

Agenda Report

May 18, 2015

TO: City Council

THROUGH: Municipal Services Committee (May 12, 2015)

FROM: City Manager

SUBJECT: WORKSHOP ON IMPLEMENTATION OF LEVEL 2 WATER SUPPLY SHORTAGE PLAN AND CONSIDERATION OF ADDITIONAL WATER CONSERVATION MEASURES AS PROVIDED IN CHAPTER 13.10 OF THE PASADENA MUNICIPAL CODE ("PMC 13.10").

RECOMMENDATION:

This report is for information only.

EXECUTIVE SUMMARY:

California is in the midst of an historic drought. The state's reservoirs are a little more than half full, and the California snowpack that normally supplies water through the spring and summer is virtually non-existent at about 5% of normal.

As the drought conditions have worsened in California, the Governor has issued several executive orders calling for extraordinary water conservation measures. As a result, the State Water Resources Control Board ("State Water Board") has established a requirement for Pasadena Water and Power ("PWP") to reduce overall customer water use by 28% from calendar year 2013 levels, placed a statewide ban on irrigating ornamental turf on public street medians with potable water, and has imposed numerous other water waste prohibitions (see Attachment 1). California water agencies face the prospect of fines up to \$10,000 per day for non-compliance.

The Metropolitan Water District ("MWD"), which supplies about 60% of PWP's water needs, has implemented their Water Supply Allocation Plan ("WSAP") that requires member agencies to reduce their water purchases from MWD by 15% or face penalty charges for exceeding their allocation.

In July 2014, the City Council adopted the Level 1 Water Supply Shortage Plan (PMC 13.10.035), which restricts outdoor watering to three days per week from April to October and one day per week from November to March. Since then, PWP customers have made great strides towards conserving water, resulting in fiscal year to date

(July 2014 through April 2015) water use at levels 8.6% less the same months from calendar year 2013.

Pasadena must intensify its water conservation efforts to meet the 28% reduction goal established by the State Water Board. A public hearing has been scheduled on June 1, 2015 for the City Council to consider adopting the Level 2 Water Supply Shortage plan, which further restricts outdoor watering to two days per week from April to October and maintains the one day per week limit from November to March. The City Council will consider other water conservation measures as well.

The measures needed to achieve the state's target for Pasadena may have significant impacts on the community. Therefore, the following schedule for public input and City Council action regarding water waste prohibitions and the Level 2 Water Shortage Plan has been established:

- May 18: Public Workshop at City Council
- May 19: Presentation at Environmental Advisory Commission Meeting
- May 26: Discussion at Municipal Services Committee
- June 1: Public Hearing and Council Consideration of Recommendations

The final recommendations presented at the June 1 public hearing may be expanded or amended based on input received in the May meetings and further staff analysis of the updated emergency regulations recently adopted by the State Water Board.

BACKGROUND:

PWP's Sources of Water

PWP acquires water from two major sources: imported and local water. Local groundwater supplies typically meet 40% of its customer demand, and the remainder is provided by MWD. MWD supplies 26 member cities and water agencies, serving nearly 19 million people in six counties. MWD gets its water from two main water sources, the State Water Project and the Colorado River. Both of these sources are severely impacted by drought conditions.

In California, mountain snowpack acts as a natural reservoir that in a normal year can hold as much as a third of the state's water supply, slowly releasing it throughout the spring as seasonal water demand rises. This year, winter storms have delivered a fair amount of precipitation, but temperatures have been warm. As a result, the state's reservoirs are at approximately 53% of average and California snowpack is currently only 5% of average.

With less available water from Northern California through the State Water Project, MWD has had to lean harder on its other primary water source (the Colorado River) and long-term storage supplies. For the last three years, PWP's imported water has consisted mainly of water from the Colorado River. However, it is important to note that the Colorado River is heading into its 15th year of drought. With very little rainfall and

record breaking heat, the snowpack in the Colorado River watershed is limited and only 42% of storage remains in the Colorado River's two main reservoirs, Lake Mead and Lake Powell.

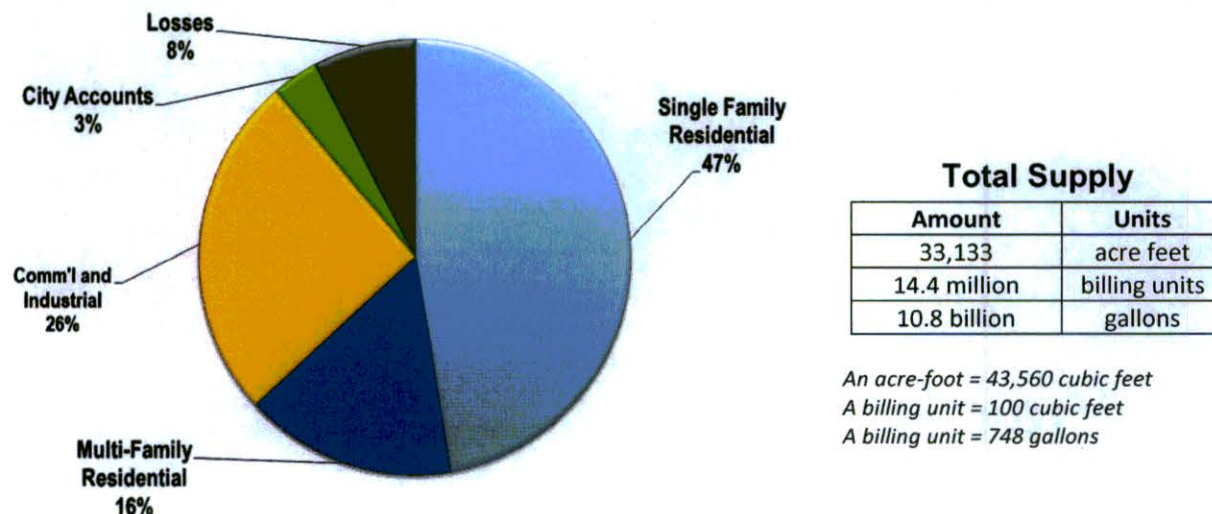
MWD has also been using record amounts of its stored water reserves to support the member agencies water needs. In the last two years, MWD has used more than half of the water in long-term storage. MWD's reserves currently stand at less than 45%.

Water Use in Pasadena

The 28% water use reduction goal applies to PWP's "net water production" (water supply) that includes all of the water pumped by or delivered to PWP, less any wholesale water delivered from PWP's supplies to adjacent water agencies. Figure 1 shows how PWP's calendar year 2013 water supply used. Most of PWP's net water production is used by its retail customers in Pasadena and adjacent areas served by PWP. PWP's four major retail customer classifications include:

1. **Single-Family Residential** – representing detached and attached individually metered residences
2. **Multifamily Residential** – representing apartments and condominiums that are master metered for the entire building or complex
3. **Commercial/Industrial** – representing businesses, government, academic and research institutions which could be metered individually or master metered
4. **City Accounts** – includes water used by city facilities, irrigation of parks and medians, and power plant operations.

Figure 1: Calendar Year 2013 Water Supply and Use in PWP's Service Territory



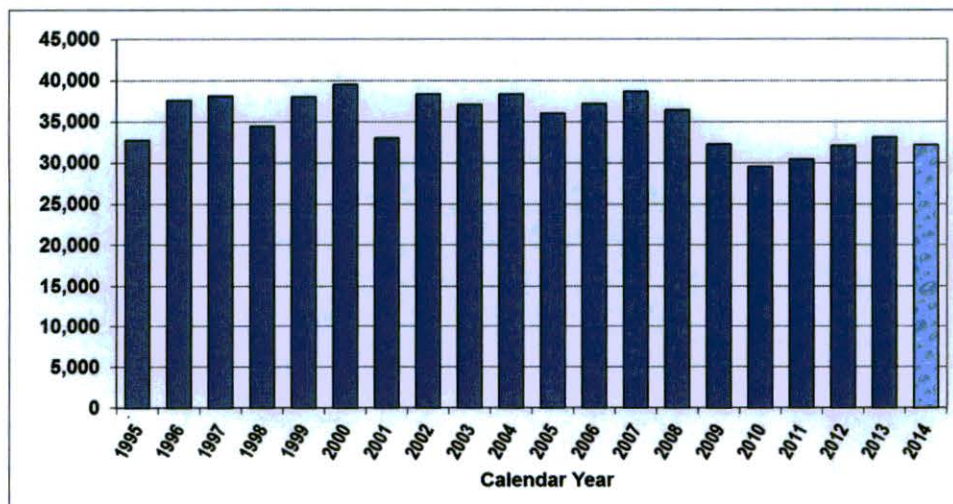
The difference between PWP's net water production and metered uses is called "Losses". Losses include distribution system leaks, evaporation, inaccurate metering, and unmetered water uses such as fire protection and water system flushing. PWP is assessing means to reduce losses as part of meeting the water conservation goal.

Within PWP's service area, an average single-family household uses about 475 gallons per day, while an average multifamily unit uses about 220 gallons per day. This large difference is mainly due to the fact that most single-family residences have yards to irrigate, whereas in multifamily housing the landscaped area is usually a relatively small common area. The combined Single Family and Multi-family Residential water consumption (including proportionate losses) in calendar year 2013 was approximately 123 gallons per person day ("GPCD") of PWP's total 196 GPCD water demand. The average use in the Commercial/Industrial customer class is about 80 gallons per day for every employee working in Pasadena.

Irrigation and water used for cooling purposes contributes a major demand for PWP's water supply. Pasadena can be quite warm in the summer, with average maximum temperatures reaching over 90 degrees. It is estimated that water used for landscaping represents nearly 60 percent of annual single-family use and up to 45 percent of multifamily residential use. For the commercial sector, approximately 45 percent of water use is for cooling and irrigation or other outdoor uses.

Total water demands for the City vary from year to year due to weather, local economy, and droughts (see Figure 2). Aside from these variations, water demand has remained essentially flat since 1995, and is about the same as it was in 1960. Any increased water demand resulting from increased population and commercial development has effectively been offset by increased efficiency in water use.

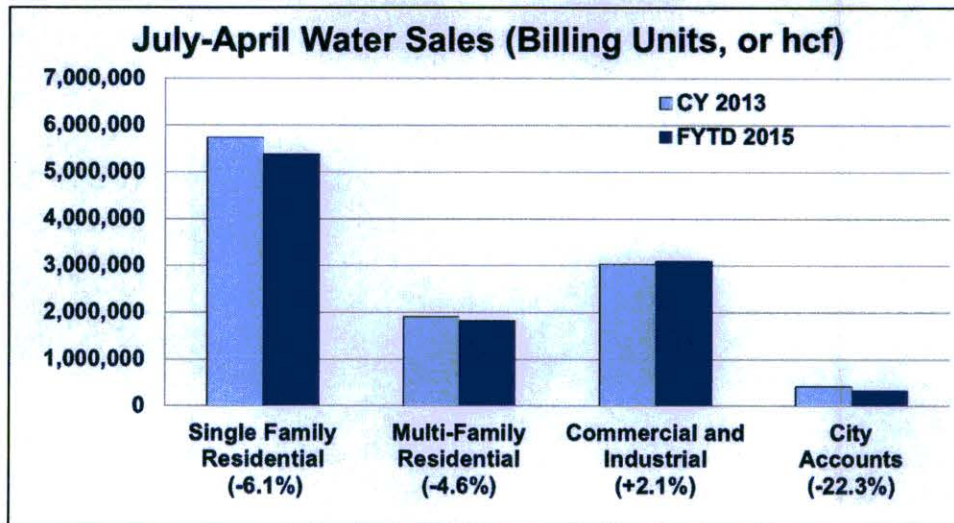
Figure 2: PWP Annual Water Demand (Net Production) in Acre-Feet



Water Use Reductions

Figure 2 shows that PWP's water began increasing in 2011. This was largely due to hotter, dryer weather (following several wet years), and an improving economy. While these factors still exist, the increasing water use trend reversed after the Level 1 Water Shortage Plan was adopted in July 2014. Figure 3 shows how each of PWP's retail customer classes' water use in the last ten months compares to the same months in calendar year 2013.

Figure 3: PWP FYTD Water Use by Customer Class



Long-Term Water Supply Planning

While the current focus of activities is on immediate actions to mitigate the drought, PWP's long-term planning remains an important ongoing effort. The 2011 Water Integrated Resource Plan ("WIRP") and 2010 Urban Water Management Plan ("UWMP") provide PWP's long-term strategy to ensure that sufficient water is available to serve all current and future water needs of the City.

Water Integrated Resource Plan

The WIRP outlines an achievable, long term strategy to meet current and future water needs. The WIRP identifies key projects to help PWP plan for future resources, maintain affordability, ensure safe, high-quality drinking water, protect water sources, and the environment, maximize efficiency of water use, and ensure public safety. The WIRP document was adopted by City Council on January 31, 2011, and was used as the framework to complete the 2010 Urban Water Management Plan, which was adopted by City Council on June 6, 2011.

The WIRP included the following key strategies and projects:

- Aggressive water conservation;
- Pumping storm water behind Devil's Gate Dam to Eaton Canyon spreading grounds;
- Recycled water for irrigation;
- Blending recycled water and storm water for groundwater recharge in Eaton Canyon spreading grounds;
- Groundwater storage of imported water; and,
- On-site storm water capture for direct landscaping use and groundwater recharge.

Urban Water Management Plan

The City's 2010 Urban Water Management Plan, adopted on June 6, 2011, supports PWP's long-term resource planning and ensures adequate water supplies are available to meet existing and future water demands of the City. Through this plan, the reliability of Pasadena's water sources are assessed over a 20-year planning horizon considering normal, dry, and multiple dry years. A UWMP must be prepared every 5 years and PWP is currently working on its 2015 update.

Local Water Supply Projects

As the drought continues, PWP needs community support for two key projects from the 2010 UWMP and 2011 WIRP that would ultimately secure over 3,500 acre feet per year ("AFY") or over 10% of the city's total water demand.

1. **Recycled Water Project:** PWP is working on the Recycled Water Project which is designed to take water from the Los Angeles-Glendale Reclamation Plant ("LAG Plant"). The project would entail connecting to the last leg of the non-potable pipeline in the City of Glendale and delivering the recycled water to PWP customers. Currently the development of the environmental review documents and the design for Phase 1 is underway and the primary customers include the Art Center College of Design, Brookside Golf Course, Rose Bowl Stadium, and Brookside Park. The project would also include the flexibility to blend water from the Richardson and Devil's Gate Tunnels to supplement the recycled water from the LAG Plant. The Phase 1 customers may account for as much as 700 AFY of recycled water (over 2% of water supply needs). The total build-out of this project, which has six phases, may account for as much as 3,000 AFY (nearly 10% of water supply needs).
2. **Arroyo Seco Canyon Project:** PWP also has a storm water capture project for groundwater recharge called the Arroyo Seco Canyon Project. This integrated resource project includes environmental improvement, streambed restoration, recreational enhancement, and local resource benefit. The project addresses three areas in the Arroyo Seco and is currently in the environmental review and approval process. The local resource benefit is increasing the City's local water rights from the Arroyo Seco stream and recharging the local aquifer. Once completed, the project will contribute approximately 600 AFY to the City's pumping credits (about 2% of water supply) and 400 AFY to the general benefit of the aquifer.

Water Use and New Development

Various Pasadena community members have expressed concerns about the impacts of new development and population growth on PWP's water supply. The City of Pasadena ensures that new development will consume water extremely efficiently by mandating the installation of water efficient fixtures as described in the California Green Building Code. New development in Pasadena, consistent with the City's General Plan, has positive effects on the City both socially and economically. In drought years, the City of Pasadena is allocated more water supply as our population increases. Population

growth also has the effect of lowering PWP's per-capita water consumption, an important metric used by the state for measuring water conservation progress.

When developing long-term water supply plans, PWP factors in community growth. PWP's UWMP ensures Pasadena has sufficient water supply to meet the needs of our growing City in normal, dry, and three consecutive dry years. In periods of extreme drought, the City relies on its Water Supply Shortage Plans (PMC 13.10) to ensure there is adequate water supply to meet the needs of our growing community. The Water Supply Shortage Plan has four levels of increasingly restrictive measures to address water shortages. Under a Level 4 Water Supply Shortage no new potable water service is permitted.

Despite significant development and population growth, PWP's total water use is about the same as it was in 1960. Adding higher density housing and additional commercial space has not resulted in increased water demand.

Additional discussion on this subject may be found in Attachment 2.

Budget Impacts

Reducing water consumption in Pasadena will result in lower Water Fund revenues and expenses, reduced Water Fund net income, and lowers corresponding General Fund revenues. Reduced water sales will also proportionately reduce funding to support key water infrastructure projects unless water rates are adjusted to account for the reduced sales volume over which fixed costs are spread.

While the degree of water conservation and the associated financial impacts cannot be predicted with certainty, Table I summarizes the approximate range of impacts, as compared to the budgeted amounts for FY2016, associated with meeting the 28% water use reduction target:

Table I: Estimated Impacts of Meeting 28% Water Conservation Target

Budget Item	Low Financial Impact Estimate	High Financial Impact Estimate
Change in Water Revenue	(\$11.5 million)	(\$13.4 million)
Change in Water Cost	(\$8.4 million)	(\$6.5 million)
Change in Net Income	(\$3.1 million)	(\$6.9 million)

Implementing the Level 2 water waste prohibitions is not expected to result in significant increases to administrative or marketing costs, nor is it expected to result in significant revenues from violations. PWP has requested an additional \$120,000 in funding for PWP's share of water conservation incentive programs in the FY2016 budget, bringing PWP's total share to \$345,000 for FY2016.

Water Rates

Water rates will need to be adjusted to align with costs and reduced water sales volumes to ensure sufficient funding for operations and capital investment in the water system. In addition, using price signals through tiered water rates (rates that increase as a customer's water use increases) has proven to be a very effective means to encourage efficient use of water and promoting conservation; however, recent legal challenges and court decisions related to tiered water rates will need to be reviewed carefully. Any water rate actions would be subject to public notice and hearings consistent with Proposition 218 and City Charter requirements.

There have been a number of recent legal actions challenging tiered water rate structures in California, claiming that tiered pricing structures are not in compliance with the requirements of Proposition 218. Proposition 218, passed by California voters in 1996, ruled that water service is "a property-related fee," and therefore requires that water rates must be set at a level to recover the actual and direct costs of providing water service to customers. While Proposition 218 does not prohibit tiered rate structures, it does require that the pricing for each tier be related to cost.

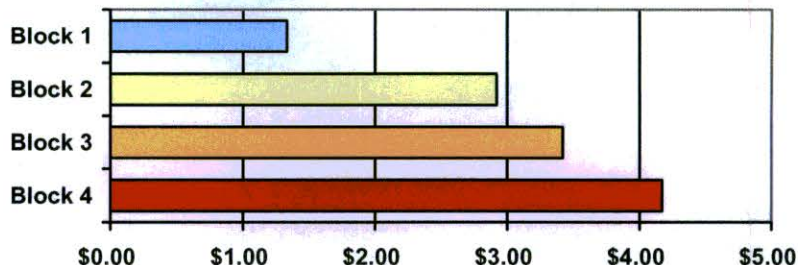
Recent legal challenges to tiered water rate structures include:

- **City of San Juan Capistrano:** A ruling by the Fourth Appellate Court of California that the tiered rate structure did not meet the requirements of Proposition 218 because the pricing for the tiers could not be tied to direct costs.
- **City of Glendale:** A recent filing by local taxpayer advocacy group challenging tiered water rates.
- **Irvine Ranch Water District:** Long considered the model for a water rate design using "budget based rates," this agency is also being challenged primarily on its cost allocation and pricing of tiers.

The outcome of these legal challenges may significantly restrict the option to use rates as incentives to conserve water. Tiered rate structures have proven to be very effective in reducing water consumption, so reductions in the availability of price signals may require other rate adjustments, including the use of penalties for excessive water use.

While PWP believes that its tiered rate structure, shown in Figure 4, complies with California law, a similar challenge may be brought against the City of Pasadena. Pasadena's rate structure provides an allocation of local ground water to all customer groups, and distributes both groundwater and purchased water to customer groups based on historical usage patterns. Also, the tiered pricing is set to recover actual costs, and customers with large water meter connections who also consume the largest amount of water are those primarily charged for usage in the higher tiers because the cost is higher to produce the water and to build and maintain the system at a level sufficient to provide service to those customers.

Figure 4: PWP Tiered Water Commodity Rates (\$/hcf)



During the next budget cycle, PWP staff will be updating its water cost of service model to reflect the most current costs and the water usage characteristics of PWP's customers. The updates will ensure that PWP's rates remain in compliance with Proposition 218. This analysis may result in recommendations to restructure PWP's water rates to ensure that revenue requirements are met even with reduced water usage by PWP's customers. Some options that may be considered include:

- Restructured tiers to reflect reduced ground water availability;
- Penalty surcharge to be implemented if Pasadena exceeds its reduced allocation from MWD or incurs penalty charges from the state;
- Drought "penalty" for excessive usage;
- Implement fixed charges to recover a portion of costs, or conduct required Proposition 218 process to enable routine adjustment of the volumetric rate formula as provided in the Rate Ordinance to offset the impact of changing retail water sales volumes to ensure sufficient funding for capital investment at appropriate levels; and,
- Cost recovery for enhanced conservation programs.

Rate restructuring options will periodically be presented to the Municipal Services Committee and the City Council for consideration along with updates on the water conservation programs. Actual rate actions would be subject to the notification and public hearing requirements of Proposition 218.

Statewide and Local Drought Actions

As the drought has persisted, the Governor, the State Water Board, and MWD have taken actions establishing different water reduction goals and restrictions applicable to the City of Pasadena. Significant recent actions include:

- **March 17, 2015:** The State Water Board adopted expanded emergency water conservation regulations. Prohibitions on potable water use were first adopted by the State Water Board in 2014, and the new expanded regulations went into effect on March 27, 2015. The City of Pasadena has already implemented the water conservation measures required by the Board, with the exception of the prohibition of irrigation of turf 48-hours following a measurable precipitation.

- **April 1, 2015:** Governor Edmund G. Brown Jr. announced actions to save water, streamline the state's drought response, and invest in new technologies that will make California more drought-resilient in Executive Order B-29-15. The Executive Order called for specific measures to be developed and enforced by the Department of Water Resources, the California Energy Commission and the State Water Board. For the first time in state history, the Governor directed the State Water Board to implement mandatory water reductions in cities and towns across California to reduce water usage by 25%.
- **April 14, 2015:** The MWD Board acted to restrict water deliveries to its member agencies for only the fourth time in MWD's history. Under the WSAP, MWD customers (member agencies) must reduce their FY2016 water use by 15% from baseline levels established in the plan. Agencies that exceed their allocated supply will face surcharges of \$1,480 to \$2,960 per acre foot, which is about two to four times the normal MWD water rate. This surcharge is designed to target excessive water use. Funds collected from the surcharge will go toward MWD's water management fund and be used for additional conservation and water supplies.

The Pasadena community has made progress towards conservation, but PWP customers will need to conserve more water to avoid penalties. PWP's water use over the last twelve months ending April 30, 2015 was 1,470 acre-feet more than the annual allocation under MWD's WSAP, and would have resulted in penalty charges totaling \$2,175,600. Ultimately these charges would have been passed along to PWP ratepayers. PWP anticipates that, with the proposed Level 2 watering restrictions in place, PWP's water use will decline sufficiently to avoid such penalty charges from MWD.

- **May 5 2015:** The State Water Board adopted additional emergency waters regulations (see Attachment 1) requiring PWP to reduce water usage by 28% compared to 2013 levels. The emergency regulation identified how much water communities must conserve based on their average residential water use in gallons per person per day ("R-GPCD) during last summer as compared to other agencies. Agencies with lower R-GPCD values were given a lower conservation target than those with higher R-GPCD values. In addition, the State Water Board adopted the following new prohibitions that PWP will recommend for City Council Adoption:
 - Irrigation with potable water of ornamental turf on public street medians;
 - Irrigation with potable water outside of newly constructed homes and buildings not in accordance with emergency regulations or other requirements established by the Building Standards Commission and the Department of Housing and Community Development; and,
 - Using potable water to wash sidewalks and driveways.

The State Water Board can issue informational orders, conservation orders or cease and desist orders to California water suppliers for failure to meet their

conservation standard. Water agencies that violate cease and desist orders are subject to a civil liability of up to \$10,000 a day. Since the emergency water regulations are currently in effect from June 1, 2015 through February 28, 2016, the theoretical maximum penalty for PWP could reach \$2.74 million.

Pasadena Water Waste Restrictions and Supply Shortage Plans

Pasadena's Permanent Water Waste Prohibitions and Water Supply Shortage Plan Ordinance (PMC 13.10) became effective on July 4, 2009. It includes thirteen permanent mandatory restrictions, and four levels of Water Supply Shortages with increasingly restrictive measures to address water shortages.

Permanent Water Waste Restrictions

The permanent restrictions include the following prohibitions and requirements:

1. Prohibits landscape irrigation between 9:00 AM and 6:00 PM (with specified exceptions for hand watering);
2. Prohibits landscape irrigation during periods of rain;
3. Prohibits water from landscape irrigation to runoff onto streets, sidewalks, driveways, etc.;
4. Prohibits washing paved or hard surfaces unless with a pre-approved device;
5. Obligates water users to fix leaks and breaks in plumbing within seven (7) days;
6. Requires water recirculating for fountains and decorative water features;
7. Prohibits washing vehicles unless with a pre-approved device;
8. Eating or drinking establishments may only serve water upon request;
9. Requires restaurant to use water conserving dish wash spray valves;
10. Commercial lodging establishments must offer guests the option to refuse linen service;
11. Prohibits the installation of single-pass cooling systems;
12. Prohibits the installation of non-recirculating equipment at car washes and laundromats; and,
13. All commercial car washes must install recirculating water systems.

Level 1-4 Water Supply Shortage Plans

In addition to the permanent mandatory water waste restrictions previously described, PMC 13.10 includes provisions for the City Council to determine a water shortage exists and adopt a water shortage plan or additional water conservation measures as appropriate to address the water shortage conditions. As shown in Table II, PMC 13.10 includes four levels of Water Supply Shortage Plans with progressively restrictive water waste prohibitions. Table II also shows the estimated water savings that would result from implementing each level.

Table II: Water Supply Shortage Restrictions by Level

	Level 1	Level 2	Level 3	Level 4
Watering Days Per Week	3 summer* 1 winter	2 summer* 1 winter	1 summer* 1 winter	No watering or irrigating
Obligation to Fix Leaks, Breaks or Malfunctions	72 hours after notification	48 hours after notification	36 hours after notification	24 hours after notification
Additional Prohibitions	None	Filling ornamental lakes/ponds	Same	Filling residential pools and spas; No new water services
Estimated Water Use Reduction	10%	20%	30%	40%

*For the water shortage plans, the "summer" season is defined as April 1 to October 31

The City of Pasadena is currently implementing a Level 1 Water Supply Shortage Plan which, combined with customer education and conservation programs, has thus far resulted in a 8.6% decrease in water usage over 2013 levels.

Impact of Level 1 Water Restrictions

The Level 1 restrictions are having an impact on water use. As of April 30, 2015, the fiscal year to date water use by all PWP customers has decreased 8.6% from calendar year 2013 levels, despite the increased temperatures and lack of rain.

While many landscaped areas have witnessed a decline in plant and turf health, the greatest impacts have been noticed in City park trees. The trees in City parks were accustomed to irrigation three to five times per week prior to the adoption of the Level 1 restrictions, which have limited watering to one day per week from November 2014 through March 2015. There are numerous trees that are currently showing signs of severe stress, and additional water conservation measures may result in irreversible damage.

PWP Water Conservation Incentive and Education Programs

PWP continues to vigorously promote water conservation through community outreach, education, and incentives for installing water-efficient equipment. With increased rebate funding from PWP's Water Fund and MWD, participation in this fiscal year's programs are on track to result in water savings equal to 1% of PWP's total water sales. A full list of current programs may be found in Tables III and IV.

Table III: Existing PWP Water Conservation Programs

Equipment Rebate and Installation Programs	Residential Rebate	Commercial Rebate
High Efficiency Clothes Washers	\$ 300	
Rotating Nozzles for Pop-up Spray Head Retrofits	\$ 7	
Rain Barrels	\$ 100	
Soil Moisture Sensor System	\$ 250	
Turf Removal	\$2 / Sq. Ft.	\$2 / Sq. Ft.
High Efficiency Toilets	\$ 100	\$ 100
Weather Based Irrigation Controller	\$ 250	\$ 60*
Zero/Low Flow Urinals		\$ 300
Plumbing Flow Control Valve		\$ 10
Soil Moisture Sensor		\$ 60*
Cooling Tower Conductivity Controller (CTCC)		\$ 875
Cooling Tower pH Controller (pH-CTC)		\$ 2,250
Dry-Vacuum Pumps		\$ 150
Laminar Flow Restrictor		\$ 15
Connectionless Food Steamers		\$ 550
Ice Making Machine		\$ 1,500
Parkway Retrofit		\$ 2,500
Water Savings Incentive Customized Program		\$.60 per 1,000 gallons saved
Free Water and Energy Direct Install for Small Commercial Customers ("WeDIP")		Up to \$2,500 installed free

* Per station or sensor

Table IV: PWP Water Education Programs

Water Education Programs
Green Living Curriculum Education Program for all PUSD 2 nd Graders
Children Investigate the Environment Education Field Trips for 4 th & 5 th Graders
Free Educational Assemblies available for all grade levels
PUSD High School Water Conservation Summer Internship
Free Landscape Audits for Customers with over 1 Acre of Turf
Free Drought Tolerant Landscape Workshops in Spanish and English
Water Education at over 50 Community Events this Fiscal Year

In addition to the existing water conservation programs, PWP is working on a variety of new programs and projects to increase water conservation as listed in Attachment 3. Some examples include:

- Discharge water capturing system (used to eliminate losses during water system flushing operations);
- Home water efficiency reports for residential customers;
- Increased rebates for irrigation retrofits on turf removal projects; and,
- Turn-key turf removal program utilizing the City's Maintenance Assistance and Services to Homeowners ("MASH") employees.

Implementing these programs may result in additional expenditure authority in the FY2016 budget, as well as future rate increases to provide the necessary funding.

Water Use for City Owned Facilities

Water conservation is a top priority for the City of Pasadena. The Public Works Department has completed various non-essential turf removal projects, modifying the irrigation system and beautifying the areas with the use of drought tolerant plants, mulch and boulders. The City will discontinue watering medians in compliance with the emergency regulations and will develop design options with community input for the Sierra Madre Blvd. medians. Staff has already shut off water at the City's beautiful fountains and water features, and will continue to do so except to the extent necessary to protect and maintain the equipment. A list of projects that are currently underway or under consideration may be found in Attachment 4.

Water use for City Accounts, which include all facilities, parks, and power plant water use, accounts for approximately 3% of all PWP's total water supply. The fiscal year to date (July 1, 2014 – April 30, 2014) water use by the City Accounts has declined by 22.3% as compared to CY2013 levels. This is by far the largest water use reduction for any of PWP's customer classes. With additional water saving actions already planned, the water use by City Accounts is expected to decline by more than 28% from CY2013 levels.

Water Use by Large Irrigation Customers

Although customers with high irrigation demands are expected to significantly reduce their water use, meeting the 28% water conservation will not be possible without significant contributions from all customers in all sectors.

Commercial Customers with High Irrigation Demand

PWP's customers with the highest irrigation include the City's parks, golf courses, public schools, and colleges. Their combined water use for irrigation represents approximately 7% of PWP's total water demand. In general, these customers use water very efficiently, as this represents a substantial operating cost.

Pasadena's Golf Courses have also made significant strides towards reducing water usage by removing over 20 acres of turf this fiscal year alone. Currently, water usage by

all golf courses combined represents 3.5% of all water use in the City. The golf courses are pursuing the removal of an additional 40 acres of turf this year.

Large Residential Properties

PWP's service territory includes a significant number of properties with large landscaped areas. The top 500 residential water users account for over 10% of Single Family Residential sales and represent approximately 5% of PWP's total water demand.

POTENTIAL RECOMMENDATIONS FOR JUNE 1 PUBLIC HEARING

To be consistent with state requirements and minimize confusion for consumers, the following actions will be recommended to the City Council at the June 1, 2015 public hearing:

1. Increasing the current 20% water conservation target to 28%;
2. Implementation of the Level 2 Water Supply Shortage measures, restricting watering to two days per week from April to October, and one day per week from November to March;
3. Prohibit the irrigation of turf within 48-hours following a measurable precipitation; and,
4. Prohibit washing down hard or paved surfaces using potable water, except where necessary to alleviate safety or sanitary hazards (this would revoke the existing exemption for pressure washers or water brooms).

While there are many other additional measures the City Council could consider adopting, such as those discussed below, the above recommendations are a necessary additional step and represent a level of new requirements that can be reasonably communicated to the public and enforced by staff.

If all of PWP's water customers strictly adhere to the Level 2 Water Shortage prohibitions and additional water conservation measures, substantial progress towards meeting the 28% reduction goal would be achievable.

Flexibility for Large Irrigation Customers

Functional turf, such as athletic fields and golf courses, cannot survive summer heat with limited watering days. Also, customers with large turf areas often cannot irrigate their entire property in a single day due to irrigation system limitations. While schedule accommodations are necessary and appropriate for functional turf, all large water consumers should be expected to work towards reducing their consumption by 28%.

In addition to rebate programs offered to PWP customers, landscape irrigation surveys are available for commercial customers with over one acre of irrigated landscape to assist in meeting reduction requirements. Due to the seriousness of the drought situation, being efficient will not be sufficient.

Exemptions for Trees and Shrubs

Staff will promote efficient irrigation of trees, shrubs, and newly established drought tolerant landscapes. The City Council may consider granting flexibility in water waste prohibitions as needed to sustain the life of trees or vegetation, particularly where a fire hazard may result from neglect.

Additional Potential Water Shortage Measures for Discussion


Depending upon the response of customers once the proposed measures are in place, it may be necessary for the City Council to order implementation of additional water conservation measures or the Level 3 water shortage plan to achieve the 28% water reduction goal established by the state. Some examples of other potential water shortage measures that may need to be considered include:

- Require that gyms, pools and other businesses providing showers must post drought notices and promote limitation of shower use;
- Prohibit the use of outdoor evaporative cooling devices (for example, misters);
- Require that businesses with evaporative air conditioning equipment set thermostats to no less than 78° for cooling; and,
- Complete ban on spray irrigation of all non-functional turf.

Additional potential measures are listed in Attachment 5, and more ideas are anticipated to be offered by the community during the public meetings prior to City Council consideration of additional measures at the June 1, 2015 Public Hearing. Further analysis may be needed on the potential water savings, feasibility, community impact, and safety issues associated with these potential water saving measures before these additional measures are recommended for formal adoption by the City Council.

In lieu of mandates at this time, PWP will promote effective water conservation measures and/or provide incentives to customers that implement such measures.

Respectfully submitted,



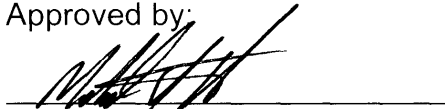
Phyllis E. Currie
General Manager
Water and Power Department

Prepared by:



Eric R. Klinkner
Assistant General Manager

Approved by:



MICHAEL J. BECK
City Manager

Attachments:

- Attachment 1: Emergency Water Regulations adopted by State Water Board
- Attachment 2: New Water Supply Connections and Development In Pasadena
- Attachment 3: Future PWP Water Conservation Programs (In Development Phase)
- Attachment 4: Public Works Water Conservation Projects Underway or Under Consideration
- Attachment 5: Additional Water Conservation Measures for Discussion