

OTAY RANCH VILLAGE 8 WEST
Non-Renewable Energy Conservation Plan

Appendix C

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Prepared for:
HomeFed Village 8, LLC
1903 Wright Place, Suite 220
Carlsbad, CA 92008
Curt Smith

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TABLE OF CONTENTS

I. INTRODUCTION	1
II. NON-RENEWABLE ENERGY CONSERVATION PLAN	1
A. Transportation	1
B. Building Design & Use	3
C. Lighting	6
D. Recycling	6
E. Land Use	7

I. INTRODUCTION

The Otay Ranch General Development Plan (GDP) requires the preparation of a Non-Renewable Energy Conservation Plan that identifies feasible methods to reduce the consumption of non-renewable energy resources. Categories identified in this Plan where reductions may occur include but are not limited to: Transportation, Building Design & Use, Lighting, Business, Recycling, Alternative Energy Sources and Land Use.

The Chula Vista region's current reliance on fossil fuels provides the majority of non-renewable energy consumption. Fossil fuels are directly consumed in the form of gasoline, diesel fuel and natural gas and indirectly as electricity generated from these fuels. The goals, objectives and policies of the GDP require that any new project identify a plan that assists in a long-range strategy that will increase the conservation of and decrease the consumption of non-renewable energy resources.

II. NON-RENEWABLE ENERGY CONSERVATION PLAN

Opportunities for energy conservation in Village 8 West are characterized by the following:

A. Transportation

Transportation design features that encourage energy conservation in Village 8 West include:

- **Reduced Vehicle-trip Miles**

On the regional level, Village 8 West is designed to accommodate Bus Rapid Transit as well as Rapid Bus Service. Within Otay Ranch, Village 8 West also will be served by local bus service - In addition, the project will provide sidewalks and bike lanes on all Transportation Element roadways. The Village Pathway, which currently terminates at the south end of Magdalena Avenue, has been extended through Village 8 West; future connections are provided to Village 8 East via Calle Escuela and Villages 3 and 4 to the west via Main Street. By design, higher density uses will be provided in the Town Center along the new couplets at La Media Parkway and Main Street. The limited setbacks and strong pedestrian-scaled frontages along these streets de-emphasize parking and support an active and vibrant Town Center where dependence on automobile is reduced and walking and biking is encouraged.
- Additional measures to promote alternative transportation use or reduce traffic congestion include: centrally located transit stop/station in Town Center offers high visibility and convenient access to transit with opportunities for transit-rider support services (coffee, transit passes, shelter, phone charging, maps, etc.); parking lots designed to the rear or side of commercial sites to improve the aesthetics, encourage walking and minimize conflicts between cars and pedestrians; synchronization of the traffic lights as part of an individual development project with previously installed traffic lights in order to reduce traffic congestion; identification of

an environmental coordinator to be responsible for education and disseminating information on ridesharing and/or mass transit opportunities, recycling, energy conservation programs, etc.

Trip reductions were based on the internal trip capture methodology outlined in the ITE Trip Generation Handbook. Using this methodology, traffic reductions ranging from, 2% to 60% were applied.

SANDAG determined a trip length for Village 8 West that was shorter than the regional average (RECON 2012). Compared to the regional average daily vehicle trip length of 5.8 miles, the ADT length for Village 8 West would be 4.62 miles (Otay Ranch Village 8 West Environmental Impact Report (CVEIR 10-03) certified on 12/17/2013).

- **Alternative Travel Modes**

Low speed vehicles (LSV) are envisioned as alternative modes of travel within and between the Otay Ranch villages. In Village 8 West, LSVs may travel on all village streets with a maximum travel speed of 35 miles per hour.

- **Increase Use of Transit**

Village 8 West concentrates its highest density housing, retail / commercial uses as well as park uses in its town center. In addition, the Town Center is located adjacent to an existing high school. The land use plan, with pedestrian-only connections, the Village Pathway, Chula Vista Regional Trail, wide sidewalks and a central transit station, provides an integrated circulation system that gives residents of the town center and adjacent neighborhoods transportation options that include walking, bicycling and transit. The current regional transit plan includes transit lines on East “H” Street, East Palomar Street, La Media Parkway, and Eastlake Parkway. Transit stations (BRT) are planned to be located approximately five to six miles apart with the nearest station to Village 8 West located in the Eastern Urban Center and Village 2. A transit route is planned along La Media Parkway with a station planned at La Media Parkway and Birch Road north of Village 8 West. In conformance with the General Plan, a future transit line is proposed on Main Street and a BRT transit stop is planned in the Village 8 West Town Center square. In addition, local transit stops are proposed within the Town Center and along La Media Parkway south of the couplet. Local bus service within Village West will provide the opportunity to connect to the regional transit system. The actual transit plan will be developed in conjunction with SANDAG and MTS. Public transit lines and stops are integrated into the plan and are located within or close to the higher intensity neighborhoods. Please see Figure 8 for reference.

- **Roadway Pavement Widths and Street Trees**

It has been demonstrated that narrow street widths and the resulting reduction in pavement area reduces the heat island effect and thus the demand for air conditioning. A strong street tree program also provides shade that enhances the reduction of heat from roadways. Both of these concepts are components of the Village 8 West plan.

B. Building Design & Use

Building design & use features that encourage energy conservation in Village 8 West include:

▪ **Housing Efficiency**

Projections for Village 8 West indicate that approximately seventy-five percent of the residential dwelling units will be medium-high (9-18 DUs/acre) or high-density (18-45 DUs/acre) attached or detached residences. Furthermore, approximately 50% of all the homes in Village 8 West will be located in the Town Center within close proximity to services and amenities.

• **Solar Orientation**

Passive solar design including the orientation of buildings can take advantage of the sun's warmth in winter to assist with heating as well as minimize heat gain in summer months to assist with cooling. The Village 8 West town center is oriented primarily on a north – south and east – west axis to take advantage of solar orientation. The 2019 Energy Code has also increased the preferred solar access zone from 110° to 90° and 270° to 300°.

• **Use of Better-insulated Buildings Efficiency**

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

- Quality insulation installation
- Low thermal emissivity windows
- Radiant barriers
- Cool roofs
- High-efficiency HVAC systems
- Alternative heating and cooling systems
- Efficient water heating systems
- Efficient lighting systems

According to the California Energy Commission, “single-family homes built with the 2019 standards will use about 7 percent less energy due to energy efficiency measures versus those built under the 2016 standards. Once rooftop solar electricity generation is factored in, homes built under

the 2019 standards will use about 53 percent less energy than those under the 2016 standards. This will reduce greenhouse gas emissions by 700,000 metric tons over three years, equivalent to taking 115,000 fossil fuel cars off the road. Nonresidential buildings will use about 30 percent less energy due mainly to lighting upgrades.

The City of Chula Vista has adopted Green Building Standards (CVMC Chapter 15.12) and an Energy Efficiency Ordinance (CVMC Section 15.26) that requires compliance with the current Title 24 Part 11 and Part 6 respectively.

- **Water Conservation**

Water-related energy use consumes 19 percent of California's electricity, 30 percent of its natural gas and 88 billion gallons of diesel fuel every year. The water-related energy use includes water and wastewater treatment as well as the energy needed to transport the water from its source (either northern California or the Colorado River.)

In compliance with the 2019 CALGreen Code and CVMC 15.12, all residential units will be required to have:

- Hot Water Pipe Insulation
- Water Efficient Dishwashers
- Dual Flush Toilets
- Water Efficient Landscape

In compliance with the 2019 CALGreen Code and CVMC 15.12, all non-residential units will be required to have:

- Hot Water Pipe Insulation
- Pressure Reducing Valves
- Dual Flush Toilets
- Water Efficient Landscape

- **Use of Energy Efficient Appliances**

For residential uses, energy efficient appliances can reduce electricity use an additional 0.12-.14% if Energy Star dishwashers are installed and 0.66-1.21% if one Energy Star ceiling fan is installed in each home. According to Energy Star.gov website, commercial Energy Star refrigerators can reduce electricity usage by 20%.

- **Use Improved Construction Standards**

Residential and commercial construction within Village 8 West is required to adhere to the Energy Efficiency Standards of the City of Chula Vista Municipal Code Section 15.26.030 as well as the Building and Energy Efficiency Standards in Title 24 Part 6 of the California Code of Building Regulations.

- **Use of Solar Energy Systems**

Chula Vista Municipal Code Section 20.04.040 requires all new residential units to include plumbing specifically designed to the later installation of a system that utilizes solar photovoltaic or other renewable energy resource as a means of generating electricity.

New buildings will be designed to be photovoltaic ready. This includes providing space on the roof surface and penetrations through the roof surface with a minimum one-inch conduit from the electrical service equipment for the future roof installation to provide for a PV system. Planting of trees on southern exposures to buildings will be carefully monitored to ensure that solar energy systems will not be impacted.

C. Lighting

Lighting features that encourage energy conservation in Village 8 West include:

- **Energy Efficient Public Lighting**

Standards for Village 8 West will comply with The City of Chula Vista Municipal Code Section 15.26.030 requiring the use of energy efficient lighting in commercial public areas including plazas and parks.

The City of Chula Vista Public Works Department has installed 16,000 LED lights in the City that use 1/3 the electricity without reducing lighting levels and impacting public safety. The applicable lighting system will be used in Village 8 West.

D. Recycling

Recycling programs in Village 8 West include:

- **Residential and Commercial Recycling**

Chula Vista Municipal Code Sections 8.23-25 requires all commercial and industrial establishments that recycle with a third-party recycler to submit recycling tonnage documentation on an annual basis to the City's conservation coordinator, due on or before January 31st, for the previous year. Those establishments recycling with a franchised hauler do not need to report because the hauler does the reporting to the City. This requirement promotes recycling of materials.

The City of Chula Vista's Recycling and Solid Waste Planning Manual, adopted by City Council, provides information for adequate space allocated

to recycling and solid waste within individual projects, based upon the type of project and collection service needed.

Additionally, the City of Chula Vista encourages the use of compost materials to be incorporated into the soil of all new construction projects to improve soil health, water retention, less water run off and filtration of water run-off prior to entering storm drains and creeks on the way to San Diego Bay. The yard trimmings collected in Chula Vista are composted at the Otay Landfill and may be available for purchase.

- **New Construction Waste Reduction**

California Green Building Code Title 24, Part 11 (CALGreen) requires that a minimum of 65% 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. To maintain these targets the following programs must be implemented per Chula Vista Municipal Code Sections 8.23 Solid Waste and Recycling Contract or Franchise; 8.24 Solid Waste and Litter; 8.25 Recycling and 19.58.340 Trash Enclosures:

All new construction and demolition projects in the City are required to divert from landfill disposal 100% of inert waste to include asphalt, concrete, bricks, tile, trees, stumps, rocks and associated vegetation and soils resulting from land clearing; and 50% of all remaining waste generated. 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. CVMC 8.25.095.

E. Land Use

Land use patterns and project features that conserve non-renewable energy resources and reduce the reliance on the automobile Village 8 West include:

- **Reduce the Reliance on the Automobile**

The vision for Village 8 is to develop a cohesive community with interconnected uses and densities. The mix of proposed residential, commercial and community uses are intended to provide a complementary, mixed-use environment with a focus on promoting a walkable and bikeable community that promotes pedestrian activity. In addition, the Village 8 West SPA plan is developed around the Form-Based Code planning method. The intent of this format is to focus on built form and urban experience to enable walkability and density. Form-based codes focus less on land uses and more on shaping the physical form. Utilizing a form-based code method in

Village 8 West allows the Village to promote higher density, mixed uses, civic spaces, mobility and walkability all within this individual community.

Direct pedestrian links extend from the surrounding neighborhoods directly to the village core. The Village Pathway, which currently terminates at the south end of Magdalena Avenue, has been extended through Village 8 West; future connections are provided to Village 8 East via Street B and Villages 3 and 4 to the west via Main Street. Class II bicycle facilities are planned along all Transportation Element roadways through Village 8 West. Roadways internal to the Village are designed to local street standards with speed limits of 25 to 30 mphs. Slow traffic speeds are conducive to bicycling and provide the necessary linkage to the regional bicycle circulation network. On-street Class II Bike Lanes are provided along Main Street, La Media Parkway and Avenida Caprise. Sidewalks will be provided throughout Village 8 West. In addition, the land use mix and density 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 through the couplet and south on La Media Parkway toward SR-125, the roadways are designed to provide a comfortable walking environment. The Town Center provides the opportunity for employers to provide their businesses close to public transit.

▪ **Regional Mass Transit Facilities**

Otay Ranch and Village 8 West are designed and ready to accommodate public transportation and alternative travel modes to reduce energy consumption. Village 8 West is public transportation ready. In conformance with General Plan policy, public transportation is an integral part of Otay Ranch. The Village 8 West plan has responded by providing for potential transit services with options available depending on what future program is implemented.

The current regional transit plan includes transit lines on East “H” Street, East Palomar Street, La Media Road and Eastlake Parkway as well as a transit route on La Media Parkway with a transit stop planned at La Media Parkway and Birch Road. Transit stations are planned to be located approximately five to six miles apart with the nearest station to Village 8 West located in the Eastern Urban Center. In conformance with the General Plan, a future transit line also is located on Main Street and two transit stops are planned in the Village 8 West Town Center, one along west-bound Main Street and one along east-bound Main Street. The actual transit plan will be developed in conjunction with 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 Tract Map (TM) process.