

**MOORPARK CITY COUNCIL  
AGENDA REPORT**

**TO:** The Honorable City Council

**FROM:** Jeremy Laurentowski, Parks and Recreation Director *SL*

**BY:** Jessica Sandifer, Management Analyst

**DATE:** April 20, 2015 (CC Meeting of 05/06/15)

**SUBJECT:** Consider Report on Drought Measures and City Water Conservation

**BACKGROUND**

Drought is not uncommon in California. There have been many periods when the state has experienced severe drought. However, according to a report released by the Department of Water Resources (DWR), California's Most Significant Droughts: Comparing Historical and Recent Conditions (February 2015), the 2012-2014 water years were the driest three consecutive years in terms of statewide precipitation, with water year 2014 being the third driest year on record. The current drought has set other notable records including the fact that the drought has occurred during a time of record warmth and minimum annual precipitation, as well as record low-water allocations from the State Water project in calendar year 2014. In addition, ground water pumping has reached historic highs, with groundwater levels dropping in many parts of the state 50 to 100 feet below their historic low levels. On January 17, 2014, Governor Jerry Brown declared a drought emergency in the State of California and urged Californians to voluntarily reduce water consumption by at least 20%. In addition, the state legislature enacted measures that provided \$600 million dollars in drought relief.

The winter of 2015 has now been documented as the driest winter in California on record. On April 1, 2015, Governor Brown signed Executive Order B-29-15 ("Order") which called for the first ever statewide mandatory water reductions. The Order directs mandatory water reductions of 25% statewide using 2013 water use as a baseline for reduction. In addition, the Order contains several other provisions that also impact City operations directly, including a requirement to remove 50 million square feet of lawn and replace it with drought tolerant landscaping, and a prohibition on the use of potable water to irrigate ornamental turf in public street medians.

## **DISCUSSION**

The State Water Resources Control Board ("SWRCB") has been tasked with implementing the Order and has drafted emergency regulations to carry out the requirements of the Order. The proposed framework sets up tiers of water reduction under which the various urban water suppliers must meet conservation standards, ranging from 8% to 36%, in order to achieve the statewide mandatory reduction target of 25%. The tiers are based upon three months of summer residential gallons-per-capita-per-day data (R-GPCD) (July-September). The tier system is designed to reflect past conservation efforts. Water suppliers that have reduced use prior to the drought will have lower R-GPCD and a lower conservation standard than water suppliers with similar factors where R-GPCD remains high.

Currently, Ventura County Waterworks District #1 (VCWWD), the City of Moorpark's water supplier, is in conservation Tier 8, which calls for a 32% reduction in potable water use. The proposed regulatory framework does allow for urban water suppliers delivering more than twenty percent (20%) of their total water production to commercial agriculture to modify the amount of water subject to the conservation standard. The supplier must provide written certification to SWRCB to be able to subtract the water supplied to commercial agriculture out of their total water production for baseline and conservation years. According to VCWWD, approximately 23% of the total water supplied is to Agricultural consumers. Since VCWWD reaches the 20% benchmark, they will request a reduction. The request for the reduction and the response will come after the framework has been adopted on May 5 or 6, 2015. Staff anticipates that the City of Moorpark will be facing a reduction goal of 25% to 32% citywide.

The SWRCB draft regulatory framework outlines mandatory end-user requirements that may have an effect on City operations. Each of the requirements is a prohibition on the use of potable water. Staff has outlined each prohibition and detailed what, if any, effect it will have on current City operations:

- Prohibited to apply potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public sidewalks, roadways, parking lots or structures: *City staff is making every effort to ensure that irrigation systems are scheduled such that runoff does not occur, there are no breaks in the system and that the irrigation heads allow for the most effective application of water to the landscape area.*
- Prohibited to use a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device that causes it to cease dispensing water immediately when not in use: *The City utilizes a local carwash vendor to wash its vehicles.*

- Prohibited to apply potable water to driveways and sidewalks: *Maintenance contractors and City staff already use other methods to clean driveways and sidewalks that do not use water.*
- Prohibited to use potable water in a fountain or other decorative feature, except where the water is part of a recirculating system: *Both fountains the City maintains utilize recirculating water systems.*
- Prohibited to apply potable water to outdoor landscapes during and within 48 hours after measureable rainfall: *City staff already turns off irrigation systems when it rains through use of maintenance staff or weather based irrigation controllers.*
- Prohibited to irrigate ornamental turf on public street medians with potable water: *The City's public street medians do not contain turf, however, as discussed further below, the medians need to be addressed as part of an overall water conservation plan, and the limited turf areas in street parkways maintained by the City will be removed.*
- Prohibited to irrigate landscape outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission: *The SWRCB will provide guidance on the implementation of this prohibition once the Regulatory Framework is adopted. Staff will be coordinating this effort with the various developers.*

### **Current Water Conservation Efforts**

In response to the worsening drought and the Governor's voluntary call for 20% water reduction in 2014, the City had initiated several long term objectives to address the issue of water conservation.

The adopted City of Moorpark Mission Statement, Priorities, Goals, and Objectives for FY 2014/2015 contain several departmental objectives that coincide with water conservation and the need to reduce consumption. Updates regarding the projects are highlighted below:

- VII. A. 6. *Install the second phase of a centralized irrigation system for City facilities, parks and landscape maintenance districts by September 30, 2014.***

In 2011, the City Council approved an Agreement with HydroPoint Data Systems, Inc. (HydroPoint) for the replacement of 44 existing irrigation controllers with WeatherTRAK

ET Pro2 irrigation controllers. WeatherTRAK controllers receive real time weather and evapotranspiration (ETo) data via HydroPoint's system software and adjust irrigation schedules on a daily basis to reduce overall irrigation water consumption. In FY 2009/2010, prior to the installation of the WeatherTRAK controllers, the City reduced water consumption by approximately 16.5%, as compared to the prior fiscal year.

Evapotranspiration (ETo) is the amount of evaporation (water loss from surfaces such as soil), and transpiration (water loss from vegetation) to the atmosphere. In simple terms, it is the amount of water that is lost to the environment, primarily due to weather conditions. As precipitation decreases, most non-native plants require supplemental irrigation to make up the deficit of the water that is lost. The advantage to weather based irrigation systems is that they are able to supplement the water loss only when it is needed, not on a continual basis, typically resulting in water savings. Staff has tracked the City's water use since FY 10/11 and has determined that overall the City has saved an average of approximately 9.4% in irrigation water use, as compared to the baseline of water use established in FY 10/11. As mentioned previously, the City saved approximately 16.5% of water in FY 09/10, resulting in considerable water savings when combined with the results of this analysis.

<b>HydroPoint Data System Water Use Summary</b>							
FY 11/12, 12/13, 13/14 Analysis							
	FY 10/11	FY 11/12		FY 12/13		FY 13/14	
	HCF Baseline	HCF	(%) saving	HCF	(%) saving	HCF	(%) saving
Total LMD/Parks	85,492	70,134	18.0%	76,130	11.0%	86,106	-0.7%
<b>Overall Savings</b>	<b>9.40%</b>						

The resulting savings is proportionate to the general weather conditions over the last several years and comparable to the significant drop in precipitation due to the drought conditions. The water savings from installing the WeatherTRAK controllers has declined from approximately 18% in FY 10/11, 11% in FY 12/13, and was relatively equal to the baseline of water use established in FY 13/14. This would be expected, as the controllers are generally programmed to supplement available precipitation when needed. Given the severe drought conditions during 2013 and 2014, the controllers have exceeded staff's expectations and have shown substantial overall savings.

Phase II of the project includes the installation of fifteen (15) ETo controllers at the following City parks: Glenwood Park, Tierra Rejada Park, Campus Park, Poindexter Park, Mountain Meadows Park, Miller Park, Campus Canyon Park, and College View Park. Currently, staff is in the process of comparing several central irrigation systems,

as well as the HydroPoint system, to ensure that the system we choose for Phase II does not compromise the City's ability to manage the parks. The parks are more difficult to manage than the LMD's, as schedules constantly need to be adjusted to accommodate turf renovation practices, youth sports organizations, rentals and large City events, such as the 3<sup>rd</sup> of July Fireworks Extravaganza. Staff anticipates that a recommendation will be made to the City Council by mid-June, 2015.

In addition, staff will be making a recommendation to replace the controllers at Arroyo Vista Community Park (AVCP) with ETo based irrigation controllers. In 2014, the Fox Canyon Groundwater Management Agency adopted Emergency Ordinance E (Ordinance), in response to Governor Brown's January, 2014 proclamation declaring a drought emergency in the State of California. The Ordinance sets Temporary Extraction Allocations (TEA) based on an operator's average annual reported extractions. The Ordinance called for a phased reduction in groundwater extractions of 20% beginning on July 1, 2014. If an operator fails to reduce their groundwater extractions by the prescribed amount, they will be subject to an extraction surcharge for the amount of water that was extracted over the TEA. The first reduction will reduce well extractions by 10%. Further reductions of 5% will occur every 6 months thereafter, arriving at the full reduction of 20% in January 1, 2016.

The City of Moorpark's TEA has been established at 66.0 acre feet of water, resulting in a ground water allocation of approximately 53 acre feet in 2016 for operations at AVCP. The average well water use during a normal year is approximately 72 acre feet/year. However, over the last several years, the City used approximately 100 acre feet of water to irrigate the sport fields at AVCP due to turf renovation practices. Staff will be proposing to the City Council a water budget of \$50,000 for FY 2015/16 to accommodate for overages in water use at AVCP. It should be noted that the cost to provide irrigation water at AVCP through a standard potable water source provided by VCWWD is estimated to be approximately \$275,000 annually at current water rates.

In order to fully eliminate future water costs at AVCP, the City would need to reduce well water use by approximately 50%. On February 5, 2014, staff brought to the City Council's attention the fact that the pump system for well water at AVCP was not only inefficient, due to the agricultural nature of the pump, but was also very difficult to manage the turf renovation practices started in 2011. The City Council approved staff's recommendation to install a variable frequency drive (VFD) system to help alleviate many of the irrigation system inefficiencies. In addition to a preferred turf management system, staff estimated that this system would save a minimum of 5% in irrigation water use. This estimate may be somewhat conservative, as the VFD system will enable staff to efficiently schedule the irrigation system based on actual turf needs, rather than the pump system parameters, and will eliminate many of the flooding problems due to overwatering. Combined with ETo based irrigation controllers, staff is confident that a 15% reduction in well water use can be achieved. Staff also believes that approximately 10% of the turf can be removed without any impacts to the overall

recreational benefits at AVCP. Staff will prepare a plan to repurpose turf areas and incorporate them into the loop trail project that is scheduled to start construction during the fall of 2015. In addition to the water saving techniques previously mentioned, approximately 25% of the turf athletic fields would need to be removed to avoid future water costs. However, staff believes that the benefits of the turf fields from a recreational perspective outweigh the newly imposed costs of well water and does not recommend removing athletic fields at this time. Staff will evaluate the well water use at AVCP in 2016, and will prepare a follow up report for the City Council at that time. It should be noted that the turf at AVCP already consists of Bermuda turf, which goes dormant during a typical year and only requires nine months of irrigation during normal seasonal temperatures.

***VII. A. 11 Develop a plan to reduce the amount of turf in City parks by ten percent (10%) by March 31, 2014.***

On February 19, 2014, staff prepared an agenda report describing the need to initiate a citywide plan to reduce the turf in all the City parks and LMD's by a minimum of 10%. However, due to the continued severe drought conditions and the Governor's recent Order to reduce water use by a minimum of 25%, staff's original 10% goal will need to be re-evaluated. The City of Moorpark has established a long standing goal of water conservation that really got underway in FY 2009/10, when the City accomplished an overall water savings of 16.5% in the City parks and LMD's. However, based on the continued water reductions due to the WeatherTRAK controllers and other staff efforts to further reduce water, increased water reductions at this point in time would be detrimental to our ornamental landscape areas and would have severe results to our urban forest. Staff believes that the only way to accomplish a water reduction goal of 25% to 32% will be through a reduction in landscape areas, primarily turf and high water use streetscapes. Staff intends to evaluate every park, LMD and miscellaneous landscape area currently maintained by the City and will prepare a turf conversion plan to identify alternative uses for these area and water saving strategies.

Staff intends to provide options for future park amenities such as walking paths, native landscape areas, and sand volley ball courts, and has already initiated several projects, to reduce the turf at several parks. In 2013 and 2014 the Helping Hands volunteers assisted staff with the conversion of approximately 30,000 s.f. of turf to native landscaping at Mammoth Highlands Park. On April 25, 2015, the Helping Hands organization assisted staff with the conversion of approximately 27,000 s.f. of turf at Glenwood Park and 6,700 s.f. of turf at Country Trail Park. Earlier this year, City staff converted approximately 21,000 s.f. of turf at Tierra Rejada Park and installed a decomposed granite walking path and exercise equipment. Staff will present an overall turf conversion plan to the City Council by June, 2015.

***VII. B. 5. Develop design plan to refurbish median landscaping and hardscape on Tierra Rejada Road, from Spring Road to Los Angeles Avenue,***

***and Campus Park Drive from Princeton Avenue to Collins Drive, including cost estimates, financing, phasing and water conservation measures.***

In 2013, staff had an opportunity to coordinate a landscaping project consisting of native plant material on Tierra Rejada Road, within the property owned by Southern California Edison (SCE), east of Walnut Creek. The result is a meadow of native grasses and shrubs specifically chosen to compliment the meadow appearance of the streetscape on Tierra Rejada Road. The California native plant types established well, with minimal water and maintenance, and due to the success of the project, the City Council approved funding for another 12,000 s.f. project along the north side of Tierra Rejada Road, from the SCE property to Walnut Creek. The project included the same plant types installed within the SCE property, which primarily consists of *Carex pansa* (Meadow Sedge), a low growing bunch grass native to central California, and *Rhamnus Californica* (Coffee Berry), a mid-height shrub native to the California foothill regions. The project also included a retrofit of the existing irrigation system with low precipitation spray nozzles and the installation of bubblers at each of the remaining healthy Sequoia trees to supplement their water needs.

At the February 19, 2014 City Council meeting, staff discussed the need to develop a comprehensive plan to renovate all of the landscaping on Tierra Rejada Road, including the slopes, parkways, and median islands, with drought tolerant and California native plant material, or other low water use options. In addition to the need to reduce water, the majority of the Tierra Rejada Road streetscape requires funding from the general fund to supplement normal maintenance costs. The Tierra Rejada Road streetscape lies within LMD Zone 2 (Steeple Hill Area Tract 2865), LMD Zone 5 (Pheasant Run Tracts 3019 & 3525) and LMD Zone 10 (Mountain Meadows Planned Community). LMD Zone 2 is fully funded and there is funding available for normal maintenance procedures. However, funding for general maintenance procedures in LMD zones 5 and 10, has historically been supplemented by the General Fund. These two zones were accepted by the City prior to the passage of Proposition 218 (*The Right to Vote on Taxes Act*) in 1996. Historically, LMD Zones 5 and 10 have exhibited negative fund balances of approximately \$41,437 and \$51,118 respectively, resulting in substantial funding from the general fund to supplement normal maintenance procedures. The cost of water for these two zones in FY 14/15 is estimated at \$87,000, which is equivalent to approximately 94% of the negative fund balance.

In order to reduce water use, and lessen the long-term impacts on the General Fund, staff feels that it will be necessary to implement significant changes to the overall streetscape design on Tierra Rejada Road. Water rates continue to rise and in addition to the recent Order initiated by the Governor, it is uncertain whether additional water restrictions will be imposed on the City in the future. Severe reductions in water use will ultimately limit our ability to maintain our urban forest and ornamental landscape areas,

particularly those landscape areas that require high to moderate supplemental irrigation water.

Per City Council's approval, staff has solicited the services of Architerra Design Group (Architerra) to prepare a landscape master plan for the complete redesign of the Tierra Rejada Road corridor. In addition, as a special consultant to the design team, Architerra has enlisted the assistance of Robert (Bob) Perry of Perry and Associates Collaborative. Bob Perry is a recognized expert in the field of drought tolerant and California native planting design, as well as sustainable landscape development. To date, staff has met several times with Architerra on site to review the existing conditions and to coordinate design efforts. Staff anticipates that a concept plan will be available for City Council review by mid-June, 2015.

In addition to the renovation plans for the Tierra Rejada Road streetscape, staff feels that it will be necessary to initiate a community outreach program to inform the public of the future plans for the Tierra Rejada Road corridor, as well as the decline of the Coast Redwoods that make up the majority of the urban forest along Tierra Rejada Road. Many of the Coast Redwoods that were planted along Tierra Rejada Road have slowly been in decline due to localized environmental stress conditions and the presence of a fungal disease commonly called Sequoia canker. The canker disease is the result of the pathogen *Botryodiplodia spp.*, a fungus that infects trees that are exposed to environmental stress or weakened by site conditions. Unfortunately, most trees infected with the canker eventually die and at this time, a cure for this disease has not been identified.

Staff has started to look into water conservation measures for the parkways and median islands on Princeton Avenue and Campus Park Drive. Although water use is proportionately low within these LMD Zones, due to the maturity of the existing landscape material, staff is confident that additional water conservation measures can be implemented to reduce overall water use.

LMD Zone 12 (Carlsberg Specific Plan), LMD Zone 15 (Toll Brothers Tract 4928), LMD Zone 16 (Cabrillo Tract 5161), LMD Zone 22 (Pardee Tract 5045) and LMD Zone 18 (Colmer Tract 5307) have also been installed with high to moderate water use plant types and staff feels that there are opportunities to reduce water consumption within these LMD's, that can further help us meet the conservation standard, primarily the conversion of turf area to planters consisting of California native plant material.

Staff has completed several minor projects to lower water use. For instance, irrigation heads at the post office parking lot were replaced with low precipitation nozzles. Staff anticipates that this work will reduce the overall water use at this location by approximately 20%. In addition, recently the turf was removed at several City owned properties on Moorpark Avenue as well as on High Street. In 2010, staff initiated a mulching program in the LMD's and City parks that is implemented by the landscape

maintenance contractors. Staff estimates that the overall reduction in water use is equal to approximately 5% of the water budget in the areas that it is installed. On April 25, 2015, staff initiated a free mulch program for residents of Moorpark. The program was a huge success, as all the mulch that was offered was taken by residents within several hours. Due to the success of the program, staff intends to offer the mulch to City residents on a quarterly basis.

### **Recommended Water Conservation Efforts**

The SWRCB requires that the conservation measures outlined in the Regulatory Framework be implemented beginning in July, 2015, with a requirement to meet the conservation standard of 25% to 32% by February, 2016. This gives all urban water suppliers seven months to meet the conservation standard. Staff is recommending the following additional actions be undertaken immediately, to assist with meeting the conservation standard.

#### **Turf Conversion Projects**

Depending on the outcome of the SWRCB Regulatory Framework, a turf conversion goal of 25% to 32% at all City parks, LMD's and miscellaneous City properties will be required. The turf conversion plans will take into consideration usage at the parks by sports leagues and the parks popularity for recreational use. This will mean that some parks will have more turf removed than others. Staff will return with a plan that shows the turf areas at all of the parks that are proposed to be converted from turf to bark mulch or other landscape material, and the approximate percentage of turf conversion at each site. Initially, the irrigation systems will be turned off and bark mulch will be used at all sites in place of the removed turf. However, future plans to replace converted areas with drought tolerant and native plants, or other recreational opportunities, will be reviewed by the Parks and Recreation Commission and the City Council, prior to the future development of these areas.

Currently, rebates are available from the Metropolitan Water District (MWD) that can be used to offset the cost of the turf conversion projects. Staff will document the areas of turf that are going to be removed so that applications for the rebates can be submitted. Once the applications are submitted, the turf conversion projects can start. The first phase of the project will be modification of the irrigation at each park to turn the water off immediately to the areas that are going to be converted, so that the City can start realizing the water savings immediately. Once the rebates are approved, the actual removal of the turf can begin. Due to the size of the project, staff is recommending hiring a landscape contractor to remove the turf and convert the area to bark mulch or other landscape material. Once a rebate reservation is received, the project will need to be completed within 120-days of the rebate reservation confirmation. However, given the size of the citywide project, staff has contacted MWD and Calleguas Municipal Water District and has been informed that a longer reservation time period will be accommodated.

Staff will return to the City Council at a later date to discuss overall costs that will be required to undertake the turf removal projects. Currently, the available turf rebates through MWD are \$2/sq.ft. of turf removed. For projects over 50,000 sq.ft. of turf removal the rebate is \$2/sq.ft., or equal to the cost of the project, whichever is less. The City will also realize water cost savings of approximately \$5,500/acre as a result of the turf conversion projects.

#### Existing Plumbing Fixture Retrofits

Staff intends to retrofit the existing plumbing fixtures (toilets, urinals, and faucets) at all City parks and facility restrooms, to high-efficiency toilets, waterless urinals, and automatic shut-off faucets. Staff will also investigate the installation of plumbing flow control valves that are designed to maintain water pressure while reducing water flow in faucets, ultimately reducing water use by up to 60%.

As with the turf removal, there are rebates available for the toilet and urinal conversions of \$100 and \$200/respectively, as long as the products that are used are on the eligible products list.

#### Community Outreach

The SWRCP conservation standard does not only need to be met by the City within its operations, but by the entire community of Moorpark. Community outreach is an important component to reaching the water conservation standard. In light of this, staff is preparing a community outreach campaign to encourage water conservation and educate the residents on why "Brown is the new Green!". This campaign will be designed to keep residents up-to-date on the City's turf conversion activities and educate them on the benefits of modifying ornamental landscape areas to native and drought tolerant plantings, and provide them with information on how they can reduce their water use. As a part of the campaign, staff will be partnering with VCWWD to promote the conservation message and schedule a series of Master Gardener workshops discussing native gardening and water conservation, to be held at locations within the City. In addition, staff will provide information regarding the Governor's Order via the City's website and other promotional material, such as the City Newsletter and Solid Waste mailing.

#### FISCAL IMPACT

The SWRCB framework mandates that the conservation standard be met by February 2016. In order to meet this timeline, staff will return to City Council by June 17, 2015, with a comprehensive funding plan to complete the turf conversion projects, and water fixture retrofits at all City parks and facilities.

#### STAFF RECOMMENDATION

Receive and file report.