OTAY RANCH VILLAGE 8 WEST

Air Quality Improvement Plan

Appendix B

February 2020

Adopted December 17, 2013
By Resolution No. 2013-270

Amended February 18, 2020
By Resolution No. 2020-033

Prepared for:

HomeFed Village 8, LLC
1903 Wright Place, Suite 220
Carlsbad, CA 92008

Prepared by

WHA, Inc.
2850 Redhill Avenue, Suite 200
Santa Ana, CA 92705-5543
(949)-250-0607
Contact: Julia Malisos

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

1. Executive Summary 1
   A. Intent of the AQIP 1
   B. Community Site Design Goals 1
   C. Planning Features 2
   D. Modeled Effectiveness of Community Design 4
2. Introduction 6
   A.Need for a Qualitative Air Quality Plan 5
   B. Purpose and Goals 5
   C.Regulatory Framework Related to Air Quality 6
      1. Federal 7
      2. State of California 9
      3. Regional 13
      4. City of Chula Vista 14
3. Village 8 West SPA Amendment Project Description 18
4. Effect of Project on Local/Regional Air Quality 23
5. Quantitative Project Evaluation 30
6. Community Design and Site Planning Features 60
7. Chula Vista CO_2 Reduction Plan 63
8. Credit Towards Increased Minimum Energy Efficiency Standards 66
9. Compliance Monitoring 66

List of Figures

Figure 1: Ambient Air Quality Standards Matrix 16
Figure 2: Thresholds of Significance for Air Quality Impacts 16
Figure 3: Site Utilization Plan 21
Figure 4: Site Utilization Summary 22
Figure 5: Mitigated Construction Emissions (Atkins November 2013) 26
Figure 6: Operational Emissions (Atkins November 2013) 28
Figure 7: Bicycle Circulation Plan 41
Figure 8: Transit Plan 42
Figure 9: Pedestrian Circulation Plan 43
Figure 10: Chula Vista General Plan Regional Transit Vision 44

Figure 11: SPA Development Standards (Reference for Setbacks)..... 45
Figure 12: SPA Street Development Standards (Reference for Setbacks) 46
Figure 13: Intersection Density 58
Figure 14: Conceptual Town Center Site Plan 59
Figure 15: Tentative Map 59

List of Tables

Table 1: LEED Neighborhood Development Plan V4 Equivalency Analysis..... 31
Table 2: Community Design and Site Planning Features 61
Table 3: Summary of Village 8 West Consistency with CO_2 Reduction Action Measures 64
Table 4: Village 8 West Air Quality Improvement Plan Compliance Checklist 67

1. Executive Summary

A. Intent of the AQIP

This AQIP provides an analysis of air pollution impacts which would result from the proposed development, and demonstrates the best available design to reduce vehicle trips, maintain or improve traffic flow, reduce vehicle miles traveled and reduce Greenhouse Gasses (GHG) direct or indirect emissions. This AQIP demonstrates how Village 8 West has been designed consistent with the City's Energy and Water Conservation regulations (CVMC 20.04) and Landscape Water Conservation (CVMC 20.12), and represents the best available design in terms of improving energy efficiency and reducing GHG emissions. GHG emissions include gases such as CO2, CH4, and N2O. These emissions 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 and specific measures for the Village 8 West Sectional Planning Area (SPA) Plan Amendment are addressed.

B. Community Site Design Goals

A central component of the Otay Ranch GDP is the "village" concept. Each village is approximately one square mile and is defined by a village core. Village cores consist of facilities and services needed to serve the everyday needs of its residents. Such uses include a school, shops, parks, and civic facilities. The highest density residential uses occur in and around the core in the form of mixed-use housing and retail as well as high-density attached homes. Residential densities decrease near the outer edges of each village to provide diversity in housing and serve a wide range of lifestyles and economic levels within each village. Most village cores include a transit stop. Higher residential densities at the core are intended to support commercial uses by activating the village core during all hours of the day and promote more walkable communities by providing facilities and services within a quarter mile of most homes. The village concept also promotes more efficient public transit and increased ridership by providing strong activity centers in each village and making transit close and convenient for most residents.

Village 8 West complies with the "village" concept and design goals. It is composed of 300.3 acres and is located at the southerly edge of the Otay Valley Parcel of Otay Ranch. The notable intersection of Village 8 West is Main Street (Formerly Rock Mountain Road) and La Media Parkway. Village 8 West is surrounded by Village 4 to the west, Village 7 to the north, Village 8 East to the east, and MSCP open space to the south. Village 8 West currently consists of vacant land which is currently being developed pursuant to entitlements approved by the City of Chula Vista in December 2013.

Village 8 West proposes a mixed-use community including diverse housing types, commercial, open space, and educational uses. It is designed to be pedestrian oriented and multi-modal with sidewalks, trails and public transit opportunities throughout. Additionally, the majority of the housing as well as the densest housing occurs in the Town Center section of Village 8 West. This

further supports the Otay Ranch GDP "village" concept and pedestrian-centric objectives. These objectives focus on reducing automobile dependence and promoting an active walkable and bikeable community with convenient neighborhood services and recreation.

C. Planning Features

Village 8 West's land use and circulation pattern are designed to reflect new urbanist and traditional town planning principles including the pedestrian and transit-oriented village concept described in the Otay Ranch GDP. This village concept intensifies residential densities and commercial uses at the heart of the community to enhance transit use, promote walkability, and create vibrant commercial and public spaces that promote social interaction and a strong community identity. The mix of proposed residential, commercial, and community uses are intended to provide a mixed-use environment that serves the needs of residents and employees.

The mixed use Town Center is organized to create a series of corridors that emulate a traditional urban neighborhood within a system of "blocks" or planning areas. Block sizes and circulation through the Town Center have been carefully defined to maximize walkability and promote a vibrant and active core.

Public Spaces and Amenities

The Village 8 West Town Center is proposed to have a central Village Square that can host civic activities as well as passive and active recreation. In addition, there is a neighborhood park at the southern end of Village 8 West as well as a community park at the northwest corner of the village. In total, Village 8 West offers 27.6 acres of usable open space.

Open Space and Trails Network

The Open Space Preserve (OSP) Zone is intended to protect natural areas that are part of the City of Chula Vista's Multiple Species Conservation Plan (MSCP) Subarea. In Village 8 West, these lands consist of 15.6-acres in the southwest corner of the SPA, adjacent to the Otay River Valley. This Zone allows for habitat preserves pursuant to the regulations of the MSCP Subarea Plan, the Otay Ranch Resource Management Plan (RMP), and the Otay Valley Regional Park (OVRP) Concept Plan. Additionally, there are trails throughout the community to provide pedestrian connectivity.

Pedestrian and Bike Mobility—Minimize Cars

The vision for Village 8 West is to develop a cohesive community with inter-connected uses and densities. The densities and design patterns envisioned for the village focus on promoting a walkable and bikeable community with less emphasis on automobile trips.

Village 8 West concentrates its highest density housing, retail/commercial, and civic uses in the Town Center. Additionally, there is a town square, community park and an existing school adjacent to the Town Center. The resulting land use plan features an integrated circulation system that provides Town Center residents and adjacent neighborhoods non-automobile related circulation options that include walking, bicycling, Low Speed Vehicles (LSVs), and transit. With travel speeds of 25 to 35 mph along Main Street and La Media Parkway through the couplet, the Town Center is designed to provide a comfortable walking environment along the planned Chula Vista Regional Trail and Village Pathway (Refer to Figure 9, Pedestrian Circulation Plan. Class II

bicycle facilities are planned along all circulation element roadways through Village 8 West. (See Figure 7) Sidewalks will be provided throughout Village 8 West, with the exception of La Media Parkway south of the couplets. All roadways internal to the Village 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.

This village is transit ready. In conformance with General Plan policy, public transportation is an integral part of Otay Ranch. The Village 8 West plan provides for potential transit services with options available depending on what future transit service program is implemented. Public transit lines and stops are integrated into the plan and are located within or in close proximity to the highest intensity neighborhoods. (See Figure 8) By design, higher density uses will be provided along the new couplets at La Media Parkway and Main Street. This is intended to help reduce the dependence on the passenger vehicle and encourage walking, biking, and transit trips.

The current regional transit plan includes transit lines on East "H" Street, East Palomar Street, La Media Parkway, and Eastlake Parkway. Transit stations are planned to be located approximately five to six miles apart with the nearest station to Village 8 West located in Millenia (Eastern Urban Center). In conformance with the General Plan, a future transit line also is located on Main Street and a transit stop is planned in the Town Center (refer to Figure 8: Transit Plan). The actual transit plan will be developed in conjunction with the San Diego Association of Governments (SANDAG). Specific access points as well as the internal circulation for bicycle riders and pedestrians and exact roadway crossings will be approved during the Tentative Map (TM) process.

Building and Design Features

The Village 8 West SPA Plan incorporates several features into the site design that promote alternative transportation use, reduce traffic congestion, encourage energy efficiency, and reduce area source pollutants. These measures include the following:

- Design parking lots to promote use of mass transit and carpools.
- Synchronize the traffic lights included as part of an individual development project with previously installed traffic lights in order to reduce traffic congestion.
- Install only electric or natural gas fireplaces in new development. No wood burning fireplaces are permitted.
- When siting sensitive land uses such as residences, schools, day care centers, playgrounds and medical facilities the recommendations set forth in Table 1-1 of California Air Resources Board's (CARB) Land Use and Air Quality Handbook (CARB 2004) will be use as a guideline. Specifically, new sensitive uses would not be located within 50 feet of any typical-sized gas station (one that has a throughput of less than 3.6 million gallons per year). No gas stations with a throughput of 3.6 million gallons per year or greater shall be developed within Village 8 West.

The updated California Building Standards Code, Title 24, will go into effect on January 1, 2020 (2019 Code). This includes Building, Residential, Electrical, Mechanical and Plumbing, as well as Energy and Green Building (CALGreen) Codes.

January 1, 2020 is the statewide effective date established by the California Building Standards Commission (CBSC) for the 2019 California Building Standards Code. In accordance with California Health and Safety Code, Section 18938.5, all applications for a building permit submitted on or after January 1, 2020 are subject to compliance with the 2019 California Building Standards Code.

The 2016 California Building Standards Code remains in effect and is applicable to all plans and specifications for, and to construction performed where the application for a building permit is received on or before December 31, 2019.

The 2019 Code updates is another step towards GHG reduction and energy efficiency increases. For example, regarding residential, the 2019 Code is 7% more efficient than 2016.

Non-residential Energy Codes are also proving to be more efficient with the 2019 update reflecting a 30% efficiency increase from 2016, whereas the 2016 Code was only 5% more efficient than 2013.

Therefore, Village 8 West will by design work towards consistency with Chula Vista's Energy and Water Conservation regulations (CVMC 20.04) and Landscape Water Conservation (CVMC 20.12) and represents code compliance in terms of energy efficiency and GHG emissions reductions.

D. Modeled Effectiveness of Community Design

The City of Chula Vista previously used the INDEX CO2 model requirements. This tool is no longer used. Therefore, LEED-ND v4.0 is being utilized as an analytical tool for sustainable design. Table 1: LEED-ND Equivalency Analysis was prepared to study various design features within Village 8 West.

2. Introduction

A. Need for a Qualitative Air Quality Plan

Pursuant to Chula Vista's Growth Management Ordinance (CVMC 19.09.050B), an Air Quality Improvement Plan (AQIP) is required to be prepared in conjunction with the Otay Ranch Village 8 West Sectional Planning Area (SPA) Plan Amendment. The Growth Management Ordinance 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.

This AQIP will serve to implement several of the key aspects of the City's CO_2 Reduction Plan and Green Building and Energy Efficiency Ordinances for the development of Village 8 West.

B. Purpose and Goals

The purpose of the AQIP is to provide an analysis of air pollution impacts that would result from development of Village 8 West and to demonstrate how the design for Village 8 West reduces vehicle trips, maintains or improves traffic flow, reduces vehicle miles traveled, reduces direct or indirect Greenhouse Gas (GHG) emissions, and minimizes pollutant emissions during construction per regulations. This AQIP also demonstrates how Village 8 West has been designed consistent with the City's requirements.

As the result of rapid development not keeping pace with the demand for facilities and improvements, the City Council adopted Growth Management 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 City of Chula Vista's Growth Management ordinance (CVMC Chapter 19.09) purpose is to provide the following:

- Provide quality housing opportunities for all economic sections of the community;
- Provide a balanced community with adequate commercial, industrial, recreational and open space areas to support the residential areas of the City;
- Provide that public facilities, services and improvements meeting City standards exist or become available concurrent with the need created by new development;
- Balance the housing needs of the region against the public service needs of Chula Vista residents and available fiscal and environmental resources;
- Provide that all development is consistent with the Chula Vista general plan;
- Prevent growth unless adequate public facilities and improvements are provided in a phased and logical fashion as required by the general plan;
- Control the timing and location of development by tying the pace of development to the provision of public facilities and improvements to conform to the City's threshold standards and to meet the goals and objectives of the growth management program;

- Provide that the air quality of the City of Chula Vista improves from existing conditions;
- Provide that the City of Chula Vista conserves water so that an adequate supply be maintained to serve the needs of current and future residents.
- Conserve energy use consistent with the General Plan, the General Development Plan, and other City regulations including the City of Chula Vista Climate Action Plan

The AQIP has been prepared based on the best available design practices and also serves to implement several of the key aspects of the City's Climate Action Plan and Municipal Code.

C. Regulatory Framework Related to Air Quality

There are a number of actions that Federal, State and Local jurisdictions have taken to 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 (NOx)
- Ozone (O3),
- Respirable 10- and 2.5-micron particulate matter (PM10 and PM2.5),
- 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 on the following page. 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 San Diego County Air Pollution Control District (APCD). As part of its air quality permitting process, the APCD has established thresholds for the preparation of Air Quality Impact Assessments (AQIAs) and/or Air Quality Conformity Assessments (AQCAs). APCD has also established an "emissions budget" or Regional Air Quality Strategy (RAQS) for the San Diego Air Basin. This budget takes into account existing conditions, planned growth based on General Plans for cities within the region, and air quality control measures implemented by the APCD. The applicable standards are shown in Figure 2: Thresholds of Significance for Air Quality Impacts.

1. Federal

Clean Air Act (CAA)

Air quality is defined by ambient air concentrations of specific pollutants identified by the EPA to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal CAA of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Figure 2: Ambient Air Quality Standards shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. California Air Resources Board (CARB) has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. On April 30, 2012, the San Diego Air Basin (SDAB) was classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB is an attainment area under the NAAQS for all other criteria pollutants. The SDAB currently falls under a national "maintenance plan" for CO, following a 1998 re-designation as a CO attainment area (SDAPCD 2010). The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (serious nonattainment), PM10, and PM2.5.

The U.S. Supreme Court ruled on April 2, 2007, in Massachusetts v. U.S. Environmental Protection Agency that CO2 is an air pollutant, as defined under the CAA, and that the EPA has the authority to regulate emissions of GHGs. The EPA announced that GHGs (including CO2, CH4, N2O, HFC, PFC, and SF6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the EPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the EPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010, for 2012 through 2016 model year vehicles and on October 15, 2012, for 2017 through 2025 model year vehicles (EPA 2011; EPA and NHTSA 2012).

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The EPA and the NHTSA have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The EPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the EPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules require these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons (MT) and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined EPA GHG standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (EPA 2011; EPA and NHTSA 2012).

San Diego Air Pollution Control District (SDAPCD) is the local agency responsible for the administration and enforcement of air quality regulations for the County. The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County's Regional Air Quality Strategies (RAQS) was initially adopted in 1991, and is updated on a triennial basis. The most recent version of the RAQS was adopted by the SDAPCD in 2009. The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California State Implementation Plan (SIP). The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for San Diego County is presented in Table 2: Federal and State Air Quality Designation for the San Diego Air Basin.

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD:

SDAPCD Regulation IV Prohibitions; Rule 51: Prohibits the discharge from any source such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.

SDAPCD Regulation IV: Prohibitions Rule 55: Fugitive Dust Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust

emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.

SDAPCD Regulation IV Prohibitions; Rule 67.0: Architectural Coatings: Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

2. State of California

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. Air toxics are generated by a number of sources, including stationary ones such as dry cleaners, gas stations, combustion sources, and laboratories; mobile ones such as automobiles; and area sources such as farms, landfills, construction sites, and residential areas. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Public exposure to TACs is a significant environmental health issue in California.

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, the CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required the CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

Supplementing the Tanner process, AB 2588 the Air Toxics "Hot Spots" Information and Assessment Act of 1987 currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified PM emitted in both gaseous and particulate forms by diesel-fueled engines as a TAC. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the EPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, the CARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary

engines (e.g., stand-by power generators). These requirements are now in force on a state-wide basis.

California Greenhouse Gas Regulations

There are numerous State plans, policies, regulations, and laws related to GHGs and global climate change. Following is a discussion of some of these plans, policies, and regulations that (1) establish overall State policies and GHG reduction targets; (2) require State or local actions that result in direct or indirect GHG emission reductions for the proposed Project; and (3) require CEQA analysis of GHG emissions.

California Code of Regulations, Title 24, Part 6

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect in January 1, 2017. The newest code update will go into effect on January 1, 2020, with subsequent iterations expected in three-year cycles that may be in-force at time of build-out. Each building that submits for permit will be required to meet the prevailing code at the time of permit submission, at the sole discretion of the authority having jurisdiction.

California Green Building Standards Code

The California Green Building Standards Code (24 California Code of Regulations [CCR], Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools and hospitals) throughout California. The current version of the code went into effect on January 1, 2017 and the newest code update will go into effect on January 1, 2020. The code is Part 11 of the California Building Standards Code in Title 24 of the California Code of Regulations and is also known as the CALGreen Building Standards Code (California Building Standards Code [CBSC] 2014a).

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all

Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs the CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

Senate Bill (SB)375

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

CARB: Scoping Plan

On December 11, 2008, the CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project by project basis.

The CARB released the First Update to the Climate Change Scoping Plan in May 2014, to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014a). To determine the amount of GHG emission reductions needed to achieve the goal of AB 32 (i.e., 1990 levels by 2020) CARB developed a forecast of the AB 32 Baseline 2020 emissions, which is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. CARB estimated the AB 32 Baseline 2020 to be 509 million metric tons (MMT) of CO2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO2e (CARB 2014b). This represents an approximately 15.32 percent reduction. The CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO2e for energy, 23 MMT CO2e for transportation, 5 MMT CO2e for high-GWP GHGs, and 2 MMT CO2e for waste. The remaining 23 MMT CO2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible—if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

3. Regional

SANDAG Regional Plan

The Regional Plan (RP) (SANDAG 2015) is the currently approved long-range planning document developed to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs. The RP establishes a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth while preserving natural resources and limiting urban sprawl." The RP encourages the regions and the County to increase residential and employment concentrations in areas with the best existing and future transit connections, and to preserve important open spaces. The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation. General urban form goals, policies, and objectives are summarized as follows:

- Mix compatible uses.
- Take advantage of compact building design.
- Create a range of housing opportunities and choices.
- Create walkable neighborhoods.
- Foster distinctive, attractive communities with a strong sense of place.
- Otay Ranch Preserve open space, natural beauty, and critical environmental areas.
- Strengthen and direct development towards existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair, and cost-effective.
- Encourage community and stakeholder collaboration in development decisions.

As plans are ever-evolving, it is recognized that new plans may be approved in the future. SANDAG lists 12 Near-Term Actions that are intended for implementation in the next Regional Plan. Along with the strategies of the approved RP, these concepts are recognized as potential features in development going forward. The 12 Near Term Actions are as follows:

1. The Regional Transportation Improvement Program (RTIP).

2. Develop a long-term specialized transportation strategy through 2050, as part of the next biennial update of the SANDAG Coordinated Plan, to address the increasing specialized service needs of seniors and people with disabilities.

3. Promote Vehicle Miles Traveled (VMT) reduction by applying the Regional Complete Streets Policy to relevant SANDAG plans, programs, and projects.

4. Develop a Regional Mobility Hub Implementation Strategy.

5. Complete a follow-up study that details ways to reduce greenhouse gases by expanding the use of alternative fuels regionwide.

6. Incorporate regional transportation model enhancements to provide more robust data regarding bike and pedestrian travel, carpools, vanpools, carshare, and public health.

7. Expand the Integrated Corridor Management Concept and design for up to three corridors.

8. Complete the comprehensive 10-year review of the TransNet Program in accordance with the TransNet ordinance.

9. Develop innovative financing tools to self-finance near-term projects for the new border crossing at Otay Mesa East.

10. Participate in the target-setting and monitoring processes for federal performance measures and report on progress toward the achievement of these federal performance measure targets in the new System Performance Report.

11. Develop an Intraregional Tribal Transportation Strategy with tribal nations in the region.

12. Explore the development of a Regional Military Base Multimodal Access Strategy.

4. City of Chula Vista

City of Chula Vista Climate Action Plan

Since 2000, Chula Vista has been implementing a Climate Action Plan (CAP) to address the threat of climate change to the local community. The original Carbon Dioxide Reduction Plan was revised to incorporate new climate mitigation and adaptation measures to strengthen the City's climate action efforts and to facilitate the numerous community co-benefits such as utility savings, better air quality, reduced traffic congestion, local economic development, and improved quality of life. To help guide implementation of the CAP, the City regularly conducts GHG emission inventories. The City's CAP was updated in 2008, 2010 and 2017.

Municipal Codes

The Chula Vista City Council adopted the California Energy Code 2016 effective January 1, 2017. The 2016 Building Energy Efficiency Standards are more efficient than previous standards and the 2019 Standards exceed 2016 and subsequent code cycles are expected to move aggressively toward zero-energy and zero-emission buildings.

Per CVMC § 15.24.045, each store in a store building, each flat in a flat building, and each building used as a dwelling shall be so wired that each store, apartment, flat or dwelling shall have separate lighting and/or power distribution panels. Such panels shall not serve other portions of the building. Hotels, motels, hotel apartments and similar types of buildings may be wired from one or more distribution panels. It is expected that this ordinance may be superseded by Title 24 updates though the build-out of the SPA Plan—future buildings will comply with the more stringent of the requirements.

Per CVMC § 20.04.040, all new residential units shall include electrical conduit specifically designed to allow the later installation of a photovoltaic (PV) system which utilizes solar energy as a means to provide electricity. No building permit shall be issued unless the requirements of this section and the Chula Vista Photovoltaic Pre-Wiring Installation Requirements are

incorporated into the approved building plans. It is expected that this ordinance may be superseded by Title 24 updates though the build-out of the SPA Plan—future buildings will comply with the more stringent of the requirements.

Additionally, per CVMC § 20.04.030, all new residential units shall include plumbing specifically designed to allow the later installation of a system which utilizes solar energy as the primary means of heating domestic potable water. It is expected that this ordinance may be superseded by Title 24 updates though the build-out of the SPA Plan—future buildings will comply with the more stringent of the requirements following the prevailing approach to water heating.

Finally, per CVMC § 20.04.050, commercial businesses are required to participate in a free resource and energy evaluation of their facilities when they obtain a new business license and every five years thereafter.

The City of Chula Vista has developed a number of strategies and plans aimed at improving air quality. The City is a part of the Cities for Climate Protection Program, which is headed by the International Council of Local Environmental Initiatives (ICLEI). The original plan followed by the city to reduce fossil fuel consumption was the CO2 Reduction Plan, adopted in 2002. Currently, the City uses the Climate Action Plan (CAP) which was adopted in 2017. The Climate Action Plan references the 2002 CO2 Reduction Plan, however, the initiatives set forth in the CAP are more relevant to today's conditions.

They are as follows:

- Water Conservation and Reuse
- Waste Reduction
- Renewable and Efficient Energy
- Smart Growth and Transportation

Figure 1: Ambient Air Quality Standards Matrix

Pollutant	Averaging Time	California Standards [1]	Federal Standards [2]	
		Concentration[3]	Primary [3, 4]	Secondary [3, 5]
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	35 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	53 ppm (100 µg/m^3)[6]	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m^3)	100 ppb (188 µg/m^3)[6]	None
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	--	--
	3 Hour	--	--	0.5 ppm (1300 µg/m^3)[7]
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)[7]	--
Lead[8]	30 Day Average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average[9]	--	0.15 µg/m^3	
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles.	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride[8]	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	

ppm = parts per million; ppb = parts per billion

(1) California standards for ozone, PM_{10}, CO, NO_2, SO_2 (1-hour and 24-hour), and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.

(2) National standards, other than 1-hour ozone, 8-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth-highest daily maximum 8-hour concentrations is below 0.08 ppm. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile 24-hour concentrations is below 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile 24-hour concentrations is below 65 µg/m^3.

(3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; parts per million in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(4) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

(5) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(6) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of ppb. California standards are in units of ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

(7) On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method using ultraviolet technology, but will retain the older pararosaniline methods until the new methods have adequately permeated state monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of ppb. California standard

Figure 2: Thresholds of Significance for Air Quality Impacts

Pollutant	Construction Emissions (pounds/day)	Operation Emissions (pounds/day)
Carbon Monoxide (CO)	550	550
Reactive organic gases (ROG)[1]	75	55
Nitrogen Oxides (NO_x)	100	55
Sulfur Oxides (SO_x)	150	150
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55

[1] Reactive organic gases are also sometimes referred to as volatile organic compounds (VOCs).
Source: SCAQMD 2010

3. Village 8 West SPA Amendment Project Description

Otay Ranch is a 23,000-acre master-planned community and includes a mix of land uses within 20 villages and/or planning areas. Village 8 West encompasses 300.7 gross acres and a variety of allowable uses. Village 8 West proposes a range of residential units and densities, a mix of uses that blends commercial and residential together, parks and open space, and community facilities including one school site. The project will be located around the future intersection of La Media Parkway and Main Street, (designed to be a pair of couplets) with a town square located in the center and surrounded by mixed-use and park space.

Under the Otay Ranch Village 8 West Sectional Planning Area Plan and Tentative Map Final Environmental Impact Report (FEIR) (State Clearinghouse No. 2010062093) (City of Chula Vista 2013), the Otay Ranch Village 8 West project was approved by the City of Chula Vista City Council in December 2013. The approved Village 8 West (approved project) land uses consist of:

- Up to 2,050 residential units;
    - 331 low-medium density single family dwelling units
    - 290 medium density single family/town home dwelling units
    - 530 medium-high density multi-family dwelling units
    - 899 high density/town center multi-family dwelling units (part of the mixed-use land uses)
- 300,000 square feet of mixed-use commercial (comprised of up to 50,000 square feet of office and 250,000 square feet of commercial)
- 5.8 acres of Community Purpose Facility
- 31.6 acres of schools
- 27.9 acres of parks
- 39.1 acres of open space

HomeFed Village 8, LLC (Project Applicant) is now proposing land use changes to the approved project resulting in:

- Up to 2,334 residential units;
    - 328 low-medium density single family dwelling units
    - 233 medium density single family/town home dwelling units
    - 563 medium-high density multi-family dwelling units
    - 1,210 high density/town center multi-family dwelling units (part of the mixed-use land uses)
- Up to 300,000 Square Feet of Commercial Development in the Town Center;
- 11.1 acres for an elementary school;

- 5.5 acres of Community Public Facilities;
- 23.4 acres of park use;
- 44.3 acres of open space;
- Transit-oriented development inclusive of local bus and BRT stops; and
- Multi-modal design inclusive of bike lanes and trails.

The proposed changes would include converting the planned middle school site, which has an underlying "town center" designation, to medium-high density residential and transferring 284 dwelling units from Village 8 East to Village 8 West. No changes are proposed to the commercial uses. These proposed changes to the land use plan of Village 8 West are collectively referred to as the "proposed project".

The vision for Village 8 West is to develop a cohesive community with inter-connected uses and densities. The mix of proposed residential, commercial, and community uses are intended to provide a mixed-use environment that serves the needs of residents and employees. The densities and design patterns envisioned for the village focus on promoting a walkable and bikeable community with less emphasis on automobile trips.

Figure 3: Site Utilization Plan and Figure 4: Site Utilization Summary implement the land uses contemplated by the Otay Ranch. The site utilization plan and site utilization summary work together and assign a general utilization to each transect within the SPA. In addition to defining the utilization of each transect, individual planning areas are also assigned a targeted number of dwelling units and commercial square feet. The number of units and commercial square feet shown in Figure 4 are only estimates. Units and commercial uses may be transferred between planning areas provided that uses being transferred are consistent with the site utilization of the receiving planning area, that the overall density of each transect remains consistent with the density ranges (du/ac) specified for each transect, and that the transfer meets all of the requirements specified in §9.3.2 of the SPA.

The Village 8 West SPA plan creates a new community centered around a pedestrian oriented, mixed-use Town Center. Uses are envisioned to include retail, office, high density residential, institutional, social, and community services that support adjacent residential neighborhoods. Such uses might include restaurants, coffee shops, dry cleaners, grocery stores, and opportunities for shopping and entertainment. These interchangeable mixed-use components create a 24-hour activity center for the community ensuring a safe, healthy, and vibrant heart for the community.

The mixed-use Town Center is organized to create a series of corridors that emulate a traditional urban neighborhood within a system of "blocks" or planning areas. Block sizes and circulation through the Town Center have been carefully defined to maximize walkability and promote a vibrant and active Town Center area. Blocks are defined by two urban couplets. Rather than divert traffic away from and around the Town Center, the couplets bring arterial traffic through the Town Center to promote activity, increase visibility, and ensure the long-term viability of businesses within. Couplets, which consist of a pair or "couple" of one-way streets, are designed to accommodate similar volumes of traffic as traditional two-way arterials with improved turning movements, through movements, and pedestrian scale. The reduced overall width of the street

creates a more intimate streetscape, benefiting the overall appearance and environment for all users including drivers, bicyclists, and pedestrians. The increased activity also supports transit use, thereby achieving the goal of a multi-modal, pedestrian oriented Town Center.

Projections for Village 8 West indicate that over 50% of the residential dwelling units will be located in the Town Center and will be higher densities between 18-45 dwelling units per acre. It has been demonstrated that these smaller homes use less energy for heating and cooling when compared to larger single-family detached homes.

Village 8 West concentrates its highest density housing, retail/commercial, and civic uses in the Town Center. There is also a proposed park and an existing school adjacent to the Town Center. The resulting land use plan features an integrated circulation system that provides Town Center residents and adjacent neighborhoods non-automobile related circulation options that includes walking, bicycling, LSVs, and transit.

Figure 3: Site Utilization Plan



Figure 4: Site Utilization Summary

Commercial and Residential

Town Center - 18-45 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	Com'l Min.[2][3]	Com'l Max[2][3]
B	1.2	T-4:TC	-	0	4
C[8]	7.5	T-4:TC	180	0	36
F	2.8	T-4:TC	175 [7]	10	10
W	2.3	T-4:TC	See [7]	0	0
H-1A–1D	7.5	T-4:TC	225	20	75
H-2	1.2	T-4:TC	0	0	12
J	5.5	T-4:TC	199	0	18
L-A – L-D	14.0	T-4:TC	431	87	145
X	0.7	T-4:TC	0	0	0
Subtotal	**42.7**		**1,210**	**117**	**300**

Medium-High Density Residential - 11-18 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	Com'l Min.[2][3]	Com'l Max[2][3]
D [8]	19.4	T-3:NC	234		
E	5.1	T-3:NC	0	Basin	
I	6.1	T-3:NC	84		
M	8.3	T-3:NC	125		
O	8.7	T-3:NC	120		
Subtotal	**47.6**		**563**		

Medium Density Residential Attached/Detached - 6-11 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	Com'l Min.[2][3]	Com'l Max[2][3]
Q	11.1	T-2:NG	106		
U	15.6	T-2:NG	127		
Subtotal	**26.7**		**233**		

Low-Medium Density Residential Village - 3-6 du/ac

Planning Area	Gross Acres	Transect[1]	Target Res. Units[2]	Com'l Min.[2][3]	Com'l Max[2][3]
N	20.1	T-2:NE	117		
P	25.4	T-2:NE	115		
V	19.1	T-2:NE	96		
Subtotal	**64.6**		**328**		
TOTAL	**181.6**		**2,334**	**300K [3]**	

Public, Quasi Public, and Other

Community Purpose Facility (CPF)[4]

Planning Area	GDP Land Use	Gross Acres	Transect[1]	Description
R-A – R-C	MH	5.5	SD: CPF	CPF
Subtotal		**5.5**		

Potential School (S) Sites[5]

Planning Area	GDP Land Use	Gross Acres (Ac.)	Transect[1]	Description
S	MH	11.1	T-3: NC	Elementary
Subtotal		**11.1**		

Parks (P)

Planning Area	GDP Land Use	Gross Acres (Ac.)	Transect[1]	Classification
A	P	15.1	SD: P	Community
G-1–2 [9]	TC	2.8	SD: P	Town Square
T	P	5.5	SD: P	Neighborhood
Subtotal		**23.4**		

Open Space (OS)

Planning Area	GDP Land Use	Gross Acres (Ac.)	Transect[1]	Classification
Y	OSP	15.6	T-1: OSP	Preserve (MSCP)
OS-1–8	OS	28.7	T-1: OS	Open Space
Subtotal		**44.3**		

Other

Planning Area	GDP Land Use	Gross Acres (Ac.)	Transect[1]	Description
Right-of-Way	NA	34.8	N/A	Arterials
Subtotal		**34.8**		
TOTAL		**119.1**		

SPA Total Area: 300.7 Gross Acres[6]

Notes:

1. Transects are defined in Chapter 3.
2. See Chapter 9 regarding Intensity Transfers and minimum commercial square footage requirements.
3. 17,000 sf of office and 100,000 sf of retail for the low range; 50,000 sf of office and 250,000 sf of retail for the high range (excludes Live/Work)
4. As Defined by CVMC 19.48.
5. The Elementary School site will revert to the underlying Medium-High Residential land use if it is not accepted by the school district.
6. Acreage does not include 19.2-acre San Diego Reservoir.
7. 185 DUs are authorized on Parcels F and W combined. Final unit allocation to be determined at Design Review.
8. The unit allocation between Parcels C and D may be adjusted and will be finalized during Design Review so long as the total number of combined units does not exceed a total of 414 units between Parcels C and D per Chapter 9, Implementation, Substantial Conformance.
9. Limited community-oriented retail may occur in the Town Square. The amount of retail to be determined during preparation of the Town Square Park Master Plan.

4. Effect of Project on Local/Regional Air Quality

This section includes a generalized discussion of Village 8 West's short-term and long-term effects on local and regional air quality including its contribution to global climate change.

Utilizing all the Federal, State, and Local strategies for reducing GHGs, Village 8 West is projected to reduce GHG emissions through the incorporation of smart growth vehicle circulation patterns, lower-emitting vehicles, and the advanced energy efficiency and water conservation design requirements that reduce GHG emissions. The energy efficiency and water conservation design requirements include both the California Title 24 requirements for energy as well as the CALGreen requirements.

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. Construction activities are anticipated to occur in five phases over the course of eight years and will disturb 261 acres of the 300-acre site. An additional 1.95 acres would be disturbed for installation of the offsite improvements and 4.57 acres would be graded on the city of San Diego reservoir property, for a total disturbance area of approximately 268 acres. The remaining area consists of designated open space.

The following construction-related mitigation measures will be implemented in Village 8 West:

GDP / GDPA SEIR

5.4-1 Short-term Air Quality Violations Reduction Measures.

The following techniques to reduce construction emissions shall be implemented during all construction activities:

1. Minimize simultaneous operation of multiple construction equipment units (i.e., phase construction to minimize impacts).
2. Use low pollutant-emitting construction equipment.
3. Use electrical construction equipment as practical.
4. Use catalytic reduction for gasoline-powered equipment.
5. Use injection-timing retard for diesel-powered equipment.
6. Water the construction area twice daily to minimize fugitive dust.
7. Stabilize (for example hydroseed) graded areas as quickly as possible to minimize fugitive dust.
8. Pave permanent roads as quickly as possible to minimize dust.

5.4-2 Dust Control Measures.

Mitigation of PM10 impacts requires active dust control during construction. As a matter of standard practice, the City shall require the following standard construction measures be included

on all grading plans to the satisfaction of the City Engineer, and shall be implemented during construction to the extent applicable:

1. All unpaved construction areas shall be sprinkled with water or other acceptable San Diego APCD dust control agents twice daily during dust-generating activities to reduce dust emissions. Additional watering or acceptable APCD dust control agents shall be applied during dry weather or on windy days until dust emissions are not visible.
2. Trucks hauling dirt and debris shall be properly covered to reduce windblown dust and spills.
3. A 20-mile-per-hour speed limit on unpaved surfaces shall be enforced.
4. On dry days, dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce re-suspension of particulate matter caused by vehicle movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.
5. On-site stockpiles of excavated material shall be covered or watered.
6. Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the City and/or APCD to reduce dust generation.
7. To the maximum extent feasible:

    i. Heavy-duty construction equipment with modified combustion/fuel injection systems for emissions control shall be utilized during grading and construction activities.

    ii. Catalytic reduction for gasoline-powered equipment shall be used.
8. Equip construction equipment with pre-chamber diesel engines (or equivalent) together with proper maintenance and operation to reduce emissions of NOx, to the extent available and feasible.
9. Electrical construction equipment shall be used to the extent feasible.
10. The simultaneous operations of multiple construction equipment units shall be minimized (i.e., phase construction to minimize impacts).

Village 8 West Air-1 Construction Best Management Practices

During all construction activities for the proposed project, the project applicant shall ensure implementation of the following BMPs to reduce the emissions of NOx and fugitive dust (PM10 to PM2.5). Prior to issuance of a grading permit, the City Engineer shall verify that these practices are specified on the grading plan.

1. All construction equipment shall use aqueous diesel fuel and be outfitted with best available control technology devices certified by CARB. A copy of each unit's best available control technology documentation shall be provided at the time of mobilization of each applicable unit of equipment.
2. Approach routes to the site shall be cleaned daily of construction-related dirt.
3. Apply chemical stabilizer or pave the last 100 feet of internal travel path within the construction site prior to public road entry.

4. Install wheel washers or rumble plates adjacent to a paved apron prior to any vehicle entry on public roads.
5. Remove any visible track-out into traveled public streets within 30 minutes of occurrence.
6. Wet wash the construction access point at the end of each workday if any vehicle travel on unpaved surfaces has occurred.
7. Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads.
8. General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues should turn their engines off when not in use to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and shall be discontinued during second stage smog alerts.
9. During construction, site grading activities within 500 feet of a school in operation shall be discontinued or all exposed surfaces shall be watered to minimize dust transport off-site to the maximum degree feasible, when the wind velocity is greater than 15 miles per hour in the direction of the school.
10. During blasting, utilize control measures to minimize fugitive dust. Control measures may include, but are not limited to, blast enclosures; vacuum blasters; drapes; water curtains; or wet blasting.

Project related emissions would be below the significant thresholds during underground utility construction, building construction, and coating activities. Grading activities would exceed the significant threshold for Nitrous Oxides (NOx), Particulate Matter (PM10, and PM2.5), and surface improvements (paving) would exceed the NOx thresholds, resulting in potentially significant impacts. Actual emissions may be less than calculated by the URBEMIS model (a software model designed to estimate air emissions from land use development projects) since this model does not take into account additional standards adopted by California Air Resources Board (CARB) after 2007 and assumed a worst-case scenario.

Mitigation measures implemented during grading activities would reduce NOx, PM10, and PM2.5 emissions but not to a less than significant level, resulting in significant and unavoidable impacts, as shown in Figure 5: Mitigated Construction Emissions (Atkins November 2013).

Figure 5: Mitigated Construction Emissions (Atkins November 2013)

	Pollutant Emissions (pounds/day)					
	CO	**VOC**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Unmitigated Emissions						
Mass Grading Total Emissions[1]	174	44	**379**	0	**4,345**	**918**
Trenching[2]	22	6	51	0	2	2
Surface Improvements (paving)[3]	52	15	**121**	0	5	4
Building Construction and Coating Phases[4]	161	36	81	0	4	3
Combined Daily Total for all Construction Activities	409	**101**	**632**	0	**4,356**	**927**
Mitigated Emissions[5]						
Mass Grading Total Emissions[1]	174	44	**323**	0	**2,460**	**522**
Trenching[2]	22	6	44	0	**1**	**1**
Surface Improvements (paving)[3]	52	15	**103**	0	4	3
Building Construction and Coating Phases[4]	161	36	72	0	4	3
Combined Daily Total for all Construction Activities (mitigated)	409	**101**	**542**	0	**2,469**	**529**
Significance Threshold	550	75	100	150	150	55
Significant Impact?	No	**Yes**	**Yes**	No	**Yes**	**Yes**

Bold = Exceeds significance threshold

CO = carbon monoxide; VOC = reactive organic gases; NO_x = nitrogen oxides; SO_x = sulfur oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

Modeling assumptions: Emissions are based on assumptions for the Yellow phase, plus additional equipment added to account for blasting within the Blue and Orange phases, and off-site improvements. Worst-case construction activities for the Yellow phase were assumed to occur during 2013-2015.

[1] Assumes a three-month period and a maximum land disturbance of 20 acres per day. A total of approximately 268 acres would be disturbed over five development phases. A total of 4.7 million cubic yards would be graded and replaced within the disturbance area, or 940,000 cubic yards in each phase. All cut material would be used on site and no hauling of material off site would be required. Equipment list for grading includes an excavator, two graders, four heavy-duty trucks, five dozers, 12 scrapers, and two water trucks. A drill rig, crushing unit, and tractor would be required for blasting in the Orange and Blue phases and are included in the modeled equipment list.

[2] Assumes a two-month period. Equipment list includes two excavators, two dump trucks, a dozer, two backhoes, and a water truck.

[3] Assumes a two-month period. Paving and surface improvements would be required for approximately 12 percent of the project area (31 acres), or six acres per phase. Assumes an additional two acres for off-site improvements. Equipment list includes a grader, a paver, a roller, and 27 dump trucks and concrete trucks.

[4] Assumes a two-year period and architectural coating activities would occur simultaneously with the building construction activities. Assumes building construction would require a total of 11 dump trucks and concrete trucks, an excavator, a backhoe, and a water truck. Based on the Yellow phase, which includes development of 765 multi-family units, 126,000 square feet of commercial land use, a community park, and a middle school. Assumes model defaults for low VOC coating emissions (250 grams of VOC per liter or less).

[5] Assumes use of diesel particulate filters and diesel oxidation catalysts for all equipment. Due to a calculation error in the URBEMIS 2007 model, the total reduction in PM_{10} and $PM_{2.5}$ emissions that would occur as result of watering exposed surfaces, applying chemical stabilizers, and replacing ground cover cannot be calculated because the URBEMIS 2007 model overestimates the reduction in emissions. SCAQMD recommends application of the single highest control measure. Watering twice daily was applied for the project. Additionally, emission reductions estimates are not available for all of the BMPs. Emissions would likely be reduced compared to these estimates, but not to a less than significant level.

Source: CARB 2007. See Appendix C for data sheets.

Operational Related Emissions

The major source of emissions related to the day-to-day operations of full build-out of the Village 8 are produced by project-generated vehicle trips, as shown in Figure 6. Secondary sources of emissions include space and water heating, fireplaces, landscape maintenance equipment, consumer products, and periodic repainting of interior and exterior surfaces. These sources also emit significant volatile organic compounds (VOCs) There are no feasible mitigation measures available at the project level to reduce vehicular emissions other than reducing vehicle trips which the proposed project does.

As indicated in the Village 8 West – Trip Generation Analysis and Internal ADT Estimation (Chen Ryan 2019), the proposed project would generate approximately 23,638 daily external trips, while the approved project would generate approximately 26,104 daily external trips, when accounting for estimated trip reductions due to proximity to transit. The proposed project would therefore generate approximately 2,466 fewer trips when compared to the approved project. The travel behavior of the proposed project would be similar to that previously analyzed as part of the FEIR. As a result, operational emissions (specifically those resulting from mobile sources) associated with the proposed project would be reduced as compared to the approved project analyzed in the FEIR. No new operational air quality and greenhouse gas emissions impacts or mitigation measures would occur or be required. The Otay Ranch GDP Final Program EIR includes land use policies, siting/design policies, and transportation-related management actions to mitigate operational emissions (Ogden 1992). All applicable measures have already been incorporated into the SPA plan, such as provision of bike lanes, providing services near residences, and providing transit support facilities such as bus stops. There are no other feasible mitigation measures available at the project level to reduce vehicular emissions other than reducing vehicle trips.

The project trip generation rates account for the approximately 40 percent reduction in vehicle trips that would occur as a result of the mixed-use areas, transit use, and availability of pedestrian and bicycle facilities proposed as part of the SPA plan. In addition, future vehicular emissions may be lower than estimated due to increasingly stringent California fuel efficiency requirements. Some measures cannot be implemented at the SPA level, such as providing videoconference facilities in workplaces or requiring flexible work schedules. Additionally, there are no feasible mitigation measures currently available to reduce area sources of emissions without regulating the purchases of individual consumers. Operation emissions of VOCs, NOx, and PM10 would be significant and unavoidable as shown in Figure 6: Operational Emissions (Atkins November 2013).

Implementation of the project would result in a less than significant impact with respect to the exposure of sensitive receptors to carbon monoxide hot spots and Toxic Air Contaminants (TACs). However, to assure compliance with established criteria, the following mitigation measure is required:

Village 8 West Air-2 SDAPCD TAC Emission Criteria Compliance
Prior to approval of the building permit for any uses that are regulated for TAC emissions by the SDAPCD, the project applicant shall demonstrate to the satisfaction of the Director of Planning and Building that the use complies with established criteria (such as those established by SDAPCD Rule 1200).

Figure 6: Operational Emissions (Atkins November 2013)

Emissions Source	Pollutant Emissions (pounds/ day)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicular Sources [1]	368	40	31	1	**201**	39
Area Sources						
Natural Gas [2]	20	3	34	0	0	0
Hearth (fireplaces)[3]	1	0	4	0	0	0
Landscape	38	6	0	0	0	0
Consumer Products	0	**105**	0	0	0	0
Architectural Coatings[4]	0	15	0	0	0	0
Total Emissions	427	**169**	**69**	1	**201**	39
Significance Thresholds	550	55	55	150	150	55
Significant Impact?	No	**Yes**	**Yes**	No	**Yes**	No

Bold = Exceeds significance threshold
CO = carbon monoxide; VOC = volatile organic compounds; NO_x = nitrogen oxides; SO_x = sulfur oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Modeling assumptions: Calculations assume the full development of project at buildout (2030). Output is for summer emissions, with the exception of hearth emissions, where winter emissions were added to the daily emissions for a worst-case condition.

[1] Based on an ADT of 26,104 trips and an estimated vehicle trip length of 4.62 miles, which accounts for internal capture from mixed-use development, the reduction in vehicle trips compared to similar developments that do not provide access to transit, and the TDM program in the Village 8 West SPA Plan. A four percent vehicular emission reduction for VOC, NOx, CO, and PM_{10} emissions was applied for traffic light synchronization based on the SCAQMD CEQA Air Quality Handbook (1993).

[2] Assumes buildings comply with 15% above 2005 Title 24 standards.

[3] Assumes 15 percent of homes would have fireplaces, consistent with assumptions of the GPA/GDPA SEIR. No wood burning fireplaces would be allowed.

[4] Includes the use of low VOC coatings (250 grams of VOC per liter or less). Source: CARB 2007. See Appendix C for data sheets.

Project related emissions would be below the significant thresholds during underground utility construction, building construction, and coating activities. Grading activities would exceed the significant threshold for Nitrous Oxides (NOx), Particulate Matter (PM10, and PM2.5), and surface improvements (paving) would exceed the NOx thresholds, resulting in potentially significant impacts. Actual emissions may be less than calculated by the URBEMIS model (a software model designed to estimate air emissions from land use development projects) since this model does not take into account additional standards adopted by California Air Resources Board (CARB) after 2007 and assumed a worst-case scenario. Mitigation measures implemented during grading activities would reduce NOx, PM10, and PM2.5 emissions but not to a less than significant level, resulting in significant and unavoidable impacts.

In conclusion, there are construction and operation air quality impacts anticipated during either the construction or operation phases of the project after all mitigation measures have been utilized. Village 8 West will be consistent with the City's General Plan, as amended. However, the growth projections for the Regional Air Quality Strategy (RAQS) were based on the 2005 General Plan. Even though the proposed project would be consistent with all the applicable transportation and area source control measures proposed in the RAQS to reduce emissions in the region, the project exceeds the growth projections in the RAQS and would exceed the significant thresholds for ozone precursors and particulate matter during construction and operation for the San Diego Air Basin.

Construction emissions would remain similar to that analyzed under the FEIR, as no change in the construction phasing or required construction equipment is anticipated. Although full buildout of Village 8 West is not expected until 2030, for the purposes of modeling, the FEIR assumed construction would occur between 2013-2015. This was the estimated commencement date for a worst-case scenario when the construction analysis was originally prepared in for the FEIR in 2013. The estimated commencement date is now going to occur at a date further into the future. However, the FEIR continues to provide an accurate and conservative assessment of the project's construction-related air pollutant and greenhouse emissions because regulations, restrictions, and increased market penetration of cleaner construction equipment are anticipated to continue to reduce emissions in the future. In other words, because California's construction-related emission sources are regulated and will foreseeably continue to be more strictly regulated in the future, project emissions are reasonably expected to continue to decline. Thus, by utilizing an earlier start date analyzed in the FEIR, the estimated emissions likely overstate actual emission levels. In addition, based on our review of the proposed changes, the identified impacts and associated mitigation measures in the FEIR remain applicable to this project, and no additional mitigation measures would be required.

5. Quantitative Project Evaluation

A quantitative analysis has been performed for Village 8 West using Option Two: Alternative Modeling Programs, specifically a LEED-ND equivalency analysis was conducted. LEED-ND criteria are more appropriate than INDEX indicators for the Village 8 West SPA Plan for the following reasons:

- INDEX indicators do not take habitat preservation and conservation efforts into account, of which the Project is providing a significant amount.
- LEED-ND criteria measure these benefits to a greater and more accurate extent.
- The INDEX approach uses only 16 indicators, whereas LEED-ND has 56 indicators that are able to characterize a project much more comprehensively and thoroughly, and ultimately capture more contributors to GHG emission reductions.
- The underlying basics of the INDEX approach are nearly 15 years old in contrast to LEED-ND's latest update in July of 2018. Consequently, current best practices in urban design, green infrastructure and resilient neighborhoods are not addressed by INDEX indicators, but are covered by LEED-ND criteria.
- The California Energy Code and Green Building Standards have been updated since the INDEX approach was established.
- The INDEX model is no longer being used.

The V8W SPA Plan scores the equivalent of 42 points under the LEED-ND rating system. Table 1: LEED Equivalency Scorecard provides a description of the project attributes that were considered from the LEED-ND rating system. The base ND certification of 40 points is the functional equivalent of INDEX indicator thresholds. Therefore, the Project has demonstrated AQIP compliance.

Table 1: LEED Neighborhood Development Plan V4 Equivalency Analysis

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
Smart Location & Linkage					
SLLp1	Smart Location	Transit Served	Y/N	Yes	1. New infrastructure will be installed for V8W, but will connect into existing waste and wastewater infrastructure. V8W also has Subarea Master Plan approved by Otay Ranch Water District. The intent of this prerequisite is being met as V8W will be an extension of existing infrastructure. 2. 50% of dwellings and business within 1/2 mile walk of bus or proposed BRT stop which is believed to comply with the minimum weekday trips (60) and weekend trips (40). A local bus route is also proposed on La Media Road throughout the community. 3.The BRT stop in V8W was directed by MTS which also manages funding. Funding comes from various federal, state, and local sources. A.
SLLp2	Imperiled Species and Ecological Communities	None	Y/N	Yes	MSCP designated area.
SLLp3	Wetland and Water Body Conservation	None	Y/N	Yes	V8W is implementing the MSCP Chula Vista Subarea Plan. Thus, V8W meets the intent of this prerequisite due to the fact that a large designation of land will be conveyed to public ownership for permanent preservation and management.
SLLp4	Agricultural Land Conservation	None	Y/N	Yes	V8W is implementing the MSCP Chula Vista Subarea Plan. Thus, V8W meets the intent of this prerequisite due to the fact that a large designation of land will be conveyed to public ownership for permanent preservation and management.

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
SLLp5	Floodplain Avoidance	None	Y/N	Yes	V8W is not within a 100-year or 500-year floodplain as mapped by FEMA (DWR 2011), as the flood hazard boundary is located 0.3 mile south of the project site.
SLLc1	Preferred Locations	1. Location Type	10		
		2. Connectivity			
		3. High Priority Locations			
SLLc2	Brownfield Remediation	Brownfield Site	1		
		High Priority Redevelopment Area	2		
SLLc3	Access to Quality Transit	Existing/Planned Transit	1-7	3	Weighted allocation of points based on 100 weekday trips and 65 weekend trips (inclusive of BRT).
SLLc4	Bicycle Facilities	Bicycle Storage	1	1	Option 2, Existing bicycle network within 1/4 mile, bike network connects to school (refer to Fig. 7), diverse uses (refer to Fig. 3&4), BRT (refer to Fig. 8).
		Bicycle Location			
		Bicycle Network	1	1	Connects to an existing bicycle network with at least 3 continuous miles (refer to Fig. 7)
SLLc5	Housing and Jobs Proximity	Affordable housing	3		
		30% of total SF residential OR # of jobs within 1/2 mile = # of housing	2		
		Infill project with nonresidential component	1		
SLLc6	Steep Slope Protection		1	1	Per the Otay Ranch GDP §10.C.3 Steep Slope Policy and as stated in the V8W SPA §6.2.1(2) – V8W shall preserve 83% of slopes >25%. V8W will comply with this and

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
					furthermore, the share of development in V8W will occur on slopes <15%.
SLLc7	Site Design for Habitat or Wetland and Water Body Conservation	Sites w/o Significant habitat or wetlands	1		
		Sites with habitat or wetlands	1		
SLLc8	Restoration of Habitat or Wetlands and Water Bodies		1	1	V8W includes 15.6 acres of Preserve (MSCP) but also connects to the greater MSCP area. The steepest slopes are preserved within the RMP/MSCP Preserve areas. For each acre of development (less common use areas), V8W will convey 1.188 acres within the RMP/MSCP Preserve (public ownership), along with funding for permanent for the preservation, management and monitoring of these areas. (Refer to Fig. 3&4)
SLLc9	Long-Term Conservation Management of Habitat or Wetlands and Water Bodies		1	1	The Preserve Owner/Manager is responsible for overseeing the day-to-day and long range preserve management activities within the MSCP Preserve in accordance with the Otay Ranch Resource Management Plan (RMP).
Neighborhood Pattern & Design					
NPDp1	Walkable Streets		Y/N	TBD	Too early to determine at this phase of the project.
NPDp2	Compact Development		Y/N	Yes	V8W has densities from 6-11 du/ac, 11--18 du/ac and 18-45 du/ac. (Refer to Fig. 4)
NPDp3	Connected and Open Community		Y/N	Yes	145 intersections/square mile. (Refer to Fig 12: Intersection Density. This exceeds the pre-requisite of 140.
NPDc1	Walkable Streets	25' setback (80%)	1	1	The Town Center was conceptualized using Urban Land Institute's "Ten Principles for Building Healthy Places." These principles focus on creating active and walkable environments. Part of doing so is having interesting street scenes, pedestrian friendly places and spaces, and multi-modal active streets. The anticipated development

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
					within the Town Center will promote good design and walkability which is encouraged by activated streets. Part of creating an energized environment is putting commercial and retail frontage prominently along the street, this is the intent of V8W. Please refer to Figure 14 for a conceptual design of the Town Center which illustrates architecture forward and minimal setbacks from the circulation network. Residential setbacks are also likely to use the minimum amount permitted in order to maximize habitable square footage.
		18' setback (50%)	1	1	Most restrictive street setback in V8W is 15'. Therefore, 18' setback for 50% of the buildings is achievable (Refer to Fig 11 & Fig 12).
		1' setback for nonresidential (50%)	1	1	The Town Center area of V8W (streets are La Media and Main Street) allow for 0' building setback from right-of-way. This area is for commercial, civic and mixed-uses (Refer to Fig 11 & Fig 12).
		Functional entries every 75 feet	1	1	The Master Precise Plan references entries at every 40 – 65 feet.
		Function entries every 30 feet	1		
		Glass on 60% of facades	1		
		No blank walls 40% of sidewalk	1	1	
		Ground-level retail, services must be unshuttered at night	1		
		On-street parking provided both sides on 70% of streets	1	1	Refer to Figure 14: Conceptual Town Center Site Plan for potential design of area. All streets lower

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
					density residential areas will allow on-street parking.
		Continuous sidewalks (10' wide on mixed-use blocks)	1		
		Ground-floor residential units at least 24" above grade	1		
		Ground floor retail in multi-stores	1		
		Building height-street width	1		
		20 mph residential streets	1		
		25 mph mixed use street	1		
		Driveways limited	1	1	Refer to Figure 14: Conceptual Town Center Site Plan for potential design of area.
NPDc2	Compact Development	Density/acre	1-6	1	Density for residential acreage is 12.5 du/ac. Total acreage for potential residential/mixed-use development is 186.0 gross acres. The remainder of the total V8W acres are designated for school and open space/park (Refer to Fig. 4).
NPDc3	Mixed-Use Neighborhoods	Uses with 1/4 mile walking distances	1-4	2	Services, Community-serving retail, fire station, Recreation Center, Public Park, Restaurants, School, Diverse housing types including higher density market rate and affordable housing, transit station.
NPDc4	Housing Types and Affordability	Diverse housing types	1-7	1	Diverse housing types and densities throughout V8W (Refer to Fig. 3&4).
		Affordable housing	1-3	1	Planning Areas F/W are 100% affordable rental apartments. 10% of these apartments will be designated for very low-income households, 90% of the apartments will be

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
					designated for low income households.
		Additional diverse housing types			
NPDc5	Reduced Parking Footprint	All off-street parking at side or rear	1		
NPDc6	Connected and Open Community	Intersections/mile 300-400+	1-3		
NPDc7	Transit Facilities		1	1	Bus facilities will be provided. BRT station is also potential in Town Center (Refer to Fig 8 and Fig 10).
NPDc8	Transportation Demand Management	Transit Passes	1-21 points for every 2 options		
		Developer-sponsored transit			
		Vehicle sharing			
		Unbundling of parking/fees			
		Guaranteed ride home			
		Flexible work arrangements			
NPDc9	Access to Civic & Public Space	90% of units and non-residential use entrances within 1/4 mile of 1 civic and passive use space	1	1	90% of dwelling units within 1/4 mile walk distance to civic and public space. There are various parks and passive trails throughout V8W in addition to the Town Center which will also host a civic open space area (Refer to Fig. 9).
NPDc10	Access to Recreation Facilities	1 Rec facility of 1 acre within 1/2	1	1	90% of dwelling units within 1/2 mile walk distance to rec facility. There are two main parks currently in V8W. Planning Area A is 17.2 acres and Planning Area T is 7.6 acres. Individual planning areas may

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
					also include rec amenities (Refer to Fig. 9).
NPDc11	Visitability and Universal Design	20% of dwellings are a visitable unit	1		
		At least 5 Universal Design Features	1		
		Kitchen features	1		
		Bedroom/Bathroom features	1		
NPDc12	Community Outreach and Involvement	Community outreach	1		
		Charrette	2		
		Endorsement Program	2		
NPDc13	Local Food Production	Neighborhood gardens	1		
		Community supported agriculture	1		
		Farmers Market within 1/2 mile walking distance	1		
NPDc14	Tree-Lined and Shaded Streetscapes	Trees planted 50 oc on at least 60% of streets	1	1	V8W has approved landscape plans that meet this requirement.
		Shaded sidewalks on 40% of sidewalks within 10 years	1	1	
		Certification from landscape architect that trees are planted properly and not invasive	1	1	Confirmation has been obtained from WYAC, the landscape architecture firm that prepared the approved plans.

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
NPDc15	Neighborhood Schools	Neighborhood school within 1/2 mile	1	1	Parcel S is proposed to be an Elementary School. Olympian High School is also located adjacent to V8W (Refer to Fig. 3&9).
Green Infrastructure & Buildings					
GIBp1	Certified Green Buildings		Y/N	No	No commitment for Certified LEED Buildings at this stage of project.
GIBp2	Minimum Building Energy Efficiency		Y/N	Yes	
GIBp3	Minimum Building Water Efficiency		Y/N	Yes	
GIBp4	Construction Activity Pollution Prevention		Y/N	Yes	
GIBc1	Certified Green Buildings	Number of buildings certified under LEED OR other green building rating system 10-20% 1 point; 20-30% 2 points; 30-40% 3 points, 40-50% 4 points; +50% 5 points	1-5		
GIBc2	Optimize Building Energy Performance	12% above ASHRAE; OR 20% ASHRAE	1-2		
		ASHRAE 50% Advanced Energy Design	2		
GIBc3	Indoor Water Use Reduction	Reduce water use 40% non-residential	1	1	CALgreen exceeds requirement.
		90% of residential buildings would earn 4 points under LEED v4	1	1	CALgreen exceeds requirement.
GIBc4	Outdoor Water Use Reduction	No irrigation	2		

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
		Reduced irrigation 30% 1 point; 50% 2 points	1-2	2	California Code exceeds requirements. Approved landscape plans meet California MWELO.
GIBc5	Building Reuse	N/A	1		
GIBc6	Historic Resource Preservation and Adaptive Reuse	N/A			
GIBc7	Minimized Site Disturbance		1		
GIBc8	Rainwater Management	Manage runoff on site 80th percentile 1 point; 85th 2 points; 90th 3 points; 95th 4 points	1-4	2	Stormwater management requirements in the San Diego Region require capture of the 85th percentile
GIBc9	Heat Island Reduction	Non-roof measures	1		
		High-reflectance and vegetated roofs	1		
		Mixed non-roof & roof measures	1		
GIBc10	Solar Orientation	Block orientation	1	1	Site layout is conducive to 2016 solar zone and 2019 expanded solar zone of 90 to 300 degrees
		Building orientation	1	1	Site layout is conducive to 2016 solar zone and 2019 expanded solar zone of 90 to 300 degrees
GIBc11	Renewable Energy Production	Renewable energy production 5% - 1 point, 12.5% -2 points; 20% -3 points	1-3	1	2019 California Energy Code requires solar installation unless alternative method that is equally efficient as solar is used.
GIBc12	District Heating and Cooling	Needs to be 80% of projects annual heating and/cooling	2		

LEED-NDv4 Credit		Options	Possible Points	V8W Equivalency Points	Notes
GIBc13	Infrastructure Energy Efficiency	Infrastructure to be 15% annual energy reduction	1		
GIBc14	Wastewater Management	25% of wastewater is reused on-site 1 point; 50% 2 points	1-2		
GIBc15	Recycled and Reused Infrastructure		1		
GIBc16	Solid Waste Management		1	1	CALGreen requires that a minimum of 65% of nonhazardous construction and demolition waste be either recycled or salvaged for reuse.
GIBc17	Light Pollution Reduction		1	1	Per CALGreen requirements.
Innovation & Design Process					
IDCPc1	Innovation				
IDCPc2	LEED® Accredited Professional		1	1	
Regional Priority Credits					
	Regional Priority Credit: Region Defined	Rainwater Management		1	
	Regional Priority Credit: Region Defined	Mixed-Use Neighborhoods		1	
	Regional Priority Credit: Region Defined	Housing Types and Affordability		1	
	Regional Priority Credit: Region Defined				
Total points				42	

Figure 7: Bicycle Circulation Plan

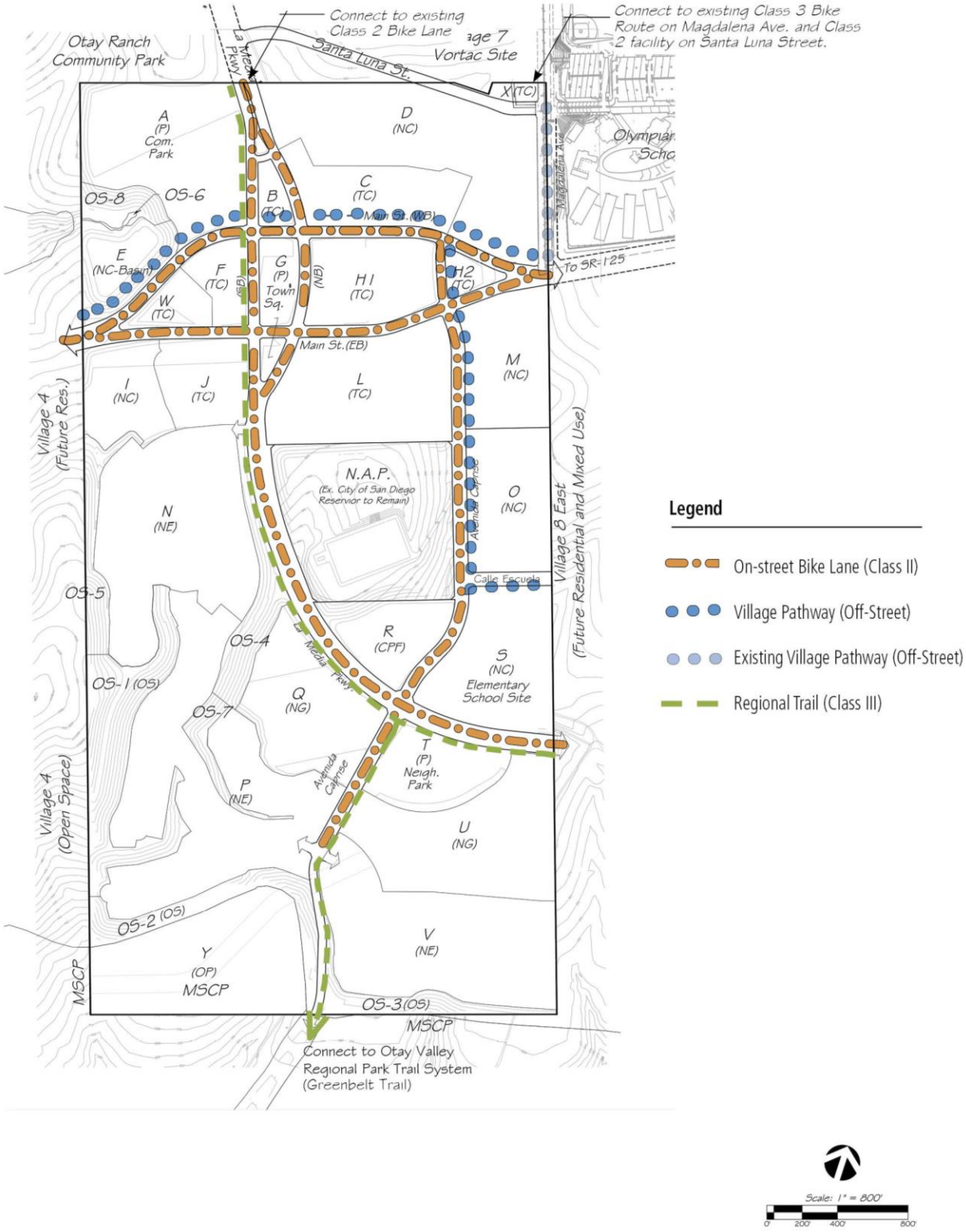


Figure 8: Transit Plan

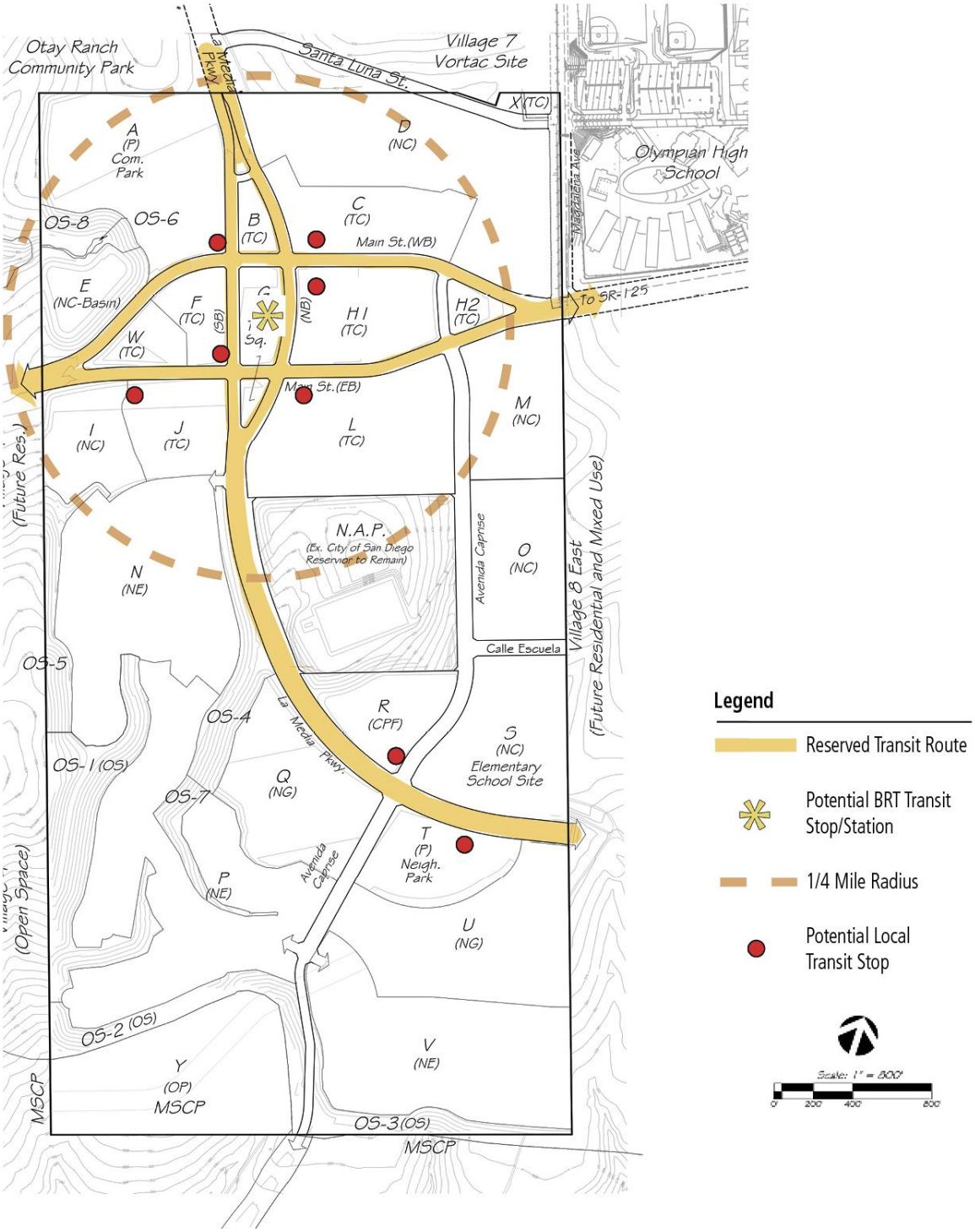


Figure 9: Pedestrian Circulation Plan

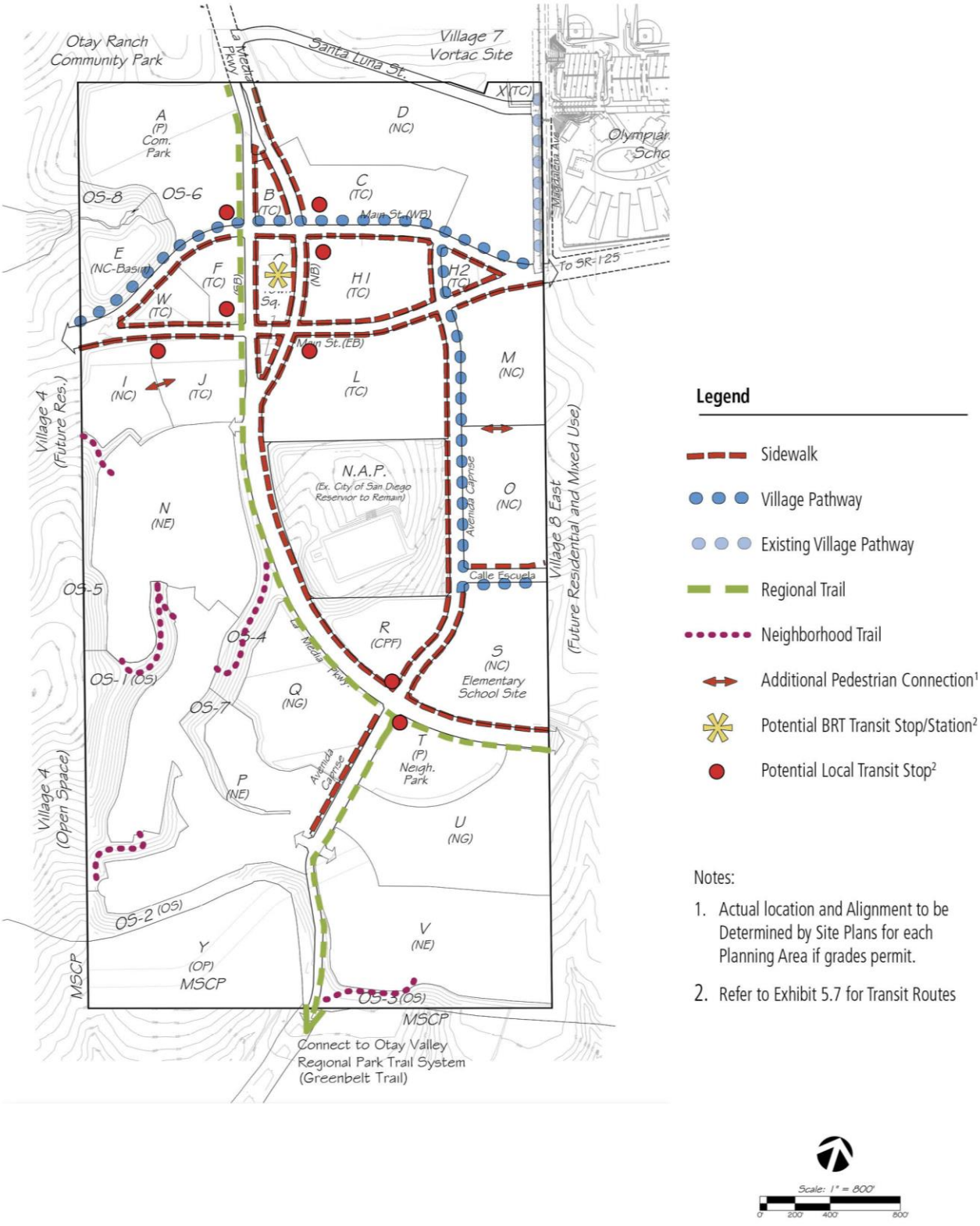


Figure 10: Chula Vista General Plan Regional Transit Vision

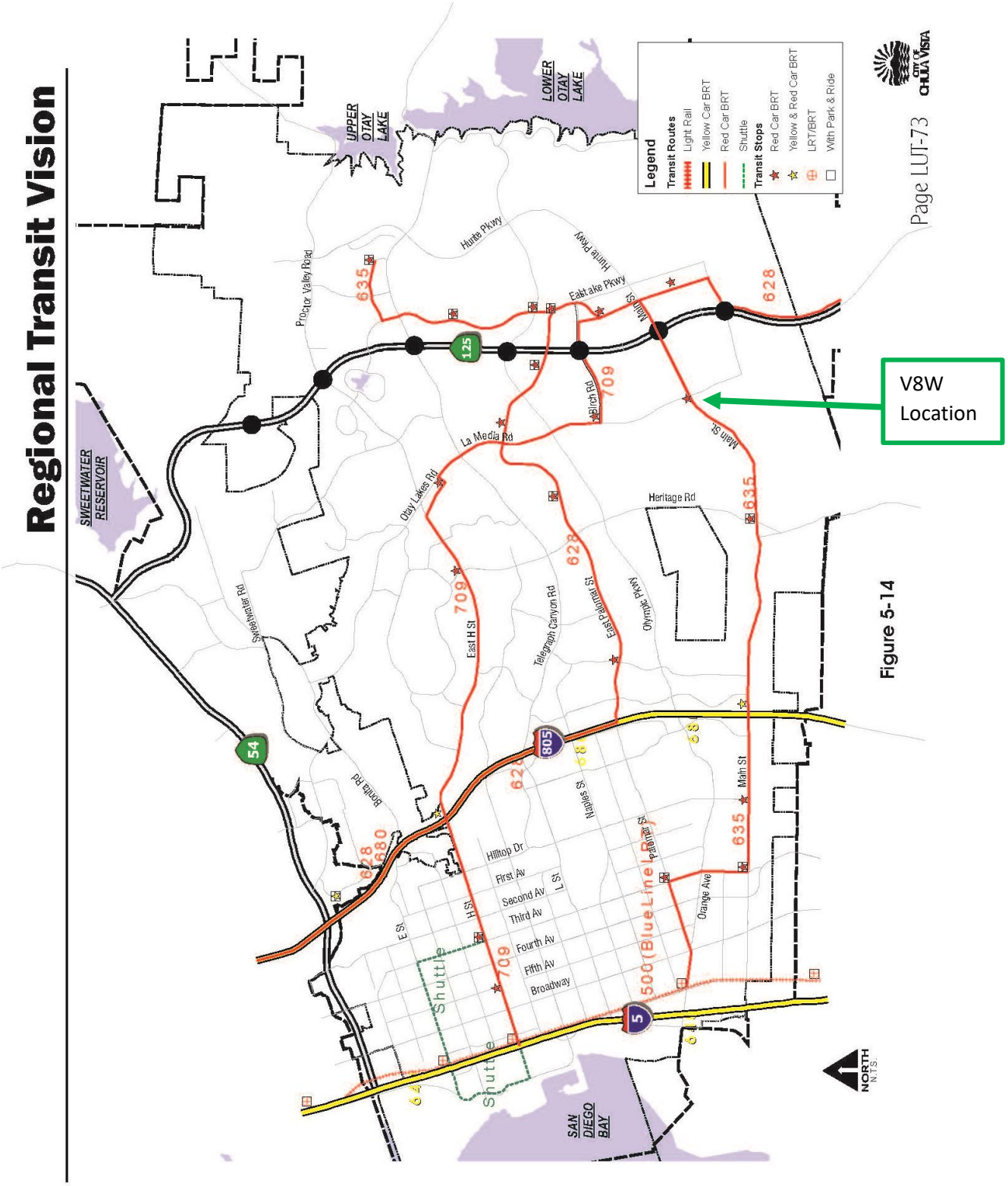


Figure 11: SPA Development Standards (Reference for Setbacks)

Requirement	T-2: Neighborhood Edge (NE) Zone	T-2: Neighborhood General (NG) Zone
Lot Configuration		
Lot Width: (measure at center of lot)	40' (min.); 45' (min.) at corner lots	20' (min.); 25' (min.) at corner lots
Lot Size:	3,480 S.F.	2,700 S.F. (also based on home configuration)
Lot Coverage (max.):	70%	80%
Building Height :	35' (max.); 2-story OR nested 3rd story (max.)	35' (max.); 2-story OR nested 3rd story (max.); Up to 40% of units along each street frontage may be 3-story; 45 feet maximum
Plotting:	Front loaded or Side loaded; Traditional, Zero Lot Line, RUE Configurations	Front Loaded or Lane Loaded; Traditional, Zero Lot Line, and RUE Configurations
Minimum Building Setbacks from Property Line		
Front:	7' to living or side of swing-in garage or 17' from garage face	7' to living or side of swing-in garage or 17' from garage face
Interior Side:	5' to living 25' to swing-in garage	5' 10' to SD or T-2: NE Zones"
Exterior Side:	10' to living	10' to living
Rear:	15' to living area 10' for outdoor living area (for 50% of homes width) 5' to single-story DAB	10'
Rear Common Lane:	N/A	5' (min.) OR 17' to garage face 5' to living area 5' to DAB/ADU
Parking/Lane/Drive Aisle:	N/A	N/A

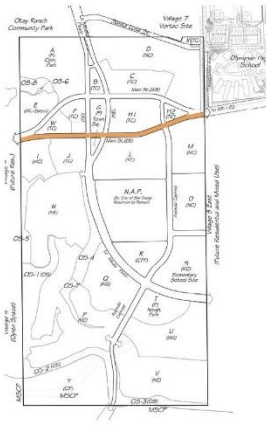
Requirement	T-3: Neighborhood Center (NC) Zone	T-4: Town Center (TC) Zone
Lot Configuration		
Lot Width: (measure at center of lot)	20' (min.); 25' (min.) at corner lots	To be determined during Design Review
Lot Size:	2,000 S.F. for detached configurations; lot size to be determined during Design Review for attached and semi-attached configurations	Design Review
Lot Coverage (max.):	90%	N/A
Building Height :	3 stories (max.); 45' (max.)	4-stories (max.);60' (max.)
Plotting:	Front Loaded or Lane Loaded; Traditional, Zero Lot Line, and RUE configurations permitted; Shall provide frontage along all public roadways	Close to sidewalk except where pedestrian plazas and spaces occur; Shall provide frontage along all public roadways.
Minimum Building Setbacks from Property Line		
Front:	N/A	N/A
Interior Side:	5'	N/A
Rear:	10'	N/A
Rear Common Lane:	5' to living area 5' (min.) OR 17' to garage face	N/A
Parking/Lane/Drive Aisle:	N/A	5' (min.)

Figure 12: SPA Street Development Standards (Reference for Setbacks)

Otay Ranch Village 8 West SPA

5.6.1 Eastbound Main Street

Main Street serves as the primary east-west connection through the Town Center, providing connections to adjacent neighborhoods and State Route 125. Main Street consists of an urban couplet, an arterial roadway split into two one-way streets. At the edges of the Town Center, the couplet transitions back to currently planned conventional reaches of Main Street. Exhibit 5.7 illustrates the eastbound half of the couplet.



Key Map
(N.T.S.)

A. GDP Classification: Town Center Arterial

B. General Dimensions

1. Right-of-Way: 76 feet
2. Curb-to-Curb: 46 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: No first story elements below 8 feet; 3 feet maximum for elements 8 feet or more above sidewalk





Koelreuteria bipinnata/ Chinese Flame Tree

D. Modes

1. Vehicles: 2 travel lanes (1-way, east bound)
2. Parking: Parallel parking (both sides/south side is a future transit reserve)
3. Bike: Class II bike lane (1-way, south side)
4. Pedestrian: Sidewalks (both sides)*
5. Transit Future transit reserve (south side)
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph





Metrosideros excelsus/ New Zealand Christmas Tree

E. Landscaping

1. Intensity: High, Urban
2. Street Trees: Metrosideros excelsus/New Zealand Christmas Tree and Koelreuteria bipinnata/Chinese Flame Tree; Planted in tree wells, spaced 35 feet on center
3. Accent Trees: See Section 5.7, Accent Trees
4. Tree Wells: Minimum dimension of 6 feet x 8 feet;

*: Sidewalk may be 5 feet with 4 feet landscape buffer or 9 feet, depending on slope and building orientation. Final design to be determined at design review level.

5-16

Otay Ranch Village 8 West SPA

5.6.2 Westbound Main Street

Main Street serves as the primary east-west connection through the Town Center, providing connections to adjacent neighborhoods and State Route 125. Main Street consists of an urban couplet, an arterial roadway split into two one-way streets. At the edges of the Town Center, the couplet transitions back to currently planned conventional reaches of Main Street. Exhibit 5.8 illustrates the westbound half of the couplet.



Key Map
(N.T.S.)

A. GDP Classification: Town Center Arterial

B. General Dimensions

1. Right-of-Way: 77 feet
2. Curb-to-Curb: 46 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: No first story elements below 8 feet; 3 feet maximum for elements 8 feet or more above sidewalk; Utilities, outdoor seating, sales, etc. shall not encroach into the 10-foot Village Pathway





Koelreuteria bipinnata/ Chinese Flame Tree

D. Modes

1. Vehicles: 2 travel lanes (1-way, westbound)
2. Parking: Parallel parking (both sides/north side is a future transit reserve)
3. Bike: Class II bike lane (1-way, north side)
4. Pedestrian: Sidewalk (south side)*/ Village Pathway (north side)
5. Transit Future transit reserve (north side)
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph





Metrosideros excelsus/ New Zealand Christmas Tree

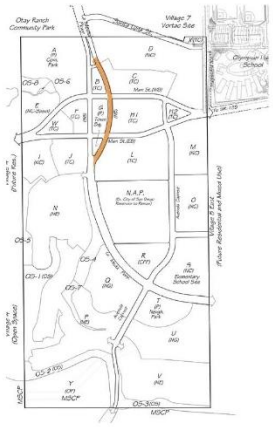
E. Landscaping

1. Intensity: High, Urban
2. Street Trees: Metrosideros excelsus/New Zealand Christmas Tree and Koelreuteria bipinnata/Chinese Flame Tree; Planted in tree wells, spaced 35 feet on center
3. Accent Trees: See Section 5.7, Accent Trees
4. Tree Wells: Minimum dimension of 6 feet x 8 feet;

*: Sidewalk may be 5 feet with 4 feet landscape buffer or 9 feet, depending on slope and building orientation. Final design to be determined at design review level.

5.6.3 Northbound La Media Parkway

The northbound couplet portion of La Media Parkway serves as the primary north-south connection through the Town Center, providing connections to adjacent neighborhoods. Within this portion of the SPA, La Media Parkway splits into two one-way streets. At the edges of the Town Center, the couplet transitions back to existing La Media Parkway to the North and to the planned two-way street configuration of La Media Parkway described in Section 5.6.5. Exhibit 5.9 illustrates the northbound half of this couplet.



Key Map
(N.T.S.)

A. GDP Classification: Town Center Arterial

B. General Dimensions

1. Right-of-Way: 73 feet
2. Curb-to-Curb: 43 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: No first story elements below 8 feet; 3 feet maximum for elements 8 feet or more above sidewalk



Metrosideros excelsus/ New Zealand Christmas Tree

D. Modes

1. Vehicles: 2 travel lanes (1 way, northbound)
2. Parking: 2 parallel parking lanes (1 on each side)
3. Bike: Class II bike lane (1-way, east side)
4. Pedestrian: Sidewalk (both sides)*
5. Transit None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

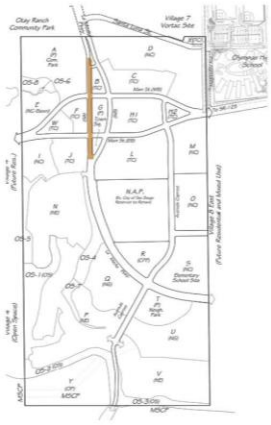
1. Intensity: High, Urban
2. Street Trees: Metrosideros excelsus/New Zealand Christmas Tree; Planted in tree wells, spaced 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees
4. Tree Wells: Minimum dimension of 6 feet x 8 feet;

*: Sidewalk may be 5 feet with 4 feet landscape buffer or 9 feet, depending on slope and building orientation. Final design to be determined at design review level.

Otay Ranch Village 8 West SPA

5.6.4 Southbound La Media Parkway

The southbound couplet portion of La Media Parkway serves as the primary north-south connection through the Town Center, providing connections to adjacent neighborhoods. Within this portion of the SPA, La Media Parkway splits into two one-way streets. At the edges of the Town Center, the couplet transitions back to existing La Media Parkway to the north and to the planned two-way street configuration of La Media Parkway described in Section 5.6.5. Exhibit 5.10 illustrates the southbound half of this couplet.



Key Map
(N.T.S.)

A. GDP Classification: Town Center Arterial

B. General Dimensions

1. Right-of-Way: 74 feet
2. Curb-to-Curb: 43 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: No first story elements below 8 feet; 3 feet maximum for elements 8 feet or more above sidewalk; Utilities, outdoor seating, sales, etc. shall not encroach into the 10-foot Regional Trail.

D. Modes

1. Vehicles: 2 travel lanes (1-way, south bound)
2. Parking: 2 parallel parking lanes (on each side)
3. Bike: Class II bike lane (1-way, west side)
4. Pedestrian: Sidewalk (east side)*
   Concrete Regional Trail (west side)
5. Transit None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

1. Intensity: High, Urban
2. Street Trees: Metrosideros excelsus/New Zealand Christmas Tree; Planted in tree wells, spaced 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees
4. Tree Wells: Minimum dimension of 6 feet x 8 feet;

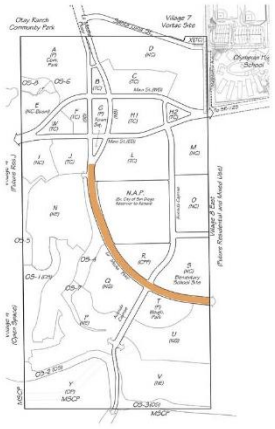


Metrosideros excelsus/ New Zealand Christmas Tree

*: Sidewalk may be 5 feet with 4 feet landscape buffer or 9 feet, depending on slope and building orientation. Final design to be determined at design review level.

5.6.5 Two-Way La Media Parkway

La Media Parkway serves as the primary north-south connection through the SPA, providing connections to adjacent villages, State Route 125, and all neighborhoods in the southern portions of the SPA. The two-way section of La Media Parkway occurs south of the Town Center and consists of a divided two-way arterial roadway. Future BRT lanes are planned in the center median. Exhibit 5.11 illustrates this section.



Key Map
(N.T.S.)

A. GDP Classification: Four Lane Major

B. General Dimensions

1. Right-of-Way: 118 feet
2. Curb-to-Curb: 27 feet in each direction
3. Median: 34 feet

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: 2 feet for projections
   Length of combined encroachments shall not exceed 50% of the building's frontage



D. Modes

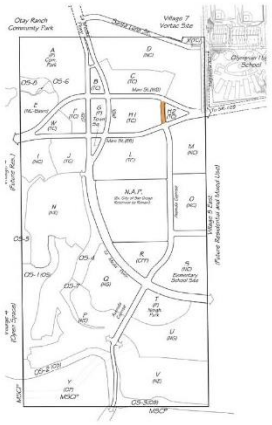
1. Vehicles: 4 travel lanes (2 in each direction)
2. Parking: Emergency parking only
3. Bike: Class II bike lanes (1 in each direction)
4. Pedestrian: Sidewalk (east side)
   D.G. Regional Trail (west side)
5. Transit BRT (in median)
6. LSVs: Not permitted

E. Landscaping

1. Intensity: High
2. Street Trees: Albizzia julibrissin/Silk Tree; Planted in landscaped parkways and median, spaced 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees

5.6.6 Avenida Caprise (Between Eastbound and Westbound Main Street)

Avenida Caprise provides a secondary north-south connection through the SPA. This street connects residential neighborhoods in the southern portions of the SPA to the Town Center. Exhibit 5.12 illustrates this street section between eastbound and westbound Main Street.



Key Map
(N.T.S.)

A. GDP Classification: Residential Collector

B. General Dimensions

1. Right-of-Way: 63 feet
2. Curb-to-Curb: 32 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: No first story elements below 8 feet; 3 feet maximum for elements 8 feet or more above sidewalk; Encroachments; Utilities, outdoor seating, sales, etc. shall not encroach into the 10-foot Village Pathway



Melaleuca linariifolia / Flaxleaf Paperbark

D. Modes

1. Vehicles: 2 travel lanes (1 in each direction)
2. Parking: No parking
3. Bike: Class II bike lanes (1 in each direction)
4. Pedestrian: Sidewalk (west side)*
   Village Pathway (east side)
5. Transit: None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

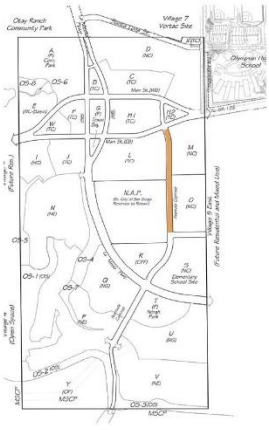
E. Landscaping

1. Intensity: Medium
2. Street Trees: Melaleuca linariifolia / Flaxleaf Paperbark; Planted in tree wells, spaced 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees

*: Sidewalk may be 5 feet with 4 feet landscape buffer or 9 feet, depending on slope and building orientation. Final design to be determined at design review level.

5.6.7 Avenida Caprise (Between Main Street and Calle Escuela)

Avenida Caprise provides a secondary north-south connection through the SPA. This street connects residential neighborhoods in the southern portions of the SPA to the Town Center. Exhibit 5.13 illustrates this street section between Main Street and Calle Escuela.



Key Map
(N.T.S.)

A. GDP Classification: Residential Collector

B. General Dimensions

1. Right-of-Way: 89 feet
2. Curb-to-Curb: 58 feet
3. Median: 10 feet (2-way left turn lane)

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: 5 feet for Outdoor Living Spaces
   2 feet for projections
   Length of combined encroachments shall not exceed 50% of the building's frontage
   Encroachments into the Village Pathway are prohibited



Melaleuca linariifolia / Flaxleaf Paperbark

D. Modes

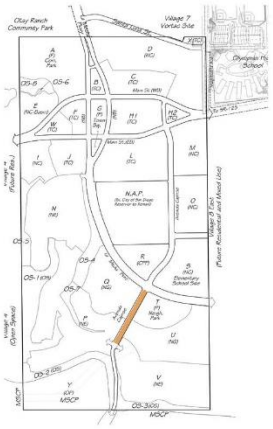
1. Vehicles: 2 travel lanes (1 in each direction)
2. Parking: Parallel Parking (both sides)
3. Bike: Class II bike lanes (1 in each direction)
4. Pedestrian: Sidewalk (west side)*
   Village Pathway (east side)
5. Transit: None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

1. Intensity: Medium
2. Street Trees: Melaleuca linariifolia / Flaxleaf Paperbark;
   Planted in tree wells, spaced 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees

5.6.9 Avenida Caprise (South of La Media Parkway)

Avenida Caprise provides a secondary north-south connection through the SPA. This street connects residential neighborhoods in the southern portions of the SPA to the Town Center. Exhibit 5.15 illustrates this street section.



Key Map
(N.T.S.)

A. GDP Classification: Residential Collector

B. General Dimensions

1. Right-of-Way: 89 feet
2. Curb-to-Curb: 58 feet
3. Median: 10 feet (2-way left turn lane)

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: 5 feet for Outdoor Living Spaces
   2 feet for projections
   Length of combined encroachments shall not exceed 50% of the building's frontage



Melaleuca linariifolia / Flaxleaf Paperbark

D. Modes

1. Vehicles: 2 travel lane (1 in each direction)
2. Parking: Parallel parking lane (both sides)
3. Bike: Class II bike lanes (both sides)
4. Pedestrian: Sidewalk (west side)
   DG Regional Trail (east side)
5. Transit: None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

1. Intensity: Medium
2. Street Trees: Melaleuca linariifolia / Flaxleaf Paperbark; Planted in parkway, spaced 40' on center
3. Accent Trees: See Section 5.7, Accent Trees

5.6.11 Calle Escuela

Calle Escuela provides a secondary connection to Village 8 East. The width of the street is designed to conform to the proposed street sections of the adjacent property. Exhibit 5.17 illustrates this section.



Key Map
(N.T.S.)

A. GDP Classification: Residential Collector

B. General Dimensions

1. Right-of-Way: 85 feet
2. Curb-to-Curb: 58 feet
3. Median: 10 feet (2-way left turn lane)

C. Building Frontage

1. R/W Setback: 10 feet minimum
2. Encroachments: 5 feet for Outdoor Living Spaces
   2 feet for projections
   Length of combined encroachments shall not exceed 50% of the building's frontage
   Encroachments into the Village Pathway are not permitted



Lagerstroemia indica/ Crape Myrtle

D. Modes

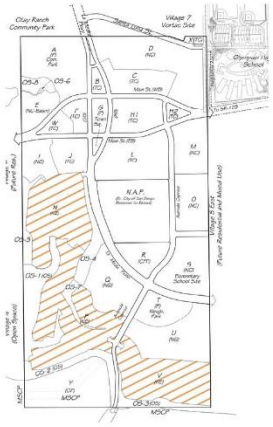
1. Vehicles: 2 travel lanes (1 in each direction)
2. Parking: Parallel parking lane (both sides)
3. Bike: Class II bike lanes (both sides)
4. Pedestrian: Sidewalk (north side)
   Village Pathway (south side)
   Concrete Village Pathway to be widened to 16' with 6'x 8' tree planters along school frontage.
5. Transit: None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

1. Intensity: Medium
2. Street Trees: Lagerstroemia indica/Crape Myrtle;
   Planted in tree wells, spaced 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees

5.6.12 Parkway Residential

Parkway residential streets are public streets that occur in the residential neighborhoods of the T-2 Transect as indicated by the hatch pattern on the key map. The exact alignment of these streets will be determined by the Tentative Map(s) for these areas. Parkway residential street patterns shall be designed to maximize connectivity within individual neighborhoods and promote walkability. Cul-de-sacs shall be designed to provide pedestrian connections between dead end streets and adjacent planning areas or open space trails as appropriate to site conditions. Exhibit 5.18 Illustrates this section. Private residential streets shall be reviewed as part of the site plan review of individual projects.



Key Map
(N.T.S.)

A. GDP Classification: Parkway Residential

B. General Dimensions

1. Right-of-Way: 58 feet
2. Curb-to-Curb: 32 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: 2 feet for Outdoor Living Spaces / 2 feet for projections

D. Modes

1. Vehicles: 2 travel lanes (1 in each direction)
2. Parking: Parallel parking lanes (both sides)
3. Bike: Shared with vehicle and parking lanes
4. Pedestrian: Sidewalk (both sides)
5. Transit None proposed
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

1. Intensity: Low
2. Street Trees: Varies by Parcel (See page 5-38):
   - Parcel V: Quercus ilex/Holly Oak
   - Parcel P: Lophostemon conefertus/Brisbane Box or Koelreuteria bipinnata/ Chinese Flame Tree
   - Parcel N: Koelreuteria bipinnata/Chinese Flame Tree, Geijera parvifolia/ Australian Willow or Jacaranda mimosifolia/ Jacaranda

   Planted in Parkway, spaced 1 tree for each building frontage or 40 feet on center
3. Accent Trees: See Section 5.7, Accent Trees

5.6.13 Common Lane

Common lanes are private alleyways that occur in the neighborhoods of any transect to provide access to rear-loaded garages and parking. The exact location and alignment of these streets will be determined by the site plans for individual Planning Areas. Exhibit 5.19 Illustrates this section.

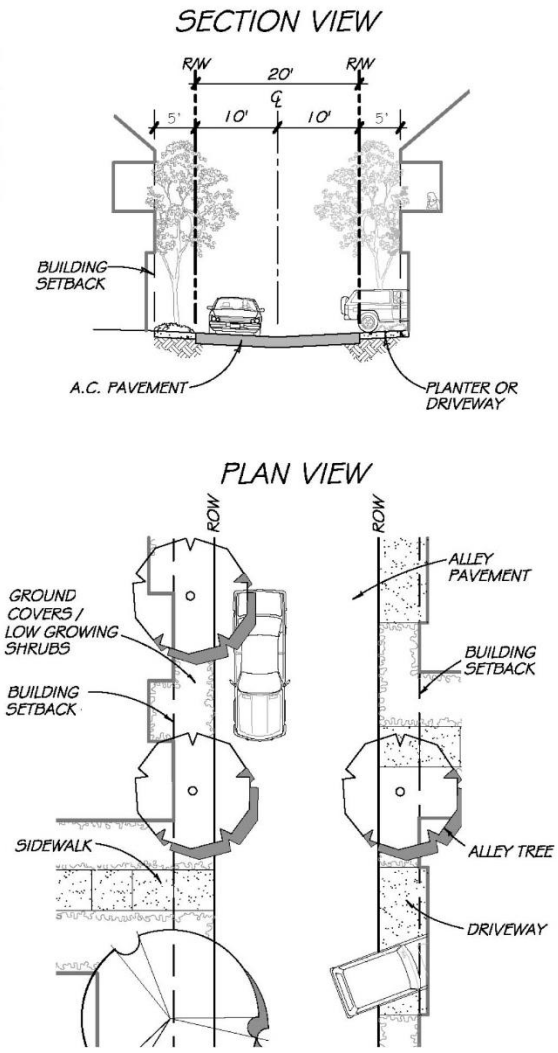


Exhibit 5.19 - Common Lane

A. GDP Classification: Alley Street

B. General Dimensions

1. Right-of-Way: 20 feet
2. Curb-to-Curb: 20 feet
3. Median: None

C. Building Frontage

1. Setbacks: See Table 3.1: Residential Development Standards Summary
2. Encroachments: 0 feet first story/ 2 feet for second story

D. Modes

1. Vehicles: 2 travel lanes (1 in each direction)
2. Parking: Parallel and perpendicular parking where appropriate; Parking shall not encroach into travel lanes
3. Bike: None
4. Pedestrian: None
5. Transit: None
6. LSVs: Permitted in vehicle travel lanes if speed is less than 35 mph

E. Landscaping

1. Intensity: Low
2. Street Trees: Varies by planning area (To be determined by the landscape palette for the planning area); Planted between buildings and other locations where space is available
3. Accent Trees: Lane landscaping will consist primarily of ground covers, shrubs, and vines to soften the appearance of the alley (Species to be determined by the landscape palette for the planning area)

Figure 13: Intersection Density

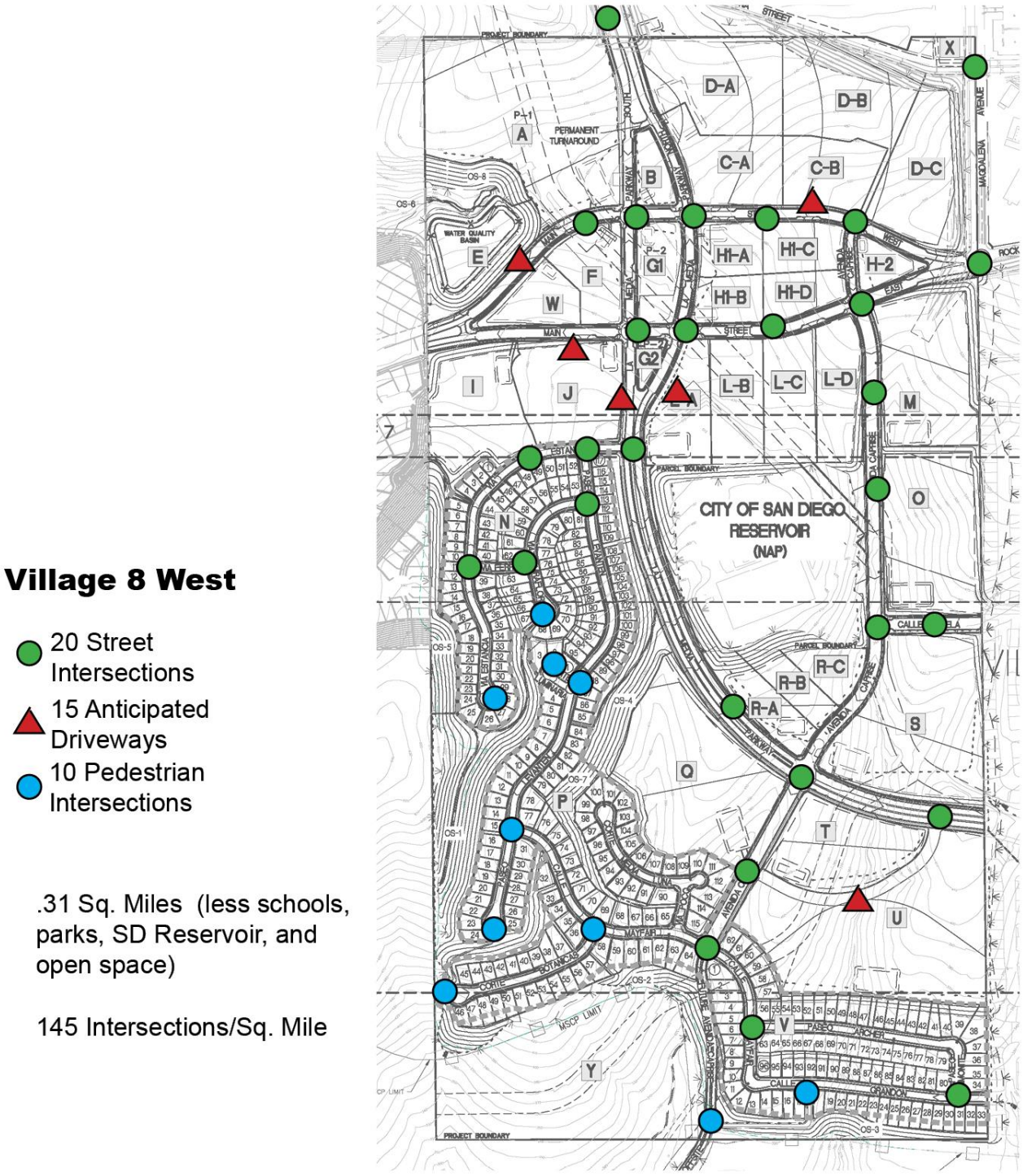
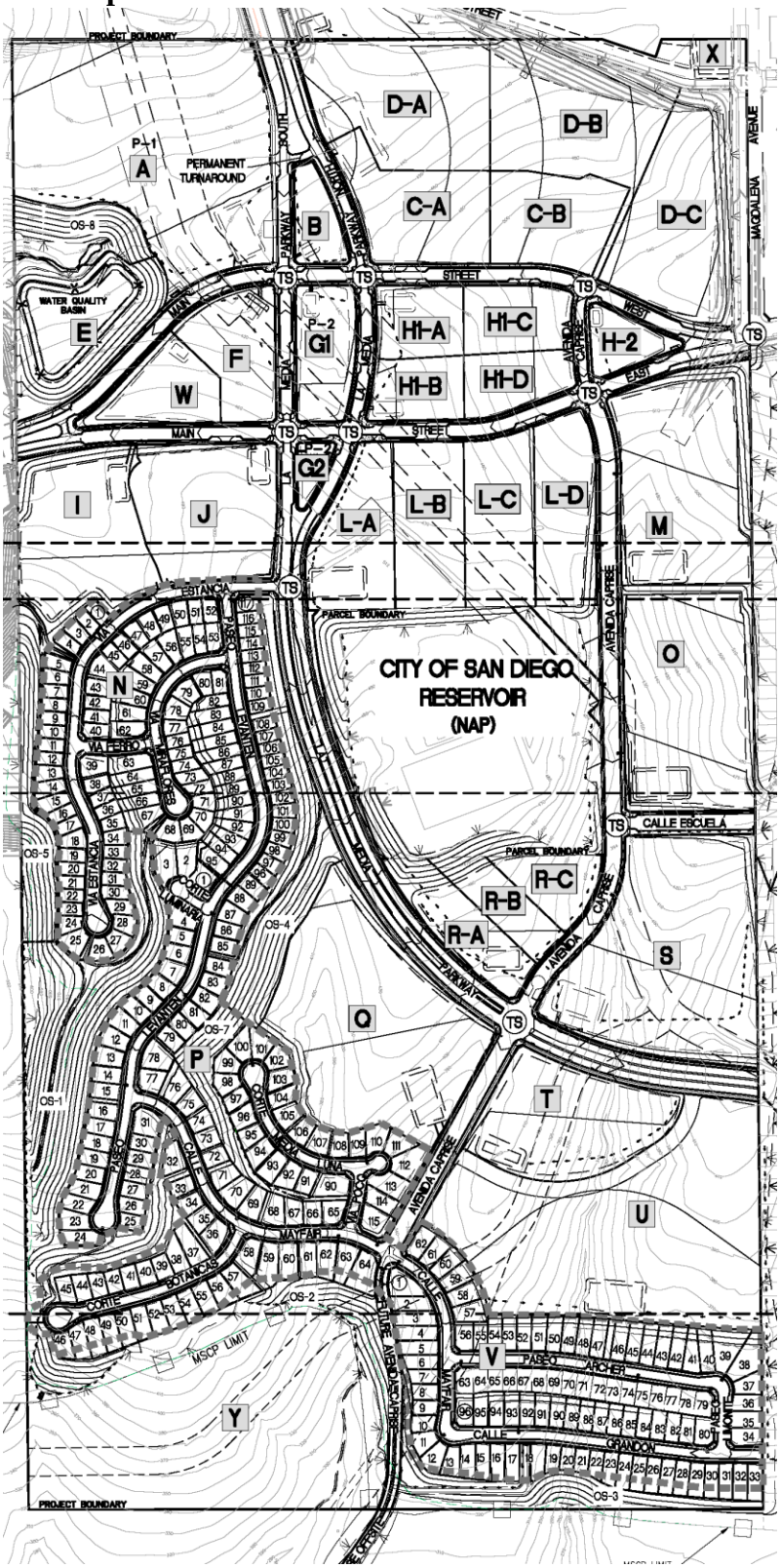


Figure 14: Conceptual Town Center Site Plan



Figure 15: Tentative Map



6. Community Design and Site Planning Features

Table 2: Community Design and Site Planning Features below provides an overview of the Community Design and Site Planning Features, as well as building and landscape features, which have been integrated into the V8W SPA Plan to create a sustainable community. These measures are based on California Air Pollution Control Officers Association (CAPCOA) Greenhouse Gas Mitigation Measures.

Table 2: Community Design and Site Planning Features

Transportation Related Measures
As indicated in the Village 8 West – Trip Generation Analysis and Internal ADT Estimation (Chen Ryan 2019), the proposed project would generate approximately 23,638 daily external trips, while the approved project would generate approximately 26,104 daily external trips, when accounting for estimated trip reductions due to proximity to transit. The proposed project would therefore generate approximately 2,466 fewer trips when compared to the approved project. The travel behavior of the proposed project would be similar to that previously analyzed as part of the FEIR. As a result, operational emissions (specifically those resulting from mobile sources) associated with the proposed project would be reduced as compared to the approved project analyzed in the FEIR. No new operational air quality and greenhouse gas emissions impacts or mitigation measures would occur or be required.
An integrated circulation system provides residents of the Town Center and adjacent neighborhoods non-automobile related circulation options that include walking, bicycling, LSV, and transit.
The mix of proposed residential, commercial, and community uses provide a complementary, mixed-use environment with a focus on promoting a walkable and bikeable community that promotes pedestrian activity.
Higher density uses will be provided along the new couplets at La Media Parkway and Main Street. The couplets provide improved safety for bicycle and pedestrian crossings, increased roadway capacity, less turn restrictions, reduced disruptions to traffic flow from curb parking/loading needs which leads to reduced GHG emissions from vehicles.
Direct pedestrian links extend from the surrounding neighborhoods directly to the Town Center.
Class II bicycle facilities are planned along all Transportation Element roadways.
Except for La Media Parkway south of the couplets, all roadways internal to the Village are 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.
Land uses designed in the Town Center (adjacent to the couplet) are intended to be pedestrian and bicycle friendly. With travel speeds of 25 to 35 mph along Main Street and La Media Parkway through the couplet, the Town Center is designed to provide a comfortable walking environment.
The Town Center provides the opportunity for employee services to be located within walking distance of employer-based businesses.
Live/work and shop keeping opportunities are provided in the Town Center.
LSVs may travel on all village streets with a maximum travel speed of 35 miles per hour.

The current regional transit plan includes transit lines on East "H" Street, East Palomar Street, La Media Parkway, and Eastlake Parkway. Transit stations are planned to be located approximately five to six miles apart with the nearest station is located in the Eastern Urban Center.
A future transit line is located on Main Street and a transit stop is planned in the Town Center at Main street and La Media Parkway.
The actual transit plan will be developed in conjunction with the San Diego Association of Governments (SANDAG). Specific access points as well as the internal circulation for bicycle riders and pedestrians and exact roadway crossings will be identified at that time.
Provide shower and locker facilities at offices with more than ten occupants to encourage bicycle use.
Design parking lots to promote use of mass transit and carpools.
Synchronize the traffic lights included as part of an individual development project with previously installed traffic lights in order to reduce traffic congestion.
Install EV charging stations as required by code.
Identify an environmental coordinator to be responsible for education and disseminating information on ridesharing and/or mass transit opportunities, recycling, energy conservation programs, etc.
Energy-Conservation Related Measures
Project will be compliant with prevailing building and energy codes at the time of permit submission.
Approximately 70% of the residential dwelling units will be small single family and multi-family residences that use less energy for heating and cooling when compared to larger single-family detached homes
The Village 8 West Town Center is oriented primarily on a north/south and east/west axis to take advantage of solar orientation. Refer to Figure 15: Tentative Map to see lot orientation with regard to the solar access zone of 90°-300°.
California Green Building Code Title 24, Part 11 (CALGreen) requires that a minimum of 50% (2016 Code) all new construction waste generated at the site be diverted to recycle or salvage. 2019 Code will require 65% 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.
CVMC 8.25.095 requires all new construction and demolition projects to divert 100% of inert waste (asphalt, concrete, bricks, tile, trees, stumps, rocks and associated vegetation and soils resulting from land clearing from landfill disposal); and 50% of all remaining waste generated, unless partial or full diversion exemption is granted. Contractors 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.
Landscape and irrigation to comply with California's Model Water Efficient Landscape Ordinance (MWELO),

Water-Related Measures to Reduce GHGs
All landscape shall comply with CVMC § 20.12. Landscape Water Conservation requirements.
Drought tolerant, low-water usage native vegetation will be planted in public landscaped areas.
Natural turf in residential development will be limited to no more than 30% of the outdoor open space.
When siting sensitive land uses such as residences, schools, day care centers, playgrounds and medical facilities the recommendations set forth in Table 1-1 of California Air Resources Board's (CARB) Land Use and Air Quality Handbook (CARB 2004) will be use as a guideline. Specifically, new sensitive uses would not be located within 50 feet of any typical-sized gas station (one that has a throughput of less than 3.6 million gallons per year). No gas stations with a throughput of 3.6 million gallons per year or greater shall be developed within Village 8 West.

7. Chula Vista CO_2 Reduction Plan

This section provides a comparative evaluation between the community /site design features and the energy efficiency emission reduction action measure. This section provides a comparative evaluation between the community /site design features and the energy efficiency emission reduction action measures contained in the City's Carbon Dioxide CO2 Reduction plan Appendix C.

Table 3: Summary of Village 8 West Consistency with CO_2 Reduction Action Measures

Action Measure	**Project/Community Design Features**	**Describe how project design will Implement CO_2 Reduction Action Measures**
Measure 6 (Enhanced Pedestrian Connections to Transit): Installation of walkways and crossings between bus stops and surrounding land uses.	The SPA provides a detailed Circulation Network (*Section 5.5.2*) that links with the potential transit stops. *Section 5.8* also provides traffic calming measures that promote pedestrian safety near the potential transit stops.	Reduces vehicle-miles traveled that in turn reduces the GHG emissions.
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.	The site utilization summary identifies densities of 18-45 du/ac and 11-18 du/ac adjacent to the potential transit stops.	Reduces vehicle-miles traveled that in turn reduces the GHG emissions.
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.	*Section 4.3.2 Town Center Design Fundamentals* states that the primary emphasis of the public street elevation should be building entries and common areas while parking is to be located to the side and rear of buildings. Section 4.3.3 *Site Planning and Building Placement* suggests orienting building toward public streets, pedestrian pathways and/or active spaces. The BRT stop as well as local transit stops are located in the Town Center. These stops are convenient to those visiting or living in the Town Center. There are also additional local transit stops near the southern end of the Village. The southern transit stops make transit accessible throughout the Village and encourages people to take it into the Town Center, minimizing car trips. V8W provides sidewalks and bike trails that connect to transit. This also facilitates ease of use and connectivity.	These features emphasize the street and focus people towards transit stops rather than into parking lots. Visible and easy access to transit will encourage ridership. Orienting buildings toward transit and connecting stops with trails and sidewalks will provide convenience and way-finding features.

Action Measure	**Project/Community Design Features**	**Describe how project design will Implement CO_2 Reduction Action Measures**
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.	The Town Center (TC) zone permits a mix of residential, offices, and retail uses that allows shared parking facilities.	Reduces vehicle-miles traveled that in turn reduces the GHG emissions.
Measure 10 (Reduced Commercial Parking Requirements): Lower parking space requirements; allowance for shared lots and shared parking; allowance for on-street spaces.	The SPA provides for a process to create a City-approved parking agreement or district in the Town Center. In addition, on-site parking is permitted on all streets except La Media Parkway south of the couplets.	Promotes alternatives to vehicle use thereby reducing vehicle-miles traveled that in turn reduces the GHG emissions.
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, bike paths, and bike racks.	*Section 4.3.2 Town Center Design Fundamentals* lists the characteristics for mixed-use design: building and site design anticipates and accommodates pedestrian and vehicle circulation to reduce traffic impacts on neighboring streets and jointly optimize pedestrians and vehicles. Buildings are oriented toward sidewalks. Bike parking is required for all uses. Street furniture is required to enhance the pedestrian environment.	Promotes bicycling and walking thereby reducing vehicle-miles traveled that in turn reduces the GHG emissions.
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.	The SPA requires 1 secure space for 3 units + 10% of the vehicle parking required for each commercial use. CALGreen requires nonresidential buildings anticipated to generate visitor traffic to provide short-term bicycle racks within 200 feet of the visitors' entrance.	Promotes bicycling that can reduce vehicle-miles traveled that in turn reduces the GHG emissions.
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.	The SPA implements the City's bicycle master plan. The Village Pathway has been extended through the SPA with connections to Villages 3, 4 and 8 East. These 10-foot wide, paved trails run parallel to public roadways. Class II bikes lanes have also been provided. Some park pathways may be designed to accommodate bicycles subject to the City approval. A Greenbelt trail (which doubles as a maintenance road for the sewer) will connect to the Salt Creek Trail.	Promotes bicycling that can reduce vehicle-miles traveled that in turn reduces the GHG emissions.
Measure 14 (Energy Efficient Landscaping): Installation of shade trees for new single-	Residential public streets will include an eight-foot parkway that includes shade trees	Reduces energy consumption that reduces GHG emissions.

Action Measure	**Project/Community Design Features**	**Describe how project design will Implement CO_2 Reduction Action Measures**
family homes as part of an overall City-wide tree planting effort to reduce ambient temperatures, smog formation, energy use, and CO_2.	as provided in *Section 5.6.11 Parkway Residential*.	
Measure 15 (Solar Pool Heating): Mandatory building code requirements for solar heating of new pools or optional motorized insulated pool cover.	Compliance with CVMC 20.04.030 that requires solar water heater pre-plumbing in all new residential units. Compliance with CVMC 20.04.040 that requires solar photovoltaic prewiring in all new residential units.	Reduces energy consumption that reduces GHG emissions.
Measure 16 (Traffic Signal & System Upgrades): Provide high-efficiency LED lamps or similar as approved by the City Engineer.	Chula Vista Public Works Department is testing the use of induction/LED lighting for public streets in a pilot program. If it is determined that one of these lighting systems is feasible on a citywide basis, the applicable lighting system will be used in Village 8 West.	Reduces energy consumption that reduces GHG emissions.
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 updated T24 code requirements are continually more stringent to reduce energy consumption and emissions. Therefore, meeting code will inherently work towards energy efficiency and GHG reductions.
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.	The Town Center allows for a mix of land uses that include employment-generating land uses near the potential transit stops.	Reduces vehicle-miles traveled that in turn reduces the GHG emissions

8. Credit Towards Increased Minimum Energy Efficiency Standards

Village 8 West will comply with CVMC Sections 15.12, 15.26, 15.28.015, 15.24.065, 15.28.20 and 20.040.

9. Compliance Monitoring

This section includes a written description and a checklist (Table 4) summarizing the project design features and mitigation measures that have been identified to reduce Village 8 West's effects on air quality and improve energy efficiency.

Table 4: Village 8 West Air Quality Improvement Plan Compliance Checklist

	Method of Verification[1]	**Timing of Verification**	**Responsible Party[2]**	**Project Consistency & Compliance Documentation[3]**
PLANNING				
AQIP Project Design Features/Principles				
Integrated circulation system in Town Center	Plan Review	Precise Plan	City of Chula Vista	
Mix of uses in Town Center	Plan Review	Precise Plan	City of Chula Vista	
Higher density in Town Center	Plan Review	Precise Plan	City of Chula Vista	
Class II Bicycle facilities	Plan Check	Tentative Tract Final Map, Improvement Plans	City of Chula Vista	
Opportunity for employee services to be located near employers	Plan Review	Precise Plan	City of Chula Vista	
Village circulation pattern w/less than 35mph	Plan Review	Tentative Tract Final Map, Improvement Plans	City of Chula Vista	
Transit Plan	Transit Review	Per SANDAG	SANDAG/City	
Air Quality Mitigation Measures				
Construction related emissions	Permit Review	Grading Permit	City of Chula Vista	

	Method of Verification[1]	**Timing of Verification**	**Responsible Party[2]**	**Project Consistency & Compliance Documentation[3]**
Siting of sensitive land uses	Permit Review	Building Permit	City of Chula Vista	
TAC Emission Compliance	Permit Review	Building Permit	City of Chula Vista	
BUILDING				
Green Building Standards				
New Construction Recycling Plan	Waste Management Report Review	Construction or demolition permit	City of Chula Vista	
Space of recycling in projects	Plan Check	Tentative Tract OR Building Permit	City of Chula Vista	
	Method of Verification[1]	Timing of Verification	Responsible Party[2]	Project Consistency & Compliance Documentation[3]
Energy Efficiency Standards				
Size of dwellings units	Plan Check	Building Permit	City of Chula Vista	
Orientation of Town Center	Plan Check	Tentative Tract Final Map, Improvement Plans	City of Chula Vista	
Building compliance with prevailing code	Plan Check	Building Permit/ Title 24 Energy Report	City of Chula Vista	
Installation of energy efficient appliances as code requires	Plan Check	Building Permit	City of Chula Vista	
Indoor water fixture requirements: Hot Water Pipe Insulation Water Efficient Dishwashers (residential only) Dual Flush Toilets	Plan Check	Plumbing Permit	City of Chula Vista	
Installation of Pressure Reducing Valves	Plan Check	Plumbing Permit	Otay Water District	

	Method of Verification[1]	**Timing of Verification**	**Responsible Party[2]**	**Project Consistency & Compliance Documentation[3]**
Landscape Water Conservation	Plan Check	Landscape Plan	City of Chula Vista	
Installation of Recycled Water for street parkway landscape, parks, manufactured slopes and landscape common areas of commercial and multi-family residential sites.	Plan Check	Tentative Tract Final Map, Improvement Plans	Otay Water District/ City of Chula Vista	

Notes:

1. Method of verification may include, but is not limited to, plan check, permit review, and 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.