



THE CITY OF SAN DIEGO

Water Department

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Satellite Imagery Helps Determine Landscape Water Conservation Potential

SAN DIEGO – The City of San Diego Water Department’s Water Conservation Program recently partnered with the U.S. Bureau of Reclamation and AgriCast Inc. to complete a project using innovative multi-spectral satellite imagery to develop an “intelligent” Geographic Information System (GIS) data layer that is highly accurate, affordable, and adaptable to many uses.

According to Dan Carney, Landscape Architect for the Water Department, “This data layer classifies land cover into six distinct categories, including impermeable surfaces and landscaped areas. With this information, a GIS user can easily measure the land cover area they are interested in and make better decisions about how much water to use, and how to avoid pollution caused by water running off their property.”

The City’s Water Conservation Program is just one of many local agencies making use of this new technology. These GIS calculations indicate that throughout the urban areas of the City, there are approximately 24,000 acres of irrigated landscape, of which 53 percent is ornamental turfgrass and groundcover plants, and 47 percent trees and shrubs. City staff was then able to create a water budget for this landscape area by using the Water Resources Landscape Database (WRLD). The budget estimates that a maximum of 66,378 acre-feet (AF) of water is required to irrigate this landscape each year.

In fiscal year 2005, the Water Department delivered 220,864 AF of water to its metered customers. Of that amount, approximately 115,946 AF (52 percent) was used for landscape irrigation. The difference between the budgeted and the actual amount of water used for irrigation is between 35,000 – 45,000 AF per year, which amounts to 16-20 percent of all the water delivered to the City’s metered customers in fiscal year 2005. With these results, the Water Conservation Program can now accurately determine the City’s landscape water conservation potential. The savings in water costs to the City and its water customers would be about \$20 million a year.

Energy use would also be reduced by decreasing water consumption. According to the California Energy Commission, 2,300 to 3,200 kilowatt-hours (kWh) are needed to deliver each acre-foot of water. Therefore, by eliminating the water waste caused by over-irrigation, a savings of 96 to 123 million kWh of energy, worth about \$10 million, could be conserved each year.

The City of San Diego Water Department currently offers free landscape water conservation programs and services designed for both residents and businesses interested in doing their part to use water wisely. For more information on these services, please visit www.sandiego.gov/water/conservation. For more information on the satellite project, please email Dan Carney at DCarney@SanDiego.gov.

The Water Conservation Program reduces water demand through promoting or providing incentives for the installation of hardware that provides permanent water savings, and by providing services and information to help San Diegans make better decisions about water use. For more information about Water Conservation, visit www.sandiego.gov/water or call (619) 570-1999.

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