

NON-RENEWABLE ENERGY CONSERVATION PLAN

**Village Seven Sectional Planning Area (SPA)
Otay Ranch GDP**

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Project Sponsor

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OTAY RANCH VILLAGE SEVEN SPA NON-RENEWABLE ENERGY CONSERVATION PLAN

Recognizing the importance of energy conservation, the Otay Ranch General Development Plan includes goals, objectives and policies that provide for the long range increase in energy conservation and reduction of energy consumption. The General Development Plan requires the preparation of a Non-Renewable Energy Conservation Plan to identify feasible methods to reduce the consumption of nonrenewable energy resources, including transportation, building design and use, lighting, recycling, alternative energy sources and land use.

Fossil fuels, which are non-renewable energy sources, provide the majority of energy utilized in the San Diego region. These fuels are directly consumed in the form of gasoline, diesel fuel, and natural gas, and indirectly as electricity generated from these fuels.

On November 14, 2000, the Chula Vista City Council adopted the Carbon Dioxide (CO₂) Reduction Plan which included implementing measures regarding transportation and energy efficient land use planning and building construction measures for new development. In this plan, it was recognized that the City's efforts to reduce carbon dioxide emissions from a new development are directly related to energy conservation and air quality efforts. Subsequently, the City adopted guidelines for the preparation of Air Quality Improvement Plans (AQIPs), which are required of all SPA Plans, to implement specific CO₂ reduction strategies. As detailed in the Village Seven AQIP, the project sponsor has committed to participate in the Chula Vista GreenStar Building Efficiency Program which will result in air quality improvement as well as energy conservation.

Opportunities for energy conservation in new development fall into three general categories: 1) the arrangement and intensity of land uses; 2) mass transit and alternative transportation modes; and, 3) building siting, design and construction. The greatest opportunities for significant conservation are transportation related. The Village Seven SPA maximizes these opportunities by implementing a land use plan which concentrates land use intensity around new transit facilities, provides for eventual extension of transit service into the project area and encourages alternative transportation modes such as walking, bicycle and use of electric carts.

A. Land Use & Community Design

Energy conservation features or components of the Otay Ranch Village Seven land use plan and community design features include:

- **Transit Oriented Development:** The Village Seven project area is an Urban Village and is planned for transit oriented development. Housing, shops, services, schools, parks and civic facilities are conveniently located. The compact design and integrated street/path circulation system places daily need within easy walking or biking distance. The central transit facility at the Village Core will provide ready access to public mass transit for commuting trips. The city

will provide bus service to this village which will connect to the regional MTDB system. Bus stops will be conveniently located in the Village Core, along the transit village entry street and on the secondary entry streets connecting to Villages Two, Five and Seven.

- **Housing Efficiency:** In addition to the transit benefits associated with increased density near transit centers, there are building related energy benefits. Smaller single-family, attached single-family and multi-family homes use less energy for space heating and cooling than typical single-family detached homes. Village Seven includes a high proportion of multi-family dwelling units (30% of total units planned for entire village).
- **Street Widths, Pavement and Street Trees:** Reducing street widths can reduce heat build-up and consequently energy demand for air conditioning. In addition to reduced pavement width, the inclusion of street trees and parking lot trees, which shade the pavement will reduce temperatures. Village Seven streets have reduced widths consistent with the standards in the Otay Ranch General Development Plan; residential streets have a 32 foot paved section compared to a 36–40 foot section typical of suburban development patterns.
- **House Design:** Homes in Village Seven are required include porches and verandas per the PC District Regulations. These features shade some windows reducing solar heating of interior spaces and also provide comfortable outdoor sitting areas, reducing the need to expend energy to cool interiors.

B. Transit Facilities

In addition to the transit facilities and transit oriented design, the Otay Ranch Village Seven project includes specific design measures to accommodate additional transportation modes (see SPA Plan Section II.2.3 Circulation):

- **Bus Service:** Village Seven will also include facilities based on the Green Car and Blue Car service concepts using buses described in the recently adopted *TransitWorks* Strategic Plan by MTDB. The Green Car represents local routes using mini to mid-size buses. The Green Car would act as a collector and provide feeder to Blue or Red Car concepts. Green Car service is to be provided on residential and major streets. The Blue Car will provide short distance trips (1–5 miles) with frequent stops along major streets and arterials.
- **Electric Cart:** The provision of circulation routes which can accommodate electric cart use provides another alternative mode of transportation, in addition to bicycles and walking for short trips. Within Village Seven, separate paths provide the opportunity for cart travel from residential areas to the village core. At this time, the viability of electric cart use is unknown since it depends on market, price, consumer acceptance and access to adjacent activity centers/destinations.

C. Building Siting & Construction

Energy conservation features for building siting and construction include the following:

- **Improved Building Construction Standards:** Buildings constructed today use approximately 50% less energy than buildings constructed prior to 1978, before energy efficiency standards went into effect in the mid-1970s. These Building Energy Efficiency Standards appear in Title 24 of the California Code of Regulations and have recently been updated (by AB970).

The Village Seven SPA project sponsors have agreed to exceed the California 2001 Title 24, Part 6, Energy Efficiency Standards (CA 2001 Title 24, effective 6/1/01) by 15% in the majority (50% or greater) of residential dwelling units through participation in a building efficiency program such as ComfortWise or CA Energy Star, or develop a custom building efficiency program using construction methods that exceed CA 2001 Title 24 requirements by 15%.

The project sponsors owns the land comprising parcels R-1, R-2, R-3, R-4, R-5, R-6 and R-7, totaling 1,204 residential units, as shown on the Site Utilization Plan. All future private development sites (within “undesigned” areas on the Site Utilization Plan) in Village Seven are owned by others, hence the project sponsor’s commitment includes only those parcels. The project sponsor’s commitment is to construct 50% of the units, 602 units, within those parcels to the Chula Vista GreenStar Building Efficiency Program standard.

- **Solar Access:** Passive solar design and building orientation can take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer. The land use plan for Village Seven depicts a street system with the many single family lots oriented in a north-south direction, maximizing southern exposure through the front or rear yard.
- **Commercial Lighting:** Interior lighting consumes approximately 30% of the energy used in commercial buildings. The large component in commercial energy use makes it a good target for the application of conservation measures. By encouraging commercial builders to include energy efficient lighting, a reduction in commercial electrical demand could be expected.
- **Energy Efficient Appliances:** New homes in Village Seven will be equipped with new appliances which are significantly more energy efficient than earlier models. According to the U.S. Department of Energy, new appliances included in new homes such as ranges, ovens and dishwasher save 30 to 50% compared with appliances manufactured 20 years old. Homes in Village Seven will require significantly less energy than those in older areas of the region due to increased building and appliance energy efficiency.
- **Public Area Lighting:** Lighting for public areas such as streets, parks and other public spaces will utilize energy efficient fixtures, consistent with City standards and requirements.

As identified above, the Village Seven project is proposed to incorporate energy saving features which respond to the energy conservation provisions of the Otay Ranch General Development Plan.