



DATE: May 19, 2015

CATEGORY: Public Hearing

DEPT.: Public Works

TITLE: Ordinance Amending Chapter 35, Article II, Division 3, of the Mountain View City Code Relating to Water Conservation and Midyear CIP for Drought Response

RECOMMENDATION

1. Introduce an Ordinance Amending Chapter 35, Article II, Division 3, of the Mountain View City Code Relating to Water Conservation, to be read in title only, further reading waived, and set the second reading for May 26, 2015 (Attachment 1 to the Council report).
2. Approve a midyear capital improvement project, Drought Response, and transfer and appropriate \$292,000 from the Water Fund to the new project. (Five votes required)

BACKGROUND

California's Water Year 2014 (October 1, 2013 through September 30, 2014) was one of the driest in decades and followed two consecutive dry years throughout the State. Although rainfall in Mountain View was almost normal this winter, precipitation elsewhere in California, and most notably the Sierra Nevada, left State and regional water supplies far below average. As of April 1, 2015, the Sierra Nevada snowpack was at a record low, just 5 percent of average. California's snowpack provides essential water throughout the State as it melts in the spring and early summer.

Water System Supply and Demand

The Public Works Department operates and maintains the City of Mountain View's potable water supply system. The City purchases approximately 85 percent of its potable water from the San Francisco Public Utilities Commission (SFPUC) and 11 percent from the Santa Clara Valley Water District (SCVWD); the remaining 4 percent is produced by the City's groundwater wells.

The City's potable water supply system serves approximately 96 percent of the homes and businesses in Mountain View; the California Water Service (Cal Water) serves the remainder, which are located throughout the southern portion of the City. The City provides 9.4 million gallons per day to its residential customers (58 percent of water consumption); large landscape customers (23 percent); and commercial, industrial, and institutional customers (19 percent). "Large landscapes" include all sites equipped with a dedicated irrigation water meter, such as parks, office buildings, home owner associations (HOAs), and apartment buildings. Staff estimates that in addition to the irrigation water used by large landscape customers, another 10 percent of total consumption is used for irrigation through "mixed-use" meters that serve a combination of indoor and outdoor uses, such as at single-family homes and small commercial properties.

Water use at City-owned sites (included in the landscape and institutional groups above) accounts for approximately 6 percent of total consumption.

Water Conservation Requests and Mandates

To reduce Statewide water consumption, on May 5, the State Water Resources Control Board (Water Board) approved water use restrictions and mandatory water use reductions for all urban water suppliers in California. Reductions imposed by the Water Board range from 8 percent to 36 percent (compared to 2013 water use), and were assigned based on each supplier's summer residential per-capita water use. Mountain View's mandatory reduction is 16 percent. Compliance with the mandatory reductions will be evaluated monthly on a cumulative basis beginning this June through the end of February 2016. New prohibitions include: (1) irrigation with potable water of ornamental turf on public street medians; and (2) irrigation with potable water outside of newly constructed homes and buildings. Staff is working with the Community Services and Community Development Departments to implement the new restrictions, including turf replacement on the Castro Street and Middlefield Road medians, and has included an additional \$200,000 in Project 16-19, Biennial Median Renovations and Roadway Landscape Renovations, in the Fiscal Year 2015-16 CIP. Penalties to the City for not meeting the Water Board's mandatory reductions and end-user restrictions could reach \$10,000 per day.

Prior to the Water Board's action, on March 24, 2015 the SCVWD called for 30 percent conservation (increased from an earlier 20 percent request) and a two-day-per-week limit on landscape irrigation. The SFPUC continues to request 10 percent conservation. Compliance for the SFPUC and SCVWD requests are assessed annually. Inability to

meet the conservation requests from the SCVWD or SFPUC do not carry financial penalties.

In response to earlier conservation requests and mandates, the City enacted the following:

- On April 1, 2014, the Council approved revisions to the City's Water Shortage Contingency Plan, delineating water use restrictions to be implemented for increasingly severe water supply shortages. The Council also adopted a resolution declaring a Stage 1 Water Shortage Emergency Condition.
- On September 16, 2014, the City Council declared a Stage 2 Water Shortage Emergency. Several new water use restrictions went into effect as part of Stage 2, including irrigating no more than three days per week, no more than 15 minutes per day (per irrigation station), and outside the hours of 9:00 a.m. to 5:00 p.m. A summary of current water use restrictions and conservation programs can be found in Attachment 2.

Existing Conservation Programs

The City offers many water conservation programs, both independently and in coordination with the SCVWD and the Bay Area Water Supply and Conservation Agency (BAWSCA). Existing programs include rebates for water-efficient appliances, irrigation equipment and landscaping, free home water audits, free water budget reports for large landscapes, free irrigation audits, free landscape education classes, and free water-saving devices (such as showerheads and faucet aerators). Since 2007, these programs have facilitated distribution of over 7,400 free devices; replacement of 4,300 toilets and urinals; replacement of 3,200 clothes washers; 1,900 audits; conversions or upgrades of 160 landscapes; and installation of 430 water submeters.

As part of the City Manager's Innovation Labs, a pilot program initiated last July funded installation of smart water meter data collectors and offered online home water reports to 826 single-family homes in Mountain View. Over 270 customers chose to participate. Feedback from the pilot program has been overwhelmingly positive. Results from a recent customer survey showed that 72 percent of respondents found the home water reports helpful. Approximately half of the respondents had also logged in online to monitor their real-time water use, and 72 percent found the data helpful. The pilot program is scheduled to end next month.

Conservation Savings in 2014

As a result of the water use restrictions and ongoing conservation efforts noted above, systemwide water use in 2014 was 13 percent less than in 2013. Savings were achieved across all customer bases, with the largest reductions by customers with the highest percentage of landscape water use—large landscape customers (41 percent savings) and single-family residential customers (34 percent savings). Multi-family residential customers and commercial, industrial, and institutional customers reduced water use by 21 percent and 5 percent, respectively.

Water savings for City-owned sites was 20 percent, including 33 percent for the golf course and an average of 15 percent across all other City sites. Most of the City's water savings were achieved by increasing recycled water use at the golf course and reducing irrigation at all other City landscapes by 16 percent. The recycled/potable water blend used on the golf course during 2014 was 50 percent/50 percent, and was increased recently to 60 percent/40 percent.

ANALYSIS

The 16 percent mandatory reduction imposed by the Water Board will require the City to reduce water use by 472 million gallons between June 1, 2015 and February 28, 2016, compared to the same period in 2013. It is important to note that the mandatory reductions were imposed on a "systemwide" basis, and not at the customer level. The Water Board allows individual suppliers to decide how to meet its mandatory reduction.

To reduce total consumption by at least 16 percent, staff recommends the City establish a two-day-per-week irrigation schedule, and that Council amend the City Code to include an "alternative compliance" water use reduction method for large landscape users with water budgets. Under the existing Stage 2 water use restrictions (adopted on September 16, 2014), the City's Public Works Director can establish a schedule limiting irrigation to one to three days per week; a Code amendment is needed to establish an alternative compliance method. The following sections provide an overview of staff's proposal, including why an alternative compliance method is recommended for large landscapes, and a description of the City's existing water budget program. No other mandatory restrictions beyond those already in place are recommended at this time, although all residents and businesses are encouraged to increase other conservation activities.

Proposed Irrigation Schedule

Staff's proposed two-days-per-week irrigation will permit irrigation on the following days:

- Monday and Thursday – odd addresses and sites with no address.
- Tuesday and Friday – even addresses.
- Irrigation is prohibited on Wednesday, Saturday, and Sunday.

The proposed schedule was developed in coordination with other agencies in Santa Clara County and the BAWSCA service area. Key benefits of a uniform schedule adopted by all agencies include: (1) reduced confusion by the public; and (2) ability to leverage regional marketing campaigns. To date, three retail water agencies in the County have adopted the proposed irrigation schedule and all others plan to propose the schedule to their decision-making bodies in the very near future. Several BAWSCA member agencies outside of Santa Clara County are also implementing the same irrigation schedule.

Alternative Compliance Method

To complement the proposed irrigation schedule, staff recommends Council amend the City Code to provide an alternative method for large landscape customers to meet the irrigation schedule (days per week) and duration (15 minutes per day) restrictions. The proposed "alternative compliance" method uses site-specific water budgets designed to meet the watering needs of a landscape, and reduces it by a specified percent based on the severity of the water shortage (as determined by the Public Works Director). Staff proposes setting the current compliance threshold at 20 percent below each site's landscape water budget, based on the need to reduce systemwide water use by 16 percent. Customers who reduce water use at least 20 percent below budget would not be subject to the irrigation schedule or duration restrictions. Based on the results from the City's existing water budget program, described in more detail below, staff believes that this alternative will provide more flexibility for large landscape customers and save at least as much water as the irrigation schedule.

Examples of properties that could use the alternative method include large commercial properties and the City, with its parks and sports fields. Large commercial properties can use the flexibility of the alternative method to reallocate water to different types of landscaping on the property to maximize savings and minimize stress on plants.

The alternative method will also help the Community Services Department maintain safe and playable conditions on the City's sports fields during the summer. Watering large parks and fields only two days per week and 15 minutes per day is problematic because it is not possible to run all irrigation stations at most parks in two days. The turf on athletic fields would also not likely survive under the irrigation schedule and duration restrictions. The alternative method will allow Community Services staff the flexibility to reallocate water on-site, reducing or eliminating watering in some areas, and still maintain safe and playable fields.

Concern for sport fields and golf courses is not unique to Mountain View and has surfaced in discussions with staff from neighboring agencies. As an alternative compliance method to standard irrigation restrictions, Santa Cruz, Redwood City, and Foster City use water budgets to reduce water use at large landscape sites. Menlo Park and Palo Alto are considering an alternative compliance option based on a percent reduction from 2013 water use.

Staff recommends that an alternative compliance method for the City's large landscape customers be based on site-specific water budgets because: (a) the water budget program is already being implemented as an educational tool; and (b) the program focuses on reducing waste, which is consistent with the City's current approach of prohibiting nonessential water uses. Details about the existing water budget program are provided below.

Landscape Water Budget Program

A landscape water budget is the volume of water needed to keep a particular landscape healthy over a specified period of time. Key factors in calculating a landscape water budget are the type of plants (grass, shrub, etc.), area of planting, type of irrigation system (drip, spray, etc.), and local rainfall and temperature. Every billing period a report is sent to the City's largest landscape customers that compares actual water use to the landscape's water budget for that bill period and also for the past three years. The reports highlight the volume of water used in excess of the site's water budget, referred to as "overwatering." Reports for many sites are sent to multiple parties, all of whom have an interest in irrigation at the site, such as the irrigation manager or HOA board members. The main purpose of the program is to identify and reduce "overwatering" at large landscapes in Mountain View. The program is offered to large landscape customers (and not other customers) because they have a direct measure of irrigation use (through a dedicated water meter) and, as a group, they offer the greatest opportunity for water savings.

Landscape water budget reports have been provided to the City's largest landscape customers since 2013, with some sites receiving reports as early as 2010. There are currently 158 sites in the program, which were selected because they have dedicated irrigation meters and the annual water use exceeds 1,000 hundred cubic feet (approximately 2,000 gallons per day). Staff is currently working to add 117 new sites to the program based on a lower annual water use threshold of 500 hundred cubic feet (approximately 1,000 gallons per day).

Staff monitors use at individual sites, as well as summary statistics for all sites and groups of sites such as parks, HOAs, and offices. Over the past 12 months, total overwatering by all program participants was 25.1 percent. The most overwatering (32.6 percent over budget) came from "office" sites, and the least overwatering (4.3 percent) came from "school" sites. A collective 103 million gallons of excess water was applied to large landscapes in Mountain View over the past 12 months. This is a considerable improvement since the program started in August 2013, when 12-month overwatering for the same sites totaled 160 million gallons (33.3 percent of program water use), and demonstrates that significant savings are still available. With the alternative compliance method, users will have to reduce water 20 percent below their budget, or "ideal" water use. For many users, this will have a greater than 20 percent reduction from current use.

Benefits of the Alternative Compliance Method

Key benefits of the proposed alternative compliance method are:

1. Allows large landscape managers more flexibility in their irrigation schedules and landscape priorities, while achieving at least as much systemwide water savings.
2. Targets inefficient landscape water uses to reduce or eliminate unnecessary water use by large landscape customers.
3. Allows the City to keep sports fields in safe and playable conditions by focusing irrigation on play areas and reducing or eliminating irrigation for nonplay areas.
4. Builds on an existing conservation program.
5. Expected to reduce complaints and applications for exceptions.

By offering a water budget-based alternative to the irrigation restrictions, staff hopes to motivate all large landscape customers to improve irrigation management and reduce water waste. It also provides greater certainty that the 16 percent mandate will be achieved as all major users will have to reduce water usage.

Expected Water Savings

In order to meet the Water Board's mandated reduction, the City needs to reduce total water use by 472 million gallons between June 1, 2015 and February 28, 2016 versus 2013 consumption. Assuming the 2014 savings of 292 million gallons (achieved during the Water Board's nine-month compliance period) are repeated this year, an additional 180 million gallons of savings will be needed. Staff estimates the additional savings can be generated through a combination of the two-day-per-week irrigation schedule and the large landscape water budgets. Reducing irrigation to two days per week is estimated to save up to 171 million gallons from sites not participating in the water budget program, assuming that customers watered an average of four days per week during 2013. Anticipated savings from eliminating overwatering at water budget sites is estimated to save up to 99 million gallons. Reducing large landscape water budgets by 20 percent is estimated to save up to 53 million gallons. Increasing the recycled water/potable water irrigation blend for the golf course is estimated to save 18 million gallons.

The anticipated range in reductions from the existing and proposed conservation programs (million gallons) are summarized below:

2014 Savings (from existing savings)	292
Two-Day Irrigation	138 to 171
Eliminating Overwatering at Sites with Water Budgets	79 to 99
Reducing Water Budgets by 20%	43 to 53
Increasing Use of Recycled Water at Golf Course	<u>18</u>
Total Estimated Water Savings	<u>570 to 633</u>

The anticipated range in reductions from just a two-day schedule (with no alternative compliance option) is between 471 and 589 million gallons.

Enforcement

Eligibility for the alternative compliance method will be conditioned on the ability to meet the reduced water budget. Customers that exceed their reduced water budget for two consecutive months would no longer be eligible for the alternative compliance

method, and would instead be subject to the standard restrictions related to irrigation schedule (days per week) and duration (15 minutes). After removal from the program, a customer may reelect to participate only if the customer has reduced their irrigation water use below the reduced water budget for two consecutive months.

Pursuant to the existing City Code, penalties for violating any of the City's water use restrictions (including the irrigation schedule and duration limits) may include fines of up to \$500. In particularly egregious cases, the City may install a flow-restriction device or suspend water service.

Midyear Capital Improvement Program

In light of the new water conservation requests and mandates, staff recommends the City increase conservation outreach efforts and requests Council approve a midyear capital improvements project (CIP) to fund additional programs. In order for the City to attain maximum water savings from the irrigation restrictions proposed herein, public education about the drought is needed and customers need to be notified of the new restrictions. Customer understanding of how they use water is also important. Most of the proposed CIP projects focus on outreach, education, and providing customers detailed information about their water use. All of these programs reflect industry Best Practices. Expanding programs such as home water reports and smart metering will position the City to more effectively address the current and future droughts.

1. *Home Water Reports:* Expand delivery of home water reports to 85 percent of the City's single-family residential customers (15 percent of homes will not receive the reports as part of the control group to evaluate water savings from the program).
2. *Smart Metering:* Test new smart water meter technologies to solve data gap issues experienced during the current pilot program and finalize a recommendation for long-term implementation.
3. *Conservation Database:* Develop a cloud-based conservation database to more efficiently track conservation programs and decrease staff time spent entering and analyzing data.
4. *Temporary Staff:* Hire a summer hourly staff member to assist with customer service.
5. *School Assemblies:* Offer conservation information through school assemblies.

6. *Outreach Materials:* Develop mailers to notify customers about new restrictions and signs to post at City conservation areas where irrigation is reduced or eliminated.

The estimated costs of the programs to be funded through the proposed midyear CIP are listed below.

Home Water Reports	\$ 83,000
Smart Meter Pilot Projects	100,000
Conservation Database	23,000
Temporary Staff	21,000
School Assemblies	13,000
Mailer, Flyers, and Signs	<u>9,000</u>
Subtotal	249,000
Contingency (10%)	25,000
Administration (6.5%)	<u>18,000</u>
Total Program Cost	<u>\$292,000</u>

As noted earlier, staff is proposing additional funding in a Fiscal Year 2015-16 CIP for the conversion of median turfs and/or other drought-related projects.

Additional Ordinance Revisions

In addition to the alternative compliance method for large landscape customers with water budgets, the proposed ordinance also includes cleanup language related to the following items:

1. Makes all restrictions apply equally throughout Mountain View, not just to the City's water customers (e.g., for Cal Water customers too). As currently written, all but two of the water use restrictions apply Citywide.
2. Specifies that the time of day irrigation restrictions (before 9:00 a.m. and after 5:00 p.m.) do not apply to drip irrigation systems.

3. Specifies that the duration limit (15 minutes per day per irrigation station) does not apply to high-efficiency sprinkler nozzles, in addition to drip irrigation, which is already included in the City Code.

Staff recommends that the City Code be updated to include these changes.

FISCAL IMPACT

There is no fiscal impact from the Code amendments proposed herein.

The estimated cost of the proposed midyear CIP is \$292,000, to be transferred and appropriated from the Water Fund. The Water Fund would be reimbursed approximately \$58,000 through cost-sharing agreements with BAWSCA and the SCVWD for the home water use report program.

CONCLUSION

In response to the ongoing severe drought, Mountain View has been required to reduce demand on the City's water system. To achieve the required reductions, staff proposes the City establish a two-day-per-week irrigation schedule and Council amend the City Code to include an optional alternative method for large landscape accounts to comply with the City's irrigation restrictions pertaining to schedule (days per week) and duration (15 minutes per day).

Staff proposes increasing funding for other conservation programs through a midyear CIP that includes new programs to educate customers about the drought, test new smart metering technologies, efficiently track water conservation activities, educate elementary and middle school children, and increase staffing for conservation outreach. The estimated cost of the proposed CIP is \$292,000.

ALTERNATIVES

1. Do not introduce the proposed amendments to Chapter 35, Article II, Division 3, of the City Code.
2. Introduce other amendments to Chapter 35, Article II, Division 3, of the City Code.
3. Do not create the proposed midyear CIP for drought response.

4. Create a midyear CIP for drought response with different programs.
5. Provide other direction to staff.

PUBLIC NOTICING

Agenda posting and a courtesy notice was published in the *San Jose Post Record* for the ordinance amendment.

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- Attachments:
1. Ordinance
 2. Current Water Use Restrictions and Conservation Programs