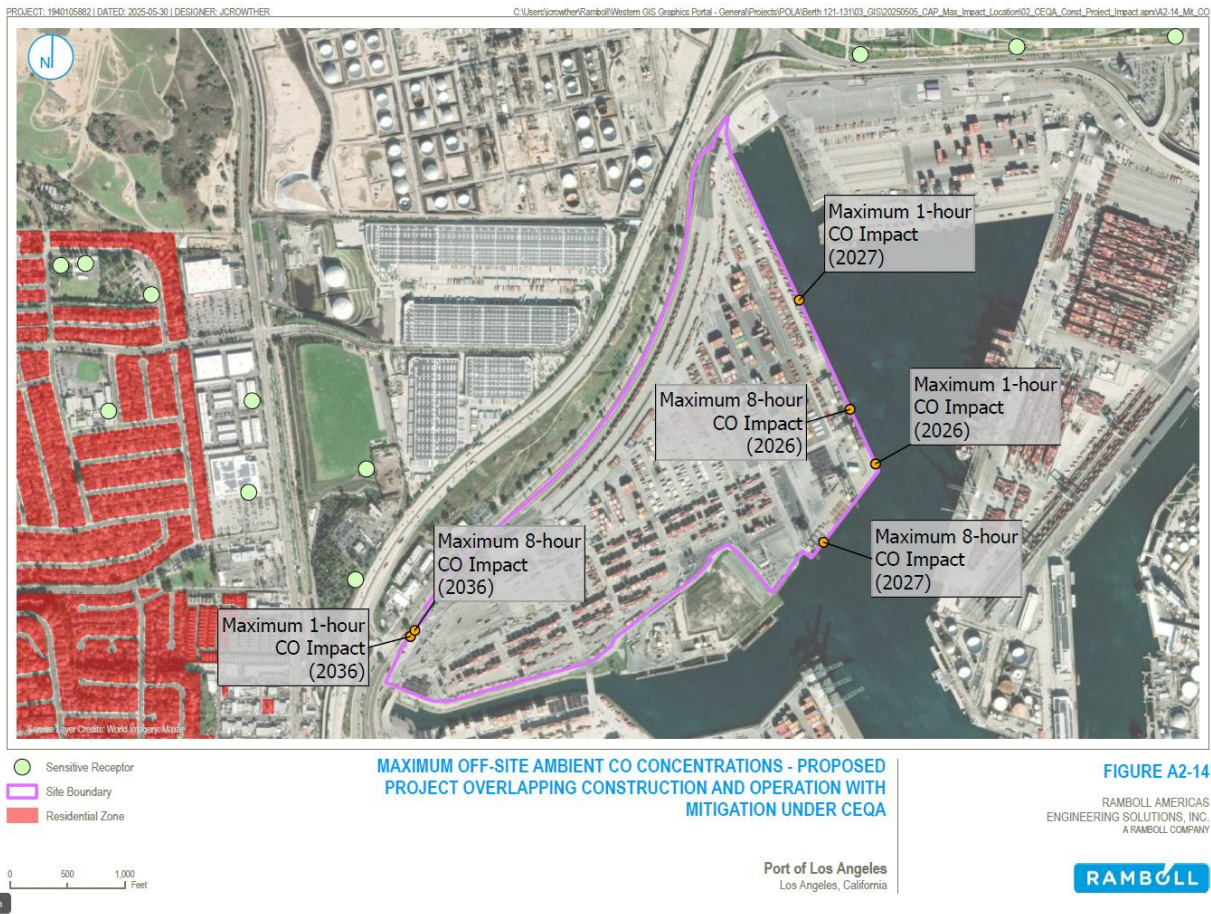


Figure A2-15. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Overlapping Construction and Operation with Mitigation under CEQA

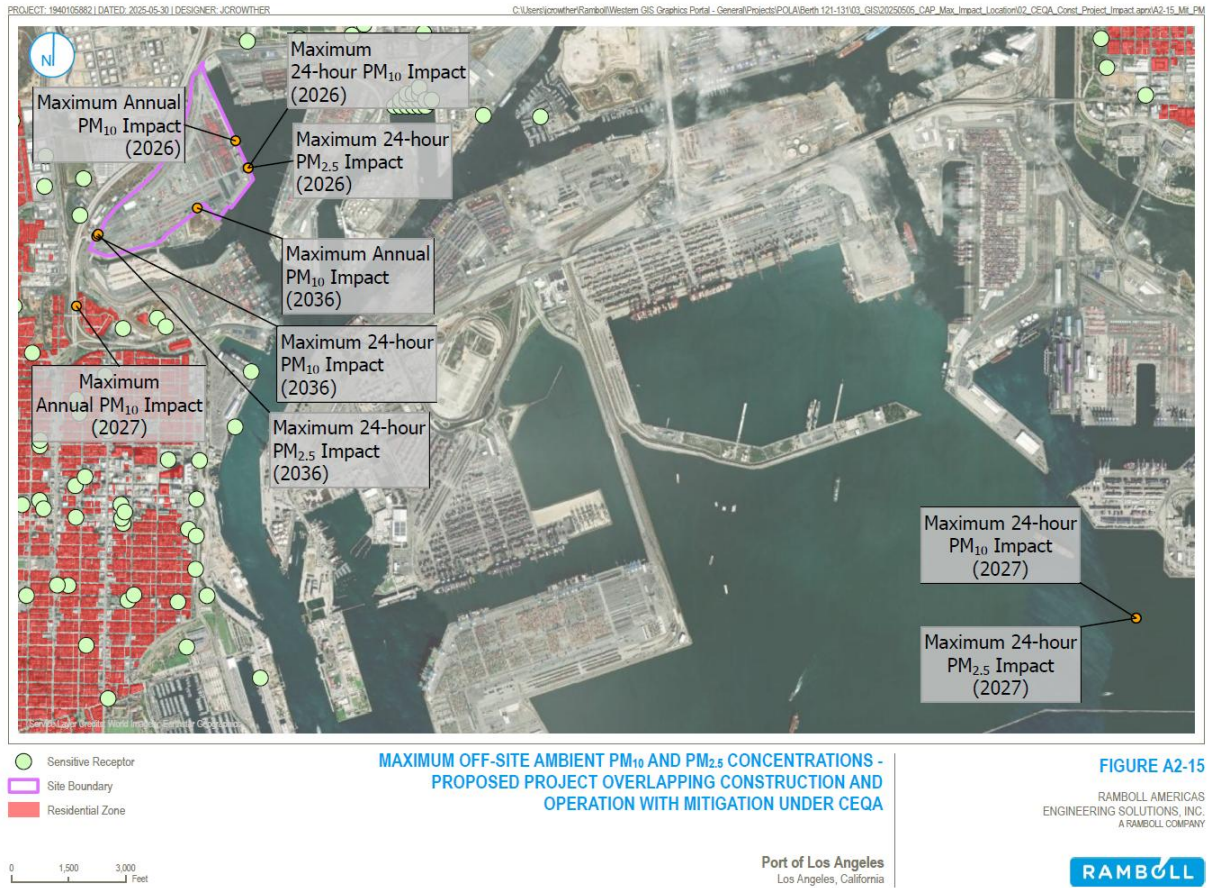


Figure A2-16. Maximum Off-site Ambient CO Concentrations – Proposed Project Construction without Mitigation under NEPA

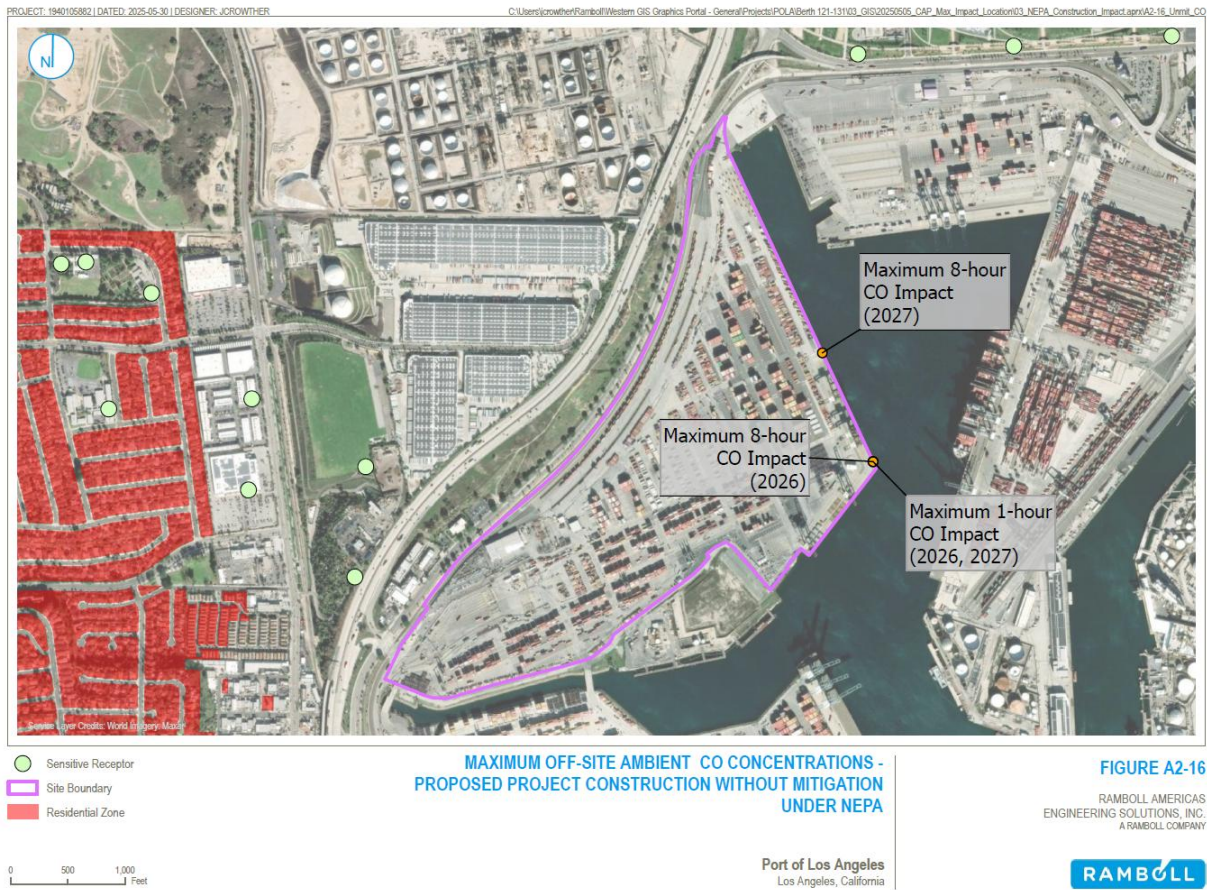


Figure A2-17. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Construction without Mitigation under NEPA

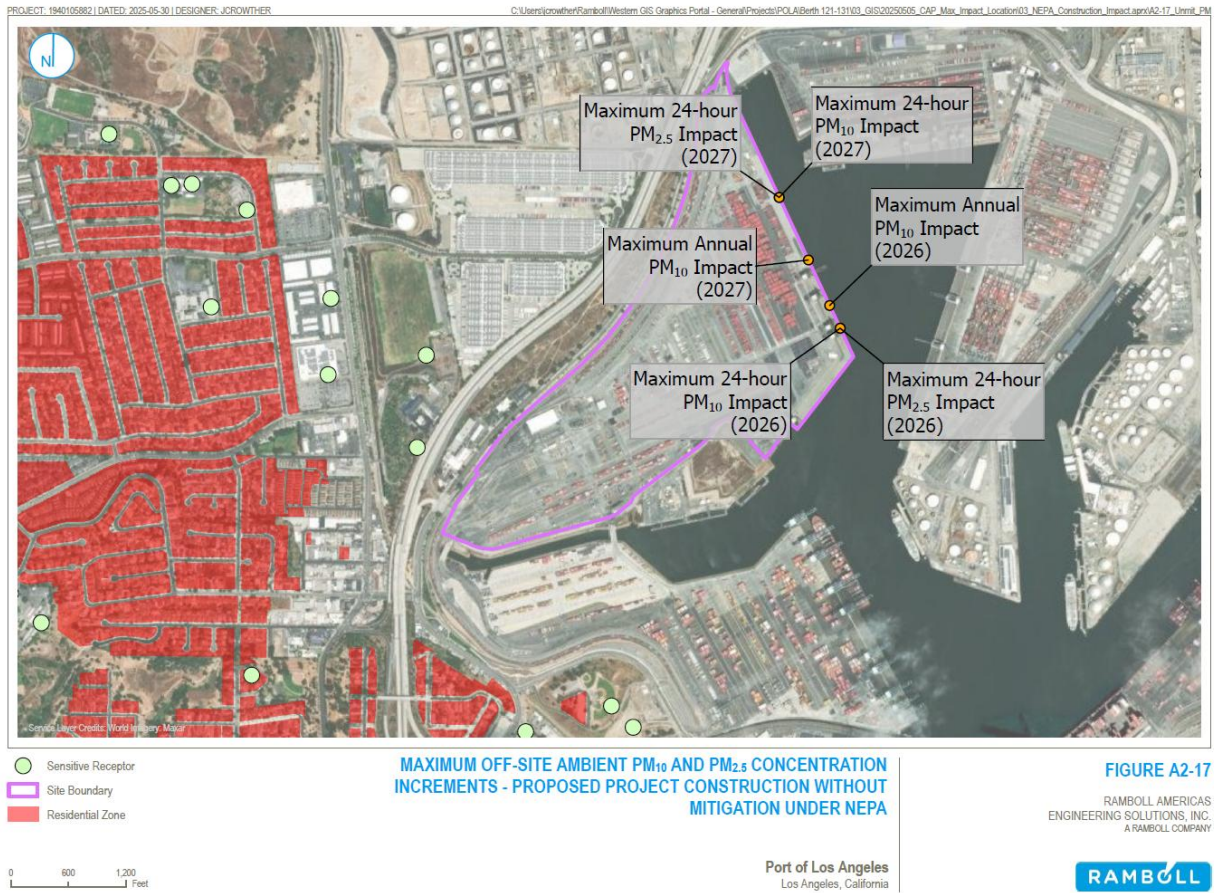


Figure A2-18. Maximum Off-site Ambient CO Concentrations – Proposed Project Construction with Mitigation under NEPA

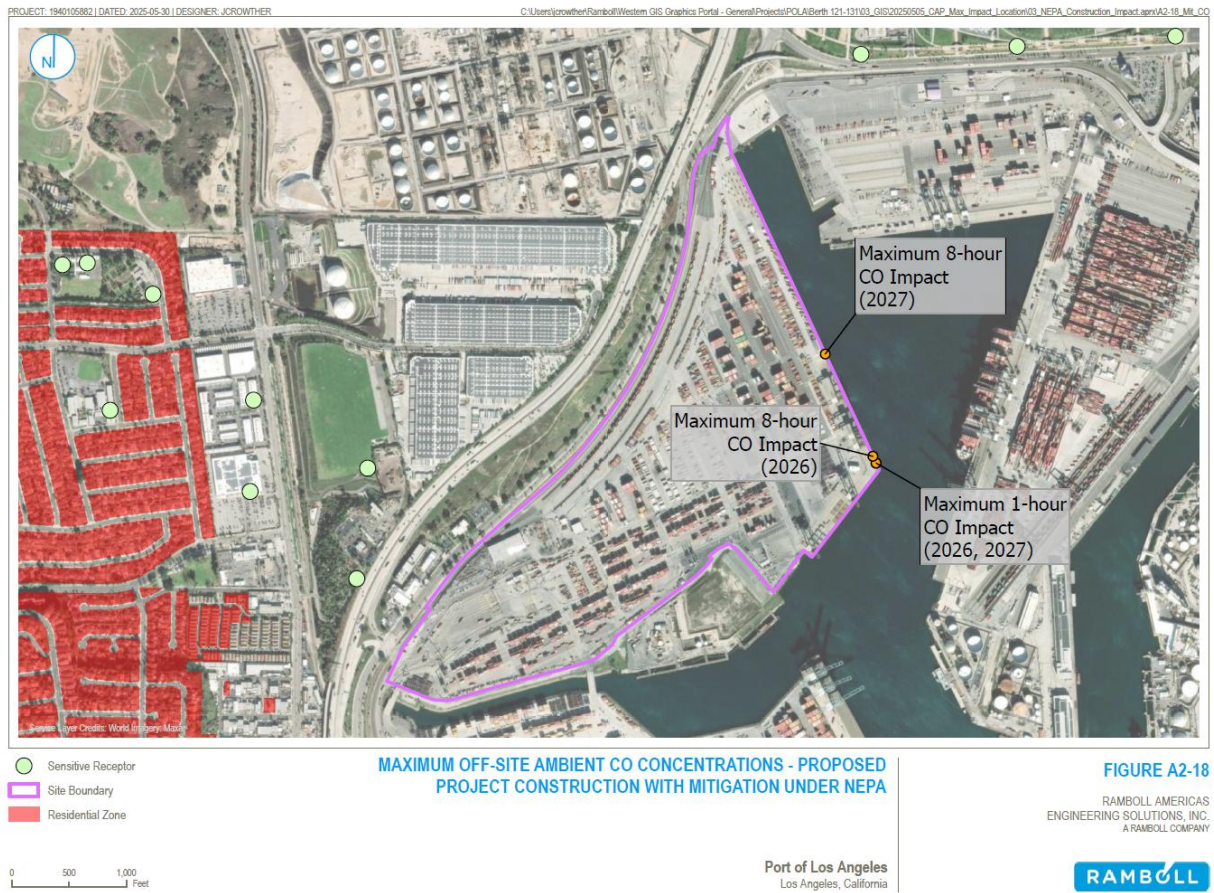


Figure A2-19. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Construction with Mitigation under NEPA

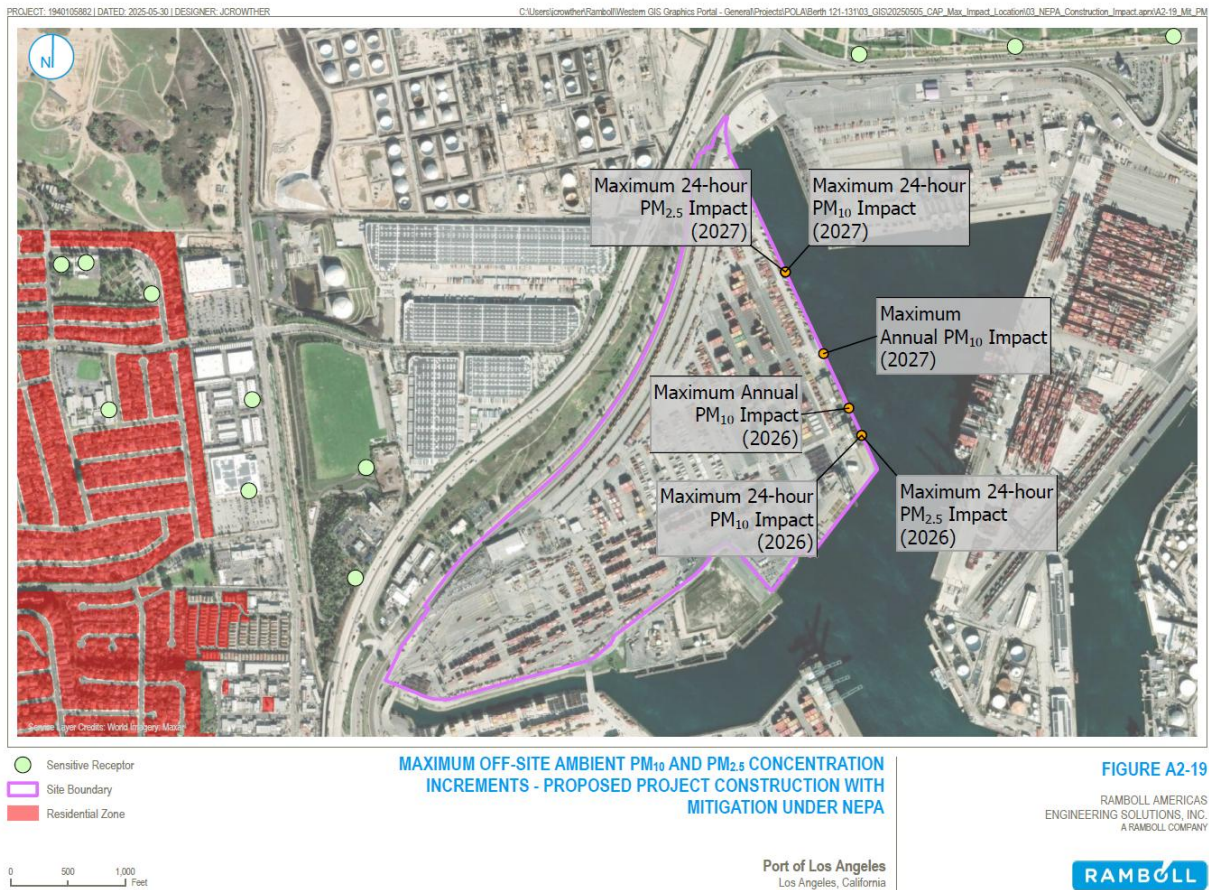


Figure A2-20. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Overlapping Construction and Operation without Mitigation under NEPA

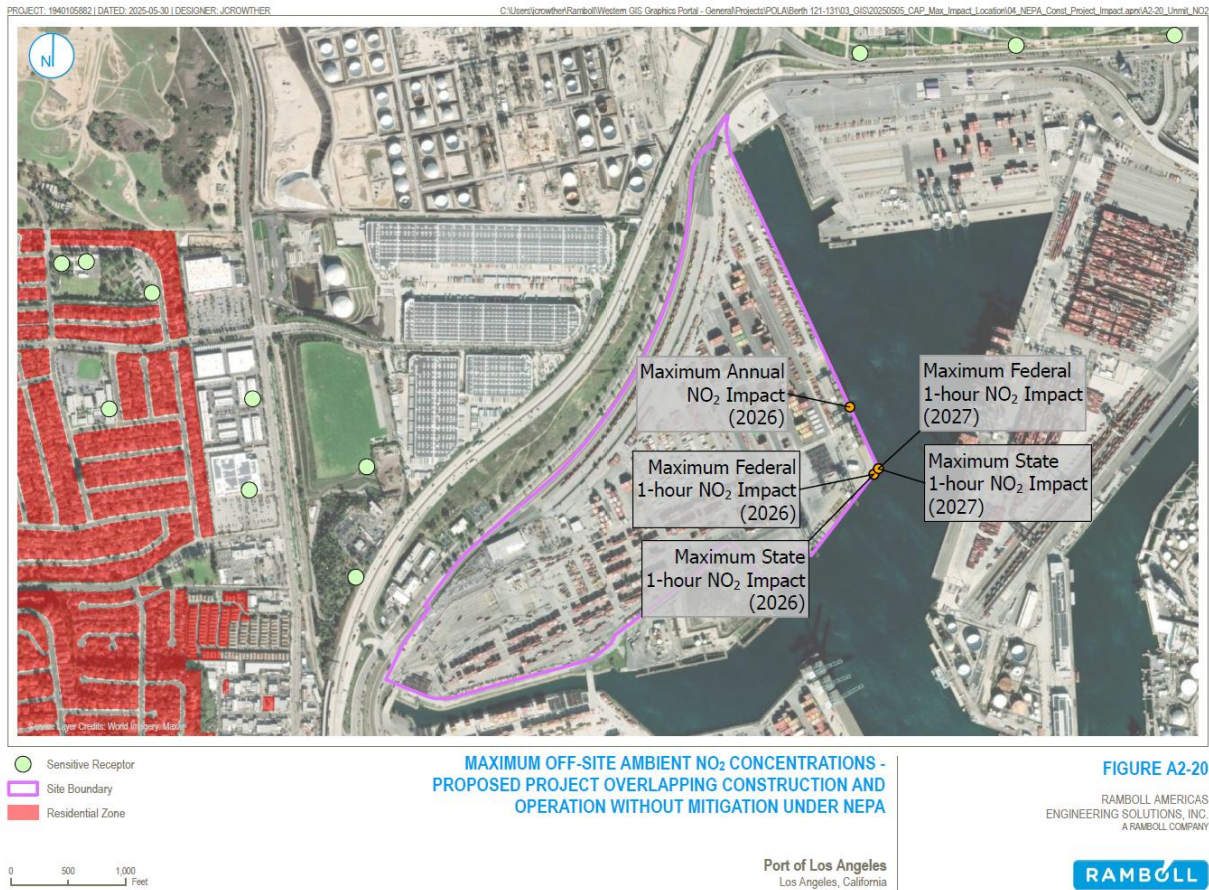


Figure A2-21. Maximum Off-site Ambient CO Concentrations – Proposed Project Overlapping Construction and Operation without Mitigation under NEPA

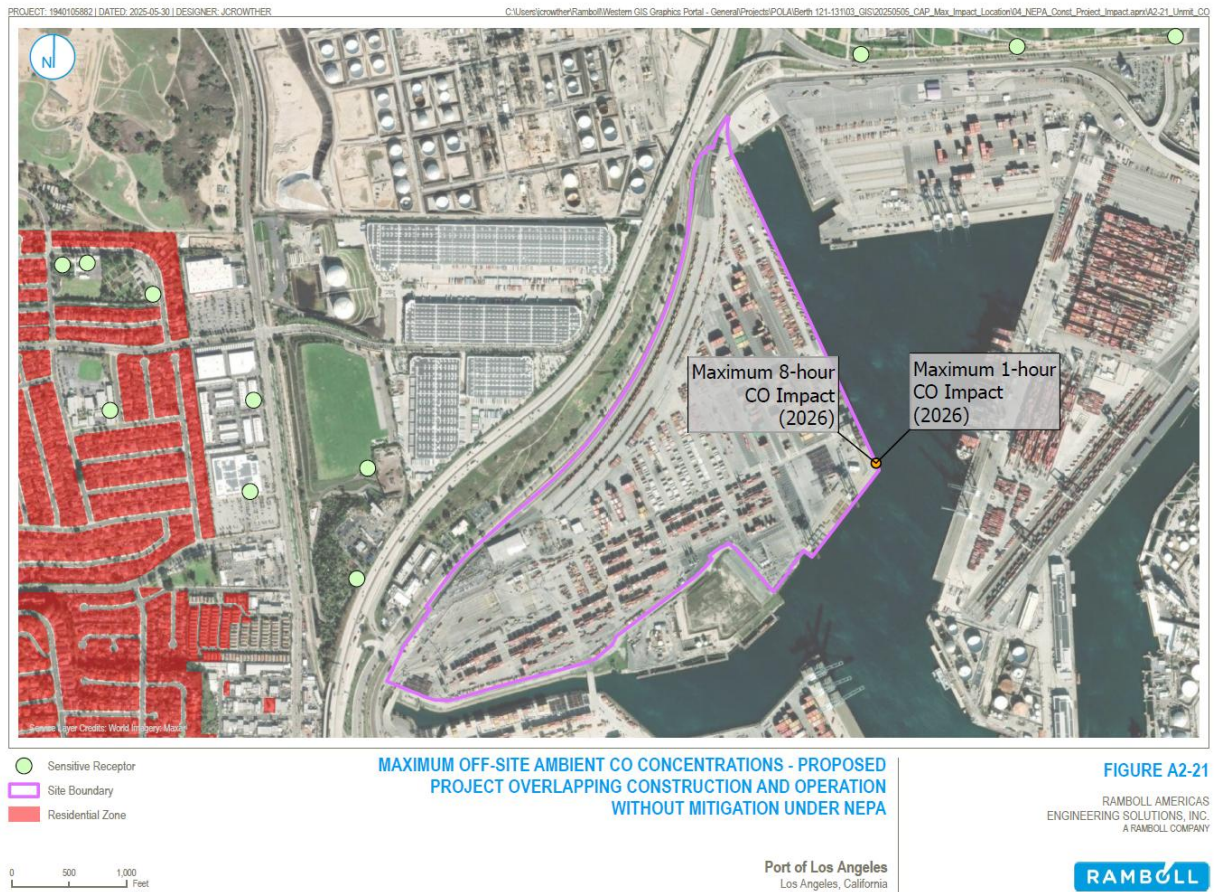


Figure A2-22. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Overlapping Construction and Operation without Mitigation under NEPA

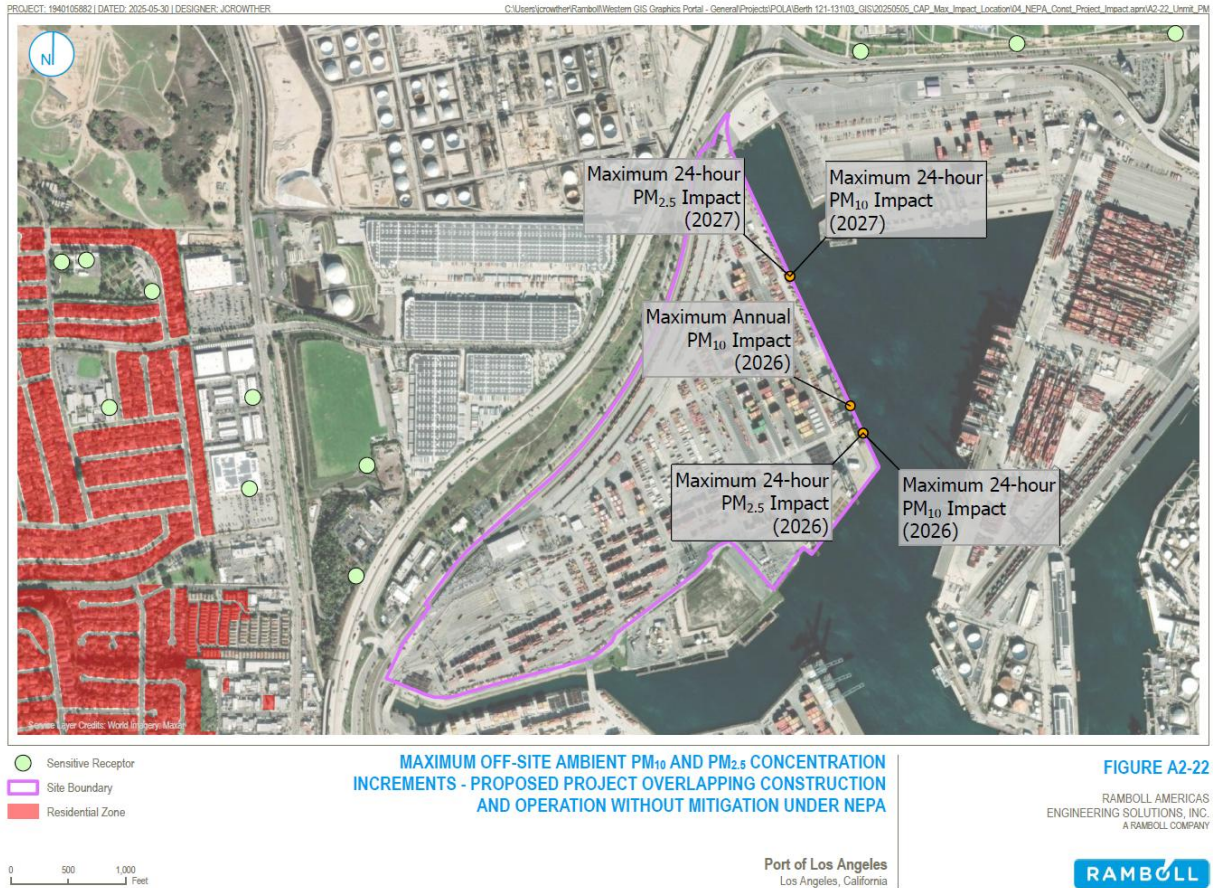


Figure A2-23. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Overlapping Construction and Operation with Mitigation under NEPA

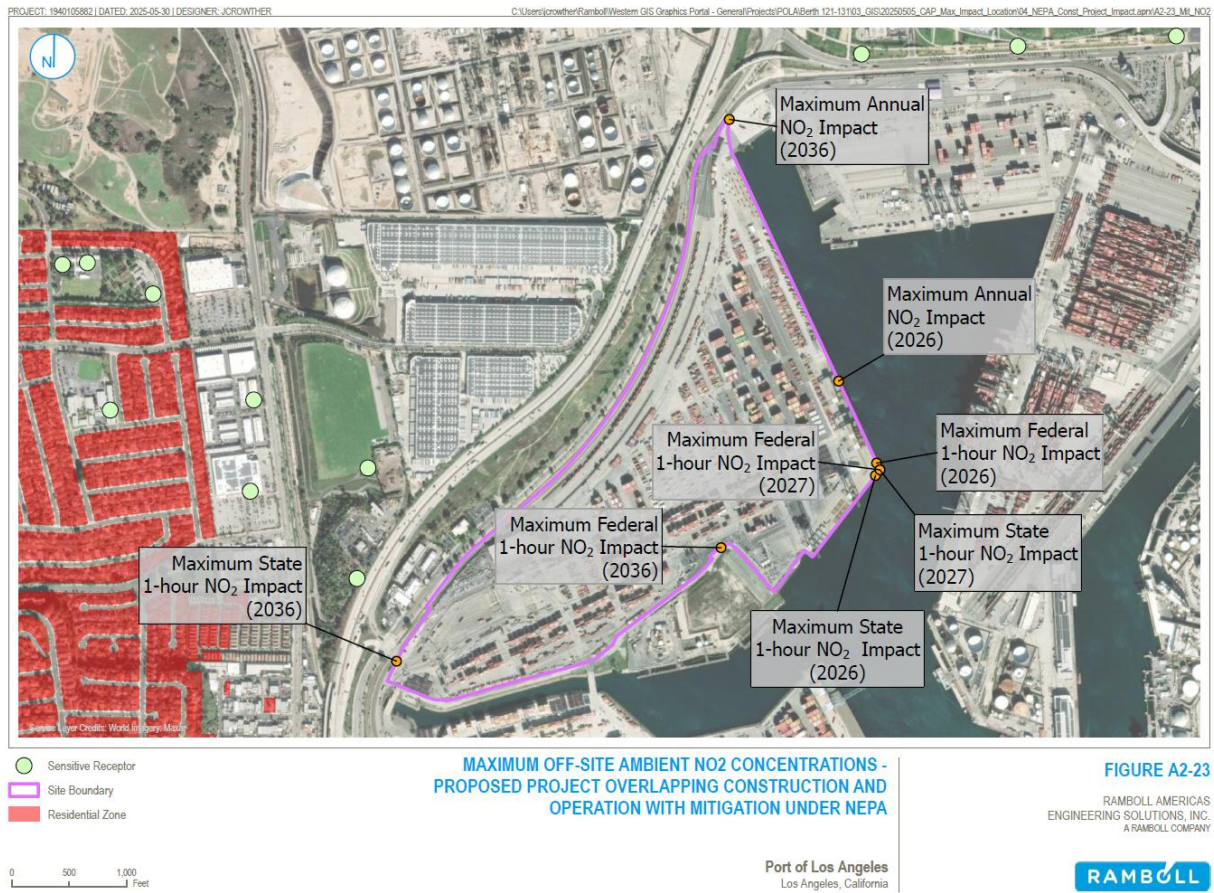


Figure A2-24. Maximum Off-site Ambient CO Concentrations – Proposed Project Overlapping Construction and Operation with Mitigation under NEPA

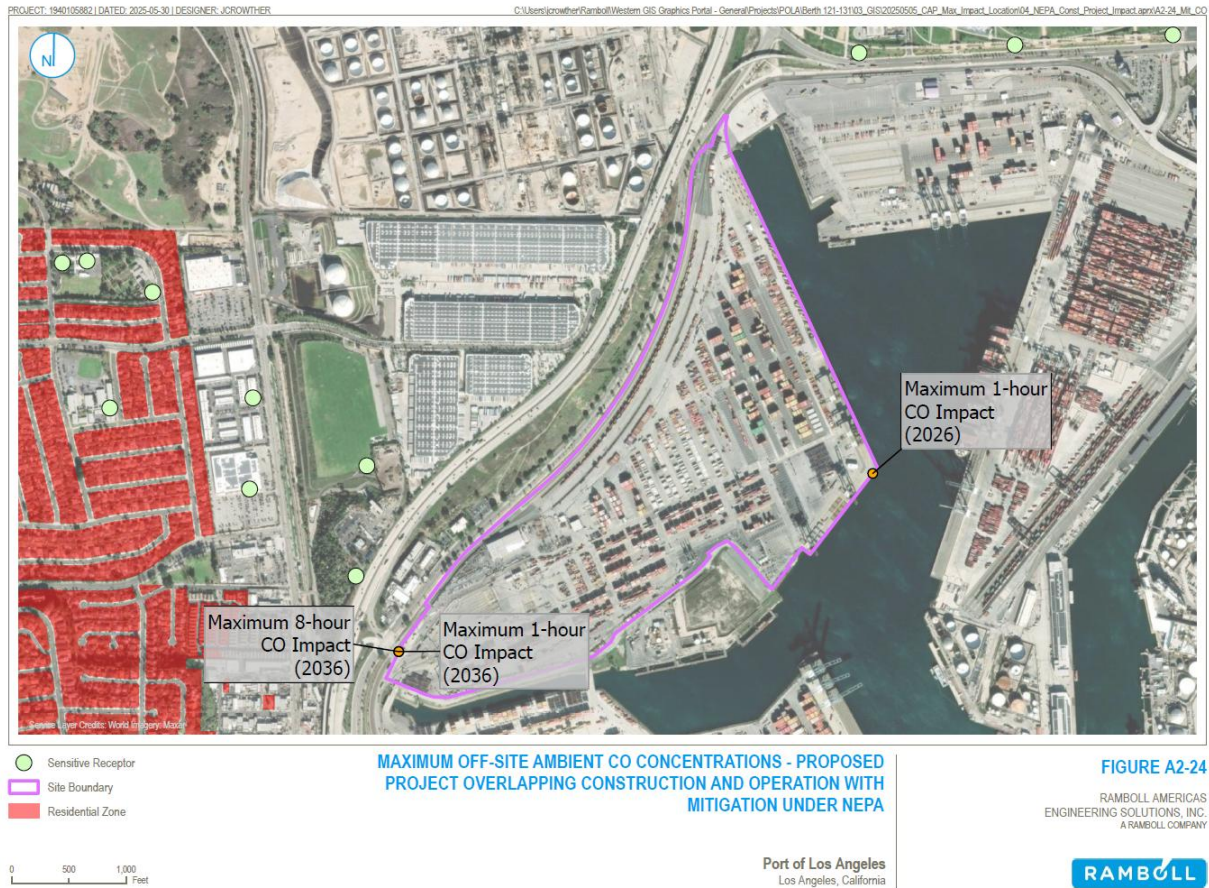
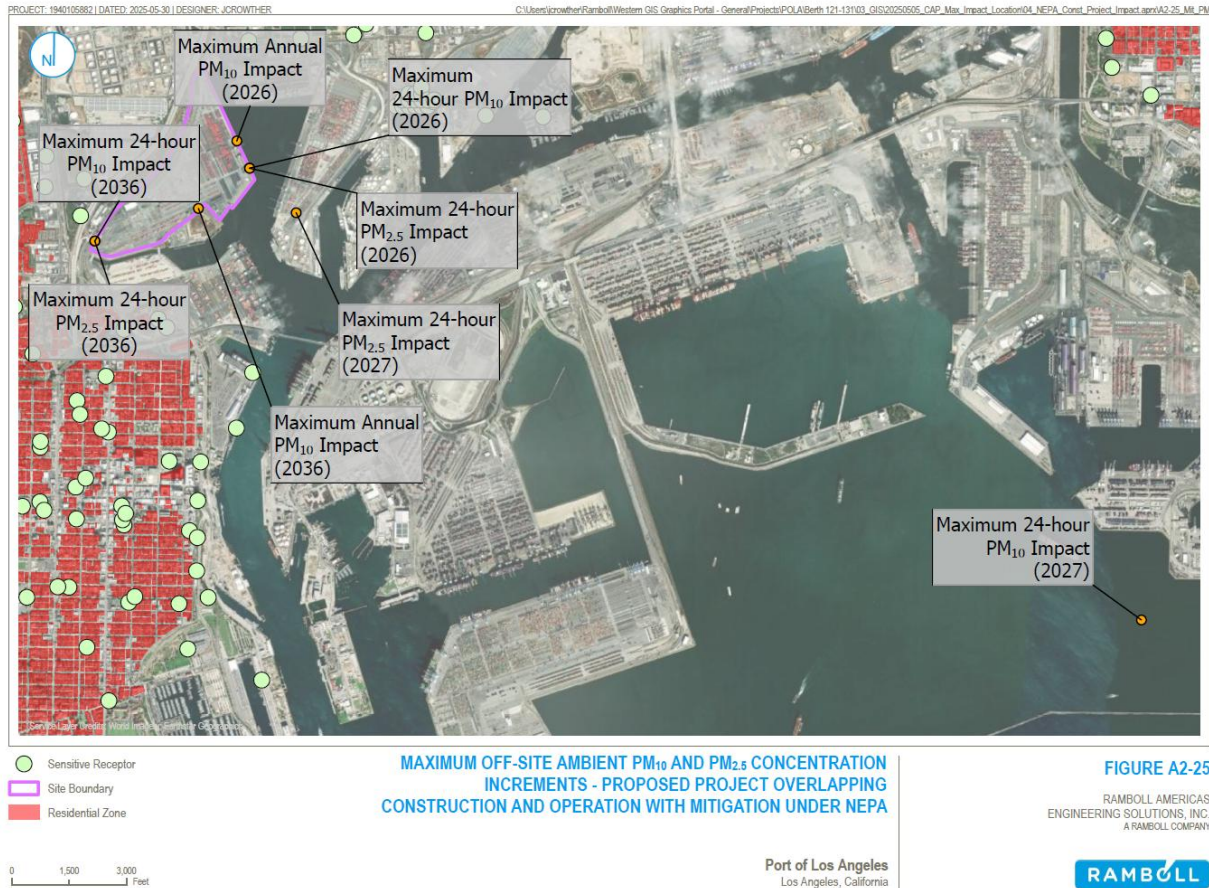


Figure A2-25. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Overlapping Construction and Operation with Mitigation under NEPA



3.3.1.2 Operational Impacts

Operational impacts were evaluated for the unmitigated and mitigated proposed Project under CEQA and under NEPA. Impacts for federal 1-hour NO₂ were modeled to represent the 98th percentile of the daily maximum 1-hour averages. Background concentrations for NO₂/CO were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School). Concentration increments represent the modeled scenario minus the CEQA or NEPA baseline. Due to maximum modeled baseline and modeled scenario concentrations potentially occurring at different receptors, scenario and baseline concentrations may not necessarily subtract to equal the presented increment. For simplification, only the increment is presented in the tables below. Additionally, exceedances of a SCAQMD threshold are indicated in bold.

The following tables summarize the AERMOD dispersion modeling results of both mitigated and unmitigated proposed Project operational emissions under CEQA & NEPA. NO₂ and CO incremental concentrations due to operation were added to background

concentrations and compared to the SCAQMD thresholds. The AERMOD modeling results for PM₁₀ and PM_{2.5} represent the incremental increases due to the project relative to the CEQA and NEPA baselines and were compared directly to the SCAQMD thresholds without adding a background concentration.

Table A2-26. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	37	134	188	No
		2028	97	36	133	188	No
		2036	97	9	106	188	No
		2050	97	2	99	188	No
		2055	97	2	99	188	No
		2062	97	2	99	188	No
	State 1-hour ^a	2027	113	44	157	339	No
		2028	113	42	155	339	No
		2036	113	10	123	339	No
		2050	113	5	118	339	No
		2055	113	5	118	339	No
		2062	113	5	118	339	No
	Annual	2027	26	-0.02	26	57	No
		2028	26	2	28	57	No
		2036	26	6	32	57	No
		2050	26	3	29	57	No
		2055	26	3	29	57	No
		2062	26	3	29	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-27. Maximum Off-Site Ambient CO Concentrations - Proposed Project Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	389	9,210	23,000	No
		2028	8,821	2,155	10,976	23,000	No
		2036	8,821	2,643	11,464	23,000	No
		2050	8,821	4,790	13,612	23,000	No
		2055	8,821	4,790	13,612	23,000	No
		2062	8,821	4,790	13,612	23,000	No
	8-hour	2027	2,749	247	2,996	23,000	No
		2028	2,749	1,364	4,113	23,000	No
		2036	2,749	1,667	4,416	23,000	No
		2050	2,749	3,044	5,793	23,000	No
		2055	2,749	3,044	5,793	23,000	No
		2062	2,749	3,044	5,793	23,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-28. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Unmitigated Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.1	2.5	No
		2028	2	2.5	No
		2036	3.2	2.5	Yes
		2050	5.7	2.5	Yes
		2055	5.7	2.5	Yes
		2062	5.7	2.5	Yes
	Annual	2027	0.01	1	No
		2028	0.7	1	No
		2036	1.1	1	Yes

Pollutant	Averaging Period	Analysis Year	Maximum Unmitigated Modeled Project Concentration Increment ($\mu\text{g}/\text{m}^3$) ^{b,c}	Significance Threshold ($\mu\text{g}/\text{m}^3$) ^d	Threshold Exceeded?
		2050	2.0	1	Yes
		2055	2.0	1	Yes
		2062	2.0	1	Yes
PM _{2.5}	24-hour	2027	0.1	2.5	No
		2028	0.8	2.5	No
		2036	1.2	2.5	No
		2050	2.2	2.5	No
		2055	2.2	2.5	No
		2062	2.2	2.5	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-29. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Operations with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b ($\mu\text{g}/\text{m}^3$)	Maximum Unmitigated Modeled Project Concentration Increment ^{c,e} ($\mu\text{g}/\text{m}^3$)	Total Concentration ^d ($\mu\text{g}/\text{m}^3$)	Significance Threshold ($\mu\text{g}/\text{m}^3$)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	36	133	188	No
		2028	97	34	131	188	No
		2036	97	9	106	188	No
		2050	97	0.5	98	188	No
		2055	97	0.5	98	188	No
		2062	97	0.5	98	188	No
	State 1-hour ^a	2027	113	41	154	339	No
		2028	113	40	153	339	No
		2036	113	10	123	339	No
		2050	113	1	113	339	No
		2055	113	1	113	339	No
		2062	113	1	113	339	No
Annual	2027	26	-0.02	26	57	No	

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
		2028	26	1	28	57	No
		2036	26	5	32	57	No
		2050	26	2	28	57	No
		2055	26	2	28	57	No
		2062	26	2	28	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-30. Maximum Off-Site Ambient CO Concentrations - Proposed Project Operations with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	389	9,210	23,000	No
		2028	8,821	27	8,849	23,000	No
		2036	8,821	93	8,914	23,000	No
		2050	8,821	81	8,902	23,000	No
		2055	8,821	81	8,902	23,000	No
		2062	8,821	81	8,902	23,000	No
	8-hour	2027	2,749	247	2,996	10,000	No
		2028	2,749	13	2,762	10,000	No
		2036	2,749	23	2,772	10,000	No
		2050	2,749	43	2,792	10,000	No
		2055	2,749	43	2,792	10,000	No
		2062	2,749	43	2,792	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
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^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-31. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Operations with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Mitigated Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.1	2.5	No
		2028	1.1	2.5	No
		2036	5.9	2.5	Yes
		2050	4.2	2.5	Yes
		2055	4.2	2.5	Yes
		2062	4.2	2.5	Yes
	Annual	2027	0.01	1	No
		2028	0.4	1	No
		2036	0.7	1	No
		2050	1.3	1	Yes
		2055	1.3	1	Yes
		2062	1.3	1	Yes
PM _{2.5}	24-hour	2027	0.1	2.5	No
		2028	0.2	2.5	No
		2036	2.1	2.5	No
		2050	0.6	2.5	No
		2055	0.6	2.5	No
		2062	0.6	2.5	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-32. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Operations without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	71	168	188	No
		2028	97	79	177	188	No
		2036	97	66	163	188	No
		2050	97	101	198	188	No
		2055	97	101	198	188	No
		2062	97	101	198	188	No
	State 1-hour ^a	2027	113	82	195	339	No
		2028	113	83	196	339	No
		2036	113	64	177	339	No
		2050	113	109	222	339	No
		2055	113	109	222	339	No
		2062	113	109	222	339	No
	Annual	2027	26	-0.002	26	57	No
		2028	26	4	30	57	No
		2036	26	5	31	57	No
		2050	26	5	31	57	No
		2055	26	5	31	57	No
		2062	26	5	31	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-33. Maximum Off-Site Ambient CO Concentrations - Proposed Project Operations without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Unmitigated Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	142	8,963	23,000	No
		2028	8,821	1,212	10,033	23,000	No
		2036	8,821	1,506	10,327	23,000	No
		2050	8,821	2,591	11,412	23,000	No
		2055	8,821	2,172	10,993	23,000	No
		2062	8,821	1,504	10,325	23,000	No
	8-hour	2027	2,749	26	2,776	10,000	No
		2028	2,749	768	3,517	10,000	No
		2036	2,749	950	3,699	10,000	No
		2050	2,749	1,646	4,396	10,000	No
		2055	2,749	1,380	4,130	10,000	No
		2062	2,749	956	3,705	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-34. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Operations without Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.01	2.5	No
		2028	1.8	2.5	No
		2036	2.5	2.5	Yes
		2050	3.9	2.5	Yes
		2055	3.3	2.5	Yes
		2062	2.4	2.5	No
	Annual	2027	-0.0001	1	No
		2028	0.6	1	No
		2036	0.9	1	No
		2050	1.3	1	Yes

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM _{2.5}		2055	1.1	1	Yes
		2062	0.8	1	No
	24-hour	2027	0.01	2.5	No
		2028	0.7	2.5	No
		2036	1.0	2.5	No
		2050	1.5	2.5	No
		2055	1.3	2.5	No
2062	0.9	2.5	No		

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-35. Maximum Off-Site Ambient NO₂ Concentrations - Proposed Project Operations with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	61	158	188	No
		2028	97	28	126	188	No
		2036	97	32	129	188	No
		2050	97	17	114	188	No
		2055	97	17	114	188	No
		2062	97	17	114	188	No
	State 1-hour ^a	2027	113	69	181	339	No
		2028	113	32	145	339	No
		2036	113	67	180	339	No
		2050	113	23	136	339	No
		2055	113	23	136	339	No
		2062	113	23	136	339	No
	Annual	2027	26	-0.003	26	57	No
		2028	26	2	29	57	No

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
		2036	26	4	30	57	No
		2050	26	2	28	57	No
		2055	26	2	28	57	No
		2062	26	2	28	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-36. Maximum Off-Site Ambient CO Concentrations - Proposed Project Operations with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Mitigated Modeled Project Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	128	8,949	23,000	No
		2028	8,821	153	8,974	23,000	No
		2036	8,821	115	8,936	23,000	No
		2050	8,821	160	8,981	23,000	No
		2055	8,821	135	8,956	23,000	No
		2062	8,821	94	8,915	23,000	No
	8-hour	2027	2,749	24	2,773	10,000	No
		2028	2,749	80	2,829	10,000	No
		2036	2,749	59	2,808	10,000	No
		2050	2,749	83	2,832	10,000	No
		2055	2,749	70	2,819	10,000	No
		2062	2,749	50	2,799	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-37. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Proposed Project Operations with Mitigation under NEPA

Pollutant	Averaging Period	Analysis Year	Maximum Mitigated Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.01	2.5	No
		2028	1.6	2.5	No
		2036	2.3	2.5	No
		2050	3.7	2.5	Yes
		2055	3.1	2.5	Yes
		2062	2.2	2.5	No
	Annual	2027	-0.0001	1	No
		2028	0.5	1	No
		2036	0.6	1	No
		2050	1.0	1	No
		2055	0.8	1	No
		2062	0.6	1	No
PM _{2.5}	24-hour	2027	0.01	2.5	No
		2028	0.4	2.5	No
		2036	0.5	2.5	No
		2050	0.8	2.5	No
		2055	0.6	2.5	No
		2062	0.4	2.5	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

The following figures display the locations of the peak AERMOD dispersion modeling results of both mitigated and unmitigated proposed Project operational incremental pollutant concentrations under CEQA & NEPA. The receptor locations with modeled concentration increments less than zero are not shown.

Figure A2-26. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Operations without Mitigation under CEQA

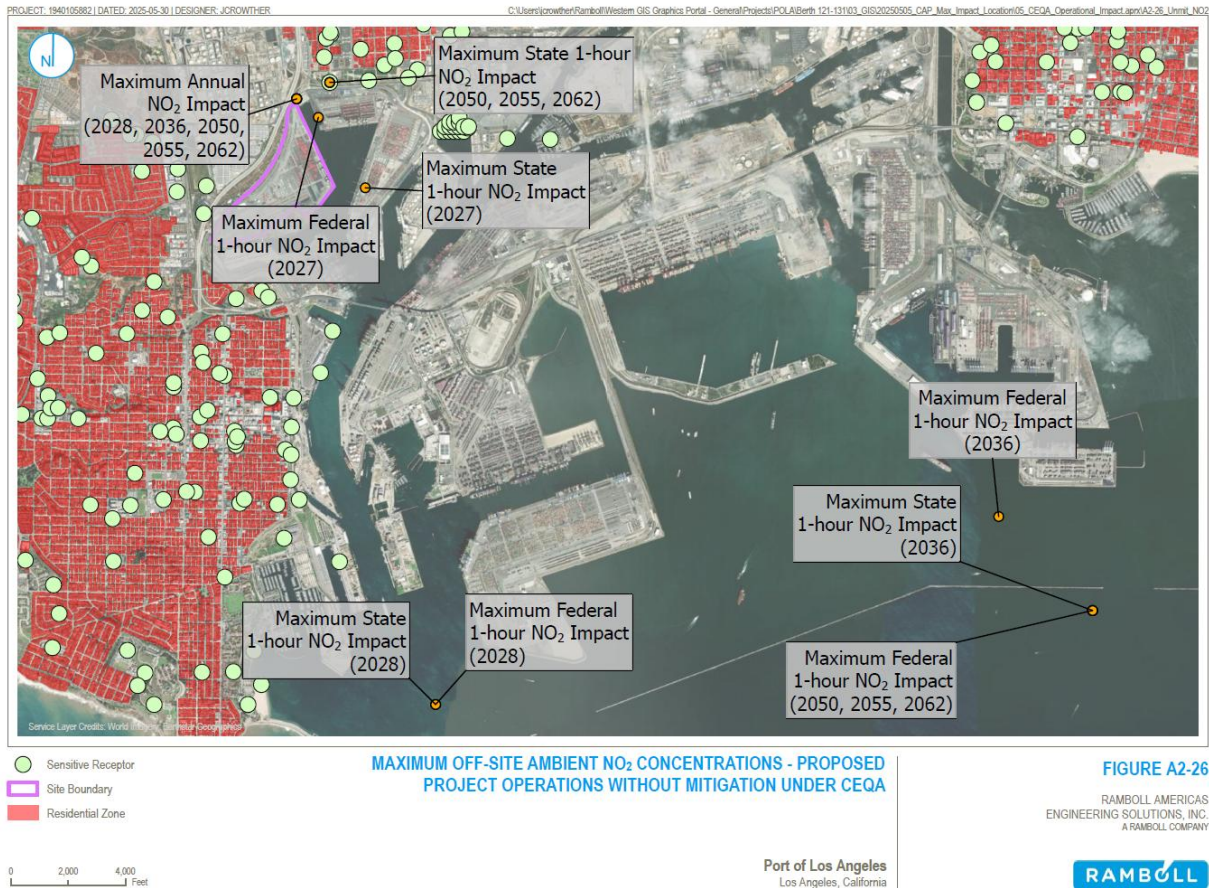


Figure A2-27. Maximum Off-site Ambient CO Concentrations – Proposed Project Operations without Mitigation under CEQA

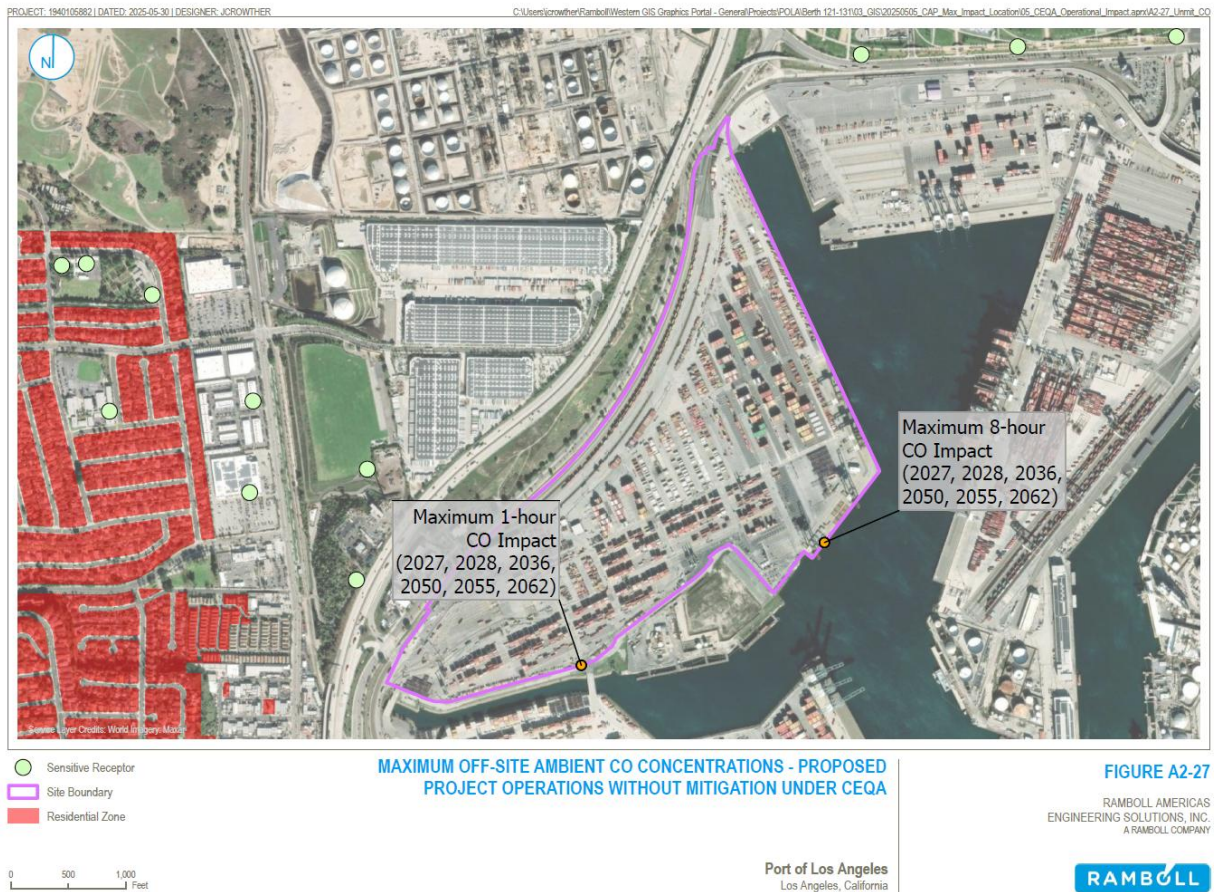


Figure A2-28. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Operations without Mitigation under CEQA

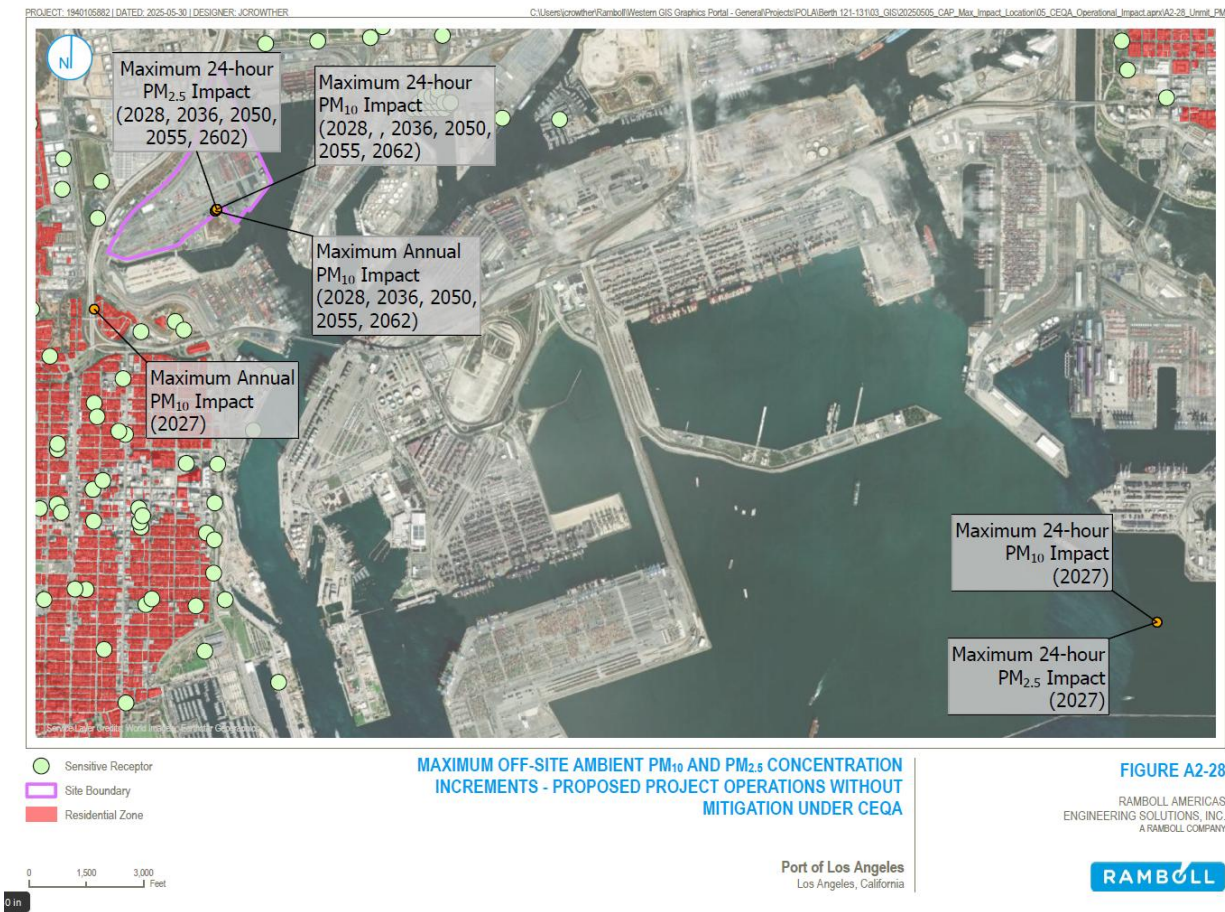


Figure A2-29. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Operations with Mitigation under CEQA

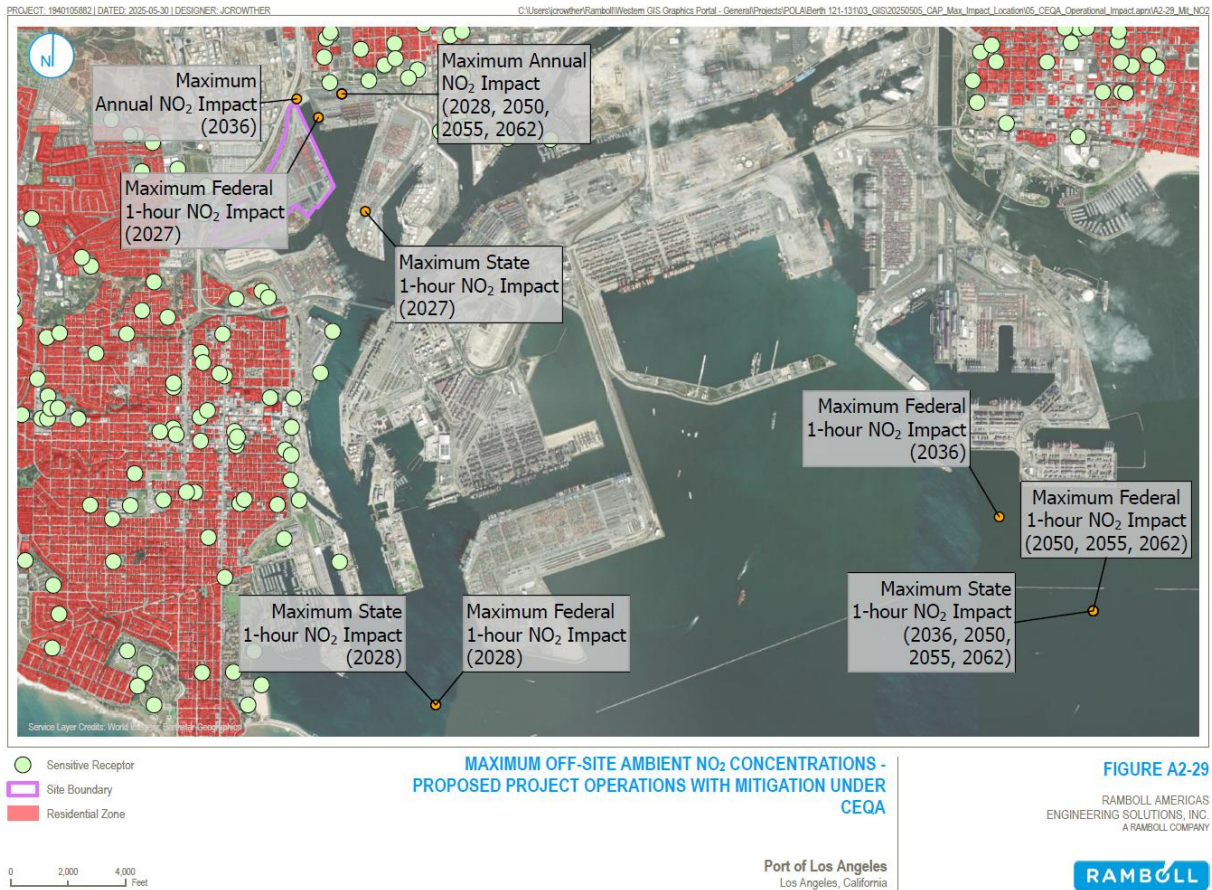


Figure A2-30. Maximum Off-site Ambient CO Concentrations – Proposed Project Operations with Mitigation under CEQA

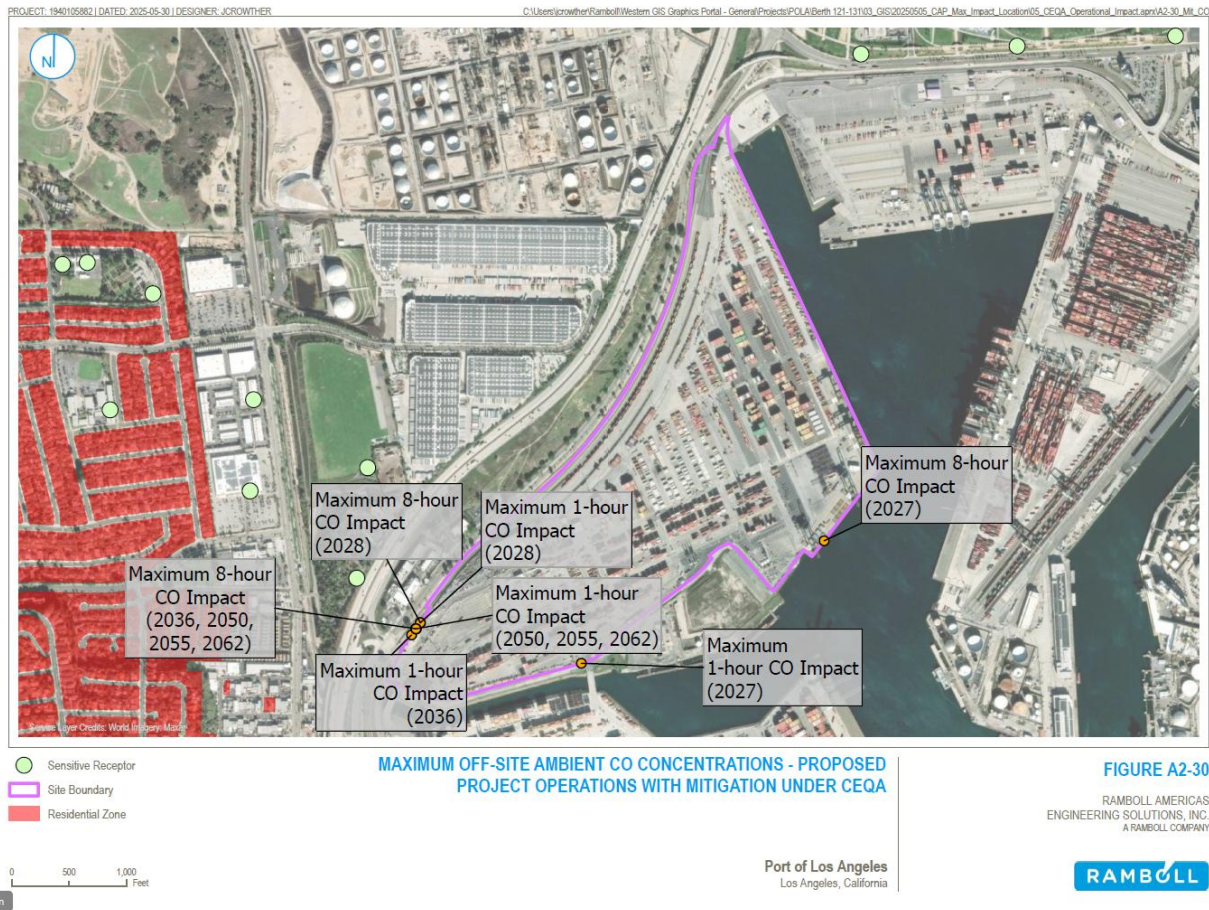


Figure A2-31. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments Concentrations – Proposed Project Operations with Mitigation under CEQA

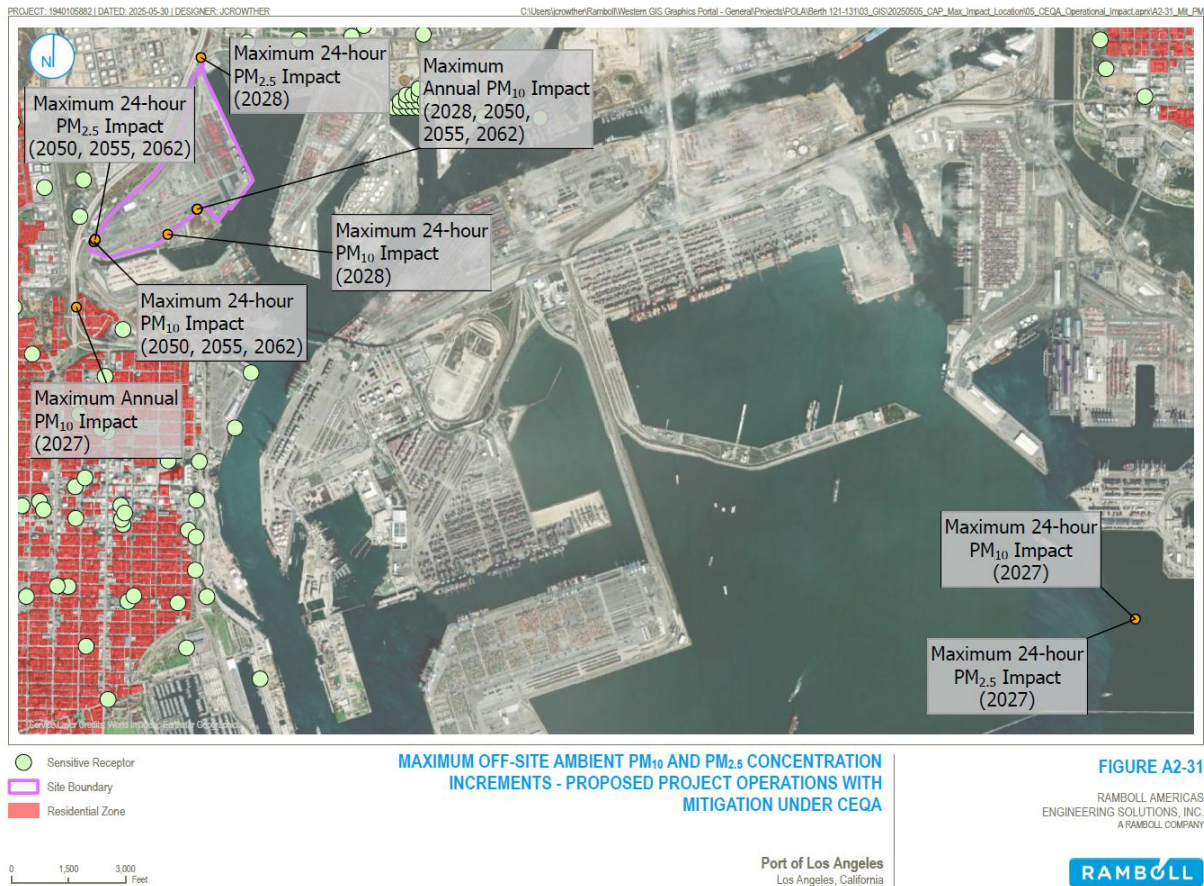


Figure A2-32. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Operations without Mitigation under NEPA

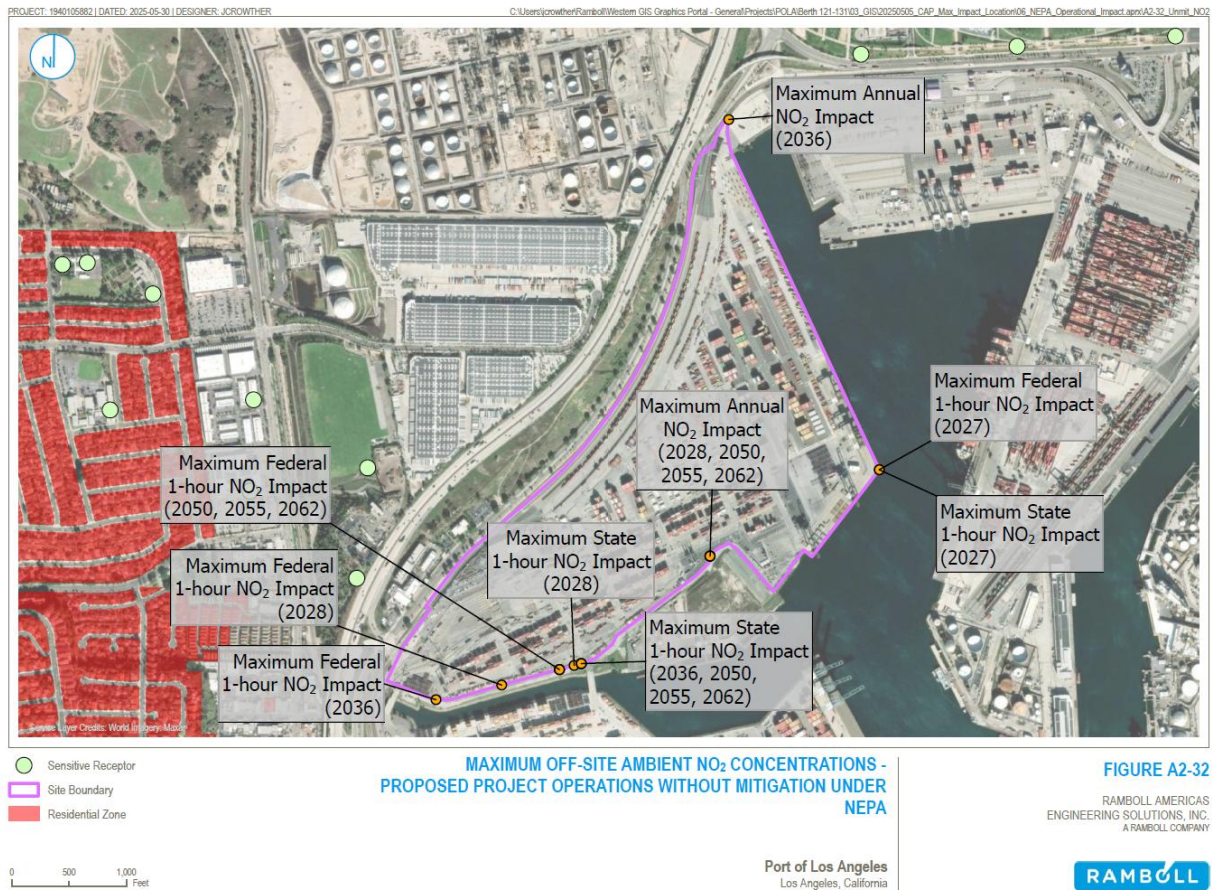


Figure A2-33. Maximum Off-site Ambient CO Concentrations – Proposed Project Operations without Mitigation under NEPA

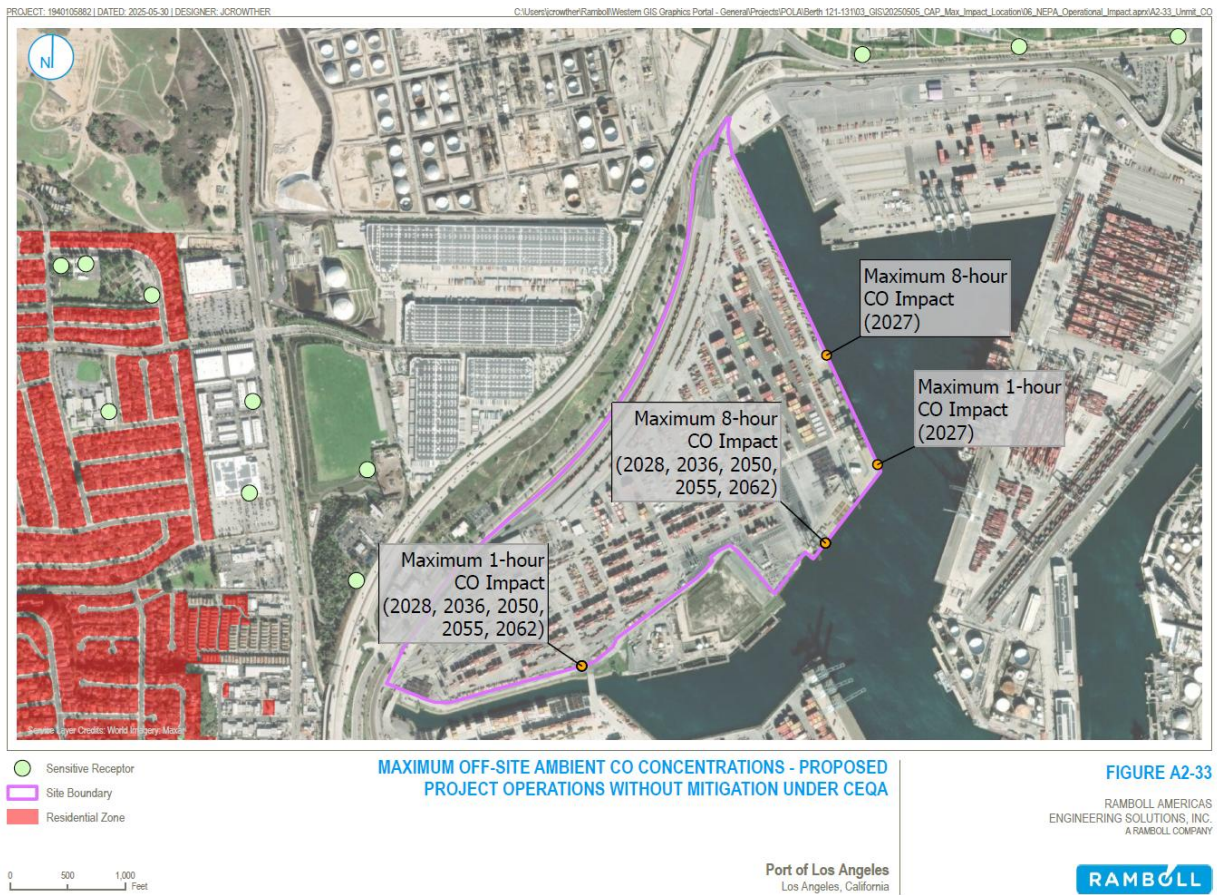


Figure A2-34. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments – Proposed Project Operations without Mitigation under NEPA

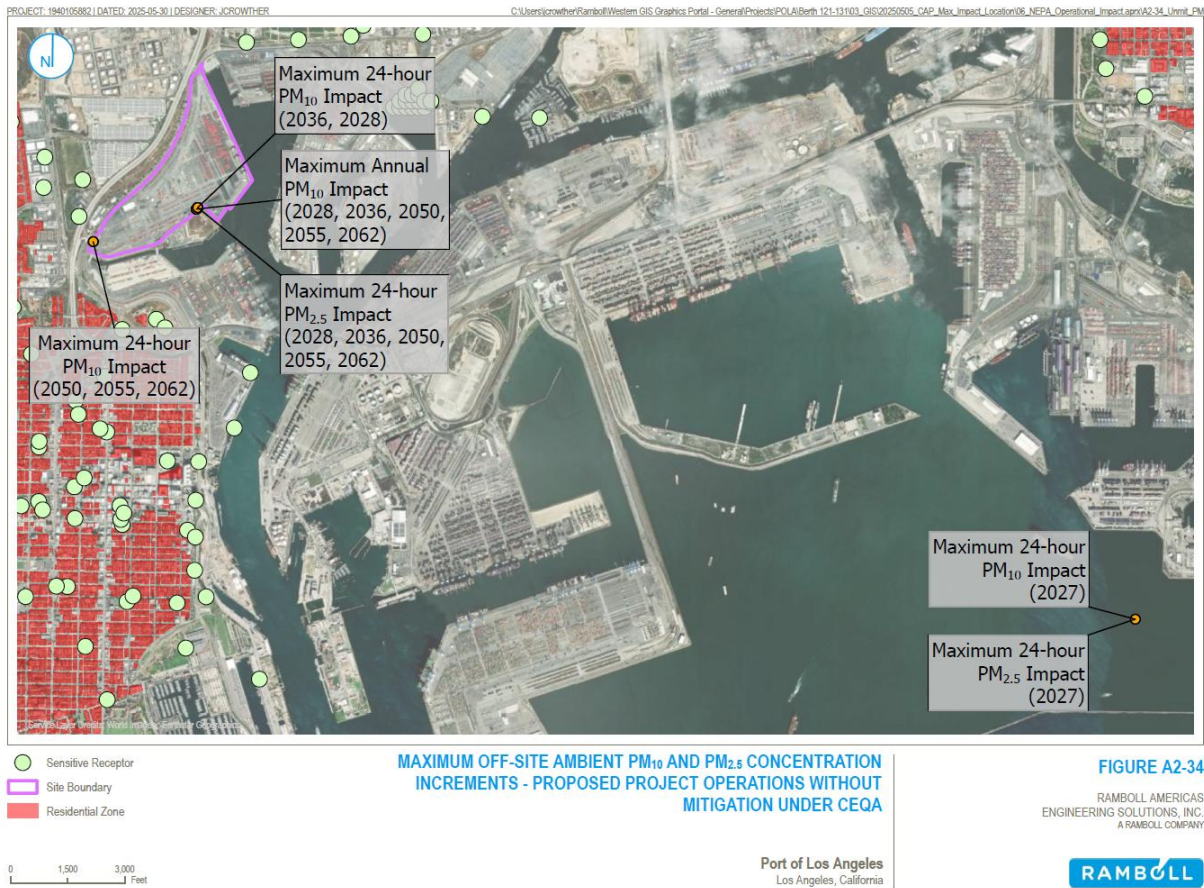


Figure A2-35. Maximum Off-site Ambient NO₂ Concentrations – Proposed Project Operations with Mitigation under NEPA

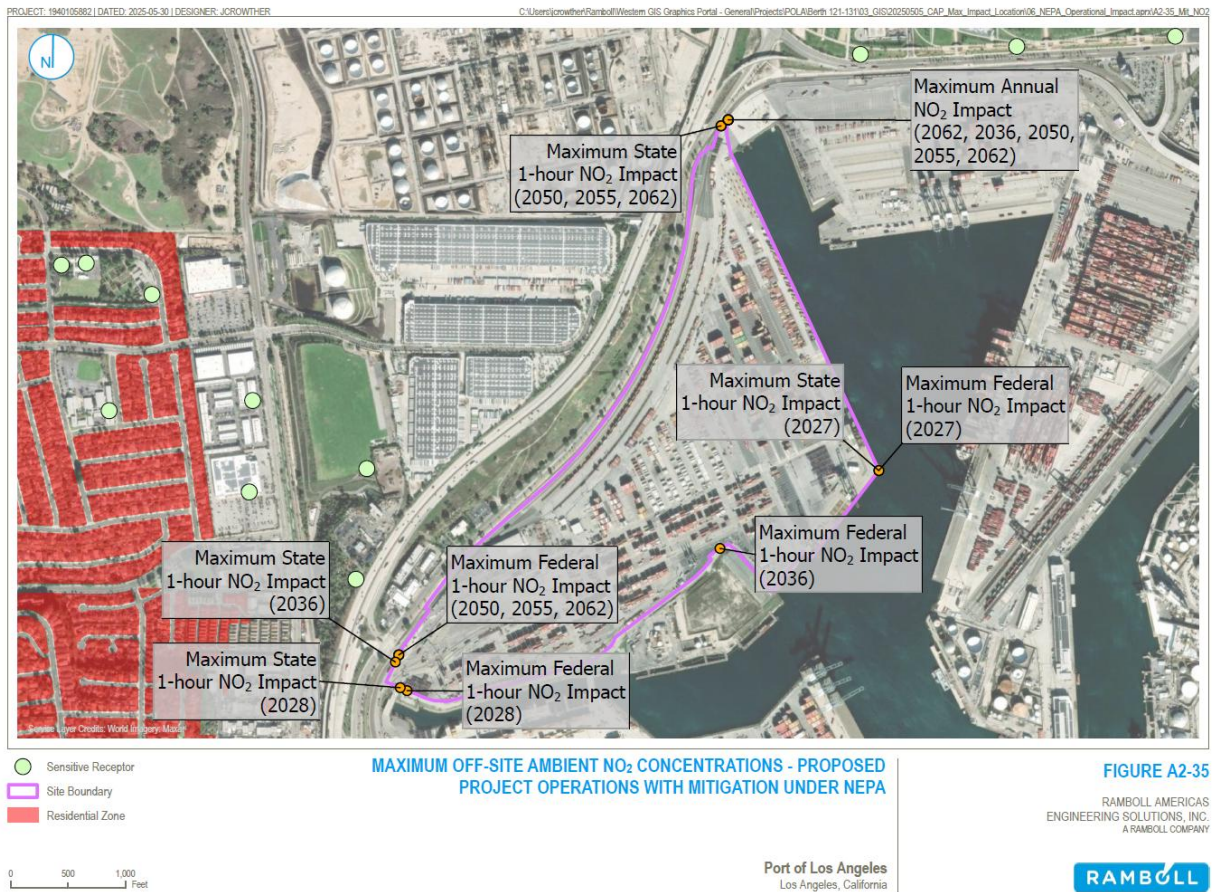


Figure A2-36. Maximum Off-site Ambient CO Concentrations – Proposed Project Operations with Mitigation under NEPA

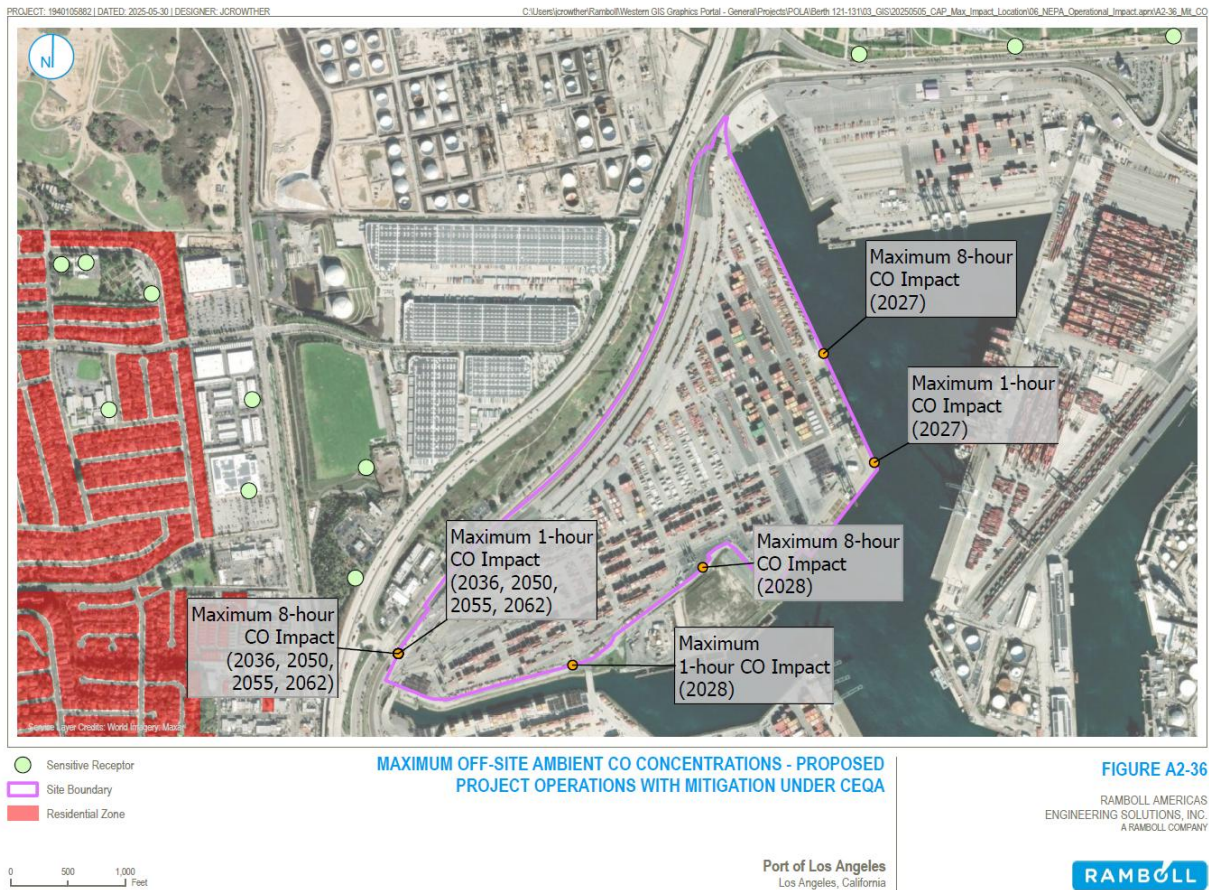
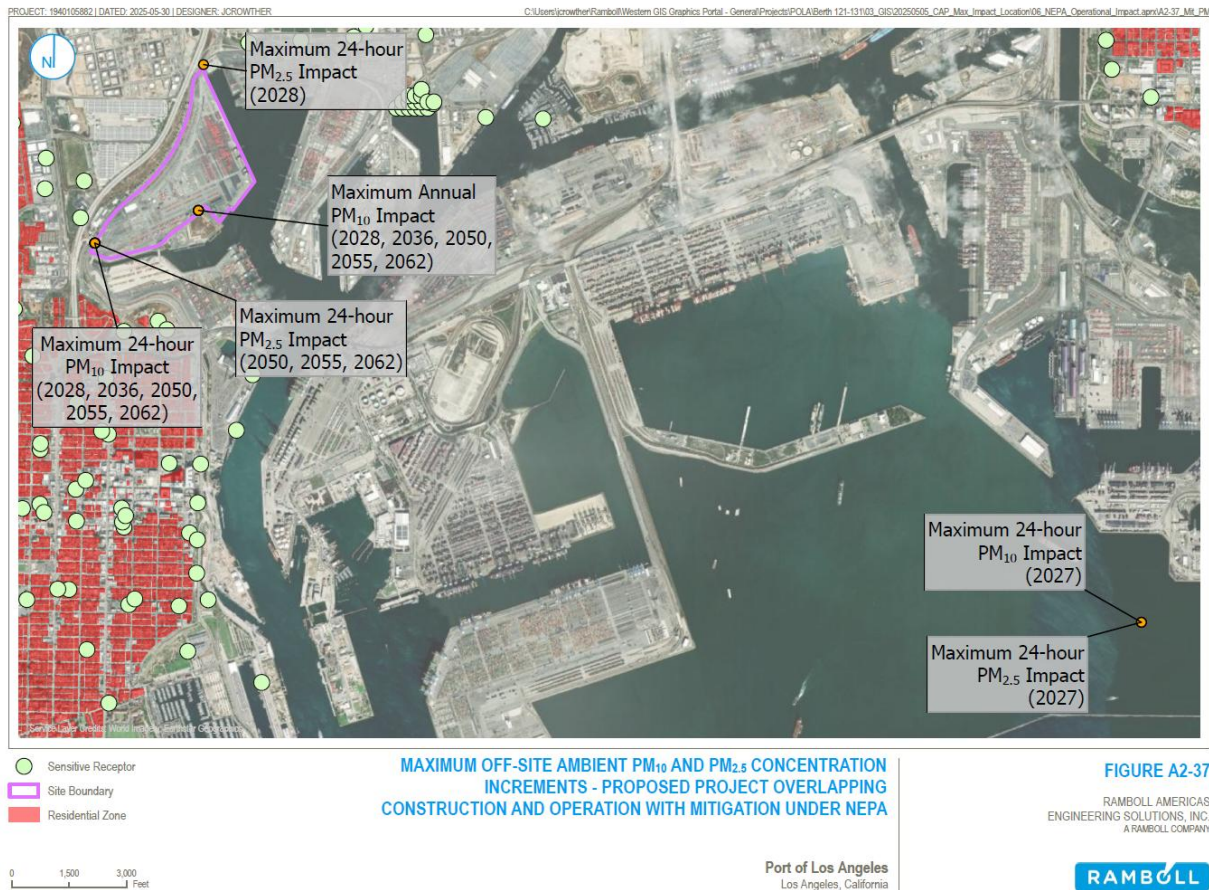


Figure A2-37. Maximum Off-site Ambient PM₁₀ and PM_{2.5} Concentration Increments Concentrations – Proposed Project Operations with Mitigation under NEPA



3.3.2 Alternative 1 – No Project

3.3.2.1 Operational Impacts

The following tables summarize the AERMOD dispersion modeling results of the Alternative 1 No Project operational emissions under CEQA. NO₂ and CO incremental concentrations due to operation were added to background concentrations and compared to the SCAQMD thresholds. The AERMOD modeling results for PM₁₀ and PM_{2.5} represent the incremental increases due to the project relative to the CEQA baseline and were compared directly to the SCAQMD thresholds without adding a background concentration.

Table A2-38. Maximum Off-Site Ambient NO₂ Concentrations - Alternative 1 No Project Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	30	127	188	No
		2028	97	27	124	188	No
		2036	97	-1	96	188	No
		2050	97	-0.5	97	188	No
		2055	97	0.4	98	188	No
		2062	97	2	99	188	No
	State 1-hour ^a	2027	113	35	148	339	No
		2028	113	31	144	339	No
		2036	113	-2	111	339	No
		2050	113	-0.2	113	339	No
		2055	113	1.0	114	339	No
		2062	113	3	116	339	No
	Annual	2027	26	-0.01	26	57	No
		2028	26	-0.01	26	57	No
		2036	26	1	27	57	No
		2050	26	0.4	27	57	No
		2055	26	1	27	57	No
		2062	26	2	28	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Concentration Increment.

^e A Maximum Modeled Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-39. Maximum Off-Site Ambient CO Concentrations - Alternative 1 No Project Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Modeled Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	929	9,750	23,000	No
		2028	8,821	943	9,764	23,000	No
		2036	8,821	1,128	9,949	23,000	No
		2050	8,821	2,211	11,032	23,000	No
		2055	8,821	2,632	11,453	23,000	No
		2062	8,821	3,302	12,123	23,000	No
	8-hour	2027	2,749	588	3,337	10,000	No
		2028	2,749	596	3,346	10,000	No
		2036	2,749	714	3,464	10,000	No
		2050	2,749	1,401	4,150	10,000	No
		2055	2,749	1,668	4,417	10,000	No
		2062	2,749	2,093	4,842	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Concentration Increment.

Table A2-40. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 1 No Project Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.2	2.5	No
		2028	0.2	2.5	No
		2036	0.4	2.5	Yes
		2050	2.2	2.5	No
		2055	2.9	2.5	Yes
		2062	4.0	2.5	Yes
	Annual	2027	0.1	1	No
		2028	0.1	1	No
		2036	0.2	1	No
		2050	0.8	1	No

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment ($\mu\text{g}/\text{m}^3$) ^{b,c}	Significance Threshold ($\mu\text{g}/\text{m}^3$) ^d	Threshold Exceeded?
		2055	1.0	1	Yes
		2062	1.4	1	Yes
PM _{2.5}	24-hour	2027	0.1	2.5	No
		2028	0.1	2.5	No
		2036	0.2	2.5	No
		2050	0.7	2.5	No
		2055	1.0	2.5	No
		2062	1.4	2.5	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Concentration Increment.

The following figure displays the locations of the peak AERMOD dispersion modeling results of the No Project operational incremental pollutant concentrations under CEQA. The receptor locations with modeled concentration increments less than zero are not shown.

Figure A2-38. Maximum Ambient NO₂ Concentrations – Alternative 1 No Project Operations without Mitigation under CEQA

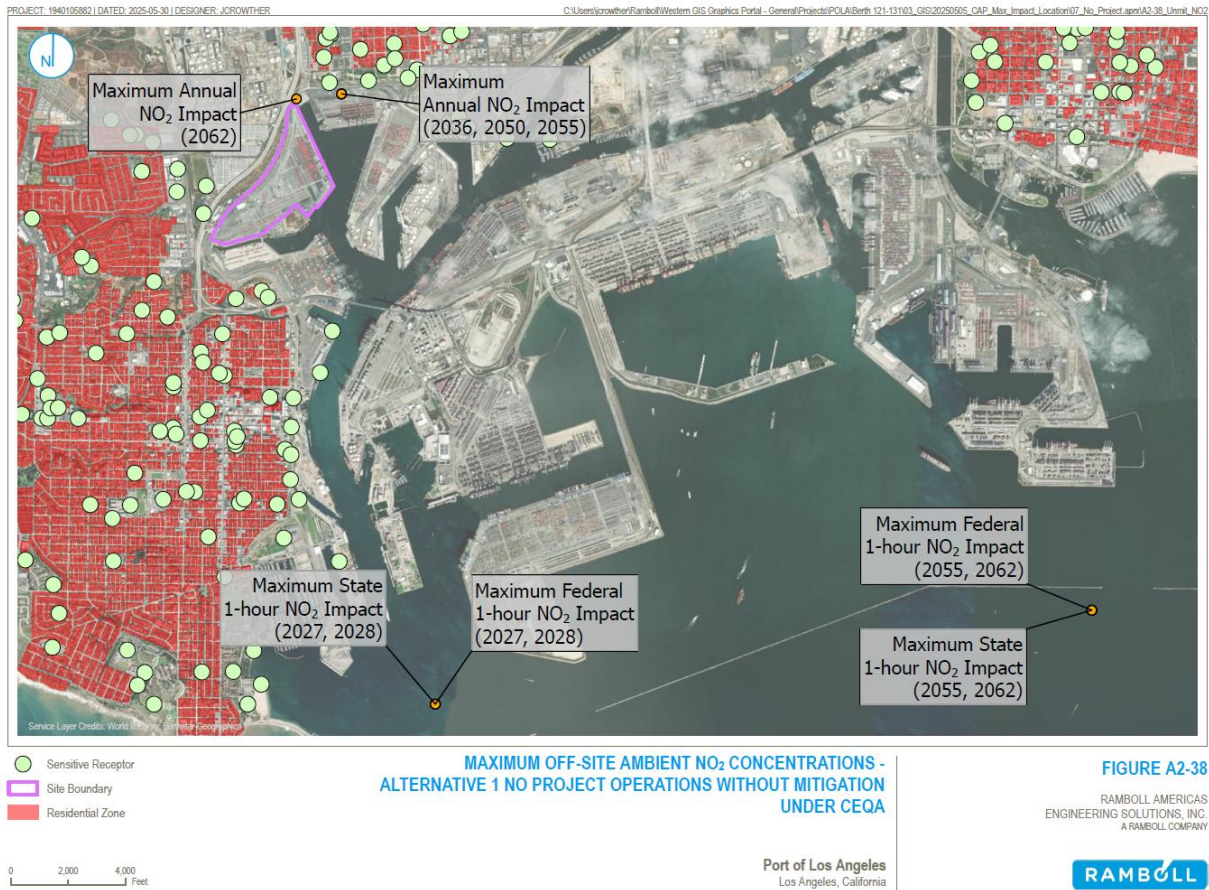


Figure A2-39. Maximum Ambient CO Concentrations – Alternative 1 No Project Operations without Mitigation under CEQA

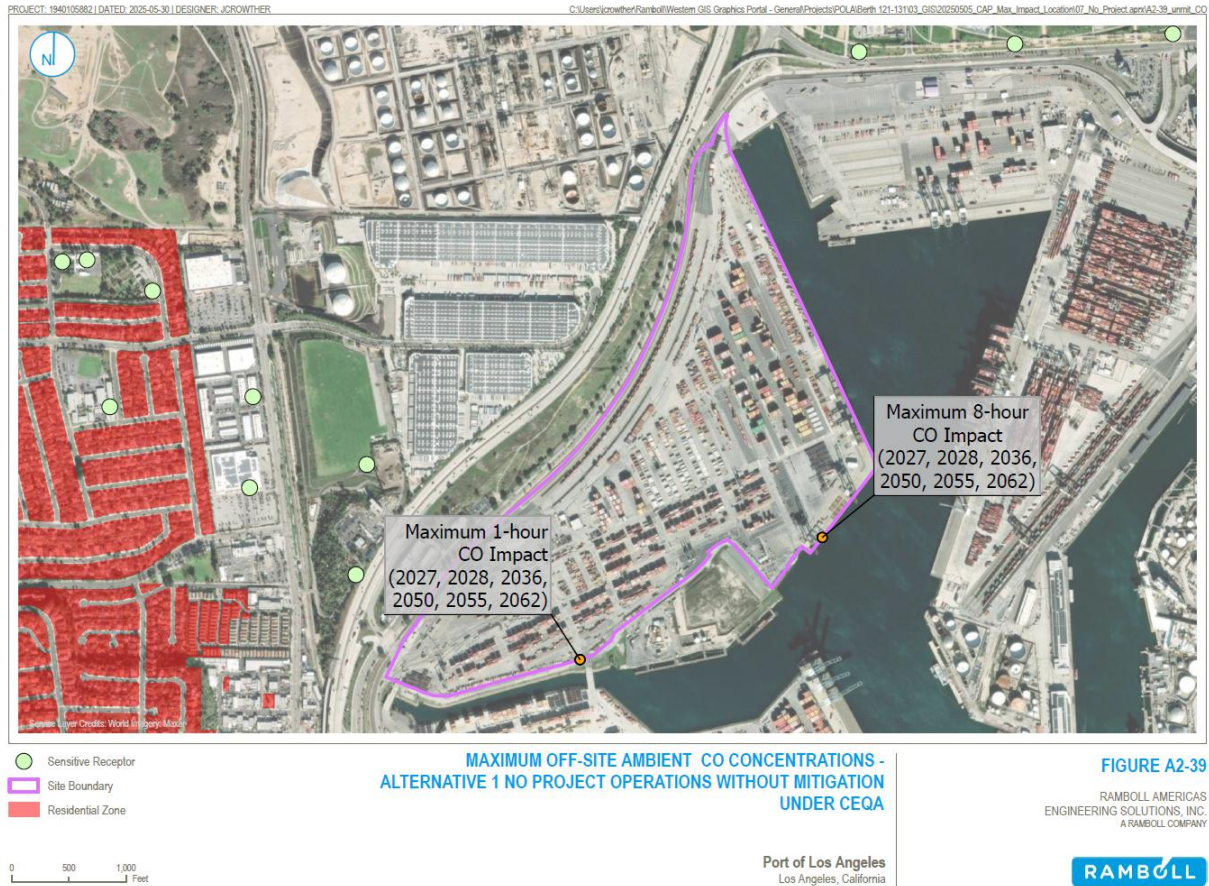
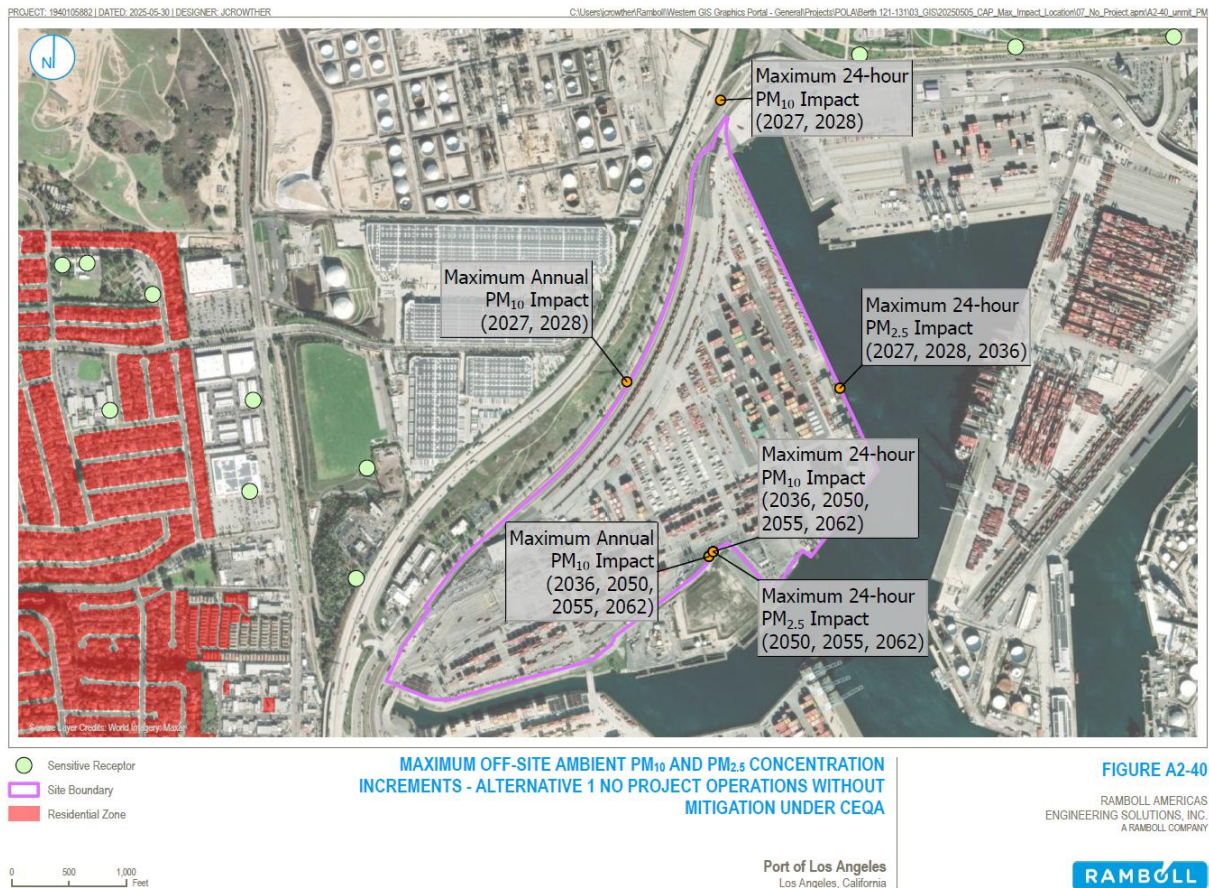


Figure A2-40. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 1 No Project Operations without Mitigation under CEQA



3.3.3 Alternative 2 – No Federal Action

3.3.3.1 Construction Impacts

Construction impacts were evaluated for the unmitigated and mitigated Alternative 2 – No Federal Action under CEQA. Construction impacts for federal 1-hour NO₂ were modeled to represent the 98th percentile of the daily maximum 1-hour averages. Background concentrations for NO₂ and CO were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School). Concentration increments represent the modeled scenario minus the CEQA baseline. Due to maximum modeled baseline and modeled scenario concentrations potentially occurring at different receptors, scenario and baseline concentrations may not necessarily subtract to equal the presented increment. For simplification, only the increment is presented in the tables below. Additionally, exceedances of a SCAQMD threshold are indicated in bold.

The following tables summarize the AERMOD dispersion modeling results of the unmitigated and mitigated Alternative 2 – No Federal Action under CEQA. The Berths 121-131 Container Terminal would continue to operate during construction of Alternative 2; construction and operational activities would overlap during this time. Total Alternative 2 emissions from overlapping construction and operational activities are presented to show the overall impacts of Alternative 2. AERMOD dispersion modeling results of mitigated and unmitigated Alternative 2 overlapping construction and operational emissions are also presented. NO₂ and CO incremental concentrations due to construction were added to background concentrations and compared to the SCAQMD thresholds. The AERMOD modeling results for PM₁₀ and PM_{2.5} represent the incremental increases due to the project and were compared directly to the SCAQMD thresholds without adding a background concentration.

Table A2-41. Maximum Off-Site Ambient CO Concentrations - Alternative 2 No Federal Action Construction without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^c (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	53	4,938	23,000	No
		2027	8,821	8	4,945	23,000	No
	8-hour	2026	2,749	16	2,576	10,000	No
		2027	2,749	2	2,578	10,000	No

^a Since the construction activities will be overlapped with operations in 2026 and 2027, combined construction and operation NO₂ impacts were modeled for 2026 and 2027. Please refer to Table A2-45 for the NO₂ impacts. NO₂ modeling was not performed for construction only. The combined impact represents the worst-case scenario and allow AERMOD to model all contemporaneous NOx sources to predict the ambient NOx/NO₂ ratio accurately using Ambient Ratio Method (ARM) for NO₂ modeling.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Concentration Increment.

Table A2-42. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 2 No Federal Action Construction without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	1	10.4	No
		2027	0.1	10.4	No
	Annual	2026	0.003	1	No
		2027	0.01	1	No
PM _{2.5}	24-hour	2026	0.5	10.4	No
		2027	0.06	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Concentration Increment.

Table A2-43. Maximum Off-Site Ambient CO Concentration Increments - Alternative 2 No Federal Action Construction with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^c (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	50	4,938	23,000	No
		2027	8,821	7	4,945	23,000	No
	8-hour	2026	2,749	15	2,576	10,000	No
		2027	2,749	2	2,578	10,000	No

^a Since the construction activities will be overlapped with operations in 2026 and 2027, combined construction and operation NO₂ impacts were modeled for 2026 and 2027. Please refer to Table A2-48 for the NO₂ impacts. NO₂ modeling was not performed for construction only. The combined impact represents the worst-case scenario and allow AERMOD to model all contemporaneous NO_x sources to predict the ambient NO_x/NO₂ ratio accurately using Ambient Ratio Method (ARM) for NO₂ modeling.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Concentration Increment.

Table A2-44. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 2 No Federal Action Construction with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	0.2	10.4	No
		2027	0.03	10.4	No
	Annual	2026	0.001	1	No
		2027	0.002	1	No
PM _{2.5}	24-hour	2026	0.2	10.4	No
		2027	0.02	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Concentration Increment.

Table A2-45. Maximum Off-Site Ambient NO₂ Concentrations - Alternative 2 No Federal Action Construction and Operation without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration (µg/m ³) ^b	Maximum Modeled Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2026	97	33	130	188	No
		2027	97	30	127	188	No
	State 1-hour ^a	2026	113	39	152	339	No
		2027	113	35	148	339	No
	Annual	2026	26	-0.01	26	57	No
		2027	26	-0.01	26	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-46. Maximum Off-Site Ambient CO Concentrations - Alternative 2 No Federal Action Construction and Operation without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Modeled Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	848	9,669	23,000	No
		2027	8,821	932	9,753	23,000	No
	8-hour	2026	2,749	529	3,278	10,000	No
		2027	2,749	588	3,338	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-47. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 2 No Federal Action Construction and Operation without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	0.5	10.4	No
		2027	0.2	10.4	No
	Annual	2026	0.1	1	No
		2027	0.1	1	No
PM _{2.5}	24-hour	2026	0.4	10.4	No
		2027	0.1	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-48. Maximum Off-Site Ambient NO₂ Concentrations - Alternative 2 No Federal Action Construction and Operation with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
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NO ₂	Federal 1-hour ^a	2026	97	33	130	188	No
		2027	97	30	127	188	No
	State 1-hour ^a	2026	113	39	152	339	No
		2027	113	35	148	339	No
	Annual	2026	26	0.0	26	57	No
		2027	26	-0.012	26	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.
^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).
^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).
^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.
^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-49. Maximum Off-Site Ambient CO Concentrations - Alternative 2 No Federal Action Construction and Operation with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Modeled Concentration Increment ^{b,d} (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2026	8,821	847	9,668	23,000	No
		2027	8,821	931	9,753	23,000	No
	8-hour	2026	2,749	529	3,278	23,000	No
		2027	2,749	588	3,338	23,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).
^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).
^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.
^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-50. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 2 No Federal Action Construction and Operation with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{a,b}	Significance Threshold (µg/m ³) ^c	Threshold Exceeded?
PM ₁₀	24-hour	2026	0.2	10.4	No

		2027	0.2	10.4	No
	Annual	2026	0.1	1	No
		2027	0.1	1	No
PM _{2.5}	24-hour	2026	0.1	10.4	No
		2027	0.1	10.4	No

^a The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^b A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^c Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

The following figures display the locations of the peak AERMOD dispersion modeling results of both mitigated and unmitigated Alternative 2 No Federal Action pollutant increment concentrations under CEQA and NEPA. The Berths 121-131 Container Terminal would continue to operate during construction of the Alternative 2 No Federal Action; construction and operational activities would overlap during this time. Total Alternative 2 No Federal Action emissions from overlapping construction and operational activities are presented to show the overall impacts of the Alternative 2 No Federal Action. Peak locations of AERMOD dispersion modeling results of both mitigated and unmitigated Alternative 2 No Federal Action overlapping construction and operational concentrations are also presented.

Figure A2-41. Maximum Ambient CO Concentrations– Alternative 2 No Federal Action Construction without Mitigation under CEQA

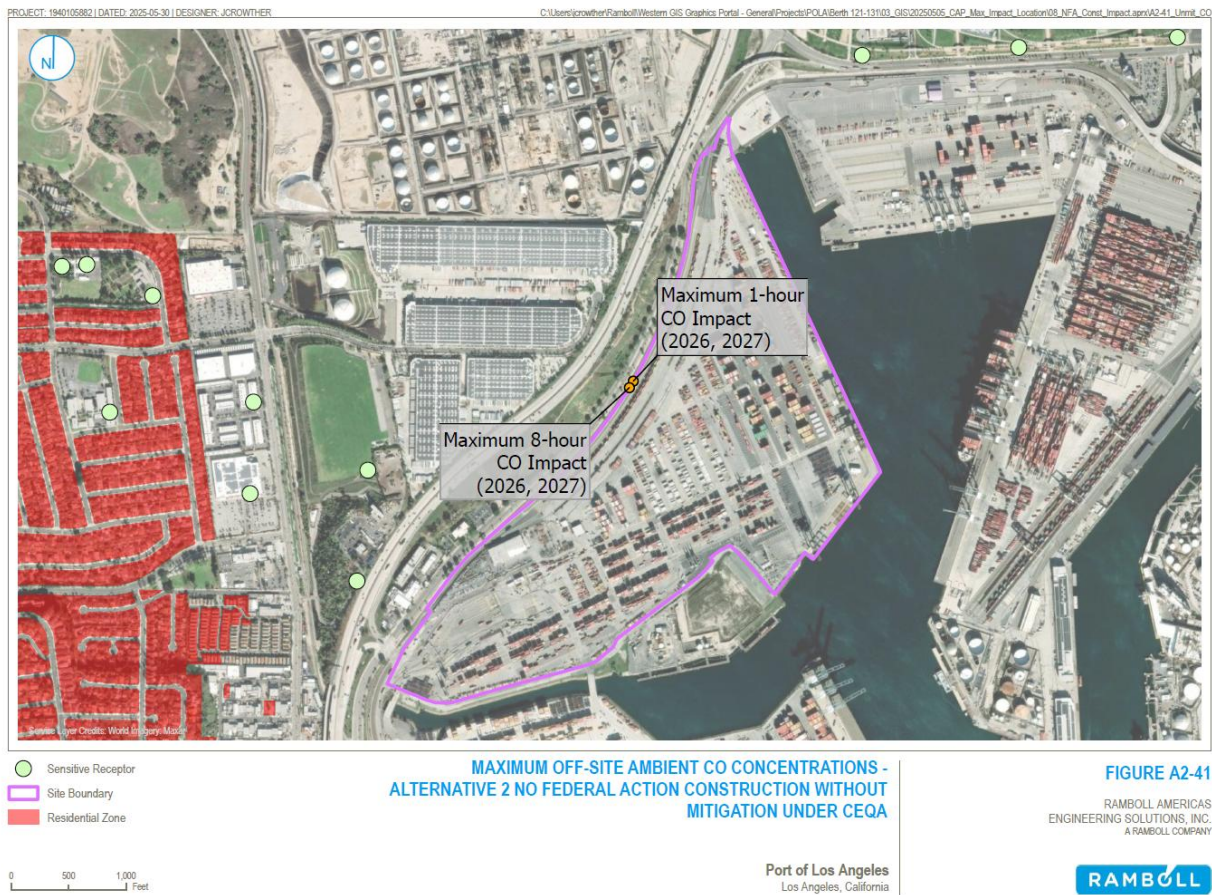


Figure A2-42. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 2 No Federal Action Construction without Mitigation under CEQA

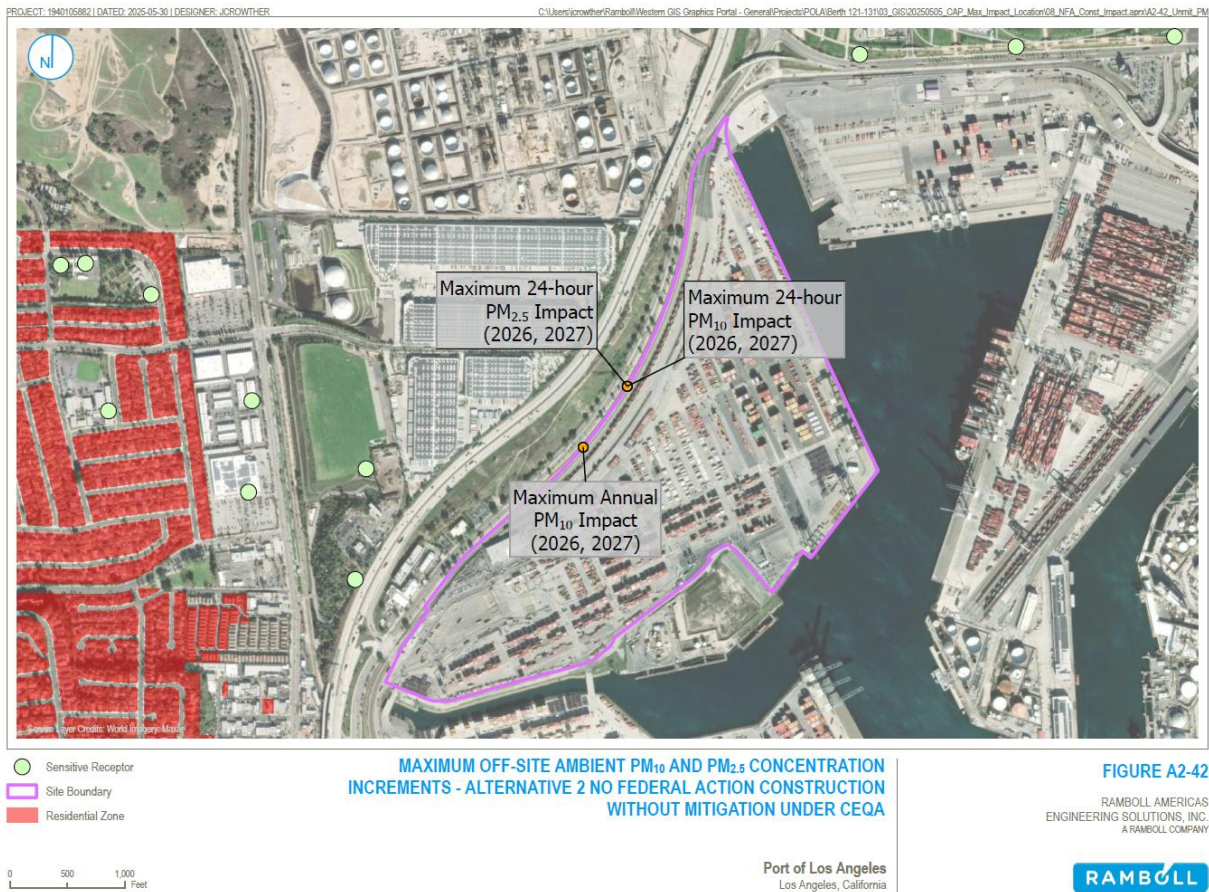


Figure A2-43. Maximum Ambient CO Concentrations – Alternative 2 No Federal Action Construction with Mitigation under CEQA

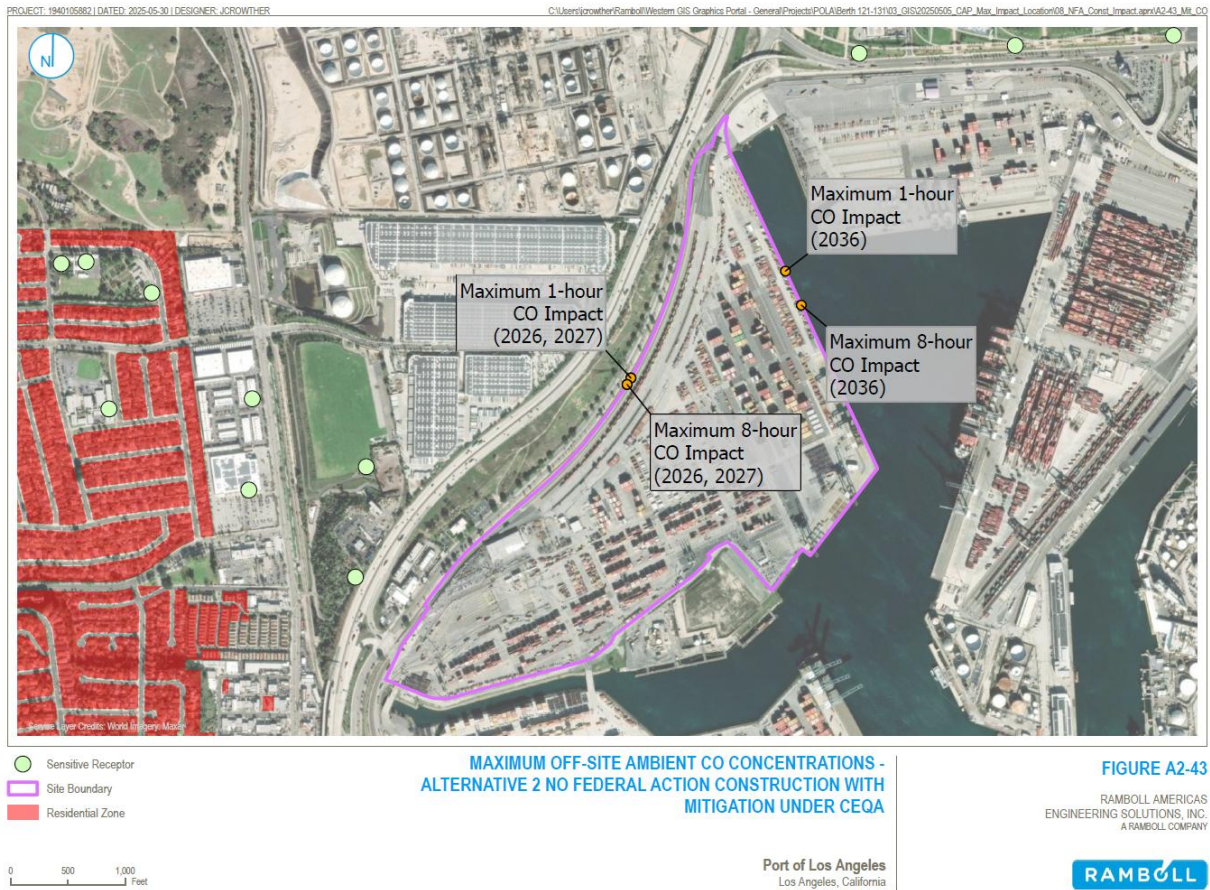


Figure A2-44. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 2 No Federal Action Construction with Mitigation under CEQA

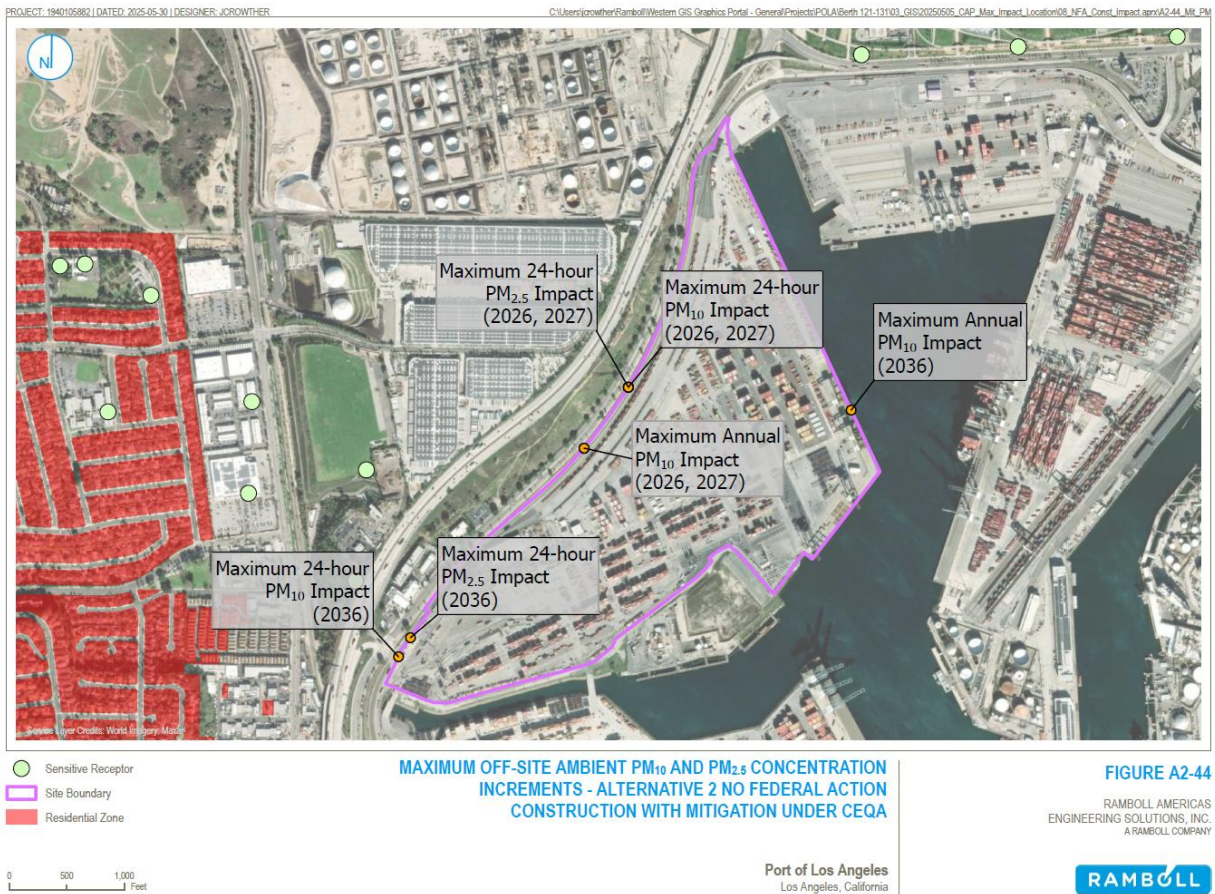


Figure A2-45. Maximum Ambient NO₂ Concentrations – Alternative 2 No Federal Action Overlapping Construction and Operation without Mitigation under CEQA

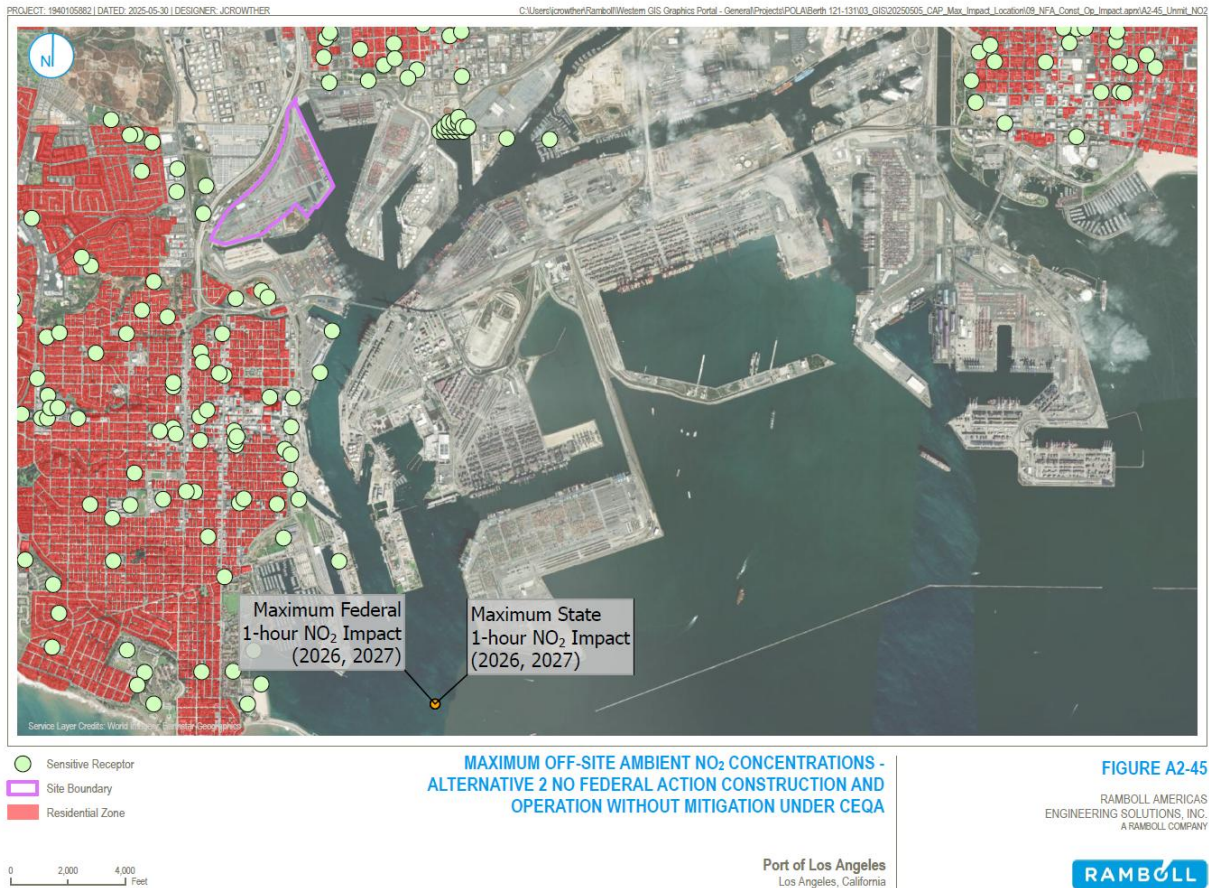


Figure A2-46. Maximum Ambient CO Concentrations – Alternative 2 No Federal Action Overlapping Construction and Operation without Mitigation under CEQA

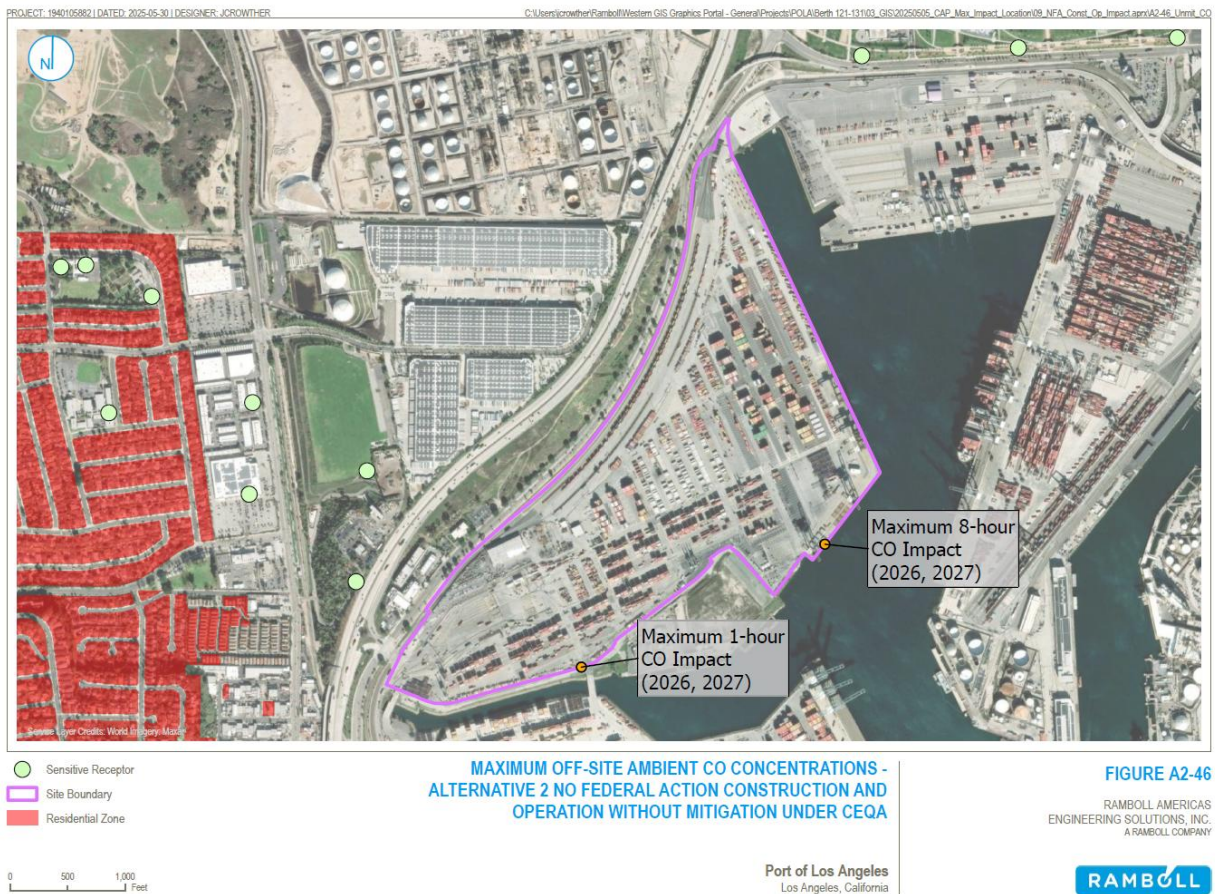


Figure A2-47. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 2 No Federal Action Overlapping Construction and Operation without Mitigation under CEQA

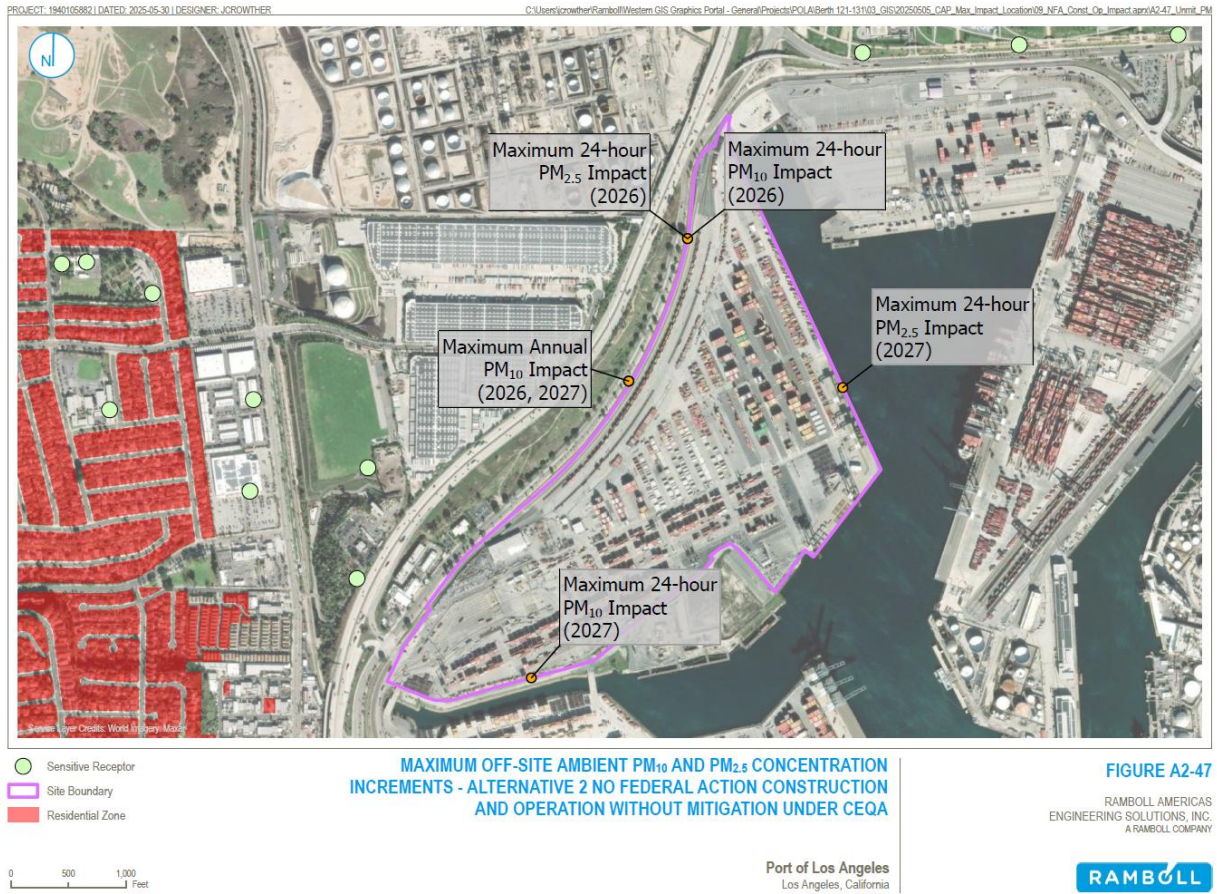


Figure A2-48. Maximum Ambient NO₂ Concentrations – Alternative 2 No Federal Action Overlapping Construction and Operation with Mitigation under CEQA

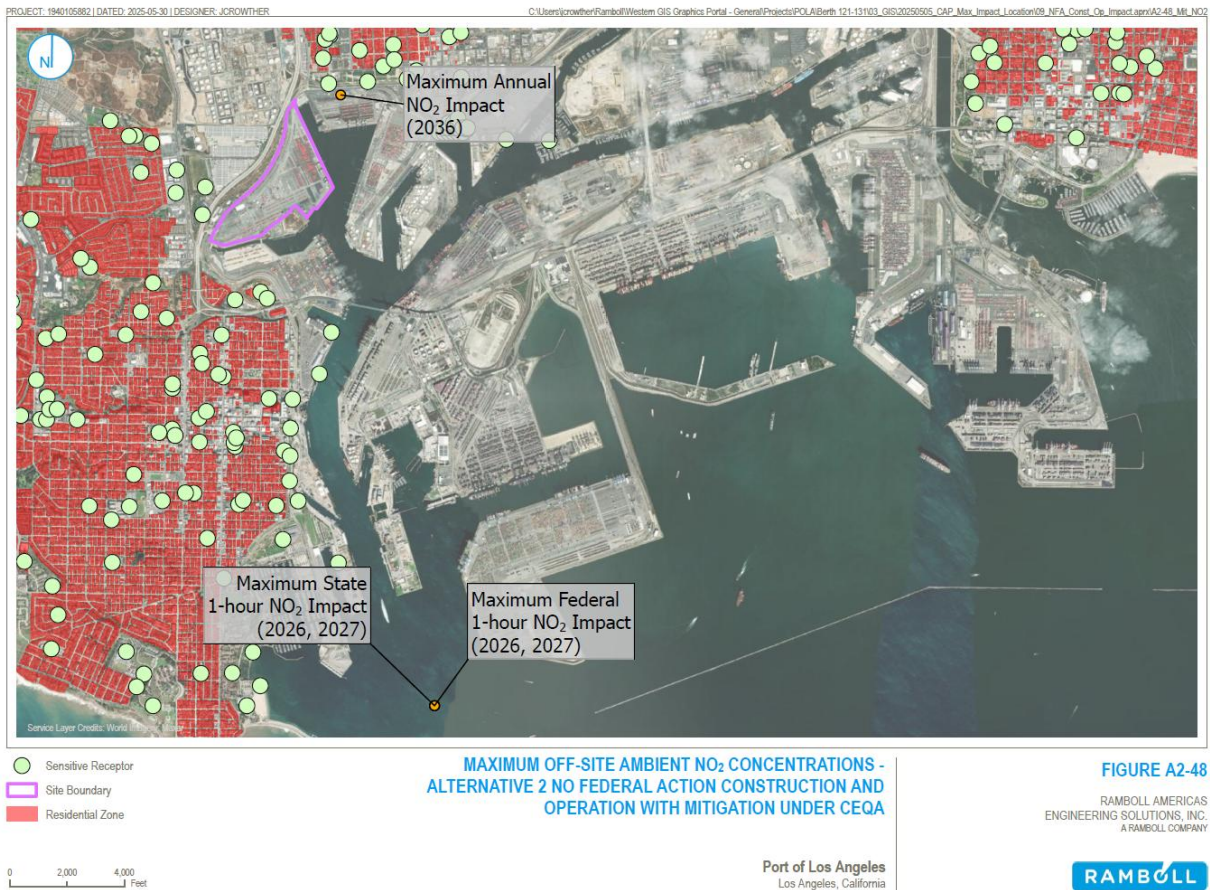


Figure A2-49. Maximum Ambient CO Concentrations – Alternative 2 No Federal Action Overlapping Construction and Operation with Mitigation under CEQA

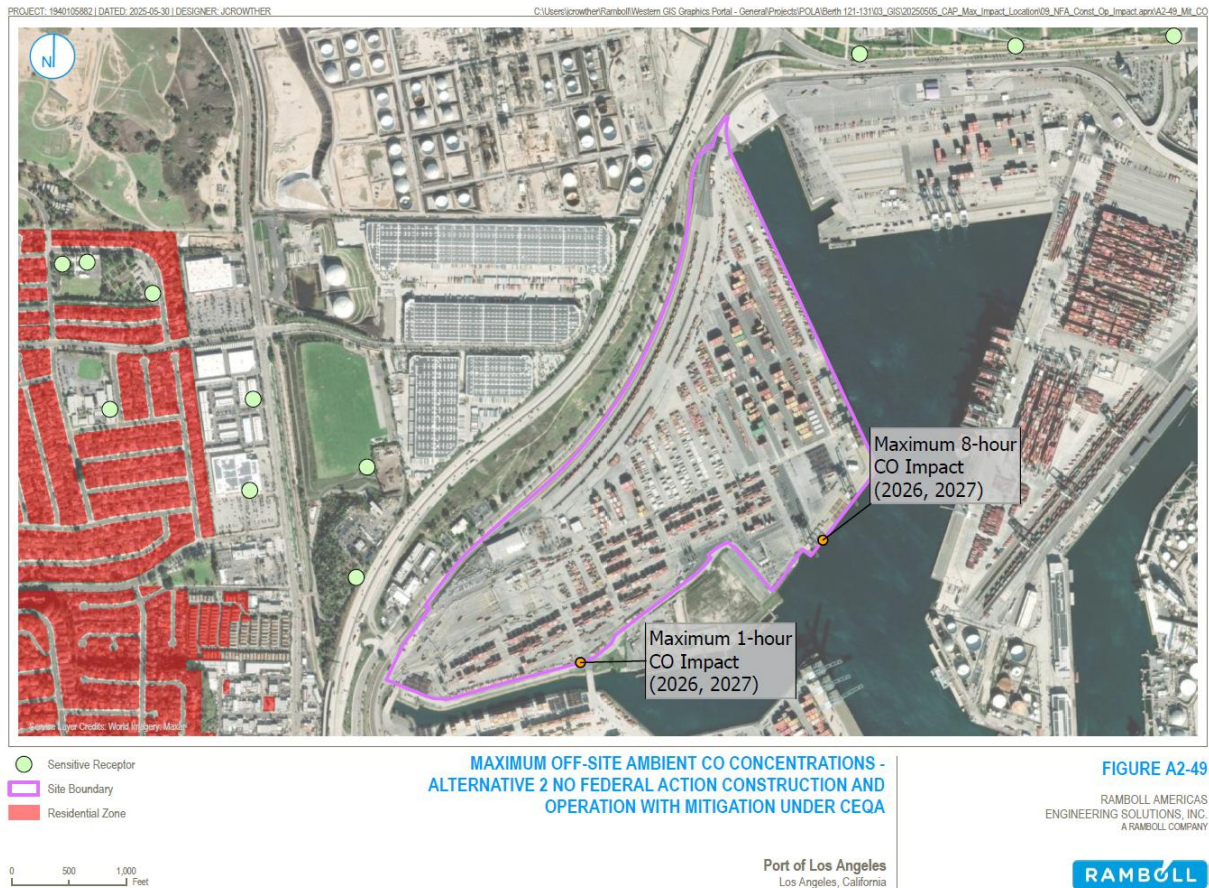
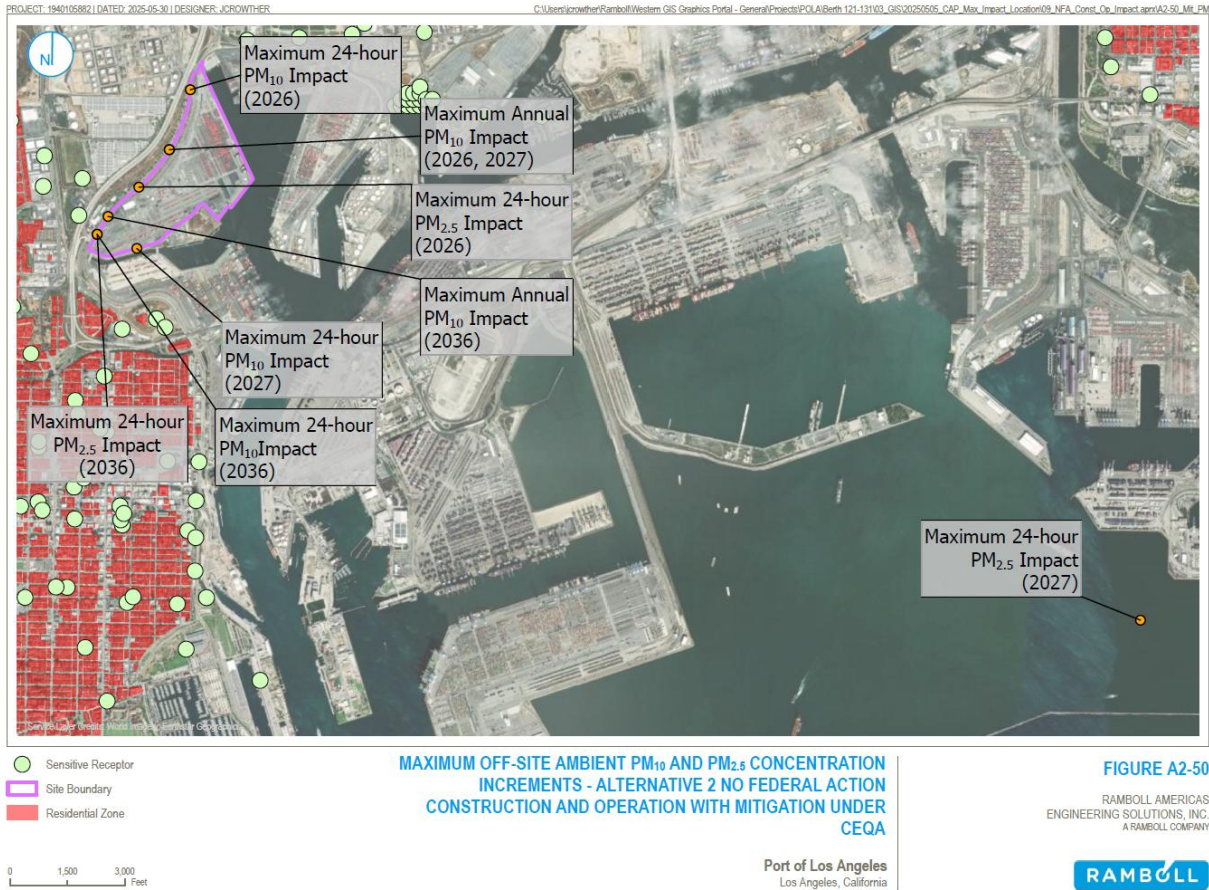


Figure A2-50. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 2 No Federal Action Overlapping Construction and Operation with Mitigation under CEQA



3.3.3.2 Operational Impacts

Operational impacts were evaluated for the unmitigated and mitigated Alternative 2 No Federal Action under CEQA. Impacts for federal 1-hour NO₂ were modeled to represent the 98th percentile of the daily maximum 1-hour averages. Background concentrations for NO₂ and CO were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School). Concentration increments represent the modeled scenario minus the CEQA baseline. Due to maximum modeled baseline and modeled scenario concentrations potentially occurring at different receptors, scenario and baseline concentrations may not necessarily subtract to equal the presented increment. For simplification, only the increment is presented in the tables below. Additionally, exceedances of a SCAQMD threshold are indicated in bold.

The following tables summarize the AERMOD dispersion modeling results of the mitigated and unmitigated Alternative 2 No Federal Action operational emissions under CEQA. NO₂ and CO incremental concentrations due to operation were added to background concentrations and compared to the SCAQMD thresholds. The AERMOD modeling results for PM₁₀ and PM_{2.5} represent the incremental increases due to the project relative to the CEQA baseline and were compared directly to the SCAQMD thresholds without adding a background concentration.

Table A2-51. Maximum Off-Site Ambient NO₂ Concentrations - Alternative 2 No Federal Action Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	30	127	188	No
		2028	97	27	124	188	No
		2036	97	-1	96	188	No
		2050	97	-1	97	188	No
		2055	97	0.4	98	188	No
		2062	97	2	99	188	No
	State 1-hour ^a	2027	113	35	148	339	No
		2028	113	31	144	339	No
		2036	113	-2	111	339	No
		2050	113	-0.2	113	339	No
		2055	113	1	114	339	No
		2062	113	3	116	339	No
	Annual	2027	26	-0.01	26	57	No
		2028	26	-0.01	26	57	No
		2036	26	2	28	57	No
		2050	26	0.1	26	57	No
		2055	26	0.5	27	57	No

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
		2062	26	1.3	28	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-52. Maximum Off-Site Ambient CO Concentrations - Alternative 2 No Federal Action Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Modeled Concentration Increment ^b (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	929	9,751	23,000	No
		2028	8,821	943	9,764	23,000	No
		2036	8,821	1,137	9,958	23,000	No
		2050	8,821	2,199	11,020	23,000	No
		2055	8,821	2,619	11,440	23,000	No
		2062	8,821	3,286	12,107	23,000	No
	8-hour	2027	2,749	588	3,338	10,000	No
		2028	2,749	596	3,346	10,000	No
		2036	2,749	717	3,467	10,000	No
		2050	2,749	1,398	4,147	10,000	No
		2055	2,749	1,664	4,413	10,000	No
		2062	2,749	2,088	4,837	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

Table A2-53. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 2 No Federal Action Operations without Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.1	2.5	No
		2028	0.2	2.5	No
		2036	0.7	2.5	No
		2050	1.9	2.5	No
		2055	2.5	2.5	No
		2062	3.5	2.5	Yes
	Annual	2027	0.1	1	No
		2028	0.1	1	No
		2036	0.2	1	No
		2050	0.7	1	No
		2055	0.9	1	No
		2062	1.2	1	Yes
PM _{2.5}	24-hour	2027	0.1	2.5	No
		2028	0.1	2.5	No
		2036	0.4	2.5	No
		2050	0.7	2.5	No
		2055	0.9	2.5	No
		2062	1.3	2.5	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

Table A2-54. Maximum Off-Site Ambient NO₂ Concentrations - Alternative 2 No Federal Action Operations with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^b (µg/m ³)	Maximum Modeled Concentration Increment ^{c,e} (µg/m ³)	Total Concentration ^d (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
NO ₂	Federal 1-hour ^a	2027	97	30	152	188	No
		2028	97	26	152	188	No
		2036	97	-2	152	188	No
		2050	97	-1	152	188	No
		2055	97	0	152	188	No
		2062	97	1	152	188	No
	State 1-hour ^a	2027	113	35	187	339	No
		2028	113	30	187	339	No
		2036	113	-1	187	339	No
		2050	113	-1	187	339	No
		2055	113	-0.2	187	339	No
		2062	113	1	187	339	No
	Annual	2027	26	-0.01	29	57	No
		2028	26	-0.01	36	57	No
		2036	26	2	34	57	No
		2050	26	0.001	34	57	No
		2055	26	0.4	34	57	No
		2062	26	1	34	57	No

^a The federal 1-hour NO₂ modeled concentration represents the 98th percentile of the daily maximum 1-hour average concentrations. The state 1-hour NO₂ modeled concentration represents the maximum concentration.

^b The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^c The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^d The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^e A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-55. Maximum Off-Site Ambient CO Concentrations - Alternative 2 No Federal Action Operations with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Background Concentration ^a (µg/m ³)	Maximum Modeled Concentration Increment ^{b,d} (µg/m ³)	Total Concentration ^c (µg/m ³)	Significance Threshold (µg/m ³)	Threshold Exceeded?
CO	1-hour	2027	8,821	929	9,751	23,000	No
		2028	8,821	-2	8,819	23,000	No
		2036	8,821	-2	8,819	23,000	No
		2050	8,821	-2	8,819	23,000	No
		2055	8,821	-2	8,819	23,000	No
		2062	8,821	-2	8,820	23,000	No
	8-hour	2027	2,749	588	3,338	10,000	No
		2028	2,749	-1	2,749	10,000	No
		2036	2,749	-0.4	2,749	10,000	No
		2050	2,749	-1	2,749	10,000	No
		2055	2,749	-1	2,749	10,000	No
		2062	2,749	-0.4	2,749	10,000	No

^a The background concentrations were obtained from the Wilmington Community Monitoring Station (Saints Peter and Paul School).

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of existing terminal operations (i.e., Baseline).

^c The Total Concentration equals the Background Concentration plus the Maximum Modeled Project Concentration Increment.

^d A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

Table A2-56. Maximum Off-Site Ambient PM₁₀ and PM_{2.5} Concentration Increments - Alternative 2 No Federal Action Operations with Mitigation under CEQA

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment (µg/m ³) ^{b,c}	Significance Threshold (µg/m ³) ^d	Threshold Exceeded?
PM ₁₀	24-hour	2027	0.1	2.5	No
		2028	0.1	2.5	No
		2036	4.2	2.5	Yes
		2050	1.0	2.5	No
		2055	1.4	2.5	No
		2062	2.1	2.5	No
	Annual	2027	0.1	1	No

Pollutant	Averaging Period	Analysis Year	Maximum Modeled Project Concentration Increment ($\mu\text{g}/\text{m}^3$) ^{b,c}	Significance Threshold ($\mu\text{g}/\text{m}^3$) ^d	Threshold Exceeded?
		2028	0.1	1	No
		2036	0.1	2.5	No
		2050	0.3	1	No
		2055	0.5	1	No
		2062	0.7	1	No
PM _{2.5}	24-hour	2027	0.1	2.5	No
		2028	0.04	2.5	No
		2036	1.7	2.5	No
		2050	0.1	2.5	No
		2055	0.1	2.5	No
		2062	0.3	2.5	No

^a Exceedances of the thresholds are indicated in bold.

^b The Modeled Project Concentration Increment represents the modeled concentration of the Project minus the modeled concentration of the Baseline.

^c A Maximum Modeled Project Concentration Increment less than zero means that the Project concentration would be less than the Baseline concentration at every modeled receptor.

^d Because the thresholds for PM₁₀ and PM_{2.5} are incremental thresholds, background concentrations are not added to the Maximum Modeled Project Concentration Increment.

The figures below show the locations of the maximum modeled concentrations of NO₂, CO, PM₁₀, and PM_{2.5} for the Alternative 2 No Federal Action operations under CEQA. The receptor locations correspond to the results in the tables presented in this section above. The receptor locations with modeled concentration increments less than zero are not shown,

Figure A2-51. Maximum Ambient NO₂ Concentrations – Alternative 2 No Federal Action Operations without Mitigation under CEQA

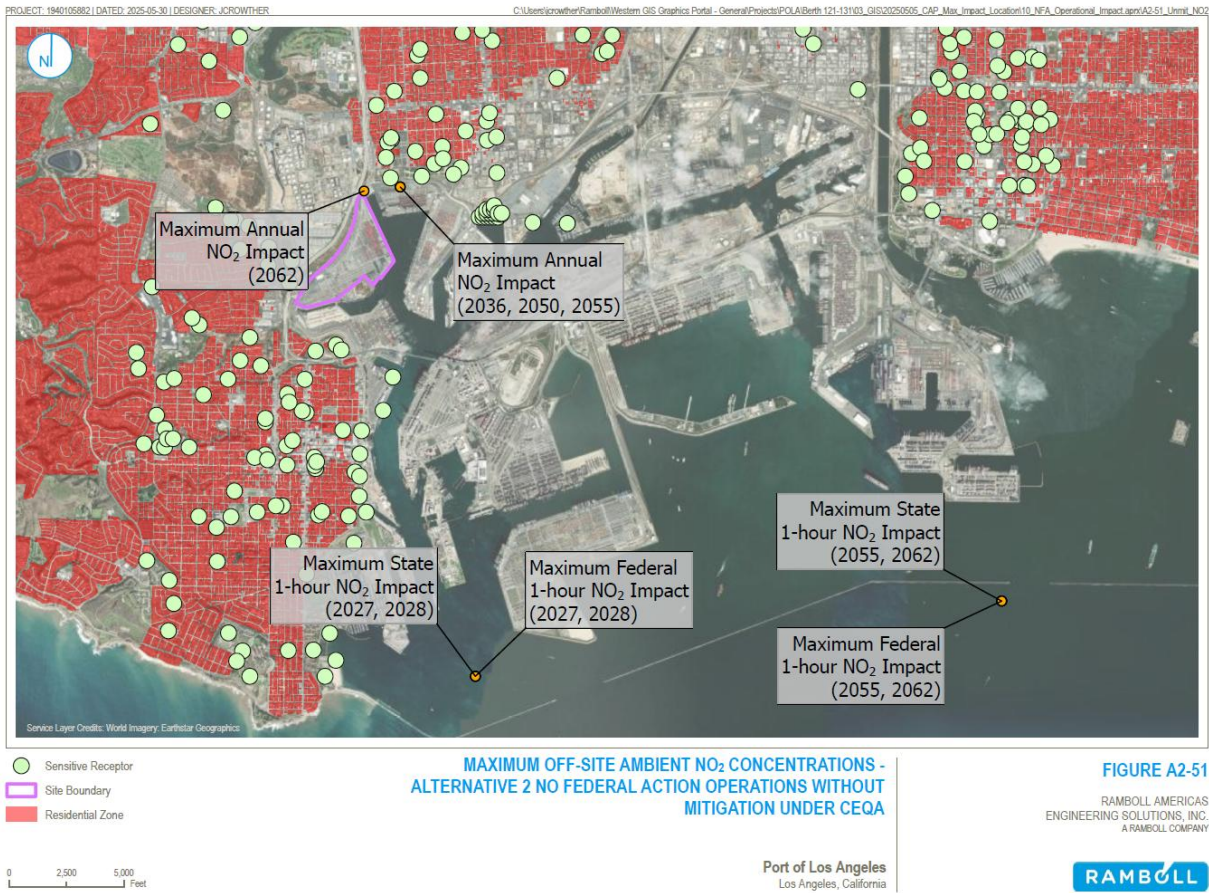


Figure A2-52. Maximum Ambient CO Concentrations – Alternative 2 No Federal Action Operations without Mitigation under CEQA

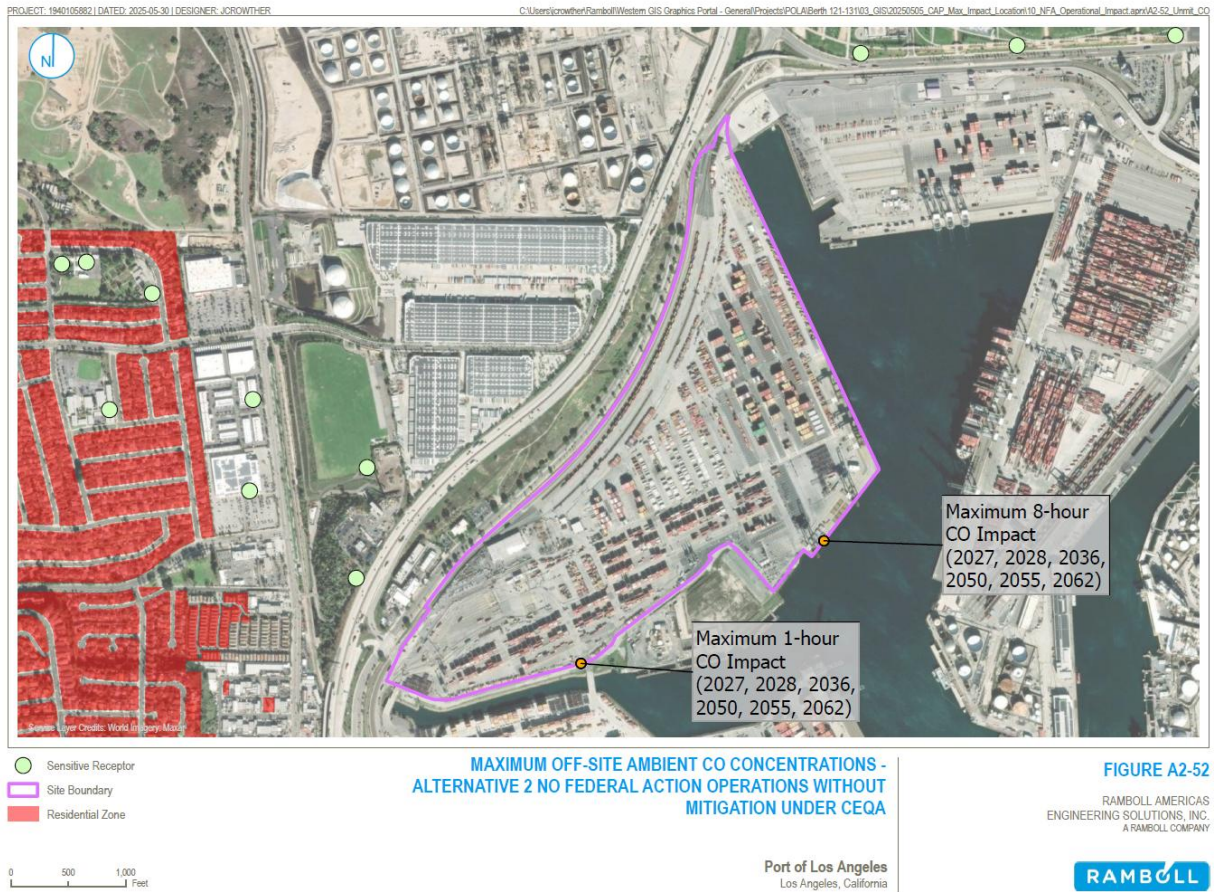


Figure A2-53. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 2 No Federal Action Operations without Mitigation under CEQA

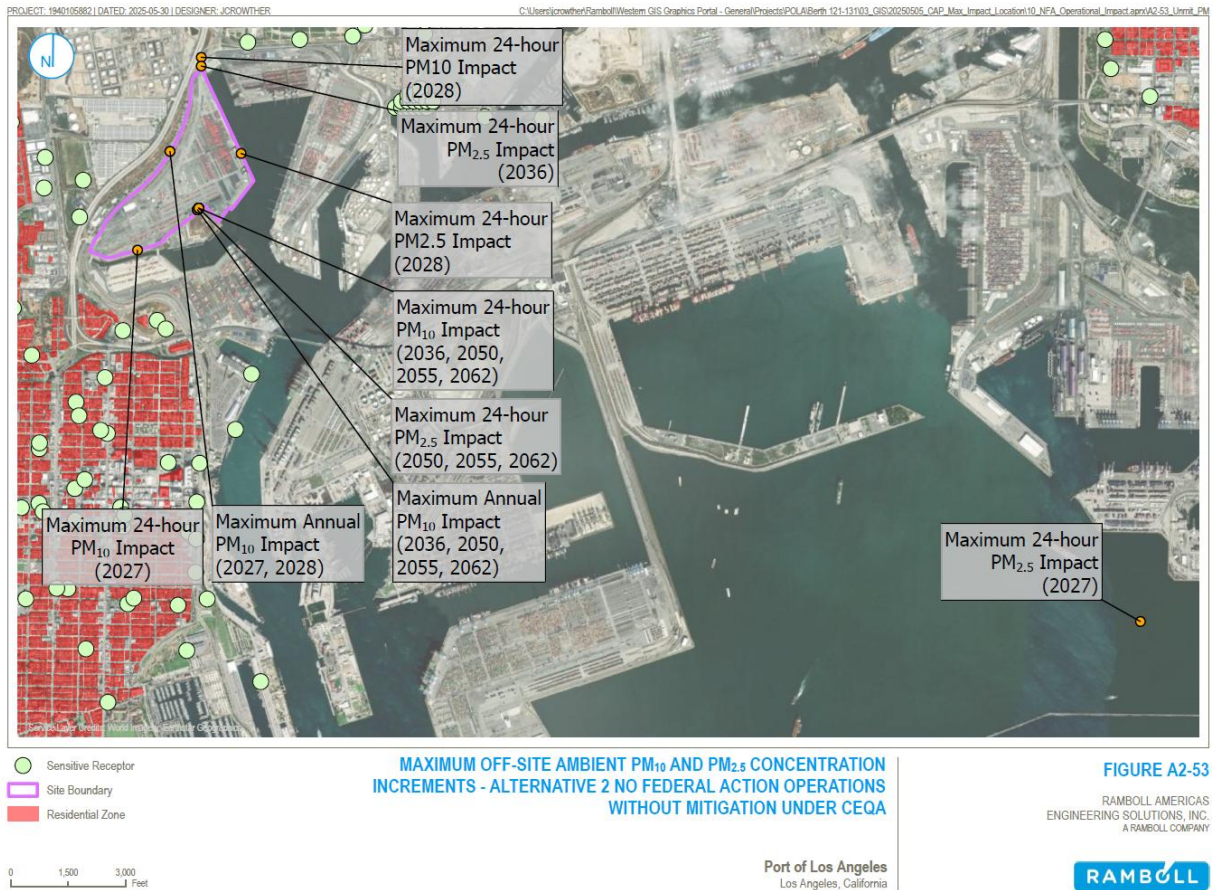


Figure A2-54. Maximum Ambient NO₂ Concentrations – Alternative 2 No Federal Action Operations with Mitigation under CEQA

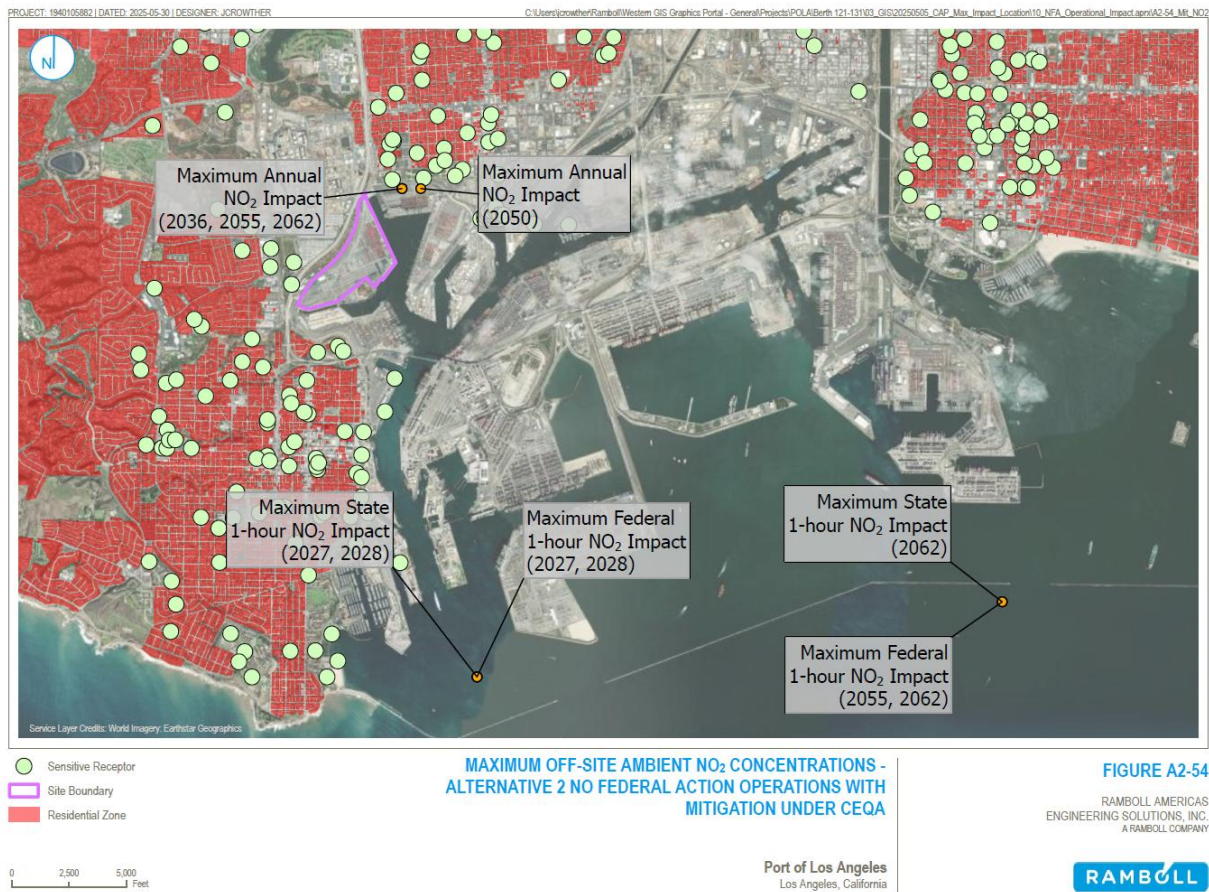


Figure A2-55. Maximum Ambient CO Concentrations – Alternative 2 No Federal Action Operations with Mitigation under CEQA

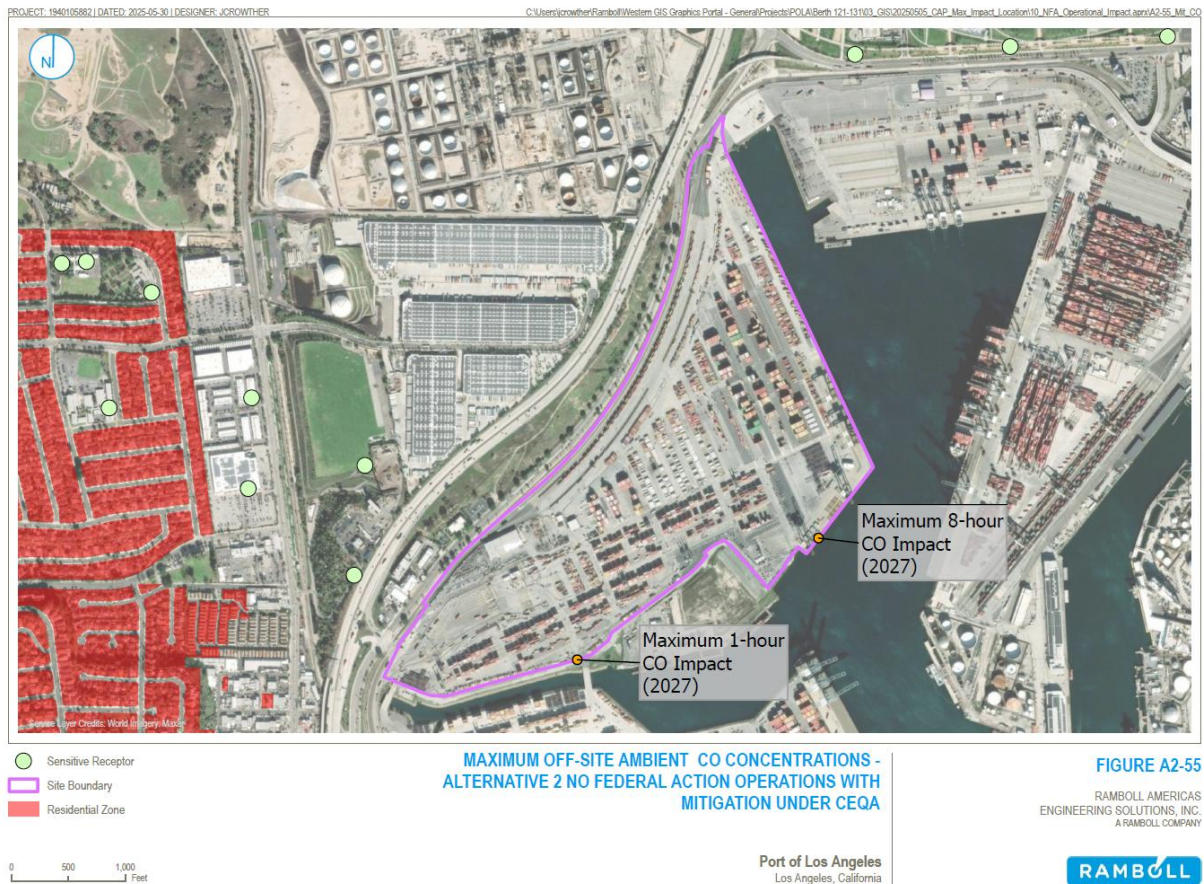
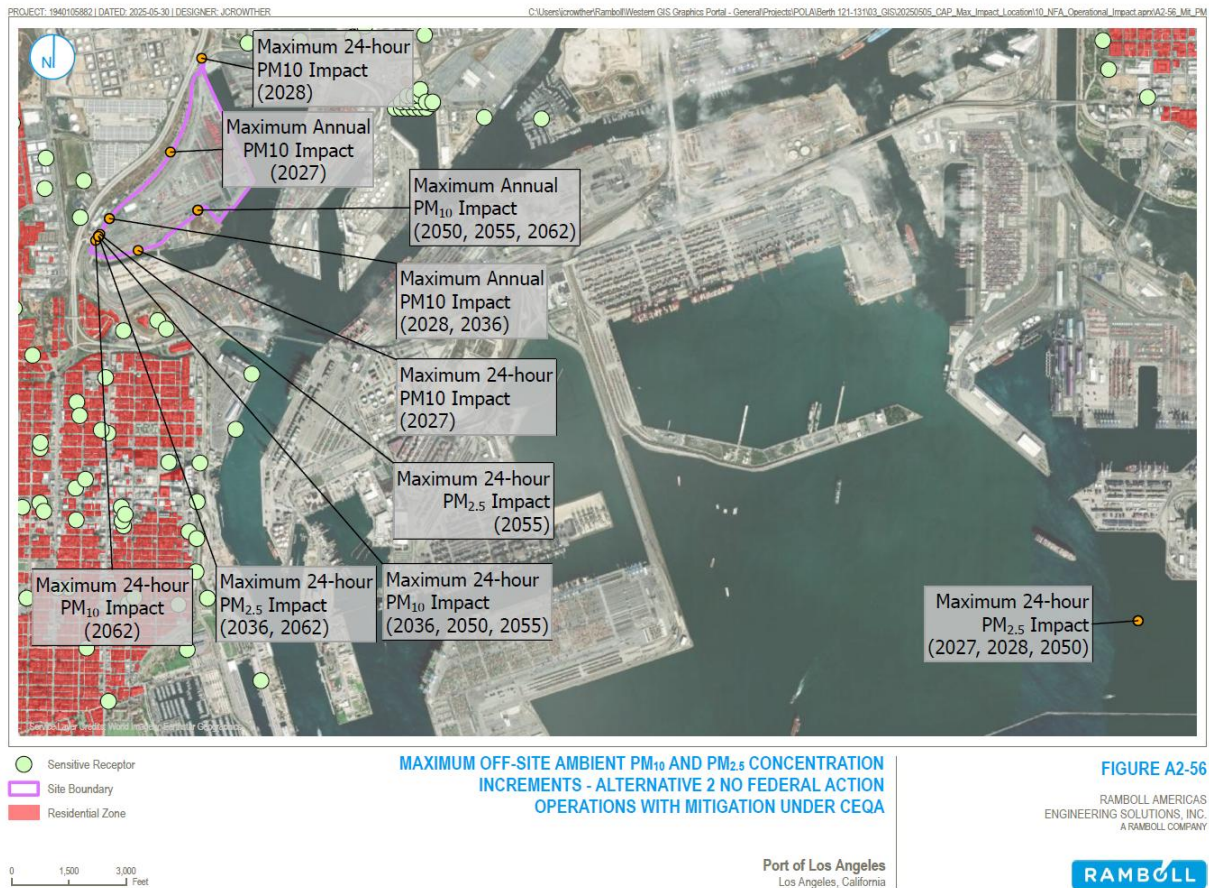


Figure A2-56. Maximum Ambient PM₁₀ and PM_{2.5} Concentration Increments – Alternative 2 No Federal Action Operations with Mitigation under CEQA



4.0 CO Hot Spots Analysis

The level of detail for dispersion modeling was based on traffic demand modeling and adequately analyzes CO impacts. Given that for the Project and Alternatives, the modeled CO concentrations would be much less than CAAQS and NAAQS thresholds, CO Hot Spots were determined less than significant without additional modeling. It is anticipated that intersection concentrations would not exceed any CO thresholds and therefore, CO Hot Spots were not analyzed.

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