

City of La Quinta

CITY COUNCIL MEETING: September 15, 2015

STAFF REPORT

AGENDA TITLE: UPDATE ON WATER REDUCTION STRATEGIES FOR 2015/16

RECOMMENDATION

Provide direction to staff regarding ongoing and proposed water reduction strategies.

EXECUTIVE SUMMARY

- The Governor has declared that California is in a serious drought and has mandated the Coachella Valley Water District (CVWD) to reduce potable water use by 36 percent.
- On June 16, 2015 City Council meeting, staff presented four possible strategies to reduce potable water consumption by 36 percent by February 2016.
- In order to bring the City in full compliance with the Governor's mandate, staff has prepared a phasing plan to retrofit all turf parkways and retention basins within the City's Lighting and Landscape (L&L) Maintenance District over the next few years, which can be incorporated in future Capital Improvement Programs (CIPs).

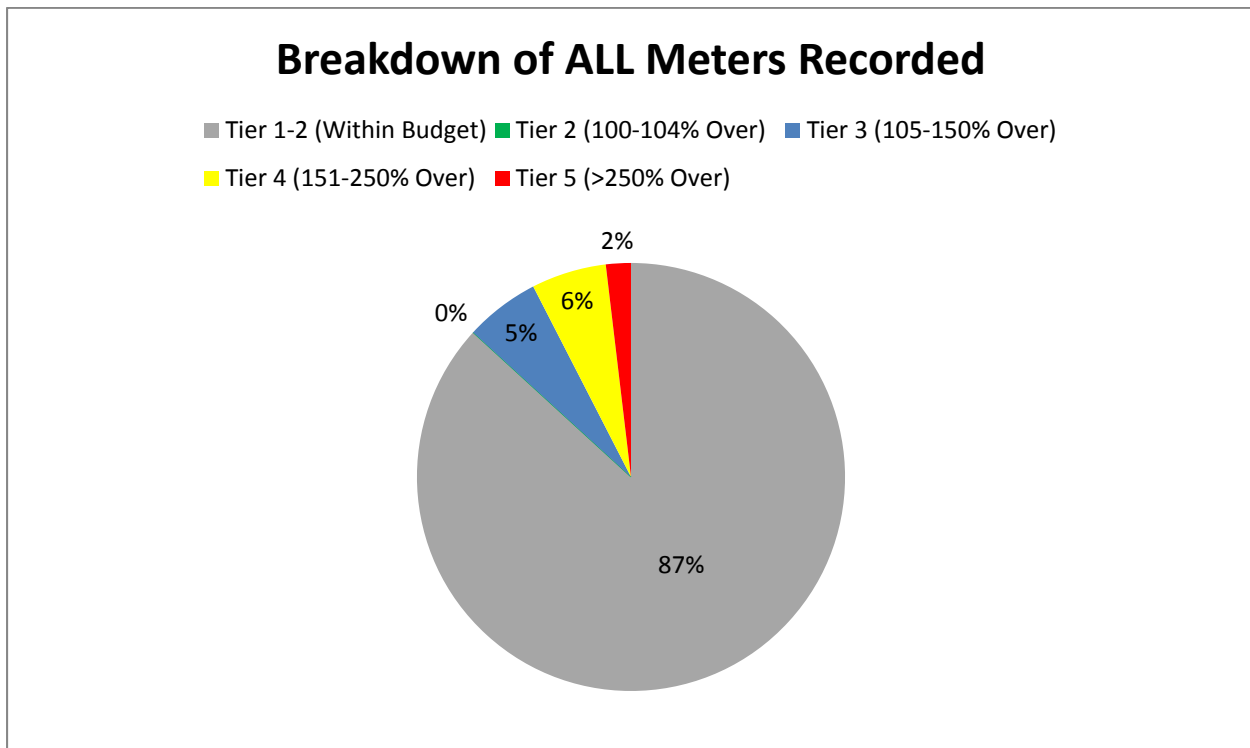
FISCAL IMPACT

Turf conversion to either the Desert Oasis or Desert Efficient landscape palettes would cost between \$7 and \$12 per square foot, respectively, for a total cost of \$4 million for Desert Oasis to \$7 million for Desert Efficient (including design, inspection, and administration). The Coachella Valley Water District (CVWD) offers a turf conversion program that would offset this cost by \$1 per square foot or \$485,000 for either plant palette. The annual water use savings would be approximately 19 million gallons or \$214,000 (at CVWD's current water rates).

BACKGROUND/ANALYSIS

On June 16, 2015, City Council reviewed four strategies to achieve the 36 percent water reduction mandate, which included reduced watering of parks and public rights-of-way landscaping; increasing non-potable water use for irrigation; converting turf to more water efficient desert scape; and revising development standards for future projects to limit potable water use for water features and landscaping. Because staff has been taking steps to reduce water consumption since early 2014, a majority of City facilities have met this goal; however, based on recent water data from CVWD, it will be difficult for the City to maintain parks and street landscape areas with the reduced water budgets.

The following pie chart utilizes August 18, 2015 data and identifies the percentage of City water meters operating within budget and those operating over budget (the data collected was for 106 meters). Currently, 87 percent or 92 meters are operating within budget.



CVWD mandates that each water meter attain a 36 percent usage reduction. In order to achieve this mandate and not incur penalties, City Council approved turf conversion projects for the Jefferson Street/Avenue 54 Fire Station, the Fritz Burns Park Parkway, the Avenida Bermudas landscape medians, the Madison Street landscape median, and the Civic Center Campus Parkways as part of the Fiscal Year 2015/16 CIP. The landscape palettes for these projects will be based upon those installed on the City's vacant parcels located on the north side of Avenue 52 between Desert Club Drive and Avenida Navarro (Attachment 1). Staff estimates these conversion projects will reduce water consumption by over 60 percent for a total savings of 6.9 million gallons per year for all projects. These projects are expected to be installed by spring 2016.

Additional water conservation projects to be considered:

1) Convert natural grass ball fields to artificial turf.

Two university studies were conducted regarding surface temperatures of artificial turf sports fields. The first study was by Brigham Young University in 2002 and a more extensive study in 2012 by Penn State University. Both studies concluded that surface temperatures continue to be a problem when outside air temperatures exceed 80 degrees. Artificial sports fields have different construction and material requirements than artificial turf used for putting greens and ornamental use. To protect from injuries, artificial turf sports fields use impact-absorbing material such as sub-surface padding or

crushed rubber infill within the turf. This impact material along with the synthetic turf contributes to the heat retention characteristics.

Staff researched other desert cities that use artificial turf fields. The City of Phoenix built the Reach 11 Sports Complex with 17 grass soccer fields and one artificial turf field. The City of Las Vegas converted two of five grass soccer fields to artificial turf at Ed Fountain Park. At both facilities, the grass fields are more popular and used year-around. The artificial turf fields are only used for tournaments during the cooler months (when air temperatures are below 80 degrees) because the surface temperatures are tolerable.

AstroTurf recently developed the “Golden Series,” a new product that does not use crushed rubber or rubber padding. Instead, this product uses a material called “Zeofill,” which is marketed as being cooler than other artificial turf products. Staff visited the recently completed soccer fields in Sherman Oaks that use the new “Golden Series.” Using a digital thermometer, the following temperature readings were observed:

- Outside air temperature 82 degrees
- Grass temperature 94 degrees average
- Concrete sidewalk 122 degrees average
- Asphalt 139 degrees average
- “New” artificial turf 154 degree average
- “Old” artificial turf 165 degree average

The new artificial turf product measured approximately 10 degrees cooler than the older artificial turf, but the readings still supported the university study findings that artificial turf surface temperatures significantly exceed grass.

Based on the cost of the Sherman Oaks facility, the cost to convert La Quinta Park would be approximately \$6 million.

2) Convert turf to desert scape in L&L district parkways and retention basins.

There is approximately 595,000 square feet (14 acres) of turf in the parkways and retention basins in the L&L District; these areas will comprise a majority of the City’s water budget once the Fiscal Year 2015/16 CIP turf conversion projects are complete. At an anticipated construction cost of \$7 to \$12 per square foot or \$4,000,000 to \$7,000,000 to convert to desert scape, staff included up to \$500,000 per year in future fiscal years in the current CIP for turf conversion.

Staff recommends that the first phase of turf conversion include the parkway on the south side of Fred Waring Drive fronting La Quinta Highlands and La Quinta Vistas as well as the parkway on the north side of Miles Avenue fronting Acacia and Quilterra since they are most visible and contribute the most to runoff onto sidewalks and streets (Attachment 2). Total cost of this phase is estimated between \$1.1 million for Desert Oasis and \$1.8 million for Desert Efficient. The second phase would include the retention basins on Miles Avenue in Acacia and Quilterra followed by the third phase, which would

convert the least visible basins located in Cactus Flower, Topaz, Del Rey, La Quinta Highlands and Rancho Ocotillo. In order to save cost, staff recommends converting only the side slopes of the retention basins to Desert Oasis since these areas are most visible and require the most water to irrigate due to the faster runoff created by the slope. The bottom of the basins should remain turf to protect the filters located there and facilitate maintenance. The estimated cost of the second and third phase is \$2.9 million.

In order to accomplish this project sooner, staff recommends hiring an on-call landscape architect to analyze the most cost effective retrofit of the existing irrigation system and then design the irrigation and landscaping conversion projects ahead of the preparation of the CIP so that “shelf ready” projects could started as soon as funding is identified. This consultant could also help identify higher impact projects to maximize water savings while also enhancing high visibility areas.

3) Convert Civic Center Campus to Colorado River Water.

Another potential project discussed on June 16, 2015 was converting the Civic Center Campus Lake to an irrigation lake by tapping into the proposed CVWD irrigation main line in Calle Tampico. The preliminary cost for this project is estimated to be between \$250,000 and \$300,000, which could be included in a future CIP. The Civic Center Campus uses approximately 13,357,000 gallons of potable water annually, which costs about \$20,000 at current water rates. Thus, the City’s potential savings in potable water costs is about \$20,000 per year.

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Report approved by: Frank J. Spevacek, City Manager

Attachments: 1. Desert Oasis and Desert Efficient landscape palettes
2. North La Quinta subdivision map

“Desert Efficient” Example Photos



Avenue 52 and Desert Club Looking West



Avenue 52 Looking West

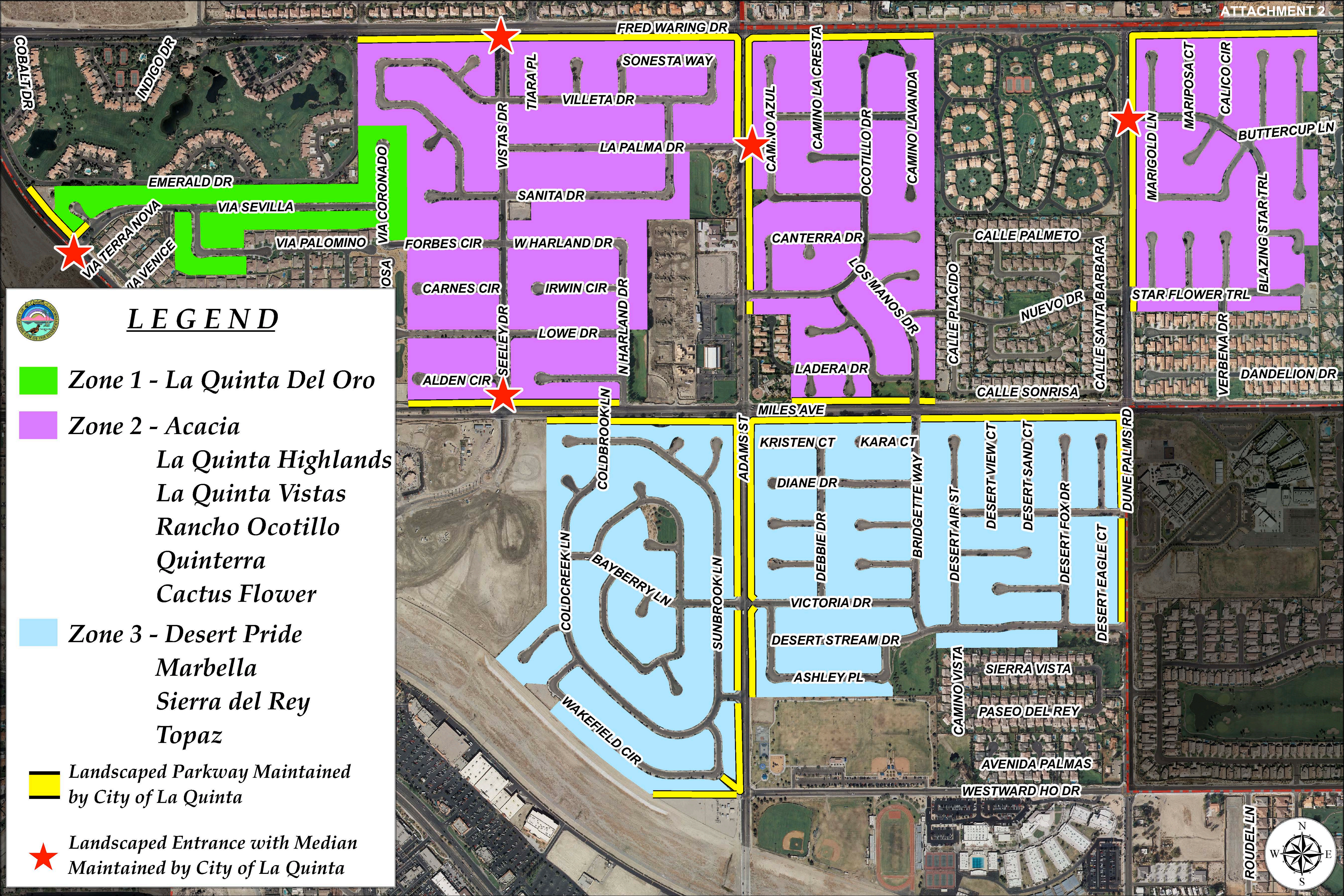
“Desert Oasis” Example Photos



Avenue 52 at Avenida Navarro Looking East



Calle Amigo Looking West



LEGEND

Zone 1 - La Quinta Del Oro

Zone 2 - Acacia
La Quinta Highlands
La Quinta Vistas
Rancho Ocotillo
Quinterra
Cactus Flower

Zone 3 - Desert Pride
Marbella
Sierra del Rey
Topaz

Landscaped Parkway Maintained by City of La Quinta

Landscaped Entrance with Median Maintained by City of La Quinta

