

ASHLAND WATER ADVISORY COMMITTEE

October 24th, 2017

AGENDA

- I. CALL TO ORDER:** 4:00 PM, Siskiyou Room, 51 Winburn Way Ashland, OR
- II. ANNOUNCEMENTS**
- III. APPROVAL OF MINUTES:** September 26, 2017
- IV. PUBLIC FORUM**
- V. WATER MASTER PLAN – CONSERVATION MODEL**
 - A. Presentation and run through of conservation model
- VI. AWAC CHARGE**
 - A. Discuss current charge of group
- VII. NOVEMBER/DECEMBER MEETING DATES**
 - A. Recommend postponing next meeting until January due to holidays
- VIII. ADJOURNMENT:** 6:00 PM



ASHLAND WATER ADVISORY COMMITTEE
September 26th, 2017

These minutes are pending approval by this Committee

CALL TO ORDER

John Williams called the meeting to order at 4:03 PM

Committee Members Present: Darrell Boldt, Joe Graf, Rich Miller, Pat Acklin, Alex Amarotico, Kate Jackson, John Williams (chair), Don Morris, Michael Morris (Council liaison)

Committee Members Absent: Donna Rhee

Staff present: Tami De Mille-Campos, Scott Fleury, Steve Walker, Michael Morrison, Greg Hunter, Kevin Caldwell, Julie Smitherman, Paula Brown

Staff absent: None

Consultants: Jeff Ballard (RH2)

ANNOUNCEMENTS

Paula Brown gave background on herself and the committee then gave around the room introductions.

APPROVAL OF MINUTES

June 27, 2017

Boldt/Graf m/s to approve minutes. Approved unanimously.

PUBLIC FORUM

None

NEW 2.5 MGD WATER TREATMENT PLANT/CROWSON II RESERVOIR PROJECT UPDATE

Brown shared with the committee that she has been back as Public Works Director for three weeks and one of the things she asked about when she became Director was where are we and what has been happening. In the past three weeks a few things have happened which brings her to recommend taking a pause and allow time to finish the siting study which should be finalized before the next meeting. Keller and Associates lost an intricate member of the group and because of this staff felt it was appropriate to part ways with Keller and look at what phase II brings. With phase II we need to look closer at what problem the committee is looking to solve and why we would want to build a new plant while continuing to operate the old plant. She is a bit perplexed as to why we would operate two plants for a town of our size. She is proposing a phase II for the committee which would be a much deeper review and would include hiring a new consultant to evaluate our existing plant from the standpoint of what lifespan does that plant have left and what risks currently exist and look at what is fiscally responsible.

Brown said a lot has changed since the committee re-formed, one of the biggest things is we now have TAP (Talent Ashland Phoenix Intertie). Brown would like the committee to look at what the policy is for using TAP and what is the realistic expectation for TAP. She wonders how we should best use it, if we are "paying for it" maybe we should be using it more than we are. She feels there should be a more detailed analysis and

doesn't feel we have the necessary information right now to move forward with a new plant. Brown questions if the old plant won't last longer than ten years, should we decide to scrap it and just build a new one or if it turns out that the existing plant will last twenty years, then it may be a good deal to keep the old plant and not build a new plant. If the old plant will last between ten and twenty years for a reasonable price then that is a debate we may need to have. She suggests that we spend roughly fifty to seventy five thousand to do a detailed study of a fifty year time period and what the costs of retrofitting the old plant would be versus building a new plant. This study could take three to six months with a new consultant. She is going to put together an RFP (request for proposal) before the next meeting.

Commented [TC1]: This is still being worked on and pending a cost analysis.

There was discussion amongst the committee regarding what has transpired since the committee began its work and Brown said she had a pretty good handle on what this committee has been looking at and in her discussions with support staff she has looked at risk versus affordability and she doesn't feel comfortable moving forward without taking a deeper look at what is best for the community. Acklin shared when they came up with the plan they didn't think there was a good enough solution to the flooding, landscape, seismic issue and they felt like that was a precarious place for the sole treatment plant to be, the thinking was that we have to find another location at some point because it is susceptible. She agreed that several things have changed since they made their original recommendations, including TAP. She also feels if we do not know more about what citizens are willing to conserve we will know a lot more in the future as a result of the computer modeling which is currently underway. While this committee has discussed TAP, they have been circular discussions and the committee hasn't necessarily arrived at a conclusion for how often we use it. She feels it would be foolish to not stop and look more carefully. Graf shared he thought the vision of this committee always was that there would be one plant (the new plant) and the recommendation that came out was a compromise because there was a lot of difficulty amongst the committee in regards to TAP and other things. They landed on 2.5mgd largely because that was the average winter consumption. He doesn't think anyone had any desire in operating two plants long term. Williams shared that for him the idea of a new treatment plant came out of an economic analysis and when looking at the cost of continuing to use the old treatment plant, given the information that was available at that time, it was so close to the cost of building a new treatment plant with the additional advantages of a new treatment plant that was a no brainer for him and that is why he supported that recommendation. Brown said she would love to have a new 7.5mgd treatment plant that does everything we want it to but she would be remiss in not taking these options and the various cost options to City Council. Jackson shared as a continuing member of this committee she feels we need to understand how the decision was made, she can't recall how they decided, other than what Graf eluded to which was there was a lot of disagreement. She's wondering how the committee should reopen the discussion without revisiting all of the old arguments. Councilor Morris recalled at the Council level the discussion was all about the redundancy of running two plants. He shared that he never saw enough of the technical side. His personal opinion is he has always felt that Ashland's problem isn't the impoundment of treated water but it is more the impoundment of untreated water (reservoir) but he never saw real numbers on that at

the council level. Boldt shared that when the committee started this process there were two key factors they were keeping in mind were reliability and redundancy and based on the information they spent a lot of time looking at different options for conservation and with climate change coming along we know that is going to be even more critical. The information they got on the existing plant all weighed into the fact that it has a limited life span that won't be easily extended which then made a lot more sense to phasing the old one out and building a new plant. The redundancy part of the equation was TAP and now that TAP is in place this changes the equation. He is never opposed to going back and revisiting something just to verify that we are going in the right direction. He agrees with Brown's recommendation to step back and make sure the right decision is being made and it is justifiable.

Brown estimated this cost analysis would probably take three to six months and cost maybe fifty to seventy-five thousand. Ballard said a seismic evaluation creates a whole different level of evaluation. Williams said there was a lot of talk about how much money was going to need to be spent on keeping the old plant going and it was adding up and they just want to make sure that even if it does have some lifespan left that it makes financial sense. Brown doesn't believe we have spent bad money at the existing plant and this plant has served the city well through three floods in recent history, there is capacity that may be untapped and there are risk issues that haven't been fully addressed but we owe it to the community to spend the money wisely. Graf said he expected this committee would have to wrestle with the notion of a 2.5mgd plant and it sounds like this is the data staff feels they need in order to make a recommendation and he is fully supportive of moving ahead with this study. He also indicated he has always thought operating two plants is a bad idea. Acklin said as she remembers the process, Pieter Smeenk was instrumental in helping us get what we needed out of Carollo. Brown said the information we have from Carollo and Keller is great information and not something you throw out but she isn't sure if it went deep enough, but we can go deeper. Brown will draft the phase II RFP and hopefully get it out for publishing before the next committee meeting. If there are things that she missed we will bring it back and get those added. She will give an update to the City Administrator and then the plan would be to take it to the November 6, 2017 Council Study Session for their input. The committee voiced unanimous agreement for Brown to draft the phase II RFP.

WATER MASTER PLAN UPDATE

Jeff Ballard, Rh2 Engineering passed around a handout (see attached) and Brown passed around the original committee charter (see attached).

Ballard shared they have all the information they need and the modeling is going through the final steps of calibration and then they will move on to the system evaluation. They are in the process of working with the conservation consultant and should be able to bring that information to the October meeting. He is continuing to build the Water Master Plan Update document itself, but the conservation element will be a big part of it. Thus far there haven't been many surprises, there could be some zone change recommendations made but other than that the system is fairly simplistic with the water all flowing downhill.

Ballard presented the Level of Service Goal recommendations (see attached), those shown in red are his recommendations.

Walker shared that cross-connection (backflow) is really important to make sure we don't have a user who infects the entire supply. Currently we satisfy the Oregon Health Authority regulations requirement which is that we have a database that tracks the testing of the backflow devices that we know of in town. One of the areas that this community hasn't gotten to is going around property by property and identifying hazards on that property and ensuring the homeowner has the proper level of protection installed. That is a huge task and politically it is a hot topic if not handled properly, there is a lot of public outreach to be done to ensure it is handled properly. He said that is a pretty simplistic explanation of it but he hopes this is something we can take a look at in the future. Brown said in addition to the water plant having cross connections, the waste water plant also has cross connection issues. She thinks we will at some point be asking Council to update the ordinances to give the City permission to monitor, check and report on every residential backflow situation, along with the public outreach component which the water conservation division has already been trying to do when they are out with property owners doing irrigation audits.

Acklin asked what the potential is to have power generated with all of our gravity flow. Ballard answered that we started to go down that path as part of the water master plan update, he isn't against evaluating it but where they landed is that within the existing system we have limited locations where there is steady flow which is needed to generate good power. The City's system operates on pressure reducing valves (PRV's) so it allows water to come through as there is demand, you need a large volume of water at a consistent flow rate. There are places where you could generate power but it comes down to cost effectiveness. Graf said with the Climate Energy Action Plan (CEAP) we are going to desperately be looking for ways to save energy and this may come up again because we may come up against a limit as to where we are going to save. Brown said she would like to explore that but that would be a future phase to the plan. Williams said we spent a lot of time talking about a fifty year climate prediction study for our watershed and staff may want to research and see if they did a more recent study during the CEAP process. Ballard said they are using updated climate data for the supply model and so we will want to make sure to have that conversation at the end of next month to make sure we are consistent with what Williams is talking about.

Brown asked the committee to review the original committee charter (year 2010 estimate) handout between now and the next meeting and come back to the next meeting with any questions or comments.

Meeting adjourned at 5:40 pm
Respectfully submitted,
Tami De Mille-Campos
Public Works Administrative Supervisor

**ASHLAND WATER REUSE AND CONSERVATION STUDY
&
WATER MASTER PLAN
ADVISORY COMMITTEE
– CHARTER –**

PURPOSE:

Ashland is committed to undertaking an integrated Water Reuse and Conservation Study and Water Master Plan (Water Program) to address long-term water supply including climate change issues, security and redundancy, watershed health, conservation and reuse, and stream health. The Water Program will address Ashland's multiple water sources & multiple options for combining them to meet demands while considering climate change, improving reliability of supply and increasing environmental stewardship. The purpose of the Ashland Water Advisory Committee is to provide a link with the community and to involve impacted persons and interest groups with Ashland's Water Supply Planning Program and Utility. The Advisory Committee will provide critical local input to the planning and policies that will guide the Water Supply Utility to defining goals, objectives and rate structure.

DUTIES:

1. Identify and prioritize community issues, goals, and concerns related to the Water Master Plan including water conservation, water recycling, public health protection, water supply reliability, and water quality.
2. Work with City staff, the Technical Review Committee, and the consultant team to adopt level of service goals for the Water Master Plan.
3. Review planning alternatives and planning recommendations and comment on their ability to satisfy the established level of service goals and address other identified community goals, issues, and concerns.
4. Assist in gaining community input into the planning process and educating the community about water planning issues.

AUTHORITY:

The Ashland Water Advisory Committee (AWAC) is to be established in accordance with Ashland's committee policies and will be in existence throughout development and implementation of the program. The purpose of this Committee is to serve as an advisory group to the City and its water staff. As such, its authority will be limited to collecting information, conducting analyses and making recommendations. All position statements or recommendations of the Committee will be transmitted by its Chairman to the City Council.

ORGANIZATION:

The AWAC will be chaired by a person [appointed by the Mayor or] selected by fellow Task Force members. The Chairperson will establish the rules of order and conduct all meetings. Each member will have one vote except for the Chairperson who will serve as a non-voting member except in the case of ties. City staff will provide direct support to the Committee and its Chairperson.

A Technical Review Committee consisting of the Director of the Talent Irrigation District, the Ashland Water Department Project Manager, Treatment Plant Operator, Distribution System Operator and Water Conservation Officer will provide technical support, input and oversight to the AWAC.

MEETINGS:

It is anticipated that the Committee will meet approximately once every two months over the next 16 months. The day of week and time for meetings will be established by the Task Force at its initial meeting. The actual date of each meeting will be set by the Chairperson. As the program takes shape additional meetings or subcommittee meetings may be requested by the Chairperson. An initial schedule for committee meetings with suggested agendas is attached.

The agenda for each meeting will be established by the Chairperson and distributed to each member prior to the meeting. Suggestions for agenda items may be made to the Chairperson by any member. A majority of the total number of Task Force members may amend the agenda at any meeting.

Position statements regarding issue papers must be approved by a majority of the total number of Committee members.

The Chairperson will document issues raised by the Committee as well as any recommendations from the Committee and transmit them to the City. Meeting summaries will be kept by Project staff and transmitted with the agenda and supporting materials to each member prior to the subsequent meeting. All summaries or other written communications from the Committee may be amended with approval of a majority of the total number of Committee members.

Members of the Committee will not be compensated for their services or the expense of attending meetings.

REPRESENTATION: (suggested)

City Council Member; Neighborhood/Community Group(s); School District Committee; Ashland Downtown Association; Chamber of Commerce, Home Builders Association; Ashland Hospital, Ashland Fire Department; WISE Project, Ashland Coalition, Utility System Development Charges (SDC) Committee, League of Women Voters, Environmental Group(s), others.

Suggested Committee size of 9.

PROPOSED MEETING SCHEDULE/TOPIC: (suggested)

- February – Kick-off, Intro to Program and background, Intro to Level of Service Goals
- April – Finalize Level of Service Goals
- June – Water Rights, Environmental Impacts, Climate Change
- August – Supply Alternatives
- October – Alternatives Analysis and Selection Workshop
- December – Draft Water Reuse and Conservation Study
- February – Draft Master Plan and SDC/Rates
- April – Final Meeting

PROPOSED ASSOCIATED MEETINGS: (suggested)

- March – Public Hearing (Program Intro and Public Listening Session)
- May – Report to City Council
- September – Public Hearing (Program Update and Listening Session)
- November – Report to City Council
- April – Final Report to City Council



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September 26, 2017 Ashland Water Advisory Committee

Meeting Talking Points
 Level of Service (LOS) Goals Discussion

2.3 WCRS LEVEL OF SERVICE GOAL

WASHINGTON LOCATIONS

BOTHELL
 MAIN OFFICE
 22722 29th Drive SE, Suite 210
 Bothell, WA 98021

BELLINGHAM

EAST WENATCHEE

ISSAQUAH

RICHLAND

TACOMA

OREGON LOCATIONS

PORTLAND
 MAIN OFFICE
 6500 SW Macadam Ave. Suite 125
 Portland, OR 97239

MEDFORD

Table 2.1 Selected LOS Goals	
Goal Area	Goal
<i>Water System Capacity</i>	<i>Have sufficient supply to meet projected demands that have reduced based on 5 percent additional conservation base year 2009. However, City will have a goal of achieving 15 percent conservation.</i>
<i>Water System Reliability</i>	<i>Community will accept curtailments of 45 percent during a severe drought. The City will prioritize source water available during drought conditions.</i>
<i>Water System Redundancy</i>	<i>Implement redundant supply project to restore fire protection and supply for indoor water use shortly after a treatment plant outage. Supply ADD with redundant supply.</i>
<i>Regulatory Requirements</i>	<i>Meet or exceed all current and anticipated regulatory requirements including cross connection program improvements.</i>

2.4.1 DISTRIBUTION SYSTEM PIPING

Table 2.2 Distribution System Criteria	
Parameter	Criterion
<i>Minimum Service Pressure under Peak Hour Demand</i>	30 psi
<i>Minimum Service Pressure under Peak Day Demand plus Fire Flow</i>	20 psi
High Pressure Limits	120 psi
Pipe Velocity Maximums <ul style="list-style-type: none"> • During normal operation • During emergency conditions 	5 fps 8 fps
All new mains providing fire flow will be sized to provide the required fire flow at a minimum residual pressure of 20 psi. <ul style="list-style-type: none"> • Residential lines shall be looped • Commercial, business park, industrial and school areas shall be looped 	8 -inch min 12 – inch min
Isolation valves will be installed in the lines to allow individual pipelines to be shut down for repair or installation of water appurtenances. A minimum of three valves will be provided per cross and two valves per tee.	1000 ft max
Individual pressure reducing valves must be installed in all customer service lines in the City.	Pressure > 80 psi
Fire Hydrant Spacing <ul style="list-style-type: none"> • Fire hydrants serving detached single-family or duplex dwellings • Fire hydrants not serving detached single-family or duplex dwellings 	Travel path < 300' 300' Spacing

2.4.2 PUMP STATIONS

Table 2.3 Pump Station Evaluation Criteria	
Parameter	Criterion
<i>Capacity for service levels with storage facilities</i>	<i>Supply Maximum Day Demand to service zone assuming the single largest capacity pump is off line (i.e., firm capacity)</i>
<i>Capacity for service levels with no storage facilities</i>	<i>Supply Peak Hour Demand and fire flow assuming the single largest capacity pump is off line (i.e., firm capacity).</i>
<i>Power Supply</i>	<p><i>New pump stations require a main power source and an emergency source.</i></p> <p><i>Secondary power source for new pumps stations to be sized to meet full pump station demands.</i></p> <p>City will plan and design facilities to optimize energy efficiency</p>

2.4.3 PUMP STATIONS

Table 2.4 Storage Evaluation Criteria	
Parameter	Criterion
<i>Operational Storage</i>	<p><i>0.25 x Maximum Day Demand of the area served by each reservoir</i></p> <p>Evaluate actual operating storage volume (based on pump station start/stop levels)</p>
<i>Equalization Storage</i>	<p><i>ES = (PHD – Qs)(150 minutes), but in no case less than zero</i></p> <p>Where: ES=Equalization Storage in Gallons PHD = Peak Hour Demand, in gpm Qs = Sum of all installed and active sources, except emergency supply, in gpm</p>
<i>Fire Storage</i>	<p><i>Provide volume for single most severe required fire flow and duration for each reservoir service area.</i></p> <p><i>System-wide, provide volume for two largest fires.</i></p>
<i>Emergency Storage</i>	<p><i>0.5 x Maximum Day Demand of the area served by each reservoir</i></p>

Nesting. The City will allow nesting of fire flow and emergency storage to maximize the use of the existing storage facilities throughout the system.

Emergency Storage. With the establishment of redundant supplies, does the City still feel that ADD is sufficient emergency storage?

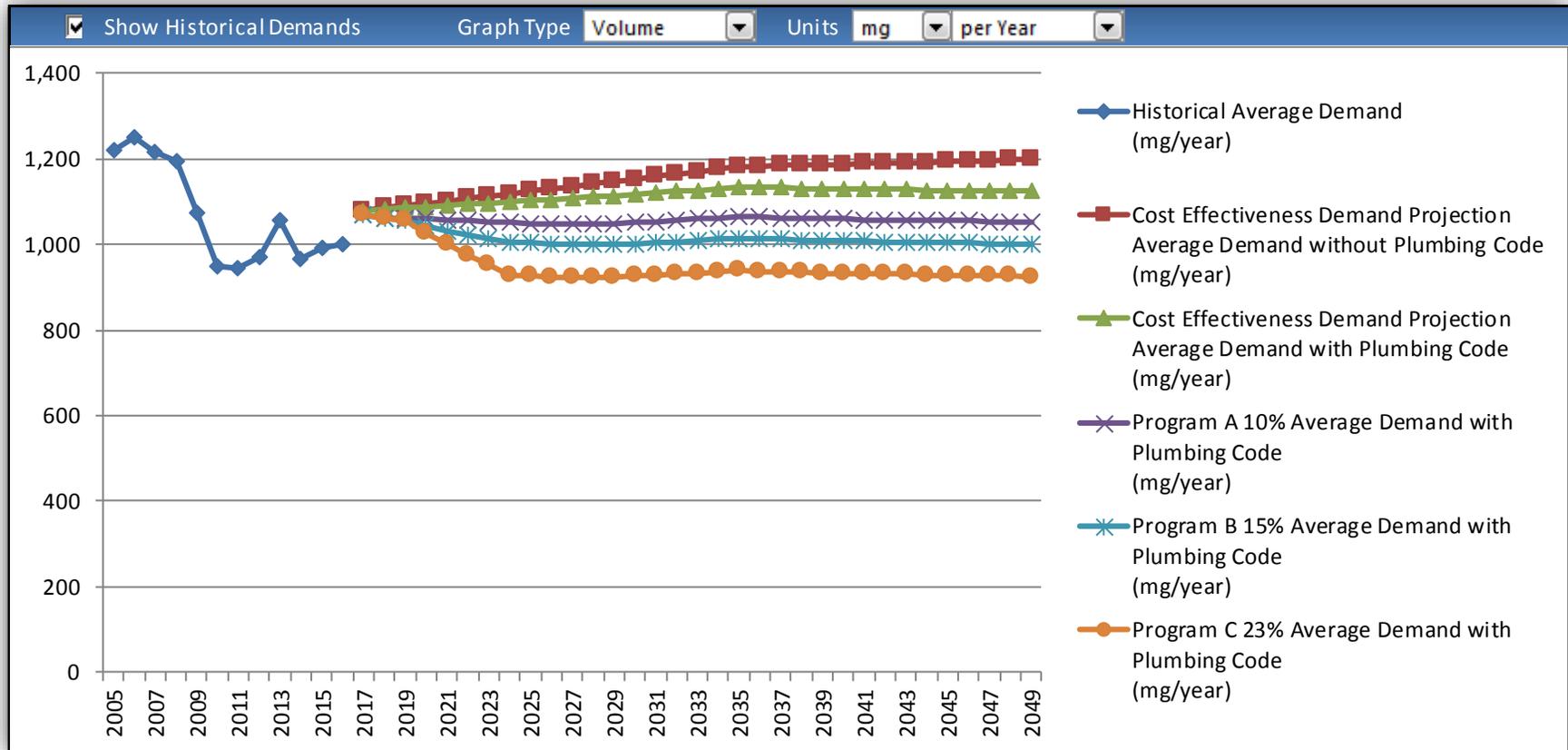
Selected Measures & Programs

Measures	Program A 10%	Program B 15%	Program C 23%
1-Pressure Reduction Valve Incentive for Irrigation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-Pressure Regulation at Individual Properties	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-Residential Irrigation Evaluations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4B-Landscape Equipment Conversion Rebate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5-Lawn Replacement Program	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6-Soil Moisture Meter Giveaway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7-Smart Controller Rebate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8-Mulch	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9-Graywater Laundry to Landscape	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10-Soil Moisture Sensor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11-Rain Sensors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12-CII Irrigation Evaluations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13-Large Rainwater Catchment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14-Toilet Rebates	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15-Indoor Fixture Giveaway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16-Graywater Indoor (Toilet Flush System)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17-Residential Clothes Washer Rebate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18-Residential Indoor Evaluations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19-Hot Water on Demand	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20-Dishwasher Rebate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21-Leak Repair for Low Income	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22-Submetering	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23-CII Indoor Evaluations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24-CII Washer Rebate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25-Large CII Rebates	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26-Urinal Rebates	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27-Awards Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
28-Customer Water Use Report Software	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29-School Retrofit Program	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30-Water Waste Ordinance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
31-Pressure Reduction in Distribution System	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
32-Education and Outreach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Projected Water Demands & Associated Program Savings

Year	Projected Water Demands	Demands with Plumbing Code	Water Conservation Program A	Water Conservation Program B	Water Conservation Program C
2020	1,096	1,088	1,059	1,042	1,026
		8.31	37.28	54.04	70.21
		0.8%	3.5%	5.1%	6.8%
2030	1,152	1,118	1,051	1,002	926
		34.8	101.6	150.5	226.7
		3.1%	9.4%	14.7%	23.5%
2050	1,199	1,124	1,052	1,000	924
		75	147	199	275
		6.5%	13.5%	19.4%	28.6%

Projected Water Demand Scenarios



Projected Water Demand

Year	Historical Average Demand (mg/year)	Cost Effectiveness Demand Projection Average Demand without Plumbing Code (mg/year)	Cost Effectiveness Demand Projection Average Demand with Plumbing Code (mg/year)	Program A 10% Average Demand with Plumbing Code (mg/year)	Program B 15% Average Demand with Plumbing Code (mg/year)	Program C 23% Average Demand with Plumbing Code (mg/year)
2005	1,220					
2006	1,251					
2007	1,218					
2008	1,196					
2009	1,073					
2010	950					
2011	943					
2012	969					
2013	1,059					
2014	968					
2015	990					
2016	1,000					
2017		1,080	1,080	1,070	1,070	1,070
2018		1,085	1,083	1,063	1,060	1,059
2019		1,091	1,085	1,062	1,055	1,055
2020		1,096	1,088	1,059	1,042	1,026
2021		1,102	1,091	1,057	1,032	1,001
2022		1,107	1,093	1,055	1,023	976
2023		1,113	1,096	1,053	1,014	952
2024		1,118	1,099	1,051	1,005	929
2025		1,124	1,102	1,050	1,003	927
2026		1,130	1,105	1,048	1,001	925
2027		1,135	1,108	1,048	1,000	924
2028		1,141	1,111	1,048	1,000	924
2029		1,147	1,114	1,048	1,000	924
2030		1,152	1,118	1,051	1,002	926
2031		1,158	1,121	1,053	1,004	928
2032		1,164	1,124	1,056	1,007	931
2033		1,170	1,127	1,059	1,009	933
2034		1,176	1,131	1,062	1,012	936
2035		1,181	1,134	1,065	1,015	938
2036		1,183	1,133	1,064	1,014	937
2037		1,184	1,132	1,063	1,012	936
2038		1,185	1,132	1,062	1,011	935
2039		1,186	1,131	1,061	1,010	933
2040		1,187	1,130	1,060	1,009	933
2041		1,189	1,130	1,059	1,008	932
2042		1,190	1,129	1,058	1,007	931
2043		1,191	1,128	1,057	1,006	930
2044		1,192	1,128	1,056	1,005	929
2045		1,193	1,127	1,056	1,004	928
2046		1,195	1,126	1,055	1,003	927
2047		1,196	1,126	1,054	1,002	927
2048		1,197	1,125	1,053	1,001	926
2049		1,198	1,125	1,053	1,001	925
2050		1,199	1,124	1,052	1,000	924