

OTAY RANCH RESORT VILLAGE



*March 2015*

ENERGY CONSERVATION PLAN



# The Otay Ranch Resort Village Energy Conservation Plan

OTAY RANCH RESORT VILLAGE; GPA 04-03, SP 04-002, REZ 04-009, TM 5361

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## **1. Purpose**

The Otay SRP requires preparation of a Non-Renewable Energy Conservation Plan to identify feasible methods to reduce the consumption of non-renewable energy sources, including but not limited to, transportation, building design and use, lighting, recycling, alternative energy sources, water use and land use. This Energy Conservation Plan, in conjunction with the Water Conservation Plan prepared as appendix to the Overview of Water Service, fulfill the Otay SRP Requirement. In accordance with Appendix F – *Energy Conservation* of the CEQA Guidelines, the goal of energy conservation is the wise and efficient use of energy thru:

- Decreasing overall per capita energy consumption
- Decreasing reliance on natural gas and oil, and
- Increasing reliance on renewable energy sources.

Fossil fuels provide the majority of non-renewable energy sources in the San Diego region. These fuels are directly consumed in the form of gasoline, diesel fuel and natural gas, and indirectly consumed as electricity generated from these fuels. The goals, objectives and policies of the Otay SRP provide for the long-range increase in conservation and reduction of consumption of non-renewable energy sources.

Opportunities for energy conservation in the Resort Village development include the arrangement and intensity of land uses, programs to reduce vehicular trips, and building siting, design and construction which includes water conservation measures incorporated into landscape and irrigation system design.

## **2. Definitions**

The following words and phrases shall be construed as defined in this section:

“Assessment” - a written evaluation of a facility’s energy and water use from building systems, appliances and office equipment.

“Energy and water conservation” - reduction of energy and water use achieved by relying on changes to behavior.

“Energy and water efficiency” - activities or programs that reduce energy and water use by upgrading to more efficient equipment or controls.

“Greenhouse gas emission” - the direct or indirect emission of one or more of the gases identified by the Intergovernmental Panel on Climate Change and/or the State of California.

“LEED” – The Leadership in Energy and Environmental Design Green Building Rating System was developed by the U.S. Green Building Council

(USGBC) to provide a suite of standards for the environmentally sustainable design, construction and operation of buildings and neighborhoods.

“Nonrenewable” - an energy resource such as, but not limited to, fossil fuels that are not replaced or is replaced only very slowly by natural processes.

“Renewable” - an energy resource such as, but not limited to, wind and solar that is replaced by natural resources.

“Solar photovoltaic” - a method of capturing energy from sunlight and converting it to electricity.

“Solar water heater” - a method of heating domestic water by allowing solar energy collection devices to transfer solar heat energy to water.

### **3. Land Use and Community Design**

Land use and community design that encourages energy conservation include:

#### *Pedestrian Oriented Development*

- The Otay Ranch Resort Village land use plan locates a school, parks and commercial land uses in proximity to residential areas to encourage pedestrian and bicycle travel as an alternative to the automobile. In addition, the Resort Village Trail and Pathway system provide alternate routes to these destinations.

#### *Street Widths, Pavement and Street Trees*

- Narrow streets and reduced paving reduce heat buildup and the demand for air conditioning. Street trees provide shade which further reduce ambient air temperatures.

### **4. Transit Facilities and Alternative Transportation Modes**

The Otay Ranch Resort Village is designed to accommodate alternative travel modes to reduce energy consumption:

#### *Public transportation*

- Public bus service for The Otay Ranch Village Resort could be provided by Chula Vista Transit (CVT) and the San Diego Association of Governments (SANDAG). Currently, CVT provides bus service through the Chula Vista Eastern Territories including the Eastlake Business Center and nearby Southwestern College. Expansion of CVT services into nearby developing areas will bring bus service to the eastern

boundary of the City of Chula Vista on Otay Lakes Road. Expansion of transit services to the Resort Village could conceptually include a bus route to the mixed use neighborhood.

- The Otay Ranch Resort hotel may provide shuttle service to major transportation centers in the County.

#### Transportation Demand Management

- Develop a transportation demand management program to encourage ridesharing and carpooling for residents and employees.

#### Alternative Travel Modes

- Otay Ranch Resort Village streets are designed for a maximum travel speed of 30 miles per hour which allows the roadway to be used by electric carts and bicycles.
- Off-street pathways and trails in the Resort Village will accommodate pedestrian and bicycle travel.
- Encourage the Homeowners Associations to partner with the elementary school to create a “walking school bus program” for neighborhood students to safely walk to and from school to reduce vehicular trips for drop-off and pick-up.

### **5. Building Siting and Construction**

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

#### Improved Construction Standards/Building and Site Design

- Design residential buildings to the United States Green Building Council (USGBC) LEED - New Home Certification, Green Point Rated, or the National Association of Homebuilders (NAHB) National Green Building standard.
- Design all single family structures to facilitate the installation or retrofit of photovoltaic systems.
- Require project-wide recycling, for single-family, multi-family, resort, school, commercial, and retail establishments.
- Provide electric car plug-in facilities/stations in all residential garages and public parking areas.

#### Energy Efficiency

- Achieve a 30% reduction in energy use through the installation of renewable energy sources (i.e. solar photovoltaic panels).

- Comply with the 2008 Building Energy Efficiency Standards in Title 24 of the California Code of regulations and CALGreen building code.
- Require indoor residential appliances to carry the Environmental Protection Agency's (EPA) ENERGYSTAR® certification.
- Require all residential units to be part of the local utility demand response program to limit peak energy usage for cooling.
- Building design and building orientation will take advantage of the sun in the winter for passive solar heating opportunities.
- Installation of vertical landscape elements such as trees and large shrubs to shade southern and western building facades to reduce energy uses.
- Design and construct homes to allow for the future installation of roof-mounted solar systems.

#### Water Conservation

- Require indoor residential plumbing products to carry the Environmental Protection Agency's (EPA) WaterSense certification.
- Require high-efficiency irrigation equipment such as evapotranspiration controllers, soil moisture sensors and drip emitters for all projects that install separate irrigation water meters.
- Use drought tolerant, low-water usage plants in public and private landscaped areas.
- Limit natural turf in residential development to no more than 30% of the outdoor open space.
- Implement a Water Conservation Plan for single family homes to reduce outdoor irrigation consumption by a minimum of 30% from business as usual.
- Reduce outdoor water usage by 30% through compliance with the County Landscape Ordinance.

#### Solar Access

- Use passive solar design and building orientation to take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer.
- Require installation of vertical landscape elements such as trees, large shrubs and climbing vines to shade southern and western building facades to reduce energy needed for heating and cooling.
- Design and construct the plumbing system to allow for and encourage the retrofit of a solar water heating system. of a system which utilizes solar energy as the primary means of heating domestic potable water.
- Design and construct the electrical system to allow for and encourage the retrofit of renewable energy generation systems such as photovoltaic panels.

Lighting

- Install energy efficient lighting for streets, parks and other public spaces. Builders will use energy efficient lighting and design.

**6. Solid Waste**

- Achieve 75% diversion rate for building construction