APPENDIX 1

38478 CEDAR BOULEVARD PROJECT NEWARK, CALIFORNIA

Air Quality, Greenhouse Gas, and Health Risk Assessment

Prepared for
Robson Homes
2185 The Alameda
San Jose, CA 95126

September 2022

ESA

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CHAPTER 1
Introduction

Robson Homes (Applicant) is proposing to build 130 single family homes and duets, or townhouses, at 38478 Cedar Boulevard (Project) in the City of Newark, California. This report analyzes the air quality, health risk, and greenhouse gas (GHG) impacts, within the context of the California Environmental Quality Act (CEQA), that would result from the construction and operation of the Project and provides mitigation measures to reduce any significant impacts. Supporting technical information is included in **Appendix A**.

Project Location and Description

The Project site occupies approximately eight acres between Cedar Boulevard and Interstate 880 (I-880), just north of the Mowry Avenue interchange (see **Figure 1**). Land uses surrounding the Project site are mainly residential with a few commercial and industrial parcels. The Project proposes to construct up to 130 single family homes and duets, or townhouses, on an approximately eight-acre site.

The Project would involve demolition of the existing industrial and commercial buildings currently occupying the site. Construction of the proposed project would involve grading and utilities, construction of the residential buildings, painting (architectural coating), and paving of the driving and parking surfaces. The demolition, site preparation, and grading phases have been estimated to take place over the period from October 4, 2021 through early January 2022. Building construction, paving, and architectural coating have been estimated to start in early January 2022 and progress in phases until completion, which is projected to occur in approximately September 2024. Total construction would last for approximately 780 work days. The equipment involved in construction includes saws, dozers, loaders, graders, scrapers, backhoes, cranes, forklifts, generators, welders, cement mixers, pavers, rollers, and air compressors, are all assumed to be diesel-fueled.

38478 Cedar Boulevard

Figure 1
Project Location

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CHAPTER 2
Air Quality Analysis

The Project site is located in the San Francisco Bay Area Air Basin (SFBAAB) under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD's jurisdiction includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties.

Under amendments to the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has classified air basins or portions thereof as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the National Ambient Air Quality Standards (NAAQS) have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as "attainment" or "non-attainment" for the California Ambient Air Quality Standards (CAAQS). Thus, areas in California have two sets of attainment designations: one set with respect to the NAAQS and one set with respect to the CAAQS. The SFAAB is currently designated as a nonattainment area for state and national ozone standards, state particulate matter (PM_{10} and $PM_{2.5}$) standards, and the federal $PM_{2.5}$ (24-hour) standard (BAAQMD, 2017a). The BAAQMD is the primary agency responsible for assuring both sets of ambient air quality standards are attained and maintained in the Bay Area.

Approach to Analysis

The analysis presented below follows the guidelines and recommendations of the BAAQMD in its *CEQA Air Quality Guidelines* (BAAQMD Guidelines) (BAAQMD, 2017b). Potential air quality impacts are assessed by modeling the estimated average daily emissions generated by Project construction and operations using the California Emissions Estimator Model (CalEEMod), version 2016.3.2 and comparing them to the BAAQMD's project-level thresholds of significance. BAAQMD's project-level significance thresholds are shown in **Table 2-1** below.

Sensitive Receptors

From an air quality analysis standpoint, sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality because people typically stay home for extended periods of time, which results in greater exposure to ambient air quality.

TABLE 2-1
BAAQMD PROJECT-LEVEL AIR QUALITY THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction-Related	Operational-Related	
	Average Daily Emissions, lb/day	Average Daily Emissions, lb/day	Maximum Annual Emissions, tons/year
ROG	54	54	10
NO_X	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	BMPs	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Risks and Hazards (individual project)	Same as operational thresholds	Compliance with Qualified Community Risk Reduction Plan; or increased cancer risk of greater than 10.0 in a million; or increased non-cancer risk of greater than 1.0 hazard index (chronic or acute); or ambient $PM_{2.5}$ increase of greater than 0.3 µg/m^3 annual average	
Risks and Hazards (cumulative threshold)	Same as operational thresholds	Compliance with Qualified Community Risk Reduction Plan; or increased cancer risk of greater than 100 in a million from all local sources; or increased non-cancer risk of greater than 10.0 hazard index (chronic or acute) from all local sources; or ambient $PM_{2.5}$ increase of greater than 0.8 µg/m^3 annual average from all local sources	

NOTES:
BMPs = Best Management Practices

ABBREVIATIONS:

ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter with diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns.

SOURCE: BAAQMD, 2017b.

The Project site is across Cedar Boulevard from several blocks of single family homes to the south and west, with Kings Kids preschool directly across Cedar Boulevard from the Project site and an elementary school approximately 1,700 feet to the southwest. The Project site is separated from residences to the north by I-880. The closest residential receptors are located approximately 120 feet from the project site boundary.

Impact Assessment

This impact assessment below follows the air quality impacts described within the CEQA Guidelines, Appendix G, Initial Study Checklist. **Table 2-2** presents a summary of the air quality issues and impacts.

TABLE 2-2
CEQA GUIDELINES AIR QUALITY ISSUES SUMMARY

Issue	Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

SOURCE: CEQA Guidelines, Appendix G

a) Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant with Mitigation Incorporated)

The most recently adopted air quality plan in the Bay Area is the BAAQMD's 2017 Clean Air Plan - Spare the Air, Cool the Climate (2017 CAP). The 2017 CAP updates the 2010 Clean Air Plan to fulfill state ozone planning requirements, and includes all feasible measures to reduce emissions of ozone precursors (reactive organic gases [ROG] and nitrogen oxides [NOx]) and reduce transport of ozone and its precursors to neighboring air basins. In addition, the 2017 CAP builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter and Toxic Air Contaminants (TACs) (BAAQMD, 2017c). The 2017 CAP also addresses GHG reductions and is discussed below.

BAAQMD recommends that a project's consistency determination with the applicable air quality plan be made with respect to the following questions. If all the questions are concluded in the affirmative, and those conclusions are supported by substantial evidence, the BAAQMD considers the project to be consistent with air quality plans prepared for the Bay Area (BAAQMD, 2017b).

1. Does the project support the primary goals of the air quality plan?

The primary goals of the 2017 CAP are to attain air quality standards, reduce population exposure to pollutants, protect public health within the SFAAB, and reduce GHG emissions and protect the climate. Any project that would not support these goals would not be considered consistent with the 2017 CAP. The recommended measure for determining project support of these goals is consistency with BAAQMD-approved CEQA thresholds of significance. Therefore, if a project

would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation measures, the project would be considered consistent with the 2017 CAP.

As indicated in the discussion under checklist question b) below, the proposed Project would not result in significant and unavoidable air quality impacts. Criteria air pollutant emissions would be less than significant prior to mitigation and would be reduced further with implementation of **Mitigation Measures 2-1** and **2-2**. TACs and fugitive dust emissions from construction activities would be less than significant with implementation of Mitigation Measures 2-1 and 2-2. Long-term operational emissions would be less than significant without mitigation. Therefore, per BAAQMD guidance, the Project would be considered to support the primary goals of the 2017 CAP.

2. Does the project include applicable control measures from the applicable air quality plan?

Projects that incorporate all feasible air quality plan control measures are considered consistent with the 2017 CAP. The 2017 CAP includes a comprehensive strategy of 85 measures aimed at reducing air pollution in the Bay Area. Along with the traditional stationary, area, mobile source and transportation control measures, the 2017 CAP contains a number of new control measures designed to protect the climate and promote mixed use, compact development to reduce vehicle emissions and exposure to pollutants from stationary and mobile sources. BAAQMD encourages project developers to incorporate all feasible measures in the building, energy, transportation, waste, and water sectors into proposed project designs and plan elements.

The Project is located in an area well served by public transit. Existing public transit services in the Project area are provided by AC Transit, BART, and Amtrak. The Project site is approximately 2.5 miles from the Fremont BART station and 3 miles from the Amtrak Fremont Centerville station. An AC Transit bus line runs on Cedar Boulevard directly adjacent to the Project site.

The Project's location in an area with very good access to transit services would serve to reduce vehicle trips. Future residents of the Project could also be expected to take advantage of teleworking opportunities reducing vehicle trips further, but the extent to which teleworking would occur cannot be accurately predicted at this time. The Project features described above ensure consistency of the Project with the transportation sector control measures in the 2017 CAP.

The Project would comply with the California Green Building (CalGreen) Code and Title 24 building energy efficiency requirements, and would include energy saving features such as high-efficiency lighting and water heaters, in addition to solar panels. The City, as part of its implementation of the CalGreen residential code requirements, requires a disclosure and certification of construction materials used in building construction for volatile organic compounds (VOC) compliance, water conservation and efficiency. These features ensure Project consistency with the control measures in the energy and building sectors of the 2017 CAP.

The Project residences would be served by the Alameda County Waste Management Authority, which provides an unlimited curbside recycling program. The program would facilitate the proper recycling and disposal of waste from the Project residences in accordance with statewide waste reduction goals. These features ensure Project consistency with the control measures in the waste sector of the 2017 CAP.

In summary, existing mechanisms or those included in the Project would be consistent with all of the relevant control measures of the 2017 CAP.

3. Does the project disrupt or hinder implementation of any control measures in the air quality plan?

If approval of a project would not cause the disruption, delay or otherwise hinder the implementation of any air quality plan control measure, the BAAQMD considers the project to be consistent with the 2017 CAP. As discussed above, the Project would comply with all feasible control measures in the 2017 CAP. Construction and operation of the Project would also not hinder implementation of any other control measures included in the 2017 CAP.

With all three questions above concluded in the affirmative, the Project would be considered to be consistent with the 2017 CAP. This would be a less than significant impact with mitigation.

Mitigation: Mitigation Measures 2-1 and 2-2, described under b) and c) below.

Significance After Mitigation: Less Than Significant.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant with Mitigation Incorporated)

According to the BAAQMD, no single project can, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The BAAQMD Guidelines recommend using its quantitative thresholds of significance to determine if an individual project's emissions would considerably contribute to cumulative air quality impacts in the region. If a project's emissions exceed the identified significance thresholds, its contribution to cumulative air quality would be considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in less-than-significant air quality impacts (BAAQMD, 2017b). The Project's contribution to cumulative air quality of the area has been evaluated below by comparing its construction and operational emissions to the applicable BAAQMD thresholds.

The Project would generate criteria pollutants and TACs during short-term construction activities as well as long-term operational criteria pollutant emissions from sources including on-road vehicles, onsite area and energy sources. As the Project consists of development of only

residential land uses, once operational, it would not be a source of substantial TACs. TAC emissions impacts are addressed within Impact c) below.

Construction

The use of construction equipment during the demolition, site preparation, grading, building construction, paving, and architectural coating phases would emit criteria pollutants[1], including reactive organic gases (ROG), oxides of nitrogen (NO_X), and particulate matter smaller than 10 microns in diameter (PM_{10}) and 2.5 microns in diameter ($PM_{2.5}$). The demolition, site preparation, and grading phases are currently estimated to take place over the approximate period from October 2021 through early January 2022. Building construction, paving, and architectural coating are currently estimated to start in early January 2022 and progress in phases until completion, which is projected to occur in approximately September 2024. Total construction would last for approximately 780 work days.

Construction emissions were calculated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is an emissions estimation model that calculates all emissions associated with land use projects. Based on the land use description and size (e.g. townhouses and single family dwellings), CalEEMod calculates the amount of construction equipment and phasing required to construct a project, plus the emissions associated with energy use, landscaping, and personal product use associated with the land use type once the construction is complete and the building is occupied. The CalEEMod modeling is based on construction commencing in October of 2021. Emission factors within CalEEMod decrease into future years, because of improvements in vehicle technology and cleaner construction equipment. Therefore, this analysis is conservative and would over-estimate emissions if construction started later than 2021.

This model is regulatory-approved for CEQA projects and has been developed by, or in coordination with, the California Air Resources Board (CARB). CalEEMod was used to estimate emissions from construction activities, using default construction equipment and emission factors based on the construction phasing schedule and soil and demolition debris export quantities associated with proposed project construction (provided by the applicant). All equipment was assumed to be diesel-powered. Emissions were estimated for NO_X, ROG, PM_{10}, and $PM_{2.5}$. The emission estimates from CalEEMod are based on the project phases and equipment usage developed by CalEEMod based on the project type and size. The construction phasing, equipment usage, and resulting emissions are presented in the CalEEMod output file (included in Appendix A).

Construction emissions from all phases are presented in **Table 2-3**, *Average Daily Project Emissions*. The emissions are compared to the BAAQMD significance thresholds.[2] As shown below, construction emissions would not exceed the BAAQMD's significance thresholds for any pollutant; therefore, project construction air quality impacts would be less than significant. The

[1] Criteria pollutants are those pollutants for which the U.S. Environmental Protection Agency and the state of California have established levels to protect human health.

[2] BAAQMD CEQA Air Quality Guidelines, May 2017. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed December 2020.

PM_{10} and $PM_{2.5}$ emissions in Table 2-3 were used in the HRA discussed below. The table includes both unmitigated emissions and mitigated emissions, the latter of which includes the use of Tier 4 Final off-road construction equipment. Although mitigation is not required for criteria pollutant emissions (unmitigated construction emissions are below the BAAQMD thresholds), mitigation is required for health risks. See the *Health Risk Assessment* section below for discussion.

Project related demolition, grading, excavation and building construction activities at the project site may cause wind-blown dust that could generate particulate matter into the atmosphere. Fugitive dust includes not only PM_{10} and $PM_{2.5}$ but also larger particles that can cause nuisance impacts. For mitigation of fugitive dust emissions, the BAAQMD Guidelines recommend using specific Best Management Practices (BMPs), which has been a practical and effective approach to control fugitive dust emissions. The Guidelines note that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent and conclude that projects that implement construction BMPs would reduce fugitive dust emissions to a less than significant level; thus there are no significance thresholds for fugitive dust. To ensure implementation of BMPs, they are identified herein as Mitigation Measure 2-1. Thus, with the implementation of Mitigation Measure 2-1, the Project would have a less than significant impact from construction emissions.

TABLE 2-3
AVERAGE DAILY CONSTRUCTION EMISSIONS

Year / Construction Phase	Unmitigated Average Daily Emissions (pounds per day)					Mitigated Average Daily Emissions (pounds per day) [a]				
	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust	Fugitive Dust	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust	Fugitive Dust
2021										
Demolition [b]	1.54	16.41	0.72	0.67	--	0.29	2.83	0.03	0.03	--
Site Preparation [c]	0.61	6.24	0.31	0.29	--	0.08	0.32	0.01	0.01	--
Grading [d]	0.97	12.12	0.45	0.42	--	0.23	3.21	0.03	0.03	--
Total Average Daily [f]	3.12	34.77	1.49	1.38	7.21	0.60	6.36	0.07	0.07	3.25
2022										
Grading [d]	0.04	0.52	0.02	0.02	--	0.01	0.15	0.00	0.00	--
Building Construction [e]	1.90	16.80	0.80	0.75	--	0.55	3.67	0.05	0.05	--
Total Average Daily [f]	1.94	17.32	0.82	0.77	0.80	0.56	3.82	0.05	0.05	0.36
2023										
Building Construction [e]	1.78	15.56	0.70	0.66	--	0.54	3.41	0.05	0.04	--
Total Average Daily [f]	1.78	15.56	0.70	0.66	0.61	0.54	3.41	0.05	0.04	0.28
2024										
Building Construction [e]	1.33	11.61	0.49	0.46	--	0.42	2.70	0.04	0.04	--
Paving [g]	0.02	0.20	0.01	0.01	--	0.01	0.03	0.00	0.00	--
Architectural Coating [h]	42.34	0.13	0.01	0.01	--	42.33	0.02	0.00	0.00	--
Total Average Daily [f]	43.69	11.93	0.51	0.48	0.50	42.75	2.74	0.04	0.04	0.23
BAAQMD Significance Thresholds	54	54	82	54	N/A	54	54	82	54	N/A
Significant Impact?	No	No	No	No	N/A	No	No	No	No	N/A

NOTES:
[a] Mitigation includes Tier 4 Final off-road construction equipment.
[b] Demolition occurs from 10/4/2021 to 11/12/2021 for 30 workdays.
[c] Site Preparation occurs from 11/13/2021 to 11/26/2021 for 10 workdays.
[d] Grading occurs from 11/27/2021 to 1/7/2022 for 30 workdays.
[e] Building Construction occurs from 1/8/2022 to 8/2/2024 for 670 workdays.
[f] Total average daily emissions for each year are averaged over the following annual workdays: 65 in 2021, 260 in 2022, 260 in 2023, and 195 in 2024.
[g] Paving occurs from 8/3/2024 to 8/30/2024 for 20 workdays.
[h] Architectural Coating occurs from 8/31/2024 to 9/27/2024 for 20 workdays.

ABBREVIATIONS:
ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter with diameter equal to or less than 10 microns; $PM_{2.5}$ =particulate matter with diameter equal to or less than 2.5 microns.

Operation

Once the Project residences are occupied, air pollutant emissions would include mobile emissions from vehicle trips generated by the Project occupants, and delivery vehicles, as well as from on-site area and energy sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.) The analysis conservatively assumed 76 single family homes and 54 townhouses. The analysis is conservative, as the trip generation rate in the CalEEMod model is higher for single family homes. Project operational emissions were also calculated using the CalEEMod and the results are presented in **Table 2-4** below.

TABLE 2-4
PROJECT OPERATIONAL EMISSIONS

	Average Daily Emissions (pounds per day) [a]				Total Annual Emissions (tons per year)			
Emission Source	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	8.05	0.05	0.03	0.03	1.47	0.01	0.01	0.01
Mobile	1.10	5.59	4.00	1.10	0.20	1.02	0.73	0.20
Total	*9.15*	*5.64*	*4.03*	*1.13*	*1.67*	*1.03*	*0.74*	*0.21*
BAAQMD Significance Thresholds	54	54	82	54	10	10	15	10
Significant Impact?	No	No	No	No	No	No	No	No

NOTES:

Categories defined as follows:
Area = Emissions from landscaping equipment. Emissions were modeled using CalEEMod.
Energy (natural gas) = Emissions from natural gas combustion for space heating and cooking. Emissions were modeled using CalEEMod.
Mobile = Operating emissions from daily vehicle trips. Emissions were estimated outside of CalEEMod using emission factors from EMFAC2017.

[a] Average daily emissions are calculated by dividing by 365 days per year.

ABBREVIATIONS:

ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter with diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns.

Table 2-4 summarizes the average daily mobile, energy, and area emissions of criteria pollutants that would be generated by Project operation and compares the emissions to BAAQMD thresholds. As shown in Table 2-4, operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ would be well below the BAAQMD significance thresholds during operations, and thus, the proposed Project would have a less than significant impact in relation to regional operational emissions.

In regards to localized CO concentrations, the BAAQMD has developed screening criteria for local CO impacts. Projects would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

1. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The proposed Project would generate minimal new traffic trips and would not exceed these screening criteria. Based on the BAAQMD's criteria, project-related traffic from both projects would not exceed CO standards and therefore, no further analysis was conducted for CO impacts. This impact would be considered less than significant on a project-level and cumulative basis.

Mitigation Measures

Mitigation Measure 2-1: The project applicant shall ensure that construction plans include the BAAQMD Best Management Practices for fugitive dust control. The following will be required for all construction activities within the project area. These measures will reduce fugitive dust emissions primarily during soil movement, grading and demolition activities, but also during vehicle and equipment movement on unpaved project sites:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All streets, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

c) Would the project expose sensitive receptors to substantial pollutant concentrations? (Less than Significant with Mitigation)

The potential for the Project to expose sensitive receptors to substantial pollutant concentrations is associated mainly with construction emissions, which involve diesel combustion equipment. The majority of operational phase emissions from the project are from gasoline-fueled passenger vehicles, which do not emit a substantial amount of TACs. The health risks from diesel-fueled are the main concern for this analysis.

The TACs included in the health risk assessment (HRA) were limited to the pollutants of primary concern associated with construction of the project, which include diesel exhaust particulate matter (DPM) and $PM_{2.5}$ exhaust emissions from heavy construction equipment and trucks, and $PM_{2.5}$ fugitive road dust from construction activities. The emissions model calculates particulate matter emissions in both the PM_{10} and $PM_{2.5}$ size range. Emissions of PM_{10} exhaust are used as a surrogate for DPM emissions.[3]

Construction activities for the proposed Project would produce DPM and $PM_{2.5}$ emissions from the construction equipment described above. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, an HRA was performed to determine the extent of increased cancer and non-cancer risks at the maximally exposed individual residence (MEIR). The HRA was based on recommended methodology of the Office of Environmental of Health Hazard Assessment (OEHHA) and adopted by the BAAQMD (BAAQMD, 2012b). The cancer risk to nearby residential receptors assumes exposure would occur 8 hours per day, five days per week, to account for the active construction duration. Additionally, cancer risk estimates also incorporate age sensitivity factors and daily breathing rates recommended by OEHHA. This approach factors in the increased susceptibility of infants and children to carcinogens as compared to adults as required by OEHHA.

The HRA was conducted using the U.S. EPA AERMOD dispersion model (version 19191) and uses measured meteorology to predict conservative concentrations at specific locations defined by a Cartesian coordinate system. Diesel construction equipment would be used during the demolition, site preparation, grading, building construction, paving, and architectural coating phases, which would take place over a 7.75-acre area. A conservative representation of the on-site construction equipment within the proposed project site was modeled as a rectangular area source, based on the site planning diagrams (included in Appendix A). The modeling parameters are as follows:

One polygon area source dimensions covering the project site, with;

- Release height of 5 meters for construction equipment exhaust;
- Initial vertical dimension of 1.4 meters;

[3] OEHHA guidance indicates that the cancer potency factor to be used to evaluate cancer risks were developed based on whole (gas and particulate matter) diesel exhaust, and that the surrogate for whole diesel exhaust is DPM, with PM_{10} serving as the basis for the potential risk calculations. Office of Environmental Health Hazard Assessment, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, August 2003, *https://oehha.ca.gov/media/downloads/crnr/hraguidefinal.pdf*, accessed July 2020.

- Emissions occurring only between the hours of 8 AM and 6 PM.[4]

A line-area source representing the haul route along Cedar Boulevard, with:

- Release height of 2.55 meters for haul truck exhaust;
- Initial vertical dimension of 2.37 meters;
- Emissions occurring only between the hours of 8 AM and 6 PM, and;

Receptor flagpole height of 1.5 meters (ground-level receptor at breathing height).

The sources were modeled with an emission rate of one gram per second to obtain a dispersion factor (unit concentration) at each receptor location. Emissions of exhaust PM_{10} were assumed to be DPM. The DPM and $PM_{2.5}$ concentrations were calculated using the dispersion factors and the DPM and $PM_{2.5}$ emissions from Table 2-3.

Lifetime excess cancer risk and non-cancer chronic hazard index were calculated using the resulting DPM concentrations along with equations and factors from the OEHHA 2015 Risk Assessment Guidelines and the BAAQMD HRA Guidelines.[5,6] **Table 2-5** presents the lifetime excess cancer risk, non-cancer chronic hazard index, and annual average $PM_{2.5}$ concentrations at the MEIR location. Results are presented for a third-trimester fetus (assuming a pregnant woman could be living at the MEIR), a child below two years of age, and a child between 2 and 9 years of age. The maximum cancer risk occurs for the child below two years of age due to the higher breathing rate of a child compared to the other ages (the third-trimester fetus assumes an adult breathing rate). The MEIR location is shown in **Figure 2**.

Modeling assumptions, equations, and the cancer risk calculations are included in Appendix A.

4 Construction hours limited to typical active workday hours for construction projects.

5 Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot Spots Program – Risk Assessment Guidelines*, February 2015, *http://oehha.ca.gov/air/hot_spots/hotspots2015.html*, accessed July 2020.

6 Bay Area Air Quality Management District, *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016, *http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en*, accessed June 2020.

TABLE 2-5
MODELED MAXIMUM EXCESS LIFETIME CANCER RISK, CHRONIC HAZARD INDEX, AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATIONS AT THE MEIR LOCATION

Construction Scenario/ Maximally Exposed Individual Receptor	Cancer Risk (in 1 million)	Chronic Hazard Index (unitless)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Unmitigated Construction			
MEIR (child resident)	22.0	0.03	0.07
Kings Kids Preschool	8.4	0.01	0.03
BAAQMD Significance Threshold	10	1.0	0.3
Exceeds Threshold?	**Yes**	No	No
Mitigated Construction			
MEIR (child resident)	1.2	0.001	0.004
Kings Kids Preschool	0.4	0.0004	0.001
BAAQMD Significance Threshold	10	1.0	0.3
Exceeds Threshold?	No	No	No

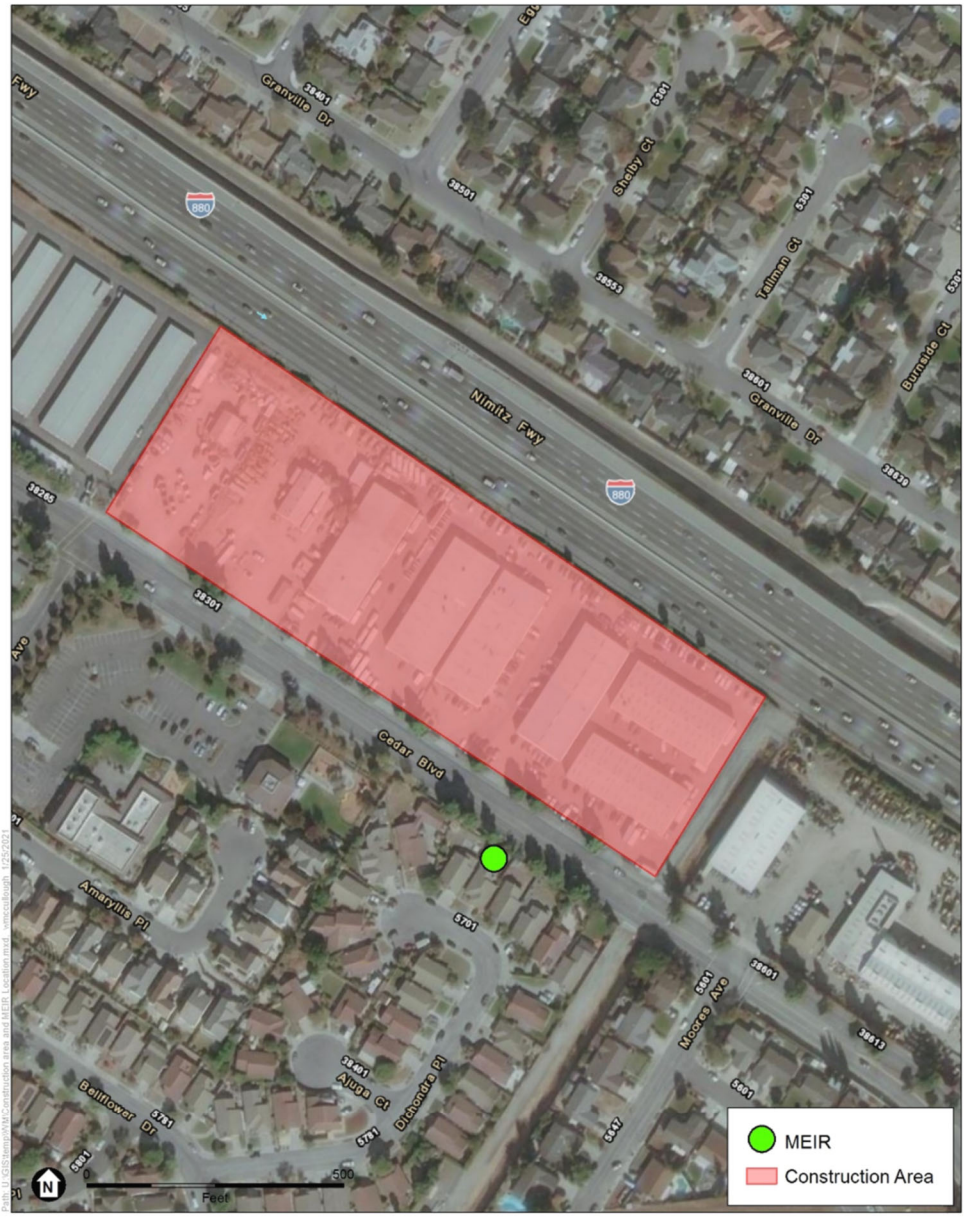
ABBREVIATIONS:
$PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns; $\mu g/m^3$ = micrograms per cubic meter.
SOURCE: ESA, 2020. See Appendix A, *Emissions and Health Risk Calculations*.

Because unmitigated proposed project health risk impacts would exceed risk thresholds for maximum excess lifetime cancer risk, project impacts would be potentially significant. Additionally, Table 3 presents a mitigated cancer risk value modeled with all equipment meeting U.S. EPA Tier 4 Final emissions standards. This mitigated scenario reduces the risks down to approximately 1 in one million, which is well below the BAAQMD standard of 10 in one million. Therefore, a construction fleet with a sufficient number of equipment meeting Tier 4 Final emissions standards will reduce the risk to below BAAQMD significance thresholds.

Implementation of **Mitigation Measure 1** would reduce cancer risks from project construction to below the risk thresholds. This mitigation measure assumes that the project construction fleet would comprise a sufficient number of off-road equipment engines that meet U.S. EPA Tier 4 Final engine emissions standards to bring the risk level to below 10 in one million.

Mitigation Measures

Mitigation Measure 2-2: *U.S. EPA Tier 4 Engines*. The applicant and/or its construction contractors shall be required to use off-road diesel construction equipment compliant with U.S. EPA Tier 4 Final non-road engine standards. If Tier 4 Final equipment is unavailable for a portion of the project's equipment fleet, then prior to the commencement of construction activities, an emissions estimate will be modeled to identify the portion of the fleet that must use Tier 4 Final engines to achieve a cancer risk value below the BAAQMD significance threshold of 10 in one million. The list shall be made available at the construction site and shall be updated when new or replacement construction equipment are brought to the site.



38478 Cedar Boulevard

Figure 2
Construction area and MEIR Location

ESA

Regarding other potential construction impacts, unmitigated demolition activities could result in airborne entrainment of asbestos, a TAC, particularly where structures built prior to 1980 would be demolished. However, these materials would be removed in accordance with the procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of BAAQMD's regulations; therefore, with adherence to regulatory requirements, asbestos would not be emitted to any substantial degree during demolition. Implementation of the **Mitigation Measures 2-1** would ensure that project-generated fugitive dust during construction would be reduced to a less than significant level.

Cumulative Analysis

Consistent with BAAQMD's CEQA Guidelines, the health risk from cumulative exposure to $PM_{2.5}$, DPM, and other nearby sources of TACs was evaluated for the MEIR. The cumulative evaluation combines health risks from proposed project construction with other nearby sources of $PM_{2.5}$ and TAC emissions within 1,000 feet of the project site boundary.

Within 1,000 feet of the project site, there are three stationary, permitted sources that are automobile repair and body shops. Other sources of TACs are mobile: rail, major streets, and highways, emitting mainly DPM but also volatile organic compounds in gasoline. This analysis evaluated health risks from the three stationary sources listed below, based on the BAAQMD Permitted Stationary Sources Risk and Hazards web-based GIS tool:[7]

- California Camper Repair, 38456 Cedar Boulevard
- Golden State Auto Collision, Inc., 38594 Cedar Boulevard
- Bay Area Body Shop, 38472 Cedar Boulevard

The first two of these stationary sources do not have any health risk values reported by the BAAQMD for cancer risk or PM2.5 concentrations. The third source, Bay Area Body Shop, will be demolished before the proposed project is built on that property.

Therefore, the only existing sources of cumulative health risk at the MEIR are mobile sources. Health risks from mobile sources were based on a BAAQMD geographic information systems (GIS) dataset that provides separate health risk estimates for rail, major streets, and highways. The BAAQMD Health Risk Calculator tool and the BAAQMD GIS mobile source files were used to estimate cancer risk and annual average $PM_{2.5}$ concentrations from the nearby mobile sources located within 1,000 feet of the project boundary.

The background cumulative cancer risk values represent exposure to TAC emissions beginning with a fetus in the third trimester (pregnant woman) and continuing through childhood and early adulthood over a 30-year exposure period. Modeling assumptions, equations, and the cancer risk calculations are included in Appendix A.

Table 2-6 presents the modeled cumulative cancer risks and $PM_{2.5}$ concentrations for construction plus existing TAC sources. The table shows both unmitigated and mitigated

[7] https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

cumulative cancer risks and $PM_{2.5}$ concentrations at the MEIR. Both unmitigated and mitigated cancer risk impacts are below the BAAQMD cumulative cancer risk threshold of 100 per million. In addition, both the unmitigated and mitigated cumulative $PM_{2.5}$ concentrations are below the BAAQMD cumulative threshold of 0.8 μ/m^3.

TABLE 2-6
CUMULATIVE MAXIMUM HEALTH RISKS FOR EXISTING OFF-SITE MEIR

Receptor Type/TAC Source	Lifetime Excess Cancer Risk (per million)	Annual Average PM2.5 Concentration ($\mu g/m_3$)
Existing Off-site MEIR		
Project Construction, unmitigated	21.87	0.07
Background Rail	3.40	0.01
Background Major Street	1.25	0.03
Background Highway	24.53	0.43
Total	*51.05*	*0.54*
BAAQMD Significance Thresholds	100	0.8
Exceeds Threshold?	**No**	**No**
Existing Off-site MEIR		
Project Construction, mitigated	1.17	0.004
Background Rail	3.40	0.01
Background Major Street	1.25	0.03
Background Highway	24.53	0.43
	30.35	*0.43*
BAAQMD Significance Thresholds	100	0.8
Exceeds Threshold?	**No**	**No**

NOTES:

[a] Since the new on-site MEIR would not be present at the site until construction is complete, the MEIR would not be exposed to any TAC emissions from construction. Therefore, only background cumulative risk values are presented.

ABBREVIATIONS:
$PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns; $\mu g/m^3$ = micrograms per cubic meter.

Criteria Air Pollutants

The following analysis of air quality impacts considers the potential impacts related to emissions of nonattainment pollutants and their precursors. Although ozone, as a secondary pollutant, would not be directly emitted by the Project, ozone precursors ROG and NOx would be emitted and are therefore, along with particulate matter, the focus of the impact assessment. Given that ozone formation occurs through a complex photo-chemical reaction between NO_X and ROG in the atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for ozone are established as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., NO_X and ROG). It is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of the resulting secondary pollutants which are

ozone and particulate matter in this case. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of atmospheric modeling in use at this time, it is infeasible and not scientifically defensible to convert specific emissions levels of NO_X or ROG emitted in a particular area to a particular concentration of ozone in that area. Meteorology, the presence of sunlight, seasonal impacts, and other complex photochemical factors all combine to determine the ultimate concentration and occurrence of ozone. Since the Project would not exceed the numeric indicator for ROG and NO_X emissions during either construction or operation, it is not likely that Project ROG and NO_X emissions could result in an increase in ground-level ozone concentrations in proximity to the Project sites or elsewhere in the air basin and impacts can be considered less than significant.

As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch Case*), the CEQA criteria pollutants significance thresholds from the air districts were set at emission levels tied to the region's attainment status. These emission levels are indexed to stationary pollution sources permitted by the air district to compel the operator to offset their emissions and they are not intended to be correlated to localized human health impacts.

Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by NO_X or ROG emissions at a project level. Therefore, it is not scientifically defensible to connect the project-level ROG or NO_X emissions to ozone-related health impacts at present.

> **Mitigation Measure 2-2: *U.S. EPA Tier 4 Engines*.** The applicant and/or its construction contractors shall be required to use off-road diesel construction equipment compliant with U.S. EPA Tier 4 Final non-road engine standards. If Tier 4 Final equipment is unavailable for a portion of the project's equipment fleet, then prior to the commencement of construction activities, an emissions estimate will be modeled to identify the portion of the fleet that must use Tier 4 Final engines to achieve a cancer risk value below the BAAQMD significance threshold of 10 in one million. The list shall be made available at the construction site and shall be updated when new or replacement construction equipment are brought to the site.

d) Would the project create objectionable odors affecting a substantial number of people? (No Impact)

BAAQMD has identified typical sources of odor in the CEQA Air Quality Guidelines, examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. The proposed Project would not include uses that have been identified by BAAQMD as potential sources of objectionable odors; this is a less than significant impact. Also, there are no sources of odor located in the Project area that future occupants of the Project would be exposed to. Therefore, there would be no impact with respect to exposure of people of odorous emissions.

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CHAPTER 3
Greenhouse Gas Analysis

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its forecasted continuation. Increases in greenhouse gas (GHG) concentrations in the earth's atmosphere are known to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature. Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be enhanced. CO_2, CH_4, and N_2O occur naturally, and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas the majority of CH_4 results from off-gassing associated with agricultural practices and landfills. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs, and SF_6, which have much higher heat-absorption potential than CO_2, and are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with 100-year GWPs of 25 and 298 times that of CO_2, respectively.

In emissions inventories, GHG emissions are reported in terms of metric tons of CO_2 equivalent (CO_2e). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e, both from residential developments and human activity in general.

Approach to Analysis

With regard to impacts from GHGs, both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts (BAAQMD, 2017b; CAPCOA, 2008); therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. This analysis uses both a quantitative and a qualitative approach. Because the quantifiable thresholds included in the BAAQMD CEQA Guidelines are based on the its 2009 *Justification Report* which formulated these thresholds based on AB 32 and California Climate Change Scoping Plan reduction targets and strategies developed to reduce GHG emissions statewide, a project cannot exceed a numeric BAAQMD threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (BAAQMD, 2009). Therefore, if a project exceeds a numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

Separate thresholds of significance are established for operational emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as vehicle traffic from land use development). As no threshold has been established for construction-related emissions, GHG emissions over the entire Project construction are amortized over a project life of 30 years and considered with the operational emissions for comparison to thresholds. For operational emissions from non-stationary sources, a significance criterion based on an emissions efficiency threshold, defined as emissions per service population, is presented in **Table 3-1**. This threshold is based on the project's total GHG emissions divided by the population occupying the housing. This threshold also represents a 40 percent reduction below that presented in the BAAQMD CEQA Air Quality Guidelines to reflect the goal of 40 percent reduction in GHGs from 2020 to 2030.

TABLE 3-1
BAAQMD PROJECT-LEVEL GREENHOUSE GAS THRESHOLDS OF SIGNIFICANCE

	Construction-Related	Operational-Related
Pollutant	**Average Daily Emissions, lb/day**	**Emissions Efficiency Threshold**
GHGs*	None	2.76 metric tons of CO_2e per service population per year

NOTES: The service population is the sum of residents plus employees expected for a development project.

* For projects other than stationary sources.

SOURCE: BAAQMD, 2017b.

The City of Newark's Climate Action Plan (CAP), January 2010 Initial Framework commits to the following:

1. Analyze the available data on emissions from both municipal and community activities, to present a comprehensive inventory of emissions from (a) City government operations and (b) community-wide activities.

2. Present this inventory as a baseline against which to measure progress towards reducing GHG emissions.

3. Develop a set of emission reduction goals for municipal operations over the next 1-4 years (short term), from years 4-8 (medium term) and from year 8 and beyond (long term) timeframes.

4. Present actions that the citizens and businesses of Newark can implement in the medium and long-term to help reduce emissions from the Community.

5. Present long-term Planning efforts to layout future development with vehicle trip reduction as an important goal.

The CAP commits to statewide GHG reduction goals but only includes a 2020 target based on the State's AB 32 goals. Because the target year for completion of the project is 2024, it is more appropriate to identify a project-specific threshold that is consistent with the reductions needed by 2030 as part of SB 32.

GHG emissions resulting from the proposed Project were also estimated using CalEEMod, using assumptions included in **Appendix A**. CalEEMod defaults were used when Project-specific data was not available. Construction emissions were estimated for equipment and truck exhaust and construction worker vehicles. In regards to operations, vehicle trips were obtained from the traffic analysis conducted for the Project. The model makes adjustments for implementation of Pavley vehicle standards and Low Carbon Fuel Standards.

3.1 Existing BAAQMD Significance Thresholds

As discussed above, the BAAQMD's CEQA Air Quality Guidelines establish thresholds for analyzing the GHG emissions associated with land use development projects:

- Compliance with a qualified Climate Action Plan, with a goal consistent with AB 32,
- A GHG efficiency threshold of 4.6 $MTCO_2e$ per service population (project jobs plus project residents).

As noted above, the City of Newark CAP sets a regional target for the year 2020. The proposed Project buildout would occur after 2020, rendering the CAP inadequate for CEQA tiering because it does not have a planning horizon that extends to the proposed Project's buildout date.

For projects such as the proposed Project that have a sizable residential population and/or employees, the efficiency threshold is more appropriate than a mass emissions threshold. The BAAQMD efficiency threshold (4.6 $MTCO_2e$) is tied directly to AB 32 and statewide emissions reduction goals for 2020 and was derived by dividing the AB 32 GHG reduction target for land use development emissions in California by the estimated 2020 population and employment level.

However, as this efficiency threshold does not consider the statewide emissions target mandated by SB 32 for 2030, it would have to be adjusted to be consistent with SB 32.

Based on the existing information the proposed Project would be fully operational in 2024. AB 32 includes a statewide GHG reduction target to achieve 1990 levels by the year 2020, while SB 32 extends the statewide target to a reduction of 40 percent below 1990 levels by 2030. Since the proposed Project has a buildout date is between 2020 and 2030 an appropriate threshold is one that interpolates between the AB 32 and SB 32 targets, recognizing that important State initiatives (most notably, the vehicle fuel efficiency standards and the Renewables Portfolio Standard) are scheduled to reduce emissions substantially as the decade progresses. The most conservative approach would be to use a threshold based on the 2030 target, which would be consistent with a 2016 white paper by the Association of Environmental Professionals (AEP) Climate Change Committee recommending that when a project is built out before the next milestone target year adopted by the State, the milestone year should be used as the basis for the project-level threshold.[8] Note that the AEP white paper is advisory only and is not binding guidance or an adopted set of CEQA thresholds.

3.2 Project Significance Criteria

Because the BAAQMD hasn't adopted GHG-related CEQA Significance Thresholds for the SB 32 horizon year of 2030, and the City does not currently have a "qualified" GHG reduction strategy available, specific project-level thresholds have been identified for the purposes of CEQA analysis, consistent with CEQA Guidelines section 15064.4 and CEQA Guidelines Appendix G. The adjusted efficiency threshold identified below is interpolated to be consistent with both the 2020 target and the adjusted 2030 SB 32 horizon year target. Specifically, the proposed Project would be deemed to have a significant adverse impact[9] related to GHG emissions if it would:

1. Generate GHG emissions, either directly or indirectly, from the construction and operation of the proposed Project in exceedance of the interpolated, adjusted emissions threshold that is 40% below the 2020 mass emissions threshold of 4.6 $MTCO_2e$ per service population per year, which equates to 2.76 $MTCO_2e$ per service population per year, or
2. Result in a conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The first threshold is consistent with AB 32 and SB 32 targets and maintains consistency with SB 743. SB 743 is focused on transportation impact requirements and VMT analysis and metrics thresholds and has direct correlation with the associated mobile GHG emissions.

The second threshold requires an assessment of the proposed Project's consistency with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of

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

[9] Greenhouse gas impacts are, by their nature, cumulative impacts because one project by itself cannot cause global climate change. These thresholds pertain to a project's contribution to cumulative impacts but are labeled "Project-Level Impacts" here to be consistent with the terminology used by BAAQMD.

GHGs, including CA2020, Moving Forward 2040, Plan Bay Area 2040, CARB's 2017 Climate Change Scoping Plan Update, and Executive Order S-3-05. Note that CA2020 has a planning horizon of 2020, and the County/RCPA have not adopted a plan to achieve its 2030 GHG reduction goal as expressed in CA2020.

Impact Assessment

This impact assessment follows the GHG issues described within the CEQA Guidelines, Appendix G, Initial Study Checklist. **Table 3-2** presents a summary of the greenhouse gas issues and impacts.

TABLE 3-2
CEQA GUIDELINES GREENHOUSE GAS ISSUES SUMMARY

Issue	Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an adopted plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

SOURCE: CEQA Guidelines, Appendix G

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

BAAQMD requires that both direct and indirect sources of GHG emissions be considered in the analysis. Direct emissions include emissions from construction equipment and vehicles, operational vehicle trips generated by the Project, and use of fuel in landscaping equipment. The proposed project would not use any natural gas, and rooftop solar panels would generate some of the Project's electricity needs. Indirect emissions are associated with offsite electricity generation, transport and disposal of solid waste, and water and wastewater transport and treatment.

These GHG sources and emissions are detailed below:

- ***Construction Activities.*** Construction equipment typically use fossil-based fuels (primarily diesel) to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. CH_4 is also emitted during the fueling of heavy equipment.

- ***Solid Waste Disposal Emissions.*** When solid waste generated by projects is deposited in landfills, anthropogenic CH_4 is generated from the anaerobic breakdown of the organic material in solid waste.

- ***Electricity and Water Use.*** Electricity used on-site can result in GHG production if the electricity is generated by combustion of fossil fuel. Although the project would install rooftop solar panels, the modeling did not assume any reduction in electricity use from this feature. However, since natural gas would not be part of the Project, any additional electricity demand is assumed to be met by the solar panels. GHG emissions from water and wastewater transport result from the generation of energy required to treat and transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point.

- ***Motor Vehicle Use.*** Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. However, not all of these emissions would be "new" to the region or state since drivers would likely have relocated from another area. To be conservative, however, all vehicle trips predicted were assumed to be new trips in this analysis.

GHG emissions over the 3-year construction period were estimated using CalEEMod and amortized assuming a 30-year development life after completion of construction. The amortized emissions were added to the Project's operational emissions for comparison to significance thresholds. Amortized GHG emissions associated with construction of the proposed Project would result in the generation of 40.1 metric tons of CO_2e per year over the assumed life of the Project.

Project construction and operational emissions as estimated using CalEEMod are shown in **Table 3-3** below. Operational emissions include GHG emissions from motor vehicle trips, grid electricity usage, solid waste, and other sources (including area sources, natural gas combustion, and water/wastewater conveyance).

TABLE 3-3
PROJECT GREENHOUSE GAS EMISSIONS

Source	Emissions, metric tons of CO_2e per year
Project construction emissions (amortized)	40.1[1]
Project operations[2]	935.4
Total project GHG emissions (construction and operation)	975.5
Project service population (number of residents)	371
Emissions per service population	2.63
Adjusted BAAQMD GHG efficiency threshold	2.76
Exceeds threshold?	No

NOTES:
1 Total CO2e emissions from construction total 1,201.45 metric tons over the four years of construction. The amortized emissions represent the total divided by 30 years.
2 Project operational emissions do not take into account reduction in electricity usage from the solar panels on Project residences. Actual emissions would be lower.

SOURCE: APPENDIX A.

Table 3-3 indicates that the total GHG emissions per service population per year associated with the Project would be below the project-specific GHG efficiency threshold of 2.76 metric tons of CO_2e per service population per year, and the impact would be less than significant.

The proposed project is located within the BAAQMD, who presented a draft update to the CEQA thresholds of significance for GHGs during a public workshop on December 9, 2021 (BAAQMD, 2021), and subsequently finalized its CEQA Thresholds for Evaluating the Significance of Climate impacts (BAAQMD 2022). The BAAQMD draft and final thresholds of significance were drafted to aid in compliance with the Statewide goals established by Assembly Bill 32 and Senate Bill 32 and are presented in **Table 3-4.**

TABLE 3-4
BAAQMD GHG THRESHOLDS OF SIGNIFICANCE (MUST INCLUDE A OR B)

Option	Draft Air District Thresholds
Option A	Projects must include, at a minimum, the following project design elements: 1) Buildings a. No natural gas (residential and non-residential) b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2) Transportation a. Achieve compliance with EV requirements in the most recently adopted version of CALGreen Tier 2 b. Achieve SB 743 target of 15% reduction in VMT per capita below regional average
Option B	Be consistent with a local GHG Reduction Strategy that meets the criteria under the CEQA Guidelines Section 15183.5(b)
SOURCES:	BAAQMD 2021, Air District Update to CEQA Thresholds of Significance for Greenhouse Gases – Public Workshop (December 9, 2021).

The proposed project would meet threshold option A for the following reasons:

Option A, 1a.) Buildings: The proposed project would not include natural gas.

Option A, 1b.) The proposed project will not result in any inefficient, wasteful, or unnecessary energy use. The proposed project would not involve natural gas use and would comply with Title 24, part 6 energy and water efficiency requirements. The proposed project would include the installation of solar panels and provision of electric vehicle parking spaces.
Construction of the Project would not be more demanding of fuel resources than other similar construction projects within the vicinity. The impact would be less than significant

Option A, 2a.) Transportation: The proposed project would include EV hookups consistent with CALGreen Tier 2.

Option A, 2b.) Transportation: The average annual VMT calculated using CalEEMod defaults is 2,319,459. Based on the transportation analysis, including trip generation, conducted for the project, the project's annual VMT would be 1,928,720. This represents a 17% reduction in the average, default VMT associated with this land use.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Significant)

As presented above, one of the City of Newark's CAP commitments is:

(5.) Present long-term Planning efforts to layout future development with vehicle trip reduction as an important goal.

This is directly applicable to the Project. The CAP includes goals and action items organized by the municipal, residential, and business communities, as well as for transportation planning and zoning, and describes the goals and action items to achieve its commitments.

The CAP Chapter 6 Transportation and Zoning section describes goals related to reducing vehicle trips and vehicle miles traveled. As discussed above in Section 2 under Impact (a), the Project is located in an area with access to public transit. An AC Transit line runs along Cedar Boulevard, adjacent to the Project site, with BART and AMTRAK each within 3 miles of the site. This proximity to public transit would reduce vehicle trips and is consistent with the development planning goal of the CAP.

The Project would be consistent with the CAP's transportation planning goals, as described above. As such, this impact would be less than significant.

CHAPTER 4
References

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