

Water Conservation Measures Enacted by Cities in Los Angeles and Orange Counties

A survey recently completed by the Water Committee of the Sierra Club Angeles Chapter compares how well the incorporated cities in Los Angeles and Orange Counties have enacted ordinances to update their Water Conservation Measures. Five cities were rated 'Best' for the number and type of measures enacted. Another four cities were rated 'Worst' for having no such measures on the books with a fifth 'Worst' city having only one. The findings demonstrate that for every city that has yet to fully implement updated water conservation measures, there are cities nearby in each county that have.

The Problem

Reliable supplies of drinking water are essential for the welfare of cities, and drive the need for sustainable water use strategies. In Southern California, cities manage water use by enacting ordinances to mandate restrictions and efficient use of water in order to contend with decreasing imported water supplies, and the need to replenish local water resources as urban population continues to grow.

So how are cities sharing the responsibility to avoid water waste? What is being done to update their water management practices and water efficiency standards so that less water benefits more people in the foreseeable future?

The Water Committee of the Sierra Club Angeles Chapter undertook a Water Conservation Measures Scorecard project to address these questions. A survey was recently completed to determine what types of ordinances are being enacted not just to avoid waste, but to also prioritize water needs, to update building standards, and to require best practices in order to better use available water resources.

Project Design

The project began by defining criteria for water conservation measures implemented or updated by Southern California cities over the past 5-10 years.

The project produced 19 categories of water conservation measures, and evaluated how many measures each city had enacted. In some cases, multiple ordinances were evaluated for a single city, but the scores for all ordinances of a city were merged such that any of the 19 categories were scored 1 point if any of a city's ordinances addressed the specific technical and enforceability criteria cited for it.

The first group of water conservation measures includes regulations to restrict wasteful water practices and other selected uses of water that generally enforced on a temporary basis when an unexpected water shortage is declared by a city. These measures are usually phased-in and become more restrictive as the temporary water shortage becomes more severe. These "Restricted Use" measures include all enforceable measures recommended by the California Department of Water Resources and included in the Water Conservation Model Ordinance proposed by the Metropolitan Water District.

Remaining measures have been enacted to enforce “Efficient Use” of water in buildings, for landscapes, and for commercial operations. Usually these measures are enforced as new building permits or business licenses are awarded by a city or when new building or business are connected to the local water supplier.

Probably the most famous water efficiency standard in California history involves the steps taken to require new buildings to install toilets rated at no more than 1.6 gallons per flush. The first use of this standard was a state law in 1980 prohibiting sales of new toilets in the state to those that met this standard. Over the next 20 years the City of Los Angeles along with many other cities invested in retrofit programs to replace older toilets that used 3 to 5 gallons per flush with new toilets to meet specific water conservation goals.

Since that time, plumbing engineering standards have continued to improve and cities have begun to update their building codes and re-visit their water conservation plans accordingly. Water conservation measures enacted or updated more recently comply with federal and state standards including EPA Water Sense plumbing standards, DOE Energy Star appliance standards, and California Water Efficient Landscape legislation. These standards include toilets rated at 1.28 gallons per flush, showerheads at 2.0 gallons per minute, faucets at 1.5 gallons per minute, and dishwashers using no more than 5.8 gallons per cycle.

The final set of water conservation measures evaluated include best practices for water use as promoted by organizations such as the California Urban Water Conservation Council along with other measures enacted by one or more cities that may be applicable and effective for other cities in the region.

Survey Methodology

Water measures enacted in municipal codes, by city ordinances or as water regulations were reviewed as provided by all incorporated cities and associated water districts of Los Angeles County and Orange County. The reviews were conducted by 2-4 independent reviewers for each city. The water ordinances of each city was reviewed and scored based on information which is widely and publicly available on the web, on the cities websites, or could be requested through the city clerk.

The primary evaluations were to determine which cities had enacted mandatory water conservation measures. If the city did not have a water ordinance did an associated water agency serving that city have one? And exactly what criteria did cities use to define required measures?

Several federal, state, and local reference points were used to establish criteria used to audit the ordinances including the MWD (Metropolitan Water District) model water ordinance, CUWCC best practices, CA DWR municipal water policy recommendation, and Federal EPA Water Sense standards. All cities received a water restriction score, and a water efficiency score that are combined for an overall water conservation score. To obtain these scores the scorecard based on the wording and construction of the MWD water ordinance was divided into 2 major divisions’ short term (month to month monitoring of water supply with mandatory enforced restrictions)

and long term water conservation (sustainable practices and standards) which were both further subdivided.

All ordinances were reviewed between August 2009 and November 2010 by volunteers of the Water Conservation Committee, Angeles Chapter, Sierra Club and students from UCLA. All ordinances were reviewed at multiple intervals by 2-4 independent and separate reviewers to facilitate any changes that may have been adopted by the cities within the above time frame. Policy changes made to any water ordinance after said date will not be reflected in the cities respective scorecard or water conservation score.

Water Districts and Cities Served by Each

Several cities advised the project team that they relied on their water district to enact and enforce water conservation measures on their behalf. As a result, several water districts were identified and contacted by the project to review their conservation measures. As the water district scores were compiled, they were applied to the cities they served. In a few cases, a city was served by two water districts that had each enacted separate water conservation measures. In all cases, if any given type of water conservation measure was enacted by a city or one or by more water districts serving it, the city was given credit for that type. Only a few water districts supplied copies of water conservation measures for review by the team. The scope of the project was to compare cities, not water districts. A subsequent project may expand to study the role of water districts for enforcing water conservation, especially in unincorporated areas of either county. Thus, water district scores were only used to augment city scores where applicable.

Conclusion

Most of the water conservation measures enacted by most of the cities in Los Angeles County and Orange County are designed to restrict the use of water, especially during periods of declared water shortage. In addition, most of the cities have enacted efficient landscape irrigation measures that meet or exceed California state standards.

The types of water conservation measures enacted by the fewest cities are for residential and commercial building standards that require federal water efficient plumbing standards for toilets, faucets, showerheads and urinals.

The model cities with the best number of water conservation measures include Burbank, La Palma, La Verne, Los Angeles, and Mission Viejo. The water conservation measures enacted by these cities provide a roadmap for the remaining cities in Los Angeles County and Orange County to apply existing federal and state standards with current best practices in order to do their of the responsibility to conserve local and imported urban water resources for the future.

Summary of Results

The survey identified cities for each of the 19 types of water conservation measures to be enforced by either each city or its water district. The summary below provides the number of cities credited for enacting each type of water conservation measure.

Water Conservation Measures Scorecard Summary	
<i>Restricted Use Measures</i>	<i>Cities (122 Total)</i>
Limited days per week and time allowed to water lawns	117
Limited filling of swimming pools, ponds and fountains	112
Limited washing of outdoor surfaces and vehicles	117
Limit or prohibit recreational, ornamental, construction and other non-essential uses	106
Prohibit water left running unattended	115
Require plumbing leaks be reported and repaired	112
<i>Residential Water Efficiency Measures</i>	<i>Cities (122 Total)</i>
Toilets rated at 1.28 gallons per flush	16
Showers rated at 2.0 gallons per minute	13
Indoor faucets rated at 2.0 gallons per minute	13
Energy Star washing machines and Energy Star dishwashers rated at 5.8 gallons	13
<i>Commercial Water Efficiency Measures</i>	<i>Cities (122 Total)</i>
Toilets rated at 1.28 gallons per flush	12
Urinals rated at 0.5 gallons per flush	8
Faucets: - private use rated at 1.5 gallons per min., and - public use rated 0.5 gallons per min., self-closing	10
Energy Star dishwashers rated at 5.8 gallons	36
No single-pass commercial water cooling towers	55
Commercial best practices: - restaurants offering water only upon request, - hotel linen laundry only upon request, and - landscape vegetation with low-irrigation needs	103
<i>Efficient Landscape Irrigation</i>	<i>Cities (122 Total)</i>
Water efficient landscape irrigation systems that meet or exceed state law AB 1881	107
<i>Efficient Commercial & Industrial Processes</i>	<i>Cities (122 Total)</i>
Water efficient equipment for food processing, laundry, car wash, and water-cooling systems	94
<i>Efficient Municipal Best Practices</i>	<i>Cities (122 Total)</i>
Municipal best practices including onsite reuse and Purple Pipe installed to use recycled water	33

In order to identify which cities were doing the best job of enacting water conservation measures, a score representing the number of measures enacted by each city, and a rating based upon the scores to place cities in one of four groups: Best, Good, Poor, and Worst.

<i>City</i>	<i>County</i>	<i>SCORE</i>	<i>RATING</i>
Los Angeles	LAC	19	BEST
La Verne	LAC	18	BEST
Mission Viejo	OC	18	BEST
Burbank	LAC	15	BEST
La Palma	OC	15	BEST
Manhattan Beach	LAC	14	GOOD
Santa Monica	LAC	14	GOOD
West Covina	LAC	14	GOOD
West Hollywood	LAC	14	GOOD
Hermosa Beach	LAC	13	GOOD
Lomita	LAC	13	GOOD
Newport Beach	OC	13	GOOD
Pico Rivera	LAC	13	GOOD
San Clemente	OC	13	GOOD
San Juan Capistrano	OC	13	GOOD
Stanton	OC	13	GOOD
Azusa	LAC	12	GOOD
Brea	OC	12	GOOD
Costa Mesa	OC	12	GOOD
Covina	LAC	12	GOOD
Fountain Valley	OC	12	GOOD
Glendale	LAC	12	GOOD
La Canada Flintridge	LAC	12	GOOD
Laguna Beach	OC	12	GOOD
Rolling Hills	LAC	12	GOOD
Santa Clarita	LAC	12	GOOD
Anaheim	OC	11	GOOD
Buena Park	OC	11	GOOD
Claremont	LAC	11	GOOD
Dana Point	OC	11	GOOD
Diamond Bar	LAC	11	GOOD
La Habra	OC	11	GOOD
Laguna Niguel	OC	11	GOOD
Lakewood	LAC	11	GOOD
Lynwood	LAC	11	GOOD
Placentia	OC	11	GOOD
Pomona	LAC	11	GOOD
Rancho Santa Margarita	OC	11	GOOD
Villa Park	OC	11	GOOD
Walnut	LAC	11	GOOD

<i>City</i>	<i>County</i>	<i>SCORE</i>	<i>RATING</i>
Westminster	OC	11	GOOD
Yorba Linda	OC	11	GOOD
Aliso Viejo	OC	10	GOOD
Arcadia	LAC	10	GOOD
Bell Gardens	LAC	10	GOOD
Carson	LAC	10	GOOD
Commerce	LAC	10	GOOD
Culver City	LAC	10	GOOD
El Segundo	LAC	10	GOOD
Garden Grove	OC	10	GOOD
Hawaiian Gardens	LAC	10	GOOD
Industry	LAC	10	GOOD
Irvine	OC	10	GOOD
La Habra Heights	LAC	10	GOOD
Laguna Hills	OC	10	GOOD
Laguna Woods	OC	10	GOOD
Lake Forest	OC	10	GOOD
Long Beach	LAC	10	GOOD
Monrovia	LAC	10	GOOD
Montebello	LAC	10	GOOD
Orange	OC	10	GOOD
Pasadena	LAC	10	GOOD
San Dimas	LAC	10	GOOD
Seal Beach	OC	10	GOOD
Signal Hill	LAC	10	GOOD
South Gate	LAC	10	GOOD
Torrance	LAC	10	GOOD
Artesia	LAC	9	POOR
Bell	LAC	9	POOR
Cerritos	LAC	9	POOR
Compton	LAC	9	POOR
Cudahy	LAC	9	POOR
Cypress	OC	9	POOR
Downey	LAC	9	POOR
Duarte	LAC	9	POOR
El Monte	LAC	9	POOR
Gardena	LAC	9	POOR
Glendora	LAC	9	POOR
Hawthorne	LAC	9	POOR
Huntington Park	LAC	9	POOR
Inglewood	LAC	9	POOR
Irwindale	LAC	9	POOR
La Mirada	LAC	9	POOR
Lancaster	LAC	9	POOR

<i>City</i>	<i>County</i>	<i>SCORE</i>	<i>RATING</i>
Lawndale	LAC	9	POOR
Los Alamitos	OC	9	POOR
Maywood	LAC	9	POOR
Monterey Park	LAC	9	POOR
Norwalk	LAC	9	POOR
Paramount	LAC	9	POOR
Redondo Beach	LAC	9	POOR
Rosemead	LAC	9	POOR
San Gabriel	LAC	9	POOR
San Marino	LAC	9	POOR
Santa Fe Springs	LAC	9	POOR
Temple City	LAC	9	POOR
Tustin	OC	9	POOR
Whittier	LAC	9	POOR
Avalon	LAC	8	POOR
Bradbury	LAC	8	POOR
Fullerton	OC	8	POOR
Huntington Beach	OC	8	POOR
Malibu	LAC	8	POOR
Palmdale	LAC	8	POOR
Rolling Hills Estates	LAC	8	POOR
San Fernando	LAC	8	POOR
Alhambra	LAC	7	POOR
Beverly Hills	LAC	7	POOR
Calabasas	LAC	7	POOR
Santa Ana	OC	7	POOR
South Pasadena	LAC	7	POOR
Westlake Village	LAC	7	POOR
Agoura Hills	LAC	6	POOR
Bellflower	LAC	6	POOR
Sierra Madre	LAC	6	POOR
Hidden Hills	LAC	5	POOR
Vernon	LAC	5	POOR
Rancho Palos Verdes	LAC	1	WORST
Baldwin Park	LAC	0	WORST
La Puente	LAC	0	WORST
Palos Verdes Estates	LAC	0	WORST
South El Monte	LAC	0	WORST