

**Village Seven Section Planning Area Amendment
Otay Ranch GDP
Air Quality Improvement Plan
(AQIP)**

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Table of Contents

1. <u>Executive Summary</u>	1
A. Intent of AQIP.....	1
B. Community Site Design Goals.....	2
C. Planning Features.....	3
D. Modeled Effectiveness of Community Design.....	5
2. Introduction.....	5
A. Need for AQIP.....	5
B. AQIP as Tool for Implementation of Ordinances.....	6
2a. <u>Purpose & Goals</u>	6
A. Purpose of AQIP.....	6
B. Regulatory Framework Related to Air Quality.....	6
<u>Figure 1: Ambient Air Quality Standards Matrix</u>	8
<u>Figure 2: Modeled Level Thresholds for Criteria Pollutants</u>	9
3. <u>Project Description</u>	13
<u>Figure 3: SPA Land Use Plan</u>	14
<u>Figure 4: Site Plan Illustration</u>	15
4. <u>Effect of Project on Local/Regional air Quality</u>	15
5. <u>Quantitative Project Design Evaluation</u>	18
<u>Table ES1: LEED-ND v2009 Equivalency Scorecard</u>	19
6. <u>Community Design and Site Planning Features</u>	22
<u>Figure 5: Community Design and Site Plan Features</u>	22
7. Chula Vista CO ₂ Reduction Plan.....	24
<u>Figure 6: Consistency with CO₂ Reduction Action Measures</u>	24
8. Credit Towards Increase Minimum Energy Efficiency Standards.....	27
9. <u>Compliance Monitoring</u>	27
<u>Figure 7: Air Quality Improvement Plan Compliance Checklist</u>	27

1. EXECUTIVE SUMMARY

The Final Environmental Impact Report for the Otay Ranch Village Seven Section Planning Area (SPA) Plan and Tentative Maps (FEIR) (identified by the City of Chula Vista as EIR 04-04) contains a comprehensive disclosure and analysis of potential environmental effects associated with implementation of the SPA Plan in the City of Chula Vista (City) (City of Chula Vista 2004). The SPA Plan was developed to refine and implement the land use plans, goals, and objectives of the Otay Ranch General Development Plan (Otay Ranch GDP) for the development of Planning Area (PA) 7.

In 2004, as part of the FEIR, the City approved an Urban Villages development which allows a maximum of 1,456 units approved by the Otay Ranch GDP for Village 7 in a 1996 Otay Ranch GDP amendment.

The current project addresses proposed modifications (involving the General Plan, GDP, and SPA Amendment) which are as follows:

Chula Vista General Plan Amendment

- 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);
- 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);

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

- 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 approved and not yet constructed.

A. Intent of AQIP

This Air Quality Improvement Plan (AQIP) has been prepared in conjunction with the Village Seven SPA Plan amendment, required for the proposed project for the proposed modification.

The purpose of the AQIP is to provide an analysis of air pollution impacts that would result from the proposed shift from 287 single-family to multi-family units and to demonstrate how the site design reduces vehicle trips, maintains, or improves traffic flow, reduces vehicle miles traveled, and reduces direct or indirect greenhouse gas (GHG) emissions.

This AQIP also demonstrates how the project has been designed consistent with the City's Green Building Standards, (CVMC 15.26) and Energy Code (15.12) and represents the best available design in terms of improving energy efficiency and reducing GHG emissions. GHG emissions primarily include but are not limited to Carbon Dioxide (CO₂), Methane (CH₄), and Nitrous Dioxide (N₂O). They occur both naturally, and are produced by human activities, such as by automobile emissions and emissions from production of electricity to provide power to homes and businesses. These gases prevent heat from escaping the earth's atmosphere, while allowing in sunlight, which has the effect of

warming the air temperature. Applicable action measures contained in the City's Carbon Dioxide (CO₂) Reduction Plan are also addressed.

B. Community Site Design Goals

Otay Ranch is a 23,000-acre master-planned community and includes a mix of land uses within 20 villages and/or planning areas. The proposed project includes modifications (involving General Plan, General Development Plan, and Sectional Planning Area Amendments) with respect to changing 287 single-family units to multi-family units. When completed, the number of residential units within Village 7 will remain the same.

The proposed change from single-family to multi-family residential use fits within the previously established design framework for a unified walkable mixed-use plan for the overall Village. Increasing residential densities near the village core and directly adjacent to Village Eight West mixed-use Town Center district creates a walkable neighborhood that offers urban-style, smaller-scale living accommodations within walking distance to the already established local shops, services, schools, entertainment, and dining, as well as a regional system of trails and open spaces.

The vision for this community is to develop a cohesive neighborhood with inter-connected uses and densities. The residential units will provide additional ridership opportunities for the nearby regional Bus Rapid Transit (BRT) and local bus system increasing the viability of transit and reducing automobile dependence. The densities and design patterns envisioned for the Otay Ranch Village 7 focus on promoting a walkable and bikeable community with less emphasis on automobile trips.

C. Planning Features

The project includes the following planning features to achieve the community site design goals:

Land Use features:

- 1) Integrated Circulation System. Project residents and visitors are afforded non-automobile related circulation options that include walking and bicycling. While MTS (Metropolitan Transit System) has not currently designated a transit route through the village, there is potential for the addition of routes in the future. The conceptual village plan includes provisions for a future bus stop within the village core, specifically in the mixed-use/town square district. Village Seven is situated approximately half a mile from the nearest existing transit station in Millenia.
- 2) Mixed-Uses. Village Seven already provides a mix of single-family and multi-family residences, public and private parks, a high school and an elementary school. A mixed-use village core is envisioned within the center of the Village at buildout following potential future relocation of the FAA (federal Aviation Administration) VORTAC (Very High Frequency Omni-Directional Radio Range Tactical Air Navigation Aid) facility from the mixed-use zoned site. This

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

- type of development makes it easy for residents, visitors, and employees to walk or bike to destinations, helping to efficiently connect the city's neighborhoods through sustainable mobility.
- 3) Residential Density. The multi-family portion of the project is intended to promote walking and biking as a feasible alternative to driving due to reduced distances and the resulting proximity of various services and destinations. Shifting the single-family to multi-family as proposed in this Project would further enhance the walkability of this site.
 - 4) Street Widths, Pavement and Street Trees. Otay Ranch street sections are narrower than typical standards which reduces asphalt pavement and the "urban heat-island effect" by limiting the amount of reflective surfaces. Street trees provide shade which further reduces heat-gain. Widened landscape medians and parkways to reduce paving, thereby reducing heat gain and the demand for air conditioning. Street trees within the parkways and medians provide shade to further reduce ambient air temperatures.
 - 5) Public Transportation. The design plan for the development is transit ready. In conformance with General Plan policy, public transportation is an integral part of Otay Ranch. Potential public transit infrastructure has been strategically integrated into the SPA plan. Should the transit agency choose to establish a route through the project area, the layout and infrastructure of Village Seven can readily accommodate the addition of a transit stop. This includes provisions for factors such as appropriate space allocation, access points, and logistical considerations necessary for the smooth operation of a transit stop within the development. The Village design plan has been thoughtfully crafted to be adaptable and supportive of transit options, ensuring that if transit services are introduced in the future, the development will be well-prepared to integrate them effectively. This is intended to help reduce the dependence on passenger vehicles and encourage walking, biking, and transit trips.
 - 6) Alternative Travel Modes. The Otay Ranch Town Center is within walking distance to Village 7 and offers shopping, employment and serves as an alternative transportation hub to the development. Sidewalks will be provided throughout the project site. All internal roadways are designed to local street standards with speed limits of 25 to 30-mph. Slow traffic speeds are conducive to both walking and bicycling and provide the necessary linkage to the regional bicycle circulation network.

Building and Design Element Features:

- 1) Use of low-VOC paints as required under San Diego County Air Pollution Control District (SDAPCD) Rule 67.
- 2) Project-wide recycling as required under the County's recycling Ordinance (SDCMC Section 66.0701)
- 3) Energy efficiency as required under the latest California Energy Code and CalGreen (Currently 2022).
- 4) Indoor residential appliances that carry the Environmental Protection Agency's

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

- (EPA) ENERGYSTAR® certification, as applicable and feasible.
- 5) Inclusion of all residential units in the local utility demand response program to limit peak energy usage for cooling.
 - 6) Indoor residential plumbing products that carry the EPA's WaterSense certification.
 - 7) Passive solar design and building orientation principles to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during summer.
 - 8) Energy efficient lighting for streets, parks, and other public spaces as well as for private development projects.
 - 9) Installation of solar water heater pre-plumbing.
 - 10) Installation of solar photovoltaic prewiring.
 - 11) Installation of residential graywater stub-out.

Landscape Features:

- 1) Watering three times daily during construction phase to control fugitive dust to meet the requirements of the SDAPCD.
- 2) High-efficiency irrigation equipment, such as evapotranspiration controllers, soil moisture controllers and drip emitters for all projects that install irrigation water meters, per the City of Chula Vista Landscape Water Conservation Ordinance of the City of Chula Vista Municipal Code Chapter 20, Section 12.
- 3) Water efficient vegetation, including native species, planted in public and private landscape areas.
- 4) Natural turf in residential development limited to no more than 30% of the outdoor open space.
- 5) Vertical landscape elements, such as trees, large shrubs, and climbing vines, shall be installed in order to shade southern and western building facades to reduce energy needs for heating and cooling.
- 6) Compliance with the City's Shade Tree Policy for parking lot design to achieve 50-percent shade cover in five to fifteen years through tree canopies, shade structures, or light colored "cool" paving.

D. Modeled Effectiveness of Community Design

The Project modification seeks to switch 287 Single-Family units to 287 multi-family units allowing for an increase residential density by area for the overall mixed-use SPA. The project would not increase the residential use intensity for Village 7 and would be consistent with the Community design already covered in the approved AQIP additional A new quantitative project design evaluation using INDEX or LEED-ND is not recommended at this time.

2. INTRODUCTION

A. Need for an AQIP

The objective of this AQIP is to fulfill the City of Chula Vista's Growth Management policy to improve air quality, conserve energy, and reduce GHG emissions from existing conditions. As the result of rapid development not keeping pace with the demand for facilities and improvements, the City Council adopted Growth Management (GMO) policy measures that would prohibit new development to occur unless adequate public facilities, improvements and environmental quality of life standards were put in place. The purpose of City of Chula Vista's Public Facilities Financing Plans (PFFPS, Air Quality Improvement Plans, and Water Conservation Plans (CVMC Chapter 19.92) is to establish compliance mechanisms and standards to ensure public Facilities, infrastructure and services will exist, or concurrently be provided, to meet the demands of infrastructure and climate protection generated by new Development.

This AQIP is provided in accordance with CVMC 19.92.030.B. The GMO requires that no application for a SPA Plan or Tentative Map shall be deemed complete or accepted for review unless an AQIP is provided and approved as part of the approval of the SPA Plan or Tentative Map by the City.

B. AQIP as Tool for Implementation of Ordinances

This AQIP has been prepared based on the best available design practices and serves to implement key aspects of the City's CO2 Reduction Plan, the Green Building Standards (CVMC Chapter 15.12) and the City's Energy Code (CVMC 15.26). It should be noted, a more detailed discussion on project compliance with such design practices is provided within subsequent sections of the report.

2a. PURPOSE & GOALS

A. Purpose of AQIP

The purpose of the AQIP is to provide an analysis of air pollution impacts that would result in the modification of Village 7 to switch 287 single-family units which have not been built to multi-family homes instead. The total residential units would not change however at 1,456 units. This AQIP also demonstrates how the project has been designed consistent with the City's Green Building Standards, (CVMC 15.12) and Energy Code (15.26) and represents the best available design in terms of improving energy efficiency and reducing GHG emissions. GHG emissions include gases such as CO₂, Methane (CH₄), and NO₂. They both occur naturally, and are produced by human activities, such as by automobile emissions and emissions from production of electricity to provide power to homes and businesses. These gases prevent heat from escaping the earth's atmosphere, while allowing in sunlight, which has the effect of warming the air temperature. Applicable action measures contained in the City's CO₂ Reduction Plan are also addressed.

B. Regulatory Framework Related to Air Quality

There are a number of actions that Federal, State, and Local jurisdictions have taken to

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

improve air quality, increase energy efficiency, and reduce GHG emissions. This section summarizes those actions.

Air quality is defined by ambient air concentrations of specific pollutants determined by the Environmental Protection Agency (EPA) to be of concern with respect to the health and welfare of the public. The subject pollutants monitored by the EPA include the following:

- Carbon Monoxide (CO),
- Sulfur Dioxide (SO₂),
- Nitrogen Dioxide (NO₂),
- Nitrogen Oxides (NO_x)
- Ozone (O₃),
- Respirable 10- and 2.5-micron particulate matter (PM₁₀ and PM_{2.5}),
- Volatile Organic Compounds (VOC),
- Reactive Organic Gasses (ROG),
- Hydrogen Sulfide (H₂S),
- Sulfates,
- Lead (Pb),
- Vinyl Chloride, and
- Visibility reducing particles (VRP).

The EPA has established ambient air quality standards for these pollutants. These standards are called the National Ambient Air Quality Standards (NAAQS). The California Air Resources Board (CARB) subsequently established the more stringent California Ambient Air Quality Standards (CAAQS). Both sets of standards are shown in Figure 1 below. Areas in California where ambient air concentrations of pollutants are higher than the state standard are considered to be in “non-attainment” status for that pollutant.

Regulation of air emissions from non-mobile sources within San Diego County has been delegated to the SDAPCD. As part of its air quality permitting process, the SDAPCD has established thresholds for the preparation of Air Quality Impact Assessments (AQIAs) and/or Air Quality Conformity Assessments (AQCAs).

SDAPCD is the government agency which regulates sources of air pollution within the county and established an “emissions budget” or Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_x).

Currently, San Diego is in “non-attainment” status for federal and state O₃ and state PM₁₀ and PM_{2.5}. An attainment plan is available for O₃. The RAQS was adopted in 1992 and has been updated as recently as 2022 which was the latest update incorporating minor changes to the prior 2016 update.

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Figure 1: Ambient Air Quality Standards Matrix

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)		
Respirable Particulate Matter (PM ₁₀) ⁹	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		—		
Fine Particulate Matter (PM _{2.5}) ⁹	24 Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/m ³		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		—	—	
Nitrogen Dioxide (NO ₂) ¹⁰	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹¹	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m ³)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas) ¹¹	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) ¹¹	—	
Lead ^{12,13}	30 Day Average	1.5 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ¹²	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m ³		
Visibility Reducing Particles ¹⁴	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

Source: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

The 2022 update mostly summarizes how the 2016 update has lowered NOX and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NOX reduction measures. NOX and VOCs are precursors to the formation of ozone in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years (SDAPCD, 2023) <https://www.sdapcd.org/content/sdapcd/planning.html>

The City of Chula Vista has opted to adopt thresholds from the South Coast Air Quality Management District (SCAQMD) to address the significance of air quality impacts resulting from projects subject to CEQA environmental review. A project would result in a substantial contribution to an existing air quality violation of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for O3, which is a nonattainment pollutant, if the project’s construction emissions would exceed SCAQMD’s VOC or NOx significance thresholds shown in Figure 2:

Figure 2: Screening Level Thresholds for Criteria Pollutants (SCAQMD)

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Particulate Matter (PM ₁₀ and PM _{2.5})	150 / 55
Nitrogen Oxide (NO _x)	100
Sulfur Oxide (SO _x)	150
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG)	75
Operational Emissions	
Particulate Matter (PM ₁₀ and PM _{2.5})	150 / 55
Nitrogen Oxide (NO _x)	55
Sulfur Oxide (SO _x)	150
Carbon Monoxide (CO)	550
Reactive Organic Gases (ROG)	55
Volatile Organic Compounds (VOCs)	55
Source: (SCAQMD, 2015)	

Summary of Energy Efficiency Standards

Title 24, Part 6 of the California Building Standards Code regulates energy use including space heating and cooling, hot water heating, and ventilation. The energy code allows new buildings to meet a “performance” standard that allows a builder to choose the most cost-effective energy saving measures to meet the standard from a variety of measures. These choices may include the following:

- Added insulation,

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

- Improved windows,
- Radiant barriers,
- Cool roofs,
- Improved HVAC systems,
- Alternative heating and cooling systems,
- More efficient water heating systems, and
- More efficient lighting systems.

The California Energy Commission's (CEC) 2022 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include the introduction of photovoltaics into the prescriptive package, improvements for attics, walls, water heating, and lighting (Source: <https://www.energy.ca.gov/publications/2022/2022-building-energy-efficiency-standards-residential-and-nonresidential>).

The City's Energy and Water Conservation Regulations (CVMC 20.04) require that all new residential units include the necessary plumbing to encourage the later installation of solar hot water heating. In addition, the electrical conduit necessary for installation of solar photovoltaic system is also required for all new residential units.

Water-related energy use consumes 19-percent of California's electricity, 32-percent of its natural gas, and 88-billion gallons of diesel fuel every year. The water-related energy use includes water and wastewater treatment as well as the energy needed to transport the water from its source (either northern California or the Colorado River). California Green Building Code Title 24, Part 11 (CALGreen) requires that indoor water use be reduced through stringent new water fixture flow rates. The City has also reduced the demand for outdoor water use through the adoption of the Landscape Water Conservation requirements (CVMC 20.12). The City of Chula Vista recently adopted a residential graywater sub-out requirement to allow the future installation of a clothes washer graywater irrigation system (CVMC 15.28.020).

CALGreen also requires that a minimum of 65-percent of all new construction waste generated at the site be diverted to recycle or salvage. Additionally, the State has set per capita disposal rates of 5.3-pounds per person per day for the City of Chula Vista. The City requires new construction to divert 100-percent of the inert waste and not less than 50-percent of the remaining waste generated during construction (CVMC 8.25.020).

Summary of Greenhouse Gas (GHG) Reduction

GHGs include but are not limited to CO₂, CH₄, and N₂O. These gases allow solar radiation (sunlight) into the Earth's atmosphere but prevent radiative heat from escaping, thus warming the earth's atmosphere. GHGs are emitted by both natural processes and human activities. As directed by Assembly Bill (AB) 32, the Climate Change Scoping Plan (December 2008 prepared by CARB) includes measures to reduce statewide GHGs

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

to 1990 levels by 2020 from forecasted business-as-usual (BAU) 2020 emissions. Recent guidance in the draft AB32 2017 Scoping Plan has identified a local government per capita GHG emission goal of 6 MT CO_{2e} by 2030 and 2 MT CO_{2e} by 2050.

The majority of the reduction strategies are to come from the two sectors that generate the most CO₂ emissions statewide: transportation and electricity generation. The majority of the reduction in transportation-related and energy-related CO₂ emissions are to be achieved through statewide regulatory mandates affecting vehicle emissions and types of fuel the vehicles use, public transit, and public utilities. The remaining reductions are to be achieved through direct regulation and price incentive measures affecting oil and gas extraction industries and forestry practices (including increased tree planting programs).

BAU is defined as the emissions that would have occurred in the absence of reductions mandated under AB32, including CHG reductions from the following:

- Implementation of Pavley 1 and Pavley 2 motor vehicle standards. Pavley regulations establish specific GHG emissions levels for both passenger cars and light-duty trucks. The standards become more stringent each year through 2016.
- Implementation of the Low Carbon Fuel Standard (LCFS). CARB has also adopted a LCFS that sets carbon reduction standards for the types of fuels that can be sold in California, particularly renewable fuels. This will reduce the GHG emissions even if total fuel consumption is not reduced. Implementation of the Renewable Portfolio Standard (RPS). RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase renewable energy resources to 33-percent by 2020.
- Increased energy efficiency measures codified in Title 24 as of 2016. BAU uses the energy efficiency standards codified in Title 24 as of 2005.
- Implementation of Federal Corporate Average Fuel Economy (CAFE) standards. The CAFE standards determine the fuel efficiency of certain vehicle classes.

The three most applicable measures to land use planning and development within the City of Chula Vista's control include the Regional Transportation-related GHG targets, support for the Million Solar Roofs program, and energy efficiency measures. Since the early 1990s, the City has been engaged in multiple climate change forums including the United Nations Framework Convention on Climate Change (UNFCCC), the Cities for Climate Protection campaign and the U.S. Conference of Mayor's Climate Protection Agreement. The key plans and ordinances that the City has adopted and implemented to achieve citywide GHG emissions reductions are summarized below.

Each participant in the International Council of Environmental Initiatives (ICLEI) was to create local policy measures to ensure multiple benefits in the City and at the same time identify a carbon reduction goal through the implementation of those measures. In its CO₂ Reduction Plan developed in 1995 and officially adopted in 2000, Chula Vista committed to lowering its CO₂ emissions by diversifying its transportation system and

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

using energy more efficiently in all sectors. To focus efforts in this direction, the City adopted the CO₂ reduction goal of 20-percent below 1990 levels by 2010. In order to achieve this goal, specific actions were identified, which when fully implemented, were anticipated to save 100,000 tons of CO₂ each year.

The 2008 GHG Emissions Inventory noted that compared to 1990, Chula Vista's city-wide GHG emissions have increased by 29-percent, however, per capita and per housing unit levels are approximately 25-percent and 17-percent below 1990 levels, respectively. The Climate Change Working Group (CCWG) helped develop recommendations to reduce the community's GHGs in order to meet the City's 2010 GHG emissions reduction targets. The CCWG ultimately chose seven measures that were adopted by the City Council and the horizon date was delayed until 2012 instead of 2010.

During 2014, a CCWG reconvened to help update the City's Climate Action Plan (CAP). Specifically, the CCWG developed recommendations, through an open and transparent public process, for new greenhouse gas reduction strategies to assist Chula Vista in reaching its carbon reduction goals.

The most recent and current plan is the 2017 CAP which was adopted by City Council on September 26, 2017. New guidance, including the 2017 draft AB 32 Scoping Plan Update, lists a local government per capita, or person, reduction goal of 6 MT CO₂e by 2030 and 2MT CO₂e by 2050.

The latest GHG inventory for 2024 was recently released (Source: <https://www.chulavistaca.gov/home/showpublisheddocument/27825/638485294770670000>) . The 2024 inventory showed that Chula Vista has reduced its GHG emissions by 17% since 2005, meeting its 2020 goal. Accounting for the 25% population growth since 2005, Chula Vista's per capita emissions have decreased 33% below 2005 levels.

CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs often referred to as "Scoping Plans" (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 (Source: <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>) 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.

- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle throughout the document.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.
- Relies on the most up to date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration as well as direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

3. PROJECT DESCRIPTION

The Final Environmental Impact Report for the Otay Ranch Village Seven Section Planning Area (SPA) Plan and Tentative Maps (FEIR) (identified by the City of Chula Vista as EIR 04-04) contains a comprehensive disclosure and analysis of potential environmental effects associated with implementation of the SPA Plan in the City of Chula Vista (City) (City of Chula Vista 2004). The SPA Plan was developed to refine and implement the land use plans, goals, and objectives of the Otay Ranch General Development Plan (Otay Ranch GDP) for the development of Planning Area (PA) 7.

In 2004, as part of the FEIR, the City approved an Urban Villages development which allows a maximum of 1,456 units approved by the Otay Ranch GDP for Village 7 in a 1996 Otay Ranch GDP amendment.

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

The current project addresses proposed modifications (involving the General Plan, GDP, and SPA Amendment) which are as follows:

Chula Vista General Plan Amendment

- 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);
- 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. 1,120 housing units approved in the 2004 EIR have already been 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.

4. EFFECT OF PROJECT ON LOCAL/REGIONAL AIR QUALITY

This section includes a generalized discussion of the short-term and long-term effects on local and regional air quality including its contribution to global climate change.

The Village design plan has been prepared to support and integrate transit options for MTS and local bus routes which could be introduced in the future. This design is intended to help reduce the dependence on passenger vehicles and encourage walking, biking, and transit trips.

Construction Related Emissions

Air pollutant emission sources during project construction include exhaust and particulate emissions generated from construction equipment; fugitive dust from site preparation, grading, and excavation activities; and volatile compounds that evaporate during site paving and painting of structures. It was found in the 2004 FEIR that significant unavoidable impacts for Village 7 would be expected.

The Project modification from 287 Single-family homes to 287 Multi-family homes would essentially maintain the same construction impacts since the relative construction activities number of residential structures would be the same.

The FEIR found that impacts associated with air quality construction emissions would be significant and unavoidable. The FEIR found that volatile organic compounds (VOC) and oxides of nitrogen (NO_x), particulate matter less than 10 microns in diameter (PM₁₀) and carbon monoxide (CO) emissions would exceed thresholds during construction. Given the air quality-related impacts identified in the FEIR, the following Mitigation Measures would be required during construction:

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

- 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.

As indicated in the Air Quality and GHG Technical Memorandum prepared for this project (Dudek 2024), construction emissions (which were calculated within CalEEMod 2022.1.1.21) were essentially the same. What their study found was that construction for the 287 multi-family homes when compared with the 2004 EIR only exceeded VOC thresholds and all remaining thresholds were not exceeded. They found that VOC impacts could only be explained by an overestimation of CalEEMod between single and multi-family residential construction activities (namely architectural coatings) which was estimated over a shorter duration. This overestimation was caused by the assumed default settings within the model. It was noted however that these impacts accounted for only 1.3% of the maximum daily emissions expected from the unavoidable impact of 4,829 pounds per day VOC identified in the 2004 EIR. Therefore, construction impacts associated with criteria air pollutant emissions would be consistent with the 2004 FEIR and construction impacts associated with criteria air pollutant emissions would not be new or substantially more severe than the 2004 EIR.

Further, it should be noted that this development is subject to SDAPCD Rule 55 - Fugitive Dust Control that requires restrictions of visible emissions of fugitive dust beyond the property line. Construction fugitive dust will be reduced by implementing

the following dust control measures:

- Watering active grading sites and unpaved roads three times daily to control fugitive dust to meet the requirements of SDAPCD Rule 55.
- Use of low-VOC as required under SPAPCD Rule 67.0.
- Replacement of ground cover as quickly as possible.
- Reducing speeds on unpaved roads to 15 miles per hour or less.
- Reduce dust during loading and unloading operations.

Operational Related Emissions

Air Quality

Operational Air Quality impacts associated criteria air pollutant emissions from operation of the proposed project modifications (multi-family housing in place of single-family housing) were estimated in the Air Quality and GHG Technical Memorandum (Dudek 2024) using the CalEEMod 2022.1.1.21 model. As determined therein, operational impacts would be less for all criteria pollutants when compared to the single-family land use for the 287 units analyzed. Therefore, Dudek found that project emissions (multi-family housing) would not result in greater emissions than single-family housing. Therefore, operational impacts associated with criteria air pollutant emissions would not be new or substantially more severe than the 2004 EIR.

The San Diego Air Basin (SDAB) has been designated as a federal nonattainment area for O₃ and a state nonattainment area for O₃, PM₁₀, and PM_{2.5}. PM₁₀ and PM_{2.5} emissions associated with construction generally result in near-field 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 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 as noted.

No new substantially significant sources of operational air emissions beyond those identified in the FEIR would occur with implementation of the proposed project and Mitigation Measures identified above (from the 2004 FEIR) would still be required.

Global Climate Change

Operational and Construction GHG impacts were disclosed within the Air Quality and GHG Technical Memorandum (Dudek 2024) which also relayed on the same CalEEMod Model as the Air Quality report but were for informational purposes only since the Project has been approved prior to GHG impact thresholds and requirements. From what Dudek found was the project would generate 3,431.87 MT Carbon Dioxide equivalent. The findings indicate that the Project is consistent with the City of Chula Vista's CAP.

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

The CAP does not require projects to calculate GHG emissions however Projects are required to complete a consistency analysis and is provided in Figure 3 below.

Figure 3: 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 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 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 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 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 project would not impair the ability of the City to facilitate simple graywater systems for laundry-to-landscape applications.
	Streamline complex graywater systems’ permit review	Not applicable. The 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 project would not impair the ability of the City to

Figure 3: City of Chula Vista Climate Action Plan Consistency Analysis

Category	Policy Objective or Strategy	Potential to Conflict
		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 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 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 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 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 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 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 project would not impair the ability of the City to require energy-savings retrofits for existing buildings.

Figure 3: City of Chula Vista Climate Action Plan Consistency Analysis

Category	Policy Objective or Strategy	Potential to Conflict
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 project site bordering the developments and in road dividers.
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 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 project consists of shifting low density single-family to 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 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 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 project would not impair the ability of the City to construct alternative fueling stations.
	Designate preferred parking for alternative fuel vehicles	Not applicable. The project would not impair the ability of the City to designate preferred parking

Figure 3: City of Chula Vista Climate Action Plan Consistency Analysis

Category	Policy Objective or Strategy	Potential to Conflict
		for alternative fuel vehicles.
	Design all new residential and commercial buildings to be “Electric Vehicle Ready”	Consistent. This project would be designed to comply with applicable CALGreen requirements for provisions of electric vehicle charging equipment, which at a minimum includes the 2022 CALGreen requirements.

Source: City of Chula Vista 2017.

As determined therein, the GHG emissions generated by the Project would not conflict with the goals and policies of the Chula Vista Climate Action Plan, the CARB Scoping Plan, and the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS).

Consistency with Air Quality Plans

The FEIR found that the original project would exceed air quality thresholds but concluded that as the proposed project had been planned for many years. Since the number of residential units will remain the same, the Project would be anticipated by the RAQS.

The number of 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 analysis above, implementation of the 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. The traffic report prepared by CR Associates found that the project would result in a decrease in ADT from the 2004 EIR (CR Associates 2023). As such, vehicle trip generation and planned development for the project are considered to be anticipated in the SIP and RAQS.

Health Risk Assessment

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.

Based on the Air Quality and GHG Technical Memorandum (Dudek 2024), it was found that 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 project.

5. QUANTITATIVE PROJECT DESIGN EVALUATION

The Project modification seeks to switch 287 Single-Family units to 287 multi-family units allowing for an increase residential density by area for the overall mixed-use SPA. The project would not increase the residential use intensity for Village 7 and would be consistent with the Community design already covered in the approved AQIP additional A new quantitative project design evaluation using INDEX or LEED-ND is not recommended at this time.

Based on the proposed Village 7 SPA modifications shifting the single-family to multi-family as identified in the Proposed site development plan, the net result on increasing residential density and diversity of residential units would have a positive effect on reducing GHG since vehicular traffic and energy use as noted in the Air Quality and GHG Technical Memorandum (Dudek 2024). The net effect would reduce operational air quality and GHG emissions which would be indicative quantitative of an improved design value.

6 COMMUNITY DESIGN AND SITE PLANNING FEATURES

This section describes the specific strategies that have been integrated into the project to create a sustainable community, including those project attributes designed to reduce air quality impacts by promoting walking and alternative travel modes, reducing vehicle miles traveled, and improving energy conservation. Figure 4: Community Design and Site Plan Features, includes the list of specific measures that have been included in the project.

Village Seven Section Planning Area (SPA) Amendment
Otay Ranch GDP
Air Quality Improvement Plan (AQIP)

Figure 4: Community Design and Site Plan Features

Transportation Related Measures
Otay Ranch Village 7 with the Proposed Project changes provides a pedestrian-friendly environment with a focus on promoting a walkable and bikeable community that promotes pedestrian activity and non-automobile trips. Higher density uses support walking as distances are reduced, which results in lower GHG emissions from vehicles.
Otay Ranch Village 7 provides an integrated circulation system which enhances the Project mixed use design enabling more non-automobile related circulation options.
Otay Ranch Village 7 includes a walking path directly Millenia Station which provides walkable connectivity to transit stops. This design increases walkability of the project which results in lower GHG emissions from vehicles.
Bike lanes and bike racks will be provided throughout the Otay Ranch Village 7 development including interconnectivity to the revised multi-family footprint.
All internal roadways within the Otay Ranch Village 7 were designed to local street standards with speed limits of 25 to 30-mph. Slow traffic speeds are conducive to walking and bicycling and provide the necessary linkage to the regional bicycle circulation network.
Low speed vehicles (LSVs) may travel on all internal streets with a maximum travel speed of 20-30-miles per hour.
The Otay Ranch Village 7 is consistent with the regional transit plan and South Bay Bus Rapid Transit (BRT) plans.
Energy Conservation Related Measures
The project Proposes to shift 287 single family home uses to a 287 multi-family home use without increasing the overall intensity of Village 7. Since multi-family units have a reduced energy footprint compared to single-family uses, a reduced energy footprint per capita would be expected. This would indirectly reduce air and greenhouse gas emissions.
CVMC 8.25.095 requires all new construction and demolition projects to divert 100 percent of inert waste (asphalt, concrete, bricks, tile, trees, stumps, rocks and associated vegetation and soils resulting from land clearing from landfill disposal); and 50 percent of all remaining waste generated. Contractors working on Otay Ranch Town Center will be required to put up a performance deposit and prepare a Waste Management Report form to ensure that all materials are responsibly handled. Upon verification that the diversion goals have been met the performance deposit will be refunded.
Utilize solar heating technology as practical. Generally, solar panels can be cost-effectively used to heat water for domestic use and for swimming pools. Advances in solar technology in the future may make other applications appropriate.
The Project will utilize the latest building code to include Title 24 at the time a building permit is requested. At the time of this AQIP, Title 24 (2022) would be utilized. Incorporating energy reduction measures of Title 24 will reduce energy requirements which will reduce air quality and greenhouse gas emissions.
The Project would install solar water heater pre-plumbing for the 287 multi-family residential structures and may use building wide water heating.

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

The Project will provide operational photovoltaic systems which will be installed for each of the 287 multi-family residential units.
Other Measures to Improve Air Quality
The single-family residential would allow for natural gas hearth options. The proposed modification to multi-family would not have hearth options installed. This would reduce HG and Air Quality emissions.
The Project will ensure shade trees are planted to meet or exceed the City's Shade Tree Policy. Parking lot design will all achieve at least a 50-percent shade cover in 5 to 15 years through tree canopies, shade structures and or light colored "cool" paving surfaces.
The Project will use Architectural coatings consistent with San Diego Air Pollution Control Districts Rule 67. This will limit the VOCs entering the ambient air.
Project-wide recycling as required under the County's recycling Ordinance (SDCMC Section 66.0701)
Energy efficiency as required under the latest California Energy Code and CalGreen (Currently 2022).
Indoor residential appliances that carry the Environmental Protection Agency's (EPA) ENERGYSTAR® certification, as applicable and feasible.
Inclusion of all residential units in the local utility demand response program to limit peak energy usage for cooling.
Passive solar design and building orientation principles to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during summer.
Natural turf in residential development limited to no more than 30% of the outdoor open space.

7. CHULA VISTA CO₂ REDUCTION PLAN

Figure 5 below provides a comparative evaluation between the Project design features specific to modifying the land use for the 287 units from single-family to multi-family within the Otay Ranch Village 7 SPA and the energy efficiency emission reduction action measures contained in the City's CO₂ Reduction Plan.

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Figure 5: Summary of Otay Ranch Village Seven SPA CO₂ Reduction Action Measures

Action Measure	Project/Community Design Features	Describe how project design will Implement CO ₂ Reduction Action Measures
<p>Measure 6 (Enhanced Pedestrian Connections to Transit): Installation of walkways and crossings between bus stops and surrounding land uses.</p>	<p>The Village 7 SPA is a complete village with a focus on promoting a walkable and bikeable community that promotes pedestrian activity and non-automobile trips. At this time, MTS does not provide bus routes through the village; therefore, no bus stops are proposed.</p>	<p>This measure is not applicable to the proposed project.</p>
<p>Measure 7 (Increased Housing Density near Transit): General increase in land use and zoning designations to reach an average of at least 14-18 dwelling units per net acre within ¼ mile of major transit facilities.</p>	<p>Major transit facilities are not present within ¼ mile of the proposed project.</p>	<p>This measure is not applicable to the proposed project.</p>
<p>Measure 8 (Site Design with Transit Orientation): Placement of buildings and circulation routes to emphasize transit rather than auto access; also includes bus turn-outs and other transit stop amenities.</p>	<p>The Village design plan has been prepared to support and integrate transit options for MTS and local bus routes which could be introduced in the future.</p>	<p>Providing circulation routes conducive to non-automobile transportation opportunities allows MTS and local bus routes opportunities to expand bussing services as their business model allows. By expanding these services reduces, vehicular travel resulting could be reduced which would lower GHG emissions.</p>
<p>Measure 9 (Increased Land Use Mix): Provide a greater dispersion/variety of land uses such as siting of neighborhood commercial uses in residential areas and inclusion of housing in commercial and light industrial areas.</p>	<p>Village Seven already has a planned mixed-use district and does not have any commercial or light industrial use areas. The scope of the proposed project is only limited to the rezoning of 287 single-family residential units to multi-family.</p>	<p>This measure is not applicable to the proposed project.</p>
<p>Measure 10 (Reduced Commercial Parking Requirements): Lower parking space requirements; allowance for shared lots and shared parking; allowance for on-street spaces.</p>	<p>The proposed project meets the multi-family parking standards established in the Village Seven Planned Community District Regulations.</p>	<p>Measure 10 is not applicable since the Project would be residential. Commercial Parking within Village 7 would not change under the proposed Project action.</p>
<p>Measure 11 (Site Design with Pedestrian/Bicycle Orientation): Placement of buildings and circulation routes to emphasize pedestrian and bicycle access without excluding autos; includes pedestrian benches,</p>	<p>The Site design has been adjusted to increase pedestrian access through pedestrian friendly amenities. The Project would install multiple bike access paths, bike racks and storage. The Project would be consistent with</p>	<p>The design promotes pedestrian and bicycle access which reduces vehicular travel which will reduce GHG emissions. The Project design will be consistent with CalGreen and local regulations</p>

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Action Measure	Project/Community Design Features	Describe how project design will Implement CO ₂ Reduction Action Measures
bike paths, and bike racks.	Cal Green requirements for nonresidential buildings.	which established benchmarks for bicycle rack placement, storage placement and showers as needed to be successful under Measure 11.
Measure 12 (Bicycle Integration with Transit and Employment): Provide storage at major transit stops and employment areas. Encourage employers to provide showers at the place of employment near major transit nodes.	. As noted above, Village Seven is currently not served by any transit routes, and the project area is designated for residential, not employment, use.	This measure is not applicable to the proposed project.
Measure 13 (Bike Lanes, paths, and Routes): Continued implementation of the City’s bicycle master plan. Emphasis is to be given to separate bike paths as opposed to striping bike lanes on streets.	. All arterial and in-tract streets in Village Seven have already been built per the established standards. The proposed project utilizes access from existing infrastructure (LaMedia Road and Santa Luna Street, and Magdalena Avenue). No new bike paths are proposed as part of the project.	This measure is not applicable to the proposed project.
Measure 14 (Energy Efficient Landscaping): Installation of shade trees for new single-family homes as part of an overall City-wide tree planting effort to reduce ambient temperatures, smog formation, energy use, and CO ₂ .	This measure applies to single-family homes, whereas the proposed project is multi-family.	This measure is not applicable to the proposed project.
Measure 16 (Traffic Signal & System Upgrades): Provide high-efficiency LED lamps or similar as approved by the City Engineer.	All public streets in Village Seven have already been built to meet the established standards. The proposed project utilizes access from existing transportation infrastructure (LaMedia Road and Santa Luna Street, and Magdalena Avenue). No traffic signals or system upgrades are proposed as part of the project.	This measure is not applicable to the proposed project.
Measure 18 (Energy Efficient Building Recognition Program): Reducing CO ₂ emissions by applying building standards that exceed current Title 24 Energy Code requirements.	Project will meet code.	The latest Title 24 building code is 2022 at the time of this report. The Project buildout would be over multiple years and would be required to implement the latest code requirement at the time building permits are submitted. Because of this, GHG emission reductions from building code enhancements will be achieved for

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Action Measure	Project/Community Design Features	Describe how project design will Implement CO ₂ Reduction Action Measures
		the Otay Ranch Town Center development.
Measure 20 (Increased Employment Density Near Transit): General increase in land-use and zoning designations to focus employment-generating land-uses within ¼ mile of major transit stops throughout the City.	As stated above, there are no major transit stops within ¼ mile of the project.	This measure is not applicable to the proposed project.

8. CREDIT TOWARDS INCREASED MINIMUM ENERGY EFFICIENCY STANDARDS

The Village 7 SPA will ensure that all development complies with the latest building codes including maximizing consistency with energy codes and would comply with Chapter 15.12 (Green Building Standards) and Chapter 15.26 (Energy Code) of Chula Vista’s Municipal Code.

9. COMPLIANCE MONITORING

This section includes a written description and a checklist (Figure 7) summarizing the project design features that have been identified to reduce the development's effects on air quality and improve energy efficiency.

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Figure 6: Air Quality Improvement Plan Compliance Monitoring Checklist

	Method of Verification¹	Timing of Verification	Responsible Party²	Project Consistency & Compliance Documentation³
<i>PLANNING</i>				
AQIP Project Design Features/Principles				
Pedestrian oriented development	Plan Review	Tentative Map (TM)	City of Chula Vista	
Widened landscape medians and parkways with street trees	Plan Review	Design Review (DR)	City of Chula Vista	
Integrated circulation system	Plan Review	TM	City of Chula Vista	
Mix of uses	Plan Review	TM	City of Chula Vista	
Higher density	Plan Review	TM	City of Chula Vista	
Local Bus Stop	Transit Review	DR	SANDAG/City	
Class II Bicycle facilities	Plan Check	DR	City of Chula Vista	
Opportunity for employee services to be located near employers	Plan Review	TM	City of Chula Vista	
Circulation pattern for internal roads are between 20 and 30 miles per hour	Plan Review	TM	City of Chula Vista	
Available public transportation	Plan Review	SPA Plan	City of Chula Vista	
Transit Plan	Transit Review	SPA Plan	SANDAG/MTS/City	
Compliance with the City's Shade Tree Policy for parking lots	Plan Review	Precise Plan, Construction Plans	City of Chula Vista	
Air Quality Mitigation Measures				
Construction related emissions	Permit Review	Construction Drawings (CDs)	City of Chula Vista	

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Use of low-VOC paints - Rule 67	Permit Review	CDs	City of Chula Vista	https://www.sdapcd.org/content/dam/sdapcd/documents/rules/rule-archive/2021/Rule-67.01.16
Siting of sensitive land uses	Plan Review	TM	City of Chula Vista	
BUILDING				
Green Building				
New Construction Recycling Plan	Waste Management Report Review	CDs	City of Chula Vista	https://calrecycle.ca.gov/lgcentral/library/canddmodel/instruction/newstructures/
Project wide recycling	Plan Check	CDs	City of Chula Vista	
Energy Efficiency				
Compliance with 2022 California Energy Code or latest code per date of request for building Permit	Plan Check	CDs	City of Chula Vista	https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards
Participation in a Utility Demand Response program	Plan Check	CDs	City of Chula Vista	https://www.sdge.com/businesses/saving-center/energy-management-programs/demand-response
Compliance with 2022 CalGreen Indoor Water Use requirements	Plan Check	CDs	City of Chula Vista	https://www.dgs.ca.gov/BSC/CALGreen
Compliance with EPA's WaterSense certification	Plan Check	CDs	City of Chula Vista	https://www.epa.gov/watersense
Compliance with EPA's Energy star certification for indoor residential appliances	Plan Check	CDs	City of Chula Vista	https://www.energystar.gov/products
Efficient irrigation equipment	Plan Check	CDs	City of Chula Vista	
Water efficient / native landscaping will be provided	Plan Check	DR	City of Chula Vista	
Landscaping Turf will only be installed on accessible and usable areas of the site	Plan Check	DR	City of Chula Vista	https://chulavista.municipal.codes/CVMC/20.12.180
Solar access - use passive solar design and building	Plan Check	DR	City of Chula Vista	

Village Seven Section Planning Area (SPA) Amendment
 Otay Ranch GDP
 Air Quality Improvement Plan (AQIP)

Solar access - Use of vertical landscape elements to reduce heating/cooling	Plan Check	DR	City of Chula Vista	
Energy efficient LED lighting	Plan Check	CDs	City of Chula Vista	
Installation of solar water heater pre-plumbing	Plan Check	CDs	City of Chula Vista	
Installation of solar photovoltaic systems per Title 24 (2022)	Plan Check	CDs	City of Chula Vista	https://www.nrel.gov/state-local-tribal/blog/posts/solar-ready-building-design-a-summary-of-technical-considerations.html
Installation of Electric Vehicle Charging Stations per CalGreen (2022)	Plan Check	CDs	City of Chula Vista	

Notes:

1. Method of verification may include, but is not limited to, plan check, permit review, site inspection.
2. Identify the party responsible for ensuring compliance (City of Chula Vista, San Diego APCD, Other)
3. This column shall include all pertinent information necessary to confirm compliance including document type, date of completion, plan/permit number, special notes/comments, and contact information.