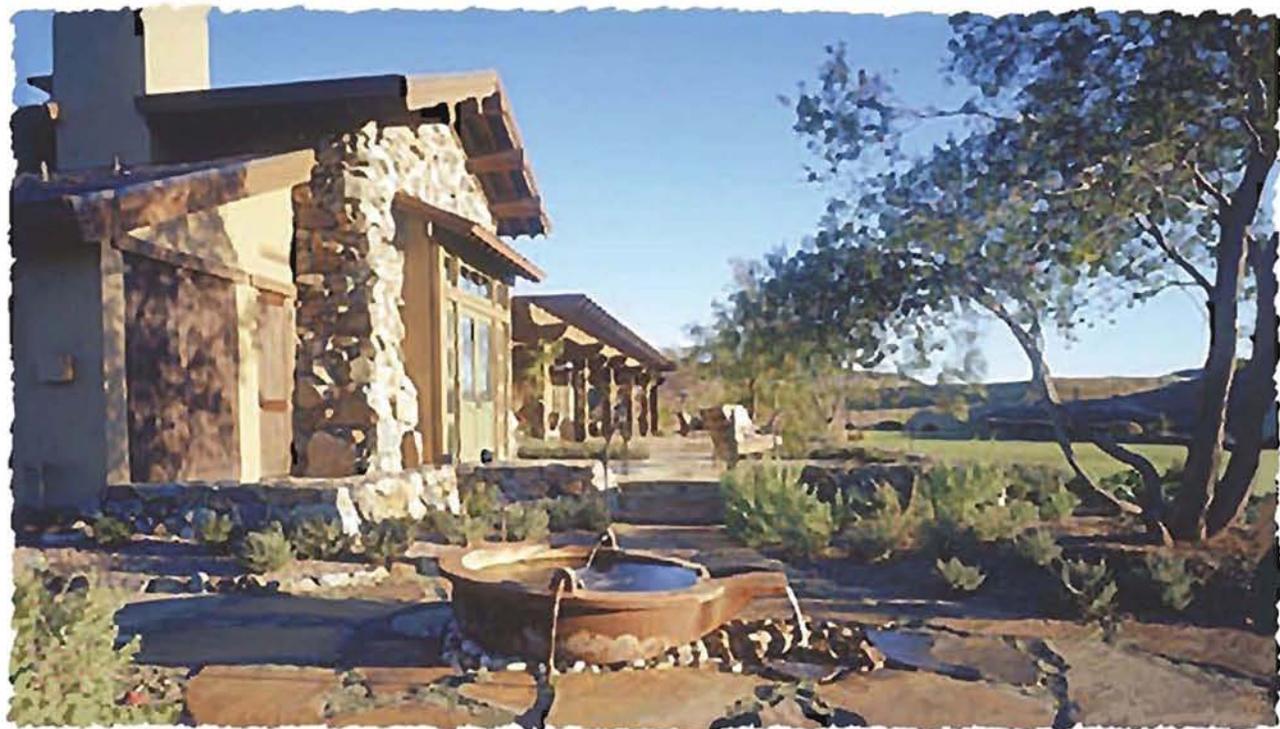


RECYCLED WATER CASE STUDY

Del Sur Master Planned Community Homeowners Association



Del Sur Master Planned Community HOA is part of the much larger Black Mountain Ranch 4,700 acre master-planned community. Black Mountain Ranch lies entirely within the boundaries of the City of San Diego, located south of Santa Fe Valley and adjoining the communities of Peirbanks Ranch and Rancho Penasquitos. Black Mountain Ranch planning started with a detailed inventory of sensitive lands and has set aside 60 percent as permanent open space, 2,870 acres in total. Del Sur is a progressive and eco-friendly community that blends environmental commitment with architectural excellence. The master-planned community has set benchmarks

for green building practices by meeting and exceeding environmental requirements and has become a leading example of sustainable communities. When completed, it will encompass 11 neighborhoods, 30 different home models and 3,050 homes. Del Sur has 18 miles of trails and eight parks, many of which will feature neighborhood swimming pools.

Del Sur receives its recycled water from the City of San Diego's North City Water Reclamation Plant. There is a 3 million gallon recycled water storage reservoir on site within the development. The City of San Diego is the water purveyor for Del Sur.

The Connection Process

Del Sur is a new development, therefore, pipe-lines and infrastructure were built prior to homes and other facilities being constructed, eliminating the need for retrofits. In the beginning of the permitting process, Del Sur had a number of recycled water meters that needed to be inspected and approved at the same time. Del Sur and the City of San Diego worked out a schedule to conduct cross-connections and get approvals that eventually resulted in a one-day streamlined process. Although coordination of permitting, connecting, cross-connection inspections was initially challenging for both the City and the developer, the eventual schedule and process was mutually

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beneficial. Del Sur was able to proceed within their schedule.

Landscape Irrigation Management Practices

Del Sur constructed a recycled water pipeline system and reservoir as a part of the irrigation system for common landscaped areas and golf courses. This infrastructure will be a central part of a comprehensive water conservation program, which includes a drought resistant landscape theme. A community-wide minimum of 50% native and drought-tolerant plants enables Del Sur to effectively reduce water use.

An extensive landscape management plan was developed by landscape architect Kurt Bruskotter which focused on using primarily drought tolerant, native species that would be sustainable regardless of rainfall and take into account soil type, slopes, aesthetics of the development, and use of recycled water. Recycled water is used for irrigation of medians, parkways, all native slopes, and all common areas, including the area around the Ranch House, Del Sur's community center. Del Sur irrigates between 9 pm and 6 am when no supervision is required. They do irrigate during the day immediately after fertilizing, and supervise during these times. Del Sur currently has 23 recycled water meters and will eventually have a total of about 50. Of the 23 existing meters, twenty are 2" and three are 1.5"; all are used to irrigate community parks with recycled water.

Currently, native-planted slopes are being irrigated, but after 3 years of maintenance they should be established without need for irrigation. After conducting an extensive soils study, it was determined that soils include 48% Huerfuerlo loam and about 31% Diablo-Olivenhain complex, calling for careful management of runoff and erosion issues. "Landscape management requires

constant oversight; however, with readily available recycled water, we are providing Del Sur with a beautiful, drought tolerant landscape that will sustain and grow over the years," states Bruskotter.

Water Quality Issues

Del Sur's landscape architect, Kurt Bruskotter, has seen no problems with the use of recycled water. They were initially concerned with high salinity but, "Plants have taken well to the recycled water," explains Bruskotter. "Although we do still fertilize to establish the vegetation, recycled water has lessened the need for fertilizer. We have more issues with the soils on site than with the recycled water."

Water Costs

The rate for recycled water is \$.80 per hundred cubic feet (HCF) and the potable rate for commercial/industrial is \$2.908 per hundred cubic feet (HCF). "The nearly 72% price differential for Del Sur was well worth the cost of installing recycled water infrastructure in the beginning," says Bruskotter. "In addition, the recycled water helps Del Sur meet its objectives to become a sustainable community."

The City of San Diego extended the recycled water backbone system to another development in the area—Santaluz—and the Del Sur developer extended the system from Santaluz to Del Sur. The City also constructed the 3 million gallon (MG) Black Mountain Ranch recycled water reservoir.

Public/Customer Perception Issues

Homeowners and users of common areas have been made aware of recycled water use and signage is prevalent in public

areas. The developer has had no negative responses from the homeowners; in fact, homeowners would use it for their yards if possible. Del Sur has received recognition from P.O.W.E.R. (Public Officials for Water and Environmental Reform) for their water conservation program, and the San Diego Water Authority recognized them for participating in the 20 Gallon Challenge. Although they have not actively promoted their use of recycled water, Del Sur's vision is to be eco-friendly and to have a sustainable community that embraces many environmental practices.

Bill Dumka, the developer of Del Sur, would like to see individual homeowners get connected to the recycled water system for yards. In addition to residential construction, Del Sur will include a retail center and employment office in future phases. There are several schools nearing completion and they will also be using recycled water. There is one golf course at Santa Luz and it has its own recycled water distribution system. At Del Sur, Dumka says, "We are proud of our efforts to use recycled water and the best part is that it is high quality, drought proof water that will help us maintain a beautiful community where we won't have to be as concerned with restrictions for providing water to landscape areas."

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San Diego County
Water Authority



The City of San Diego