OTAY RANCH VILLAGE SIX 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 (CO_2) 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. As a result, the City is initiating a pilot study to develop a program to be implemented in new SPA plans through updated guidelines for the preparation of required Air Quality Improvement Plans (AQIPs). In summary, the pilot study involves the development of a computer model to evaluate the relative effectiveness of applying various site design and energy conservation features in new development projects. The pilot study will analyze the Otay Ranch Village Six project (and two other pending SPA projects), and will result in the preparation of an AQIP for the project which will be considered in conjunction with actions on the Tentative Subdivision Map for the SPA.

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 Six SPA maximizes these opportunities by implementing a land use plan which concentrates intensity around new transit facilities, provides for eventual extension of light rail transit service into the project area and encourages alternative transportation modes such as walking, bicycle and electric cart.

A. Land Use & Community Design

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

- Transit Oriented Development: The Village Six project is a transit oriented village, with a trolley station included within the core area. Housing, shops, services, schools, parks and civic

facilities are located in close proximity to the trolley station. The compact design and integrated street/path circulation system places daily need within easy walking or biking distance. The central transit facility will provide ready access to public mass transit for commuting trips. The city will provide bus service to this village in addition to the MTDB light rail 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 Six includes a high proportion of multi-family dwelling units (58% of total units).

- 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 which shade the pavement will reduce temperatures. Village Six 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 Six 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.

C. Transit Facilities

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

- Light Rail Transit Service: Village Six includes a right-of-way for future expansion of the San Diego light rail transit (LRT) system through Otay Ranch; the Red Car concept in the MTDB *TransitWorks* Strategic Plan. The LRT right-of-way extends approximately 0.6 mile through the project site. Timing for construction of the LRT system through Otay Ranch Villages One and Five is uncertain. The SPA One Non-Renewable Energy Conservation Plan assumes the transit will be in place in 15 years.

- Bus Service: Village Six 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 Six, 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.

D. 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).

- 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 Six 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 Six 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 Six 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 Six project is proposed to incorporate energy saving features which respond to the energy conservation provisions of the Otay Ranch General Development Plan.