MEMORANDUM

To:	Maria Miller, Director of Planning and Entitlement, Baldwin & Sons
From:	Shane Russett, Air Quality Specialist, Dudek
Subject:	Otay Village 7 Air Quality and Greenhouse Gas Emissions Technical Memorandum
Date:	October 15, 2024
cc:	Alexandra Martini, Project Manager, Dudek
Attachment(s):	Attachment A – CalEEMod Emissions Outputs

1 Introduction and Purpose

The purpose of this technical memorandum is to evaluate the potential air quality and greenhouse gas (GHG) emissions impacts of the proposed Otay Village 7 (project) located in the City of Chula Vista (City). This memorandum was prepared in support of the California Environmental Quality Act (CEQA) evaluation for the project, which is an addendum to Village Seven Environmental Impact Report (EIR) (EIR 04-06. SCH # 2003111050, City of Chula Vista 2004). Consistent with Section 15162 of the CEQA Guidelines, this assessment addresses whether currently proposed changes to the original Village Seven Plan could result in any new significant environmental impacts which were not identified in the Village Seven EIR (2004 EIR) or whether previously identified significant impacts would be substantially more severe such that a subsequent EIR would be required as it relates to the air quality and GHG emissions issue areas.

The original project was the *Village Seven Sectional Planning Area Plan and Tentative Maps*, which initially approved the development of a maximum of 1,053 single-family residential units; a maximum of 448 multi-family residential units; elementary, middle, and high schools; and a public park.[1]

The contents and organization of this memorandum are as follows: Project Description; Background and Methodology; Air Quality and GHG Emissions Assessments; and References Cited.

2 Project Description

The 2004 EIR (approved project) allows for the maximum construction of 1,456 residential units to date, 1,120 units have been constructed); a high school; a trail connection connecting Wolf Canyon to the west and the Eastern Urban Center in Planning Area 12 to the east; and a village core area that contains commercial uses in a mixed use setting, public and community purpose facilities, a transit stop, an elementary school, multi-family residences, a Town Square/Village Green/Main Street area, affordable housing, and a Neighborhood Park.

The proposed project includes the following:

[1] Note that the original Otay Ranch General Development Plan (GDP), adopted in 1993 and subsequently amended in 1996, permitted 1,501 units in Village Seven (1,053 single-family and 448 multi-family units) and a middle school (in addition to the currently existing elementary school and high school), the latter of which is no longer part of Village Seven. The technical reports for the adopted 2004 EIR, including the Traffic Impact Assessment, studied the impacts from 1501 units. The overall residential count was eventually reduced to the current 1,456 units, but the environmental impacts and public facilities development assumptions of the 2004 EIR were based on a higher-intensity development scenario.

Chula Vista General Plan Amendment (Rezone)

- Change the land use category in Neighborhood R-3 from Mixed-Use Residential (MU) and Low-Medium Residential (LM) to Medium-High (MH) Residential;
- Change the land use category in Neighborhood R-4 from Low-Medium Residential (LM) to Town Center (TC); and
- Change the land use category in Neighborhood R-8 from Low-Medium Residential (LM) to Medium-High (MH) Residential.

Otay Ranch GDP Amendment

- Change the land use category in Neighborhood R-3 (APN 644-241-10-00) from Mixed-Use (MU) and Low-Medium Village (LMV) to Medium-High (MH) Residential;
- Change the land use category in Neighborhood R-4 (644-241-08-00) from Low-Medium Village (LMV) to Town Center (TC);
- Change the land use category in Neighborhood R-8 (APN 644-241-07-00) from Low-Medium Village (LM) to Medium-High (MH) Residential;
- Update the land use map, applicable tables and exhibits to reflect the revised land use categories and associated acreages;
- Update the boundary of Village Seven on the relevant exhibits to exclude the property which had been previously transferred to Village Eight West by another applicant via a separate application, and has not been corrected in the GDP.

Village Seven SPA Plan Amendment

- Change the land use designation in Neighborhood R-3 from Single Family Three (SF3) to Residential Multi-Family One (RM1);

- Change the land use designation in Neighborhood R-4 from Single Family Four (SF4) to Residential Multi-Family Two (RM2);
- Change the land use designation in Neighborhood R-8 from Single Family Four (SF4) to Residential Multi-Family One (RM1);
- Rename the western portion of Neighborhood R-3 (APN644-241-10-00) into a separate Neighborhood R-8;
- Assign 287 dwelling units (out of the total of 1,465 dwelling units currently entitled for Village Seven in the GDP) to the neighborhoods as follows:
  - Neighborhood R-3: 43 units;
  - Neighborhood R-4: 123 units;
  - Neighborhood R-8: 121 units.
- Update SPA Plan text, tables, and exhibits to reflect the proposed land use changes;
- Update SPA Appendices – Planned Community District Regulations, Village Seven Design Plan, Air Quality Improvement Plan, Water Conservation Plan, Non-Renewable Energy Conservation Plan, and technical studies to reflect the SPA Amendment.
- Update the boundary of Village Seven on the relevant exhibits to exclude the property which had been previously transferred to Village Eight West by another applicant via a separate application, and has not been corrected in the Village Seven SPA Plan.

In short, the project will result in the reassignment of 287 of the approved dwelling units from single-family housing to multi-family housing. In total, 1,120 housing units approved in the 2004 EIR have already been constructed, having 336 units that have been approved and not yet constructed. In order to compare the emissions of the updated project to the project approved in the original 2004 EIR, the emissions associated with the construction and operation of 287 single-family homes (representing the emissions accounted for in the 2004 EIR) will be compared to the emissions associated with the construction and operation of 287 multi-family homes (proposed by the project) in the following analysis.

A site utilization plan (Figure 1) for the project is included below.

INTENTIONALLY LEFT BLANK

3 Background and Methodology

3.1 Pollutant and Greenhouse Gas Overview

The project site is located within the San Diego Air Basin (SDAB) and is within the jurisdictional boundaries of the San Diego Air Pollution Control District (SDAPCD), which has jurisdiction over San Diego County (County) where the project is located.

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $PM_{2.5}$). Volatile organic compounds (VOCs; also referred to as reactive organic gases [ROGs]) are not a criteria air pollutant but are evaluated as a precursor to ozone (O_3), which is a criteria air pollutant but is difficult to directly quantify because of its complicated formation process in the atmosphere, which requires light photolysis and the presence of multiple precursors.

Greenhouse gases (GHGs) are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2) methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also 14 CCR 15364.5). The GHG analysis herein focuses on CO_2, CH_4, and N_2O as those are primary GHGs associated with the proposed land use development and what is quantified in the California Emissions Estimator Model (CalEEMod). If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (Climate Action Team [CAT] 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2e). The CO_2e for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons (MT) of CO_2e = (MT of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 25, which means that emissions of one MT of CH_4 are equivalent to emissions of 25 MT of CO_2, and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's (IPCC's) Fourth Assessment Report (IPCC 2007).

3.2 Approach and Methodology

CalEEMod Version 2022.1.1.21 was used to estimate air quality and greenhouse gas emissions from construction of the project (California Air Pollution Control Officers Association [CAPCOA] 2022). CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with construction activities and operation of a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and its size, construction schedule, and anticipated use of construction equipment, were based on information provided by the applicant or default model assumptions if project specifics were unavailable., In order to compare the emissions of the updated project to the project approved in the original 2004 EIR, the emissions associated with the construction and operation of 287 single-family homes will be compared to the emissions associated with the construction and operation of 287 multi-family homes in the following analysis.

Criteria air pollutant emissions associated with construction of the project were estimated for the following emission sources: operation of off-road construction equipment, paving, architectural coating, on-road vendor (material delivery) trucks, and worker vehicles. The operational criteria air pollutant emissions were estimated from area sources, energy sources, and mobile sources. GHG emissions associated with construction of the project were estimated for the following emission sources: operation of off-road construction equipment, on-road vendor trucks, and worker vehicles. GHG emission sources associated with operation of the project include area, energy, mobile, solid waste, water, and wastewater categories. Project construction and operational assumptions are discussed below.

3.2.1 Construction Emissions

Construction of the project would result in a temporary addition of pollutants to the local airshed caused by combustion pollutants from on-site construction equipment and off-site worker vehicles, vendor trucks, soil disturbance (i.e., dust emissions), and VOC off-gassing from application of paint and asphalt pavement. CalEEMod was used to estimate project-generated construction emissions. For purposes of estimating project-generated emissions, and based on information provided by the applicant, it is assumed that construction of the project would commence in January 2025. According to CalEEMod defaults, construction of 287 single-family homes, used to represent the emissions accounted for in the 2004 EIR, would last approximately 4 years and 5 months, ending in May 2029. According to CalEEMod defaults, construction of 287 multi-family homes, used to represent the emissions caused by the project, would last approximately 1 year and 6 months, ending in June 2026. As demolition and site preparation were not modeled in the 2004 EIR, the phases were not included in the updated modeling.

Construction phasing assumed for emissions modeling of the single-family housing is as follows:

- Grading: January 2025—October 2025 (155 days)
- Building Construction: October 2025—July 2028 (775 days)
- Paving: July 2028—December 2028 (110 days)
- Architectural Coating: December 2028—May 2029 (110 days)

Construction phasing assumed for emissions modeling of the multi-family housing is as follows:

- Grading: January 2025—February 2025 (30 days)
- Building Construction: February 2025—April 2026 (300 days)
- Paving: April 2026—May 2026 (20 days)
- Architectural Coating: May 2026—June 2026 (20 days)

The analysis presented herein assumes a construction start date of January 2025, which represents the earliest date at which construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

Table 1 presents the construction scenario assumptions used for estimating project-generated emissions in CalEEMod for modeling the single-family housing construction (accounted for in the 2004 EIR). The assumptions presented below are primarily based on CalEEMod default values for the construction activities of each phase.

Table 1. Construction Scenario Assumptions–Single-Family Housing

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Grading	20	2	0	Excavators	2	8
				Graders	1	8
				Rubber Tired Dozers	1	8
				Scrapers	2	8
				Tractors/Loaders/Backhoes	2	8
Building Construction	104	32	0	Cranes	2	7
				Forklifts	6	8
				Generator Sets	2	8
				Tractors/Loaders/Backhoes	6	7
				Welders	2	8
Paving	16	2	0	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8
Architectural Coating	22	2	0	Air Compressors	1	6

Notes: See Attachment A for details.

Table 2 presents the construction scenario assumptions used for estimating project-generated emissions in CalEEMod for modeling the multi-family housing construction (proposed by the project). The assumptions presented below are primarily based on CalEEMod default values for the construction activities of each phase.

Table 2. Construction Scenario Assumptions–Multi-Family Housing

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Grading	20	2	0	Excavators	2	8
				Graders	1	8
				Rubber Tired Dozers	1	8
				Scrapers	2	8
				Tractors/Loaders/Backhoes	2	8
Building Construction	208	32	0	Cranes	1	7
				Forklifts	3	8
				Generator Sets	1	8
				Tractors/Loaders/Backhoes	3	7
				Welders	1	8
Paving	16	2	0	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8
Architectural Coating	42	2	0	Air Compressors	1	6

Notes: See Attachment A for details.

For both construction scenarios, CalEEMod default values were assumed for the trip distance for worker and vendor trips. The interior and exterior square footage to be painted during each architectural coating phase was estimated based on CalEEMod assumptions for building surface area multiplier and fraction of interior or exterior surface area along with estimated square footage painted in that phase, which matches with the square footage built in the respective building construction phase. CalEEMod provides default inputs for area paved for the single-family housing land use subtype while no defaults were generated for all other land use types.

3.2.2 Operational Emissions

The project would generate operational criteria air pollutant emissions from area sources (consumer products, architectural coatings, and landscaping equipment), energy sources (natural gas appliances, space and water heating), and mobile sources (vehicular traffic). The first year of operation was assumed to be 2029 for the single-family housing scenario and 2026 for the multi-family housing scenario. Operation of the project would result in

GHG emissions from area sources (landscape maintenance equipment), energy use (natural gas and electricity consumed by the project), mobile sources, solid waste generation, and water supply and wastewater treatment, which was estimated using CalEEMod.

Area Sources

CalEEMod default assumptions were used to estimate operational emissions from area sources, including emissions from consumer product use and architectural coatings. Emissions associated with natural gas usage in space heating and water heating are calculated in the building energy use module of CalEEMod, as described under "Energy Sources" below.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2022). Consumer product VOC emissions were estimated in CalEEMod based on the floor area of buildings and default factor of pounds of VOC per building square foot per day. The CalEEMod default values for consumer products were assumed.

The greatest source of VOC emissions is use of consumer products, and the second greatest source of VOC emissions is architectural coatings. Consistent with typical construction practices and SDAPCD Rule 67.0.1, it is anticipated that, for both residential and non-residential land uses, interior paint would not exceed flat coating limits (50 grams per liter [g/L] VOC) and exterior paint would not exceed non-flat coating limits (50 g/L VOC). SDAPCD Rule 67.0.1 identifies VOC limits for various specialty coatings that exceed 150 g/L VOC, but the primarily residential proposed project is not anticipated to require a substantial amount of specialty coatings.

Consistent with CalEEMod default assumptions, it is assumed that the residential surface area for painting equals 2.7 times the floor square footage while it is assumed that the nonresidential surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating (CAPCOA 2022). CalEEMod default assumptions were assumed for the application of architectural coatings during operation.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. It is assumed that the project would include a photovoltaic solar system in alignment with Title 24 requirements. CalEEMod default assumptions were used for estimating energy use.

Mobile Sources

Following the completion of construction activities, the project would generate criteria pollutant and GHG emissions from mobile sources (vehicular traffic) as a result of project residents. Project-specific trip rates were assumed for the single-family and multi-family housing scenarios based on the Project Information Form for Transportation Studies (PIF) completed by CR Associates (CR Associates 2024). CalEEMod was used to estimate emissions from

proposed vehicular sources (refer to Attachment A). CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the associated use, as modeled within CalEEMod, which is based on the California Air Resources Board (CARB) EMFAC model. Emission factors representing the vehicle mix and emissions for the applicable operational year were used to estimate emissions associated with vehicular sources.

Solid Waste

The project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste.

Water and Wastewater

Supply, treatment, and distribution of water for the project requires the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the project requires the use of electricity for treatment, and GHG emissions can directly be emitted during wastewater treatment. Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using CalEEMod default values.

4 Air Quality Assessment

4.1 Summary of Previous Analysis

The 2004 EIR found that impacts associated with air quality standard violations would be significant and unavoidable. The 2004 EIR found that CO, ROG (otherwise known as VOC), NO_x, and PM_{10} emissions would exceed thresholds during operation, and found that construction emissions would be less than significant after the inclusion of mitigation.

Given the project air quality-related impacts identified in the 2004 EIR, the following mitigation measure was incorporated in the project design to reduce emissions of VOCs, NO_x, CO, and PM_{10} during construction:

Mitigation Measure

4.5-1 The following measures shall be specified as notes on the project grading plans, and shall be implemented as practical to minimize construction emissions:

- ♦ Minimize simultaneous operation of multiple construction equipment units.
- ♦ Use low pollutant-emitting construction equipment, as practical
- ♦ Use electrical construction equipment as practical.
- ♦ Use catalytic reduction for gasoline-powered equipment.
- ♦ Use injection timing retard for diesel-powered equipment.
- ♦ Water the construction area at least twice daily to minimize fugitive dust.
- ♦ Stabilize graded areas as quickly as possible to minimize fugitive dust.
- ♦ Pave permanent roads as quickly as possible to minimize dust.

♦ Use electricity from power poles instead of temporary generators during building, as feasible.
♦ Apply chemical stabilizer or pave the last 100 feet of internal travel path within a construction site prior to public road entry.
♦ Install wheel washers adjacent to a paved apron prior to vehicle entry on public roads.
♦ Remove any visible track-out into traveled public streets within 30 minutes of occurrence.
♦ Wet wash the construction access point at the end of each workday if any vehicle travel on unpaved surfaces has occurred.
♦ Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads.
♦ Cover haul trucks or maintain at least 12 inches of freeboard to reduce blowoff during hauling.
♦ Suspend all soil disturbance and travel on unpaved surfaces if winds exceed 25 mph.

4.2 Impact Analysis

4.2.1 Does the project conflict with or obstruct implementation of the applicable air quality plan?

No New or Substantially More Severe Significant Impact. The 2004 EIR found that the approved project would result in impacts that would contribute to existing non-attainment within the air basin.

At the local level, SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plans for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) in the SDAB; specifically, the State Implementation Plan (SIP) and Regional Air Quality Strategy (RAQS).[2] The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2020. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is updated every 3 years (most recently in 2022). The RAQS outlines SDAPCD's plans and control measures designed to attain the CAAQS for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the County as part of the development of their general plans.

If a project proposes development that is greater than what was anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality. Implementation of the 2004 EIR would result in an increase in housing of 1,456 residential units. The proposed project will result in the reassignment of 287 of the approved projects dwelling units from the 2004 EIR from single-family housing to multi-family housing.

[2] For the purpose of this discussion, the relevant federal air quality plan is the O_3 maintenance plan (SDAPCD 2016b). The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the SDAB.

The most recent Regional Housing Needs Assessment (RHNA) from SANDAG stated that Chula Vista needs to build 11,105 units from 2021 through 2029 (SANDAG 2020). The proposed project is expected to bring 287 out of the 336 remaining units approved to be built in the 2004 EIR to market, which would be within SANDAG's growth projection for housing during the 6th Cycle planning horizon. Therefore, the proposed project would not conflict with SANDAG's regional growth forecast for the City.

The increase in the housing units and associated vehicle source emissions are not anticipated to result in air quality impacts that were not envisioned in the growth projections and RAQS, and the increase in residential density in the region would not obstruct or impede implementation of local air quality plans. Based on the information included above, implementation of the proposed project would not result in development in excess of that anticipated in local plans or increases in population/housing growth beyond those contemplated by SANDAG.

Moreover, the PIF prepared by CR Associates found that the proposed project would result in a decrease in Average Daily Trips (ADT) from the 2004 EIR (CR Associates 2024). As such, vehicle trip generation and planned development for the proposed project are considered to be anticipated in the SIP and RAQS. Because the proposed land uses and associated vehicle trips are anticipated in local air quality plans, the proposed project would be consistent at a regional level with the underlying growth forecasts in the RAQS. Therefore, impacts associated with the potential to conflict with an applicable air quality plan would be **less than significant**, and the level of impact would not be substantially more severe than the impacts identified in the 2004 EIR.

4.2.2 Does the project violate any air quality standards or contribute to an existing or projected violation?

No New or Substantially More Severe Significant Impact. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SDAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

The 2004 EIR found that CO, VOC, NO_x, and PM_{10} emissions would exceed thresholds during operation. With implementation of the mitigation measure described in Section 4.1, the 2004 EIR found that impacts would be reduced below significance thresholds during construction. Overall, the operational air quality impacts of the approved project were found to be significant and unavoidable.

Construction Emissions

Construction activities from the proposed project modifications would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

CalEEMod Version 2022.1.1.21 was used to estimate emissions from the construction of 287 single-family homes (representing the emissions accounted for in the 2004 EIR) and the emissions associated with the construction of 287 multi-family homes (proposed by the project). Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$

emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil.

The proposed project is subject to SDAPCD Rule 55 – Fugitive Dust Control, which requires the project restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit any fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the emissions modeling, it was assumed that the active sites would be watered at least two times daily, resulting in an approximately 55% reduction of particulate matter. Consistent with typical construction practices and SDAPCD Rule 67.0.1, it is anticipated that for both residential and non-residential land uses, interior paint would not exceed flat coating limits (50 grams per liter (g/L) VOC) and exterior paint would not exceed non-flat coating limits (50 g/L VOC). These calculations do not include the mitigation from the 2004 EIR listed in Section 4.1.

Table 3. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Construction Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Single-Family Housing (2004 EIR)						
2025	3.28	29.82	31.39	0.06	10.62	4.83
2026	2.54	21.09	30.91	0.05	1.85	0.97
2027	2.45	20.11	30.60	0.05	1.77	0.89
2028	32.03	19.10	30.34	0.05	1.70	0.83
2029	32.02	0.91	1.94	0.00	0.21	0.06
Maximum	***32.03***	***29.82***	***31.39***	***0.06***	***10.62***	***4.83***
Multi-Family Housing (Proposed Project)						
2025	3.28	29.82	29.15	0.06	10.62	4.83
2026	95.48	11.56	22.43	0.03	2.35	0.83
Maximum	***95.48***	***29.82***	***29.15***	***0.06***	***10.62***	***4.83***

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
Emissions include compliance with SDAPCD Rule 55.
Emissions represent the summer or winter maximum daily project-related emissions.
See Attachment A for complete results.

As shown in Table 3, the proposed project emissions (multi-family housing) would not result in greater emissions than single-family housing, except for VOC. The CalEEMod construction architectural coating assumptions associated with multi-family housing may not present a reasonable comparison between land uses based on the default assumptions for the amount of square footage to be coated per day. CalEEMod defaults assume that the construction of the single-family housing will result in the coating of 1,511,055 square feet over a 110-day period, or an average of 13,737 square feet coated per day, while defaults assume that multi-family housing construction will result in the coating of 821,394 square feet over a 20-day period, or an average of 41,070 square feet coated per day. CalEEMod defaults assume that construction of multi-family housing will require the coating of approximately three times the amount of square footage per day required for single-family housing; thus, the VOC emissions caused by multi-family housing construction are anticipated to be overestimated in relationship to single-family housing construction.

Additionally, the 2004 EIR estimated that construction of the entire approved project would result in maximum daily VOC emissions of approximately 4,829 pounds per day.[3] As 1,120 of the 1,456 units allowed for in the 2004 EIR have already been constructed, the likelihood that construction of the proposed project will overlap with other development accounted for in the 2004 EIR is low, due to the buildout of the majority of the plan area. Under the reasonably foreseeable assumption that proposed project construction would not overlap with other Village Seven development, a maximum daily emission of 95.48 pounds per day of VOC is well accounted for by the 2004 EIR (e.g., within the 4,829 pounds per day of VOC estimated). Even if the proposed project's net increase in VOC emissions between single-family and multi-family housing of 63.45 pounds per day is considered in addition to the VOC emissions estimated in the 2004 EIR, it would represent approximately 1.3% of the maximum daily VOC emissions accounted for in the 2004 EIR. Accordingly, while construction of the proposed project may result in greater VOC emissions compared to the equivalent number of single-family residential units, the potential relative increase in VOC emissions does not constitute a new or substantially more severe impact. Furthermore, the 2004 EIR previously found that VOC impacts would exceed thresholds but would be reduced to less-than-significant levels by MM 4.5-1. The proposed project would also be subject to MM 4.5-1. Therefore, construction impacts associated with criteria air pollutant emissions would not be new or substantially more severe than the 2004 EIR.

Operational Emissions

Criteria air pollutant emissions from operation of the proposed project were estimated using CalEEMod and include emissions from area, energy, and mobile sources, which are discussed below and compared to the emissions from the operation of the same number of units of single-family housing. Table 4 presents the emissions during operation.

Table 4. Estimated Maximum Daily Operation Criteria Air Pollutant Emissions

Emissions Source	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Single-Family Housing (2004 EIR)						
Mobile	10.14	7.34	74.48	0.19	17.74	4.59
Area	14.35	--	16.33	0.00	0.01	0.01
Energy	0.12	2.07	0.88	0.01	0.17	0.17
Total	**24.61**	**9.40**	**91.69**	**0.20**	**17.91**	**4.76**
Multi-Family Housing (Proposed Project)						
Mobile	9.04	7.13	66.93	0.16	14.21	3.69
Area	8.48	--	16.27	0.00	0.01	0.01
Energy	0.09	1.49	0.63	0.01	0.12	0.12
Total	**17.60**	**8.62**	**83.84**	**0.17**	**14.34**	**3.82**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
Note that CalEEMod defaults result in the non-operation of landscaping equipment during winter, leading to zero NOx emissions for area sources during that time period.

[3] The 2004 EIR estimated construction emissions are presented on page 28 of Appendix D, Air Quality Impact Analysis, which shows the URBEMIS 2002 model output (Giroux and Associates 2004). Table 3 presents current industry standard emissions modeling of single-family housing for a focused comparison between previously approved and currently proposed, which is different from the 2004 EIR estimated construction emissions, which evaluated the entire Village 7 plan.

See Attachment A for complete results. Columns may not add due to rounding.

As shown in Table 4, the proposed project emissions would not be greater than the emissions generated by the operation of the single-family housing. Therefore, operational impacts associated with criteria air pollutant emissions would not be new or substantially more severe than the 2004 EIR.

Summary

The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field[4] or localized impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As indicated in Tables 3 and 4, the construction and operational emissions generated by the proposed project would not exceed the emissions generated by the same number of units of single-family housing (accounted for in the 2004 EIR), apart from construction VOC emissions. The 2004 EIR estimated that the construction of the proposed project would generate VOC emissions of 4,829 pounds per day, which exceed the 2004 VOC threshold of 55 pounds per day.[5] VOC emissions from the proposed project would be less than what was evaluated in the 2004 EIR. As such, the proposed project would result in a potentially significant impact with respect to VOC, but not a new or substantially more significant impact to air quality.

4.2.3 Does the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard?

No New or Substantially More Severe Significant Impact. At the time of the 2004 EIR, the SDAB was a nonattainment area for federal O_3 standards and state O_3 and PM_{10} standards. At the time of the 2004 EIR, $PM_{2.5}$ was evaluated as a subset of PM_{10}; therefore, the 2004 EIR does not mention attainment with $PM_{2.5}$ standards. The SDAB is currently designated as a nonattainment area for federal O_3 standards and state O_3, PM_{10}, and $PM_{2.5}$ standards (SDAPCD 2022). The SDAB is designated as an attainment or unclassified area for all other criteria air pollutants. The 2004 EIR found that CO, VOC, NO_x, and PM_{10} emissions would exceed thresholds during operation.

The nonattainment status of regional pollutants is a result of past and present development, and the SDAPCD develops and implements plans for future attainment of ambient air quality standards. In addition to the SDAPCD efforts, CARB has comprehensive regulatory programs in place for new and existing sources of air pollution. Local policies, such as land use decisions that involve siting, zoning, and permitting actions, in conjunction with air agency efforts have the potential to greatly enhance the effectiveness of these programs by addressing cumulative impacts in local areas. Cumulative air quality impacts are the effect of long-term emissions of the project plus any existing emissions at the same location, as well as the effect of long-term emissions of reasonably foreseeable similar projects, on the projected regional air quality or localized air pollution in the SDAB and surrounding areas. Based on the cumulative nature of air pollution and the various mechanisms in place to reduce cumulative air pollutant emissions, project-level thresholds of significance for criteria pollutants, as analyzed in Section 3.2.2, are relevant

4 For air quality analysis purposes, near-field generally refers to the short-distance dispersion of pollutants.

5 The 2004 EIR identified the numeric thresholds as operational thresholds; however, also compared project-generated construction emissions to the daily thresholds in text. The construction and operational numeric thresholds of significance are thus the same and not differentiated herein.

in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

In analyzing cumulative impacts from a project, the analysis must specifically evaluate the project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for the CAAQS and NAAQS. If a project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project components, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, a project would only be considered to have a significant cumulative impact if its contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

Additionally, for the SDAB, the RAQS serves as the long-term regional air quality planning document for the purpose of assessing cumulative operational emissions within the basin to ensure the SDAB continues to make progress toward NAAQS and CAAQS attainment status. As such, cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to air quality if, in combination, they would conflict with or obstruct implementation of the RAQS. Similarly, individual projects that are inconsistent with the regional planning documents on which the RAQS is based would have the potential to result in cumulative impacts if they represent development beyond regional projections.

Implementation of the proposed project would generate emissions of VOCs, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ associated with construction and increased vehicle traffic to and from the site as well as energy use during operation. As indicated in Tables 3 and 4, the construction and operational emissions generated by the proposed project would not exceed the emissions generated by the same number of units of single-family housing (accounted for in the 2004 EIR), apart from construction VOC emissions. The 2004 EIR estimated that the construction of the approved project would generate VOC emissions of 4,829 pounds per day, which exceed the 2004 VOC threshold of 55 pounds per day. VOC emissions from the project would be less than what was evaluated in the 2004 EIR.

Proposed project impacts associated with a cumulatively considerable net increase of a criteria air pollutant that the SDAB is designated as a non-attainment area for would be insignificant. The SDAB is in nonattainment for O_3 emissions, for which VOCs are a precursor. VOC emissions would be significant, but not more severe than the 2004 EIR. As such, the proposed project would result in a potentially significant impact with respect to O_3 emissions through its VOC precursor, but not a new or substantially more significant impact to air quality.

4.2.4 Does the project expose sensitive receptors to substantial pollutant concentrations?

No New or Substantially More Severe Significant Impact. The 2004 EIR does not explicitly discuss impacts to sensitive receptors. The 2004 EIR Appendix D concludes that CO hotspot potential is negligible.

Operational Carbon Monoxide Hotspots

Mobile source impacts occur on two scales – regionally and locally. Regionally, proposed project-related travel would add to trip generation and increased the vehicle miles travelled within the local airshed and the SDAB. Locally, traffic from the proposed project would be added to the City's roadway system. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-

inefficient speeds and is operating on roadways already crowded with non-proposed project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SDAB is steadily decreasing.

During construction, the proposed project would result in CO emissions from construction worker vehicles, vendor trucks, and off-road equipment. Title 40, section 93.123(c)(5) of the California Code of Regulations, Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (hot-spot analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site" (Cal. Code Regs., tit. 40, § 93.123). Since construction activities would be temporary, a proposed project-level construction hotspot analysis would not be required.

The City does not have guidance regarding CO hotspots; as such, the County's CO hotspot screening guidance was followed to determine whether the proposed project would require a site-specific hotspot analysis. Since the last update of the County's guidance (County of San Diego 2007), the County has evaluated the potential for the growth anticipated under the General Plan Update to result in CO "hot spots" throughout the County (County of San Diego 2009). To do this, the County reviewed the CO "hot spot" analysis conducted by the SCAQMD for their request to the U.S. Environmental Protection Agency for redesignation as a CO attainment area (SCAQMD 2003).

At the time that the 1993 SCAQMD Handbook was published, the South Coast Air Basin (SCAB) was designated nonattainment under the CAAQS and NAAQS for CO. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS as a result of the steady decline in CO concentrations in the SCAB due to turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities. The SCAQMD conducted CO modeling for the 2003 AQMP (Air Quality Management Plan)[6] (SCAQMD 2003) for the four worst-case intersections in the SCAB: (1) Wilshire Boulevard and Veteran Avenue, (2) Sunset Boulevard and Highland Avenue, (3) La Cienega Boulevard and Century Boulevard, and (4) Long Beach Boulevard and Imperial Highway. At the time the 2003 AQMP was prepared, the intersection of Wilshire Boulevard and Veteran Avenue was the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. Using CO emission factors for 2002, the peak modeled CO 1-hour concentration was estimated to be 4.6 ppm at the intersection of Wilshire Boulevard and Veteran Avenue, while the CAAQS is 20 ppm.

The 2003 AQMP also projected 8-hour CO concentrations at these four intersections for 1997 and from 2002 through 2005. From years 2002 through 2005, the maximum 8-hour CO concentration was 3.8 ppm at the Sunset Boulevard and Highland Avenue intersection in 2002; the maximum 8-hour CO concentration was 3.4 ppm at the Wilshire Boulevard and Veteran Avenue in 2002, while the CAAQS is 9.0 ppm.

Accordingly, CO concentrations at congested intersections would not exceed the 1-hour or 8-hour CO CAAQS unless projected daily traffic would exceed 100,000 vehicles per day; however, exceeding 100,000 vehicles per day does not guarantee a CO impact. The proposed project would not increase daily traffic volumes at any study intersection to more than 100,000 vehicles per day; therefore, a CO hotspot is not anticipated to occur, and associated impacts would be less than significant. As such, proposed project-generated impacts associated with CO hotspots would be less than significant, the same determination as the 2004 EIR.

[6] SCAQMD's CO hotspot modeling guidance has not changed since 2003.

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

No residual TAC emissions and corresponding health risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the proposed project. CARB has published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005), which identifies certain types of facilities or sources that may emit substantial quantities of TACs and therefore could conflict with sensitive land uses, such as "schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities." The *Air Quality and Land Use Handbook* is a guide for siting of new sensitive land uses, and CARB recommends that sensitive receptors not be located downwind or in proximity to such sources to avoid potential health hazards. The enumerated facilities or sources include the following: high-traffic freeways and roads, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and large gas dispensing facilities. The proposed project would not include any of the above-listed land uses associated with generation of TAC emissions.

Proposed project construction would result in emissions of diesel particulate from heavy construction equipment and trucks accessing the site. Diesel particulate is characterized as a TAC by the State of California. The Office of Environmental Health Hazard Assessment (OEHHA) has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure, but has not identified health effects due to short-term exposure to diesel exhaust. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of the proposed construction activities would only constitute a percentage of the total 30-year exposure period. Furthermore, the proposed project's modeled NO_x, PM_{10}, and $PM_{2.5}$ emissions due to construction are less than the approved project construction NO_x, PM_{10}, and $PM_{2.5}$ emissions disclosed in the 2004 EIR. Lastly, Section 4.1 includes Mitigation Measure 4.5-1 from the 2004 EIR, which includes a mandate to "Use low pollutant-emitting construction equipment" that would reduce proposed project TAC emissions. Furthermore, operation of the proposed project

would not include onsite generators or other land uses that could create health risk. Overall, the TAC exposure to sensitive receptors in the vicinity of the proposed project would not be substantially more severe than the impacts identified in the 2004 EIR and would remain less-than-significant with mitigation measure 4.5-1 incorporated.

4.2.5 Does the project create objectionable odors affecting a substantial number of people?

No New or Substantially More Severe Significant Impact. The 2004 EIR did not discuss odors during construction or operation.

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the proposed project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Examples of land uses and industrial operations that are commonly associated with odor complaints include agricultural uses, wastewater treatment plants, food processing facilities, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding facilities. The proposed project would not create any new sources of odor during operation. Therefore, proposed project operations would result in an odor impact that is **less than significant.**

5 Greenhouse Gas Assessment

5.1 Summary of Previous Analysis

The 2004 EIR did not include an evaluation of GHG emissions. At the time the 2004 EIR was adopted, an evaluation of GHG emissions was not required under the CEQA Guidelines; however, since then, California laws have expanded to regulate GHG emissions with the passage of the California's Global Warming Solutions Act of 2006 (AB 32) and Senate Bill (SB) 32. While CEQA now requires evaluation of potential GHG emission impacts of a project, based on the findings of *Citizens for Responsible Equitable Environmental Development v. City of San Diego* (No. D057113, Cal. Ct. App. Feb. 16, 2011), GHG impacts are not a topic that constitutes "new information" triggering preparation of an EIR or negative declaration as opposed to relying on analysis from a prior EIR or negative declaration that did not analyze GHG impacts. Accordingly, a GHG emissions analysis is not required for the proposed project. The purpose of an addendum is to compare impacts of the revised project to those impacts analyzed in the 2004 EIR, and as a GHG analysis does not exist in the 2004 EIR, there is no threshold or evaluation to use for a comparison. Nonetheless, for informational purposes, the GHG emissions are presented herein to understand the potential magnitude of proposed project-generated emissions. In addition, the proposed project's potential to conflict with the City's Climate Action Plan (CAP), SANDAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and CARB's Scoping Plan for Achieving Carbon Neutrality is also presented herein for informational purposes.

5.2 Informational Analysis

5.2.1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

As discussed in Section 5.1 above, the 2004 EIR did not analyze GHG emission impacts.

Construction Emissions

Construction of the proposed project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor (material delivery) trucks, and worker vehicles. GHG emissions associated with temporary construction activity were quantified using CalEEMod, using the assumptions summarized above in Section 3.2.

Table 5 summarizes the estimated annual GHG construction emissions associated with the proposed project, as well as the amortized construction emissions over a 30-year project life. These calculations do not include the mitigation from the 2004 EIR listed in Section 4.1.

Table 5. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
2025	624.45	0.03	0.02	0.43	632.27
2026	178.41	0.01	0.01	0.13	180.79
Total	**802.86**	**0.04**	**0.03**	**0.56**	**813.07**
				Amortized Emissions (30 years)	**27.10**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent, R=refrigerant.
See Attachment A for complete results.

Total construction-related GHG emissions for the proposed project are anticipated to be approximately 813 MT CO_2e. Estimated 30-year amortized proposed project-generated construction emissions would be approximately 27 MT CO_2e per year.

Operational Emissions

Operation of the proposed project would generate GHG emissions from motor vehicle trips to and from the proposed project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. These calculations do not include the mitigation from the 2004 EIR listed in Section 4.1. The estimated operational (year 2026) proposed project-generated GHG emissions from these sources are shown in Table 6.

Table 6. Summary of Estimated Annual Operational GHG Emissions

Emissions Source	CO_2	CH_4	N_2O	R	CO_2e
	Metric Tons per Year				
Mobile	2,630.67	0.13	0.11	3.96	2,670.71
Area	3.55	0.00	0.00	–	3.57
Energy	629.78	0.05	0.00	–	631.73
Water	21.54	0.33	0.01	–	32.12
Waste	18.94	1.89	–	–	66.27
Refrigerants	–	–	–	0.36	0.36
Total	**3,304.49**	**2.40**	**0.12**	**4.32**	**3,404.77**
				Amortized Construction Emissions (30 years)	*27.10*
				Proposed Project Operations + Amortized Construction Total	***3,431.87***

Notes: GHG = greenhouse gas; MT = metric tons; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent, R= refrigerants,– = no emission estimates reported.
See Attachment A for complete results.

As shown in Table 6, estimated annual proposed project-generated GHG emissions would be approximately 3,432 MT CO_2e per year as a result of operations and amortized construction emissions. As discussed in Section 5.1 above, GHG emissions were not analyzed in the original 2004 EIR for the approved project, and GHG emissions impacts do not constitute "new information" that would trigger preparation of an EIR or negative declaration rather

than an analysis relying on a prior EIR or negative declaration that did not analyze GHG emission impacts. Therefore, a GHG emissions analysis is not required for the proposed project but is provided here for informational purposes.

5.2.2 Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed in Section 5.1 above, GHG emissions were not analyzed in the original 2004 EIR for the approved project, and GHG emissions impacts do not constitute "new information" that would trigger preparation of an EIR or negative declaration rather than an analysis relying on a prior EIR or negative declaration that did not analyze GHG emission impacts. Therefore, a GHG consistency analysis is not required for the proposed project modifications but is provided here for disclosure. The proposed project is consistent with the CAP, CARB's Scoping Plan, and SANDAG's 2021 RTP/SCS as demonstrated below.

The City of Chula Vista Climate Action Plan

The City's CAP was adopted in 2017, and includes ambitious goals and policies to strengthen the City's climate action and GHG emission reduction efforts (Chula Vista 2017). The City's CAP is not qualified to be used to determine the significance of impacts in CEQA documents; nevertheless, a consistency analysis is included below for disclosure purposes. Table 7 below outlines the proposed project's potential to conflict with the applicable policies and strategies of the City's CAP. As shown, the proposed project is consistent with the applicable strategies from the City's CAP.

Table 7. City of Chula Vista Climate Action Plan Consistency Analysis

Category	Policy Objective or Strategy	Potential to Conflict
Water Conservation & Reuse		
Water Education & Enforcement	Expand education and enforcement [through fines] targeting landscape water waste	**Not applicable.** The proposed project would not impair the ability of the City to expand education and enforcement targeting landscape water waste.
Water Efficiency Upgrades	Update the City's Landscape Water Conservation Ordinance to promote more water-wise landscaping designs	**Not applicable.** The proposed project would not impair the ability of the City to update its Water Conservation Ordinance.
	Require water-savings retrofits in existing buildings at a specific point in time (not point of sale)	**Not applicable.** The proposed project would not impair the ability of the City to require water-savings retrofits for existing buildings.
Water Reuse Plan & System Installations	Develop a Water Reuse Master Plan to maximize the use of storm water, graywater [recycled water] and onsite water reclamation	**Not applicable.** The proposed project would not impair the ability of the City to develop a Water Reuse Master Plan.
	Facilitate simple graywater systems for laundry-to-landscape applications	**Not applicable.** The proposed project would not impair the ability of the City to

Table 7. City of Chula Vista Climate Action Plan Consistency Analysis

Category	Policy Objective or Strategy	Potential to Conflict
		facilitate simple graywater systems for laundry-to-landscape applications.
	Streamline complex graywater systems' permit review	**Not applicable.** The proposed project would not impair the ability of the City to streamline complex graywater systems permit review.
Waste Reduction		
Zero Waste Plan	Develop a Zero Waste Plan to supplement statewide green waste, recycling and plastic bag ban efforts	**Not applicable.** The proposed project would not impair the ability of the City to develop a Zero Waste Plan.
Renewable & Energy Efficiency		
Energy Education & Enforcement	Expand education targeting key community segments [e.g., do-it-yourselfers and Millennials] and facilitating energy performance disclosure (e.g., Green Leases, benchmarking and Home Energy Ratings)	**Not applicable.** The proposed project would not impair the ability of the City to expand energy education.
	Leverage the building inspection process to distribute energy-related information and to deter unpermitted, low performing energy improvements	**Not applicable.** The proposed project would not impair the ability of the City to distribute energy-related information during the building inspection process.
Clean Energy Sources	Incorporate solar photovoltaic into all new residential and commercial buildings [on a project-level basis]	**Consistent.** The proposed project would include a photovoltaic solar system in alignment with Title 24 requirements.
	Provide more grid-delivered clean energy (up to 100%) through Community Choice Aggregation or other mechanism	**Not applicable.** The proposed project would not impair the ability of the City to provide a Community Choice Aggregation of clean energy.
Energy Efficiency Upgrades	Expand the City's "cool roof" standards to include re-roofs and western areas	**Not applicable.** The proposed project would not impair the ability of the City to expand the City's cool roof standards.
	Facilitate more energy upgrades in the community through incentives [e.g., tax breaks and rebates], permit streamlining (where possible) and education [e.g., more local energy efficiency programming]	**Not applicable.** The proposed project would not impair the ability of the City to incentivize additional energy upgrades in the community.
	Require energy-savings retrofits in existing buildings at a specific point in time (not at point of sale)	**Not applicable.** The proposed project would not impair the ability of the City to require energy-savings retrofits for existing buildings.
Robust Urban Forests	Plant more shade trees to save energy, address heat island issues and improve air quality	**Consistent.** Trees will be planted on the proposed project site bordering the developments and in road dividers.

Table 7. City of Chula Vista Climate Action Plan Consistency Analysis

Category	Policy Objective or Strategy	Potential to Conflict
Smart Growth & Transportation		
Complete Streets & Neighborhoods	Incorporate "Complete Streets" principles into municipal capital projects and plans [e.g., the Bicycle and Pedestrian Master Plans and Capital Improvement Program]	**Not applicable.** The proposed project would not impair the ability of the City to incorporate Complete Streets principles into the Bicycle and Pedestrian Master Plans and Capital Improvement Program.
	Encourage higher density and mixed-use development in Smart Growth areas, especially around trolley stations and other transit nodes	**Consistent.** The proposed project consists of high-density apartment buildings, therefore encouraging higher population density.
Transportation Demand Management	Utilize bike facilities, transit access/passes and other Transportation Demand Management and congestion management offerings	**Not applicable.** The proposed project would not impair the ability of the City to use Transportation Demand Management and congestion management offerings.
	Expand bike-sharing, car-sharing and other "last mile" transportation options	**Not applicable.** The proposed project would not impair the ability of the City to expand bike-sharing, car-sharing and other "last mile" transportation options.
Alternative Fuel Vehicle Readiness	Support the installation of more local alternative fueling stations	**Not applicable.** The proposed project would not impair the ability of the City to construct alternative fueling stations.
	Designate preferred parking for alternative fuel vehicles	**Not applicable.** The proposed project would not impair the ability of the City to designate preferred parking for alternative fuel vehicles.
	Design all new residential and commercial buildings to be "Electric Vehicle Ready"	**Consistent.** This proposed project would be designed to comply with applicable effective California Green Building Standards (CALGreen) requirements for provisions of electric vehicle charging equipment, which at a minimum includes the 2022 CALGreen requirements.

Source: City of Chula Vista 2017.

CARB Scoping Plan

The CARB Scoping Plan, approved in 2008 and updated in 2014, 2017, and 2022, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs (CARB 2014, 2017, 2022). The Scoping Plan is not directly applicable to specific projects, and it is not intended to be used for project-level evaluations. Under the Scoping Plan, however, several state regulatory measures aim to identify and reduce GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Many of the measures and programs included in the Scoping Plan

would result in the reduction of project-related GHG emissions with no action required at the project-level, including GHG emission reductions through increased energy efficiency and renewable energy production (SB 350), reduction in carbon intensity of transportation fuels (LCFS), and the accelerated efficiency and electrification of the statewide vehicle fleet (Mobile Source Strategy). Given that the proposed project is also not anticipated to result in substantial increase in mobile trips, the project would also not conflict with the Second Update's goal of reducing GHG emissions through reductions in VMT statewide.

The 2045 carbon neutrality goal required CARB to expand proposed actions in the Third Update to include those that capture and store carbon in addition to those that reduce only anthropogenic sources of GHG emissions. The proposed project would support the state's carbon neutrality goals, as implementation includes addition of green space throughout the project site, which represent opportunities for potential carbon removal and sequestration over the project lifetime. However, the Third Update emphasizes that reliance on carbon sequestration in the state's natural and working lands will not be sufficient to address residual GHG emissions, and achieving carbon neutrality will require research, development, and deployment of additional methods to capture atmospheric GHG emissions (e.g., mechanical direct air capture). Given that the specific path to neutrality will require development of technologies and programs that are not currently known or available, the project's role in supporting the statewide goal would be speculative and cannot be wholly identified at this time.

Overall, the proposed project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent applicable and required by law. As mentioned above, several Scoping Plan measures would result in reductions of project-related GHG emissions with no action required at the project-level, including those related to energy efficiency, reduced fossil fuel use, and renewable energy production. As demonstrated above, the proposed project would not conflict with CARB's 2017 or 2022 Scoping Plan updates and with the state's ability to achieve the 2030 and 2045 GHG reduction and carbon neutrality goals.

SANDAG's San Diego Forward: The 2021 Regional Plan

The passage of SB 375 requires Metropolitan Planning Organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) in their Regional Transportation Plan (RTP). SANDAG serves as the MPO for the San Diego region and is responsible for developing and adopting a SCS that integrates transportation, land use, and housing to meet GHG reduction targets set by CARB. The RTP/SCS is updated every 4 years in collaboration the 18 cities and the County of San Diego, in addition to regional, state, and federal partners. The most recent, *San Diego Forward: The 2021 Regional Plan* was adopted in 2021, and provides guidance on meeting or exceed GHG targets through implementation of five key transportation strategies, including complete corridors, high-speed transit services, mobility hubs, flexible fleets, and a digital platform to tie the transportation system together. Through these strategies, the 2021 Regional Plan is projected to reduce per capita GHG emissions from cars and light-duty trucks to 20% below 2005 levels by 2035, exceeding the region's state-mandated target of 19% (SANDAG 2021)

The primary objective of the RTP/SCS is to provide guidance for future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the region, as stipulated under SB 375. As discussed in Section 4.2.1, the proposed project would result in a decrease in ADT from what was proposed in the original 2004 EIR (CR Associates 2024). As such, the proposed project would not conflict with the goals and policies of the RTP/SCS.

Summary

The proposed project's GHG emissions and plan consistencies are divulged, but are not required for this analysis. The proposed project is does not conflict with the goals and policies of the CAP, the CARB Scoping Plan, or the RTP/SCS.

6 References

CAPCOA (California Air Pollution Control Officers Association). 2022. California Emissions Estimator Model (CalEEMod) User Guide Version 2022.1. https://caleemod.com/documents/user-guide/01_User%20Guide.pdf.

CARB (California Air Resources Board). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005. Accessed August 2016. http://www.arb.ca.gov/ch/landuse.htm.

CARB. 2014. *First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006*. May 2014. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed May 2022.

CARB. 2017. *California's 2017 Climate Change Scoping Plan.* November. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed May 2022.

CARB. 2022. *2022 Scoping Plan Update.* November 16, 2022. Accessed December 2022. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

CAT (Climate Action Team). 2010. *Climate Action Team Biennial Report*. Sacramento, California. April 2010. Accessed January 2019. http://web.archive.org/web/20190223112247/https://www.energy.ca.gov/2010publications/CAT-1000-2010-004/CAT-1000-2010-004.PDF.

City of Chula Vista. 2017. Climate Action Plan. Available: 636428706054030000 (chulavistaca.gov). Accessed July 2022.

County of San Diego. 2007. *Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality*. Department of Planning and Land Use, Department of Public Works. March 19, 2007. https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/AQ-Guidelines.pdf

County of San Diego. 2009. Air Quality Technical Report for the San Diego County General Plan Update. May 11, 2009. https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/docs/BOS_Aug2011/EIR/Appn_B_Air.pdf.

CR Associates. 2024. *CEQA Transportation Analysis and Local Mobility Analysis.*

Giroux and Associates. 2004. Air Quality Impact Analysis, Otay Ranch Village 7, Chula Vista, California. June 2004.

IPCC (Intergovernmental Panel on Climate Change). 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp. Accessed May 2019. http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf.

SANDAG (San Diego Association of Governments). 2021. *SANDAG 2021 Regional Plan*. Adopted December 10, 2021. Accessed April 2022. https://sdforward.com/mobility-planning/2021-regional-plan

SCAQMD (South Coast Air Quality Management District). 2003. Final 2003 AQMP Appendix V Modeling and Attainment Demonstrations. August 2003. https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2003-air-quality-management-plan/2003-aqmp-appendix-v.pdf?sfvrsn=2.

SDAPCD. 2022. *Attainment Status*. Available: https://www.sdapcd.org/content/sdapcd/planning/attainment-status.html.

Attachment A

CalEEMod Outputs and Estimated Emissions