

# ASHLAND WATER ADVISORY COMMITTEE

February 28, 2017

## AGENDA

- I. CALL TO ORDER: 4:00 PM, Siskiyou Room Community Development Building, 51 Winburn Way
- II. ANNOUNCEMENTS
- III. APPROVAL OF MINUTES: January 24, 2017
- IV. CONSENT AGENDA
- V. PUBLIC FORUM
- VI. Water Conservation Modeling (DSS Update)
  - A. Conservation measures -DSS model
    - Review list of potential conservation measures to model
    - Discuss the benefits or concerns of any of the listed measures
    - Focus the list to 25 measures to input into the DSS model
- VII. Water Master Plan Update
  - A. RH2 Project status update
- VIII. New 2.5 MGD Water Treatment Plant/Crowson II Reservoir Project Update
  - A. Staff will update AWAC on status of project
- IX. ADJOURNMENT: 6:00 PM



**CITY OF  
ASHLAND**  
**Ashland Water Advisory Committee**  
Contact List as of February 2017

<b>Name</b>	<b>Title</b>	<b>Telephone</b>	<b>Mailing Address</b>	<b>Email Address</b>
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Joe Graf	Committee Member	541-488-8429		jlgrans15@gmail.com
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**ASHLAND WATER ADVISORY COMMITTEE**  
**January 24<sup>th</sup>, 2017**

These minutes are pending approval by this Committee

**CALL TO ORDER**

John Williams called the meeting to order at 4:05 PM

**Committee Members Present:** Don Morris, Amy Patton (vice chair), John Williams (chair), Joe Graf, Michael Morris (council liaison), Rich Miller, Donna Rhee, Pat Acklin, Alex Amarotico, and Kate Jackson (arrived at 4:22 pm)

**Committee Members Absent:** Darrell Boldt

**Staff present:** Emily Killam, Scott Fleury, Julie Smitherman, Steve Walker, Michael Morrison, Stephanie Danyi, Greg Hunter, Kevin Caldwell

**Staff absent:** Mike Faught

**Consultants:** Jeff Ballard (RH2)

**ANNOUNCEMENTS**

None

**Public forum**

Shaun Moran-no comments

**WATER MASTER PLAN UPDATE AND CLIMATE ACTION ENERGY PLAN PRESENTATION**

Minutes from 11.29.2016 were approved.

Smitherman says she's hoping to get all the data collected and done within the next couple weeks. She has a meeting with the consultant in the middle of February to go over everything and transfer it all into the model.

This is the list of all the things that have been collected so far: production data, consumption data, max day usage, historic usage which includes precipitation, the highs and lows on a monthly basis, evapotranspiration (ET data) data which is anything that's been evaporated by the soil or transpired by the plants which is important as we develop our outdoor programs, east and west fork stream flows going back to the early 1900s, water rates for all sectors, max sewer rates, and max day demand. We also have talked to a 100 commercial industrial users in the area, saturation rate with the current programs, population and population projections since 1995, our rate of growth is about ¼% per year, historical unemployment rates, and the list of all our current conservation programs. In the past there was mention of having a problem with population data, but it was decided to just stick with the Portland Research Data because that's where our data has been coming from for a long time.

Smitherman has a list of a hundred different potential conservation ideas and the idea is to narrow it down to a list of twenty-five that really fit our area. Then we'll model those and look at whether or not they're cost effective for our area and if our community would

accept it. There are also additional benefits that it might have, for example does it have an energy efficiency or storm water benefit, etc. and present it to the AWAC group.

Morris asks where the rain water gauges are placed, which Smitherman responds that we are using the gauges that are at the Waste Water Treatment plant (WWTP). We've compared it with other gauges to make sure that we are consistent, and we also have precipitation gauges at the treatment plant. For the conservation purposes we use the data that is collected here in town. Morris asks if we collect temperature and we do; we have two stations at the WWTP.

Fleury says one of the things we're looking at is budgeting to put a weather station at the dam itself. We take weather gauge data at the treatment facility, but not at the actual dam. This will help in the final development of the water quality model.

Our weirs that we measure from are 11.99mil gallons per day and then we have to look at the usgs monitor which collect in cubic feet per second which we then have to convert into million gallons per day. These gauges also have a tendency to freeze which has resulted in anomalies within the data collection.

Fleury says one of the things we'll have to focus on is how we collect data. The thought is to have this model continually updated to put new data into it. So we'll need to have the means to grab the data we need to keep inputting it into the model. One of the things we're having our IT do is look for a way to separate out the residential and multi-family data into different categories so that we can see the difference between the two.

Williams asks if we're separating out users who are already using grey water for watering lawns, gardens etc., and SOU as well as other places. Smitherman says we are looking at that and it's also another part of the tracking system. The new tracking system has put government, municipal and institutional all in one category, so we don't know exactly how much each category is using. Which is why we need to separate each category out from one another.

Ballard asks what kind of timeframe does Smitherman see the AWAC group evaluating the conservation goals and conservation benchmarks. The reason for the question is because it'll impact the long term capital planning based on demand forecasting which is dependent on those pieces. That piece can take longer than most because it involves a lot on input and decisions from people outside of our team. This is a piece that ties in directly to the completion of the project, because there is a lot of input. Smitherman has a goal of March to have all the information uploaded into the model.

Acklin asks Smitherman if she was thinking of having the AWAC group look over the top 25 conservation choices. She said if the group can see that list in February and Smitherman have the data in the model in March, then we could look preliminarily at it at the end of the March meeting. Smitherman says she'll try her hardest to get that completed and make it a priority.

Ballard says from his standpoint that he's seen it go both ways with there being a set goal that is then evaluated against the expenditure of that goal. Also, compared to the expenditure of capital improvements and how those balance out, and he doesn't know what the driving force will be for that.

Jackson says we had some conservation numbers in our last plans that we were shooting for, and asks if we're currently using those numbers. Ballard says depending on what comes out of the updated information the cost of each one of those levels could go up or could go down depending on what the more detailed analysis determines. It could be a fairly substantial swing depending if we were to find something that was highly cost effective to install but has a huge impact. It would be less of an investment to get to that goal, so it makes higher goals more attainable, but it could also work in the opposite manner as well.

Fleury says we're going to see the base cost benefit of the measures as part of the plan, but then you're going to have to measure that against the capital as well and ask the question, where will the pendulum swing.

Ballard says we're moving ahead with the hydraulic modeling as we've discussed before, but we're still collecting data as well. The next big hurdle is waiting for the weather to change so that we can do some flow testing in the city. This will probably be coordinated around the middle or end of February to come out and do some calibration work within the city so that they can verify that the hydraulic model is consistent with the actual conditions that exist today.

Smitherman says that we are at about 145% of normal in snow water equivalent, and at about 90" at our automatic snotel site, we measure manually at 3 different sites. The snotel site is about 6050' elevation.

Ballard states that the most important part of this is the O&M plan, the operational manual. Walker wanted this O&M plan to be put in the master plan so that it was known that we are capable of doing the correct things. He wanted to create an outline because we face challenges that aren't currently outlined. The outline can be taken to superiors to show them this is what we really should be doing, and this is what we're able to accomplish. This plan is really what that is all about, it's not about the department not knowing what they're doing. It's so we have procedures and if everyone was gone tomorrow someone could walk in and take a look at this and be able to pick up where the others left off.

Morris asks if a water quality test is done when the flow testing is being done. Ballard said we do not test quality typically when doing the flow test. Walker has a testing program that is laid out in the O&M plan that states where the samples have to be taken and when etc. This plan is something to establish a guideline moving forward so that everyone is on the same page and everyone is accomplishing what they need to.

Walker states that the industry standard is to test the hydrants once yearly, but preferably every six months. So that is a question that we need to have answered, if you'd like to test every 6 months, or is once yearly enough. Then valve maintenance is every 3-5 years and that's another discussion that needs to be had, every 3 or every 5 years. Then what are you doing to those, and in this city as well as many others, typically valve maintenance creates broken valves and that needs to be taken into consideration as well. So when you go out to maintain and operate valves that haven't been operated in years or even less at times, they break. That's something that has to be thought about because often times this just ends up creating your own issues.

Fleury says we're extrapolating level of service goals. So if we're a 3 year or a 5 year cycle, that's a level of service goal we'll have to talk about. Typically in the wastewater system we camera the whole system on the 5 year cycle, so we have those established level of service goals. Part of this O&M plan will be a discussion of establishing those level of service goals along with hydrant flushing as well and how we operate the system that way. Part of it is to let people know these things do happen and like Walker said when you turn a valve they might break etc. There are these issues that a lot of people don't know or understand.

Smitherman said on the side of conservation, public perception is huge. So when you're flow testing hydrants you get a lot of calls as to why it's being done, and why water is being wasted. This is why we really need to up our education and let people know why we're doing this. It's not that we want to waste water, it's what is required to keep a high quality of drinking water flowing through town. Getting that message out is what we have to think about if we decide to increase the testing of hydrants etc.

Graf states that we had part of the capital improvement plan in the last plan and there was a certain amount of maintenance and updating of the pipes etc. However, in this update what we're really talking about is looking more carefully at the operations and maintenance and what should be done. Such as how we're going to revise those figures, which will eventually roll into rates when this is all done. Fleury says for a lot of internal Public Works plans, and if we were all to disappear today, we want to make sure there is a guide for a day to day interaction of what goes on. This would serve as a living document that can be passed down from generation to generation as industry standards change.

Williams asks what the agenda is looking like for the future. Fleury says potentially if we can move forward in February/March/ April with the conservation plan and how that ties in with capital, and finish up the hydraulic modeling, those things will be on the agenda as we move forward. The other thing on the agenda, which will be about four months out, is the Water Treatment Plant and Crowson II project. Fleury says we've received the funding to construct the Water Treatment Plant through the IFA and council has approved that. We don't have the funding yet to construct Crowson II, but council has approved a funding resolution that will allow us to move forward with funding the project and then get reimbursed for everything that's been spent up until the date that we get a bond for the Crowson II reservoir. We advertised for consultants and interviewed

everyone as well and made the final decision. We have been negotiating with Keller Associates since December 7<sup>th</sup>, 2016 which was the initial negotiation for scope and fee for the preliminary engineering associated with this project. The internal group got together and reviewed the scope and fee document. Walker brought up the question on what are we trying to get out of this right now, and what problems are we trying to solve for step one of this project. We talked about it and the true step one that we want to solve is how and where are we going to treat the water. Fleury said we are to look at three different water quality treatment options on each possible site. We will have workshops with the consultant and then bring that information back to this group and have a discussion with AWAC to make a formal recommendation to bring to council. Fleury says he's hoping to get a contract for the preliminary engineering phase to bring to February's council meeting for approval. Then we'll do our analysis, our workshops and then come back to AWAC and have a discussion.

Rhee asks if there have been any movements at the federal level to take water quality treatment measures that are beyond what we typically test for. Fleury said the EPA is going to make changes to the lead and copper laws which will affect the decision making. The regularity requirements will change. Part of the discussion about the plant was that we need to account for the upcoming changes that might occur. Our discussions include things that we might not have on the initial plan, but that we'll leave room for future improvements. Our funding goal is to get as much capacity in the new plant as we can so that we don't have to manage two treatment plants.

Meeting adjourned at 5:05pm

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Emily Matlock", written in a cursive style.

Emily Matlock  
Public Works Administrative Assistant

## List of Measures to Model

Reference #	Potential New Measures	Comments
4	Leak repair for low income	
5A	Pressure reduction in distribution system	
5B	PRV incentive for irrigation	
9A-9D	Submetering	
12B	Urinal rebates	
16B	Hot water on demand	
17B	CII Washer rebate	
24	Smart controller rebate	
25B	Rain sensors	
25D	Spray to drip, bubblers, MPRs	
28B	Large rainwater catchment	
29A-29C	Graywater outdoor	
29D	Graywater indoor (toilet flush system)	
30	Pool Covers	
31B	Mulch	
33B	CII Large Rebates (x-ray machines, analyzers)	
36	School retrofit grant program	
41C	Watersmart software	
42B	Awards Program	
Reference #	New Ordinance Measures	Comments
5C	Pressure Regulation at Individual Properties	
49	Permenant water waste ordinance	

Reference #	Current Programs	Comments
10A-10B	Residential Indoor Evaluations	
11A	Giveaways (showerheads, aerators)	
12A	Toilet Rebates	
17A	SFR/MFR Washing Machines	
19	Residential Irrigation Evaluations	
20	Commercial Irrigation Evaluations	
23A-23C	Lawn Replacement Program	
25E	Giveaways (moisture meters)	
37B	CII Indoor Evaluations	

Water Conservation Measure Screening  
 Potential Water Conservation Measures for Southern Oregon

Potential New Programs  
 Recommended for Modeling

Measures							Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)			Ranking and Criteria (0 to 3). (3 = excellent)	Total Score	Pass Yes or No	Comment
Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Service Area Match	Customer Acceptance / Equity	Additional Service Area Benefits					
2B	Water Loss	Apparent Loss Reduction - Meter Testing	System	N/A to Customers	Address meter testing and repair/replacement to insure more accurate meter reads and revenue collection. Actions could include meter calibration and accelerated meter replacement		Will be discussed in the Master Plan Update			0	Yes	We replace meters as needed but a complete replacement program is needed and will be discussed in the update. (5)	
4	Water Loss	Real Water Loss Reduction - Leak Repair Assistance	SFR	Voluntary / Mandatory	Customer leaks often occur at properties where owners are least able to pay costs of repair. These programs may require that customer leaks be repaired, but either subsidize part of the repair and/or pay the cost with revolving funds that are paid back with water bills over time. May also include option to replace inefficient plumbing fixtures at low-income residences.		3	5	4	12	Yes	We do not require that leaks be repaired. Most substantial leaks are repaired because the water bill would be too high otherwise. The City offers a "leak credit" currently but a more substantial program to cover plumbing replacements could be discussed. (3) <b>This could be a part of a low income program.</b> <a href="http://www.saws.org/service/affordability/plumbers.cfm">http://www.saws.org/service/affordability/plumbers.cfm</a>	
5A	Water Loss - Pressure Regulation	Distribution System Pressure Regulation	System	No \$\$ obligation to Customers, but their service would be impacted	Install additional pressure regulators in portions of distribution system to maintain pressure within limits so accounts do not receive excessive pressure. There is a high correlation between high water usage and high pressure, due to higher leakage, atomization of sprinklers and ease of using excessive water.		3	5	4	12	Yes	Our system has very high pressure. There are some areas that could benefit from added pressure reduction but would involve engineering and possible impacts to fire flows would need studied (2) Could have energy savings too!	
5B	Water Loss - Pressure Regulation	Pressure Regulation at Individual Properties	ALL	Incentive / Ordinance	Install pressure regulators at properties where pressure is above a certain level and pressure regulation is found to be lacking or inadequate. Plumbing codes require installation of pressure regulation when pressure exceeds 80 psi, but this does not always occur and/or regulators are installed improperly or in locations where they don't also serve the irrigation system, resulting in significant waste. Utility could fund and facilitate appropriate installation of regulators, first targeting neighborhoods with the highest pressure. Utility may need to impose regulations to require that such installations are made and maintained thereafter.		5	5	3	13	Yes		
5C	Water Loss - Pressure Regulation	Pressure Regulation at Individual Properties	ALL	Ordinance or MOU	Work with City and County building officials to develop protocols aimed at assuring that pressure regulation is being installed where required by plumbing codes, and is located where it is accessible for maintenance and will serve irrigation systems as well as the buildings.		5	5	3	13	Yes	Need to look into current ordinances	

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 Potential Water Conservation Measures for Southern Oregon

Measures											Potential New Programs	Recommended for Modeling
Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)		Ranking and Criteria (0 to 3). (3 = excellent)	Additional Service Area Benefits	Total Score	Pass Yes or No	Comment
						Service Area Match	Customer Acceptance / Equity					
6A	AMS	Install AMS (AMI)	ALL	N/A	Retrofit system with AMS (AMI) meters and associated network capable of providing continuous consumption data to Utility offices. Improved identification of system and customer leaks is major conservation benefit. Some of costs of these systems are offset by operational efficiencies and reduced staffing, as regular meter reading and those for opening and closing accounts are accomplished without need for physical or drive-by meter reading. Also enables enhanced billing options and ability to monitor unauthorized usage (such as use/tampering with closed accounts or irrigation if time of day or days per week are regulated). Customer service is improved as staff can quickly access continuous usage records to address customer inquiries. Optional features include online customer access to their usage, which has been shown to improve accountability and reduce water use. A ten year change-out would be a reasonable objective.			Will be discussed in the Master Plan Update Combine with 2B		0	Yes	Same response as the previous metering question, this needs addressed in the update and a decision made at council level. (5)
6B	AMS	Install AMS (AMI) New Development	ALL	Requirement	Require that new customers install such AMS meters as described above and possibly purchase means of viewing daily consumption inside their home/business either through the Internet (if available) or separate device. The AMS system would, on demand, indicate to the customer and Utility where and how their water is used, facilitating water use reduction and prompt leak identification. This would require Utility to install an AMS system. While reducing costs to Utility for meter acquisition, costs for AMS system would be incurred, and unless coupled with 5A, obtaining full benefits of system would be protracted.			Will be discussed in the Master Plan Update Combine with 2B		0	Yes	Same response as the previous metering question, this needs addressed in the update and a decision made at council level. (5)

Water Conservation Measure Screening  
 Potential Water Conservation Measures for Southern Oregon

Measures											Potential New Programs					
											Recommended for Modeling					
											Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)		Ranking and Criteria (0 to 3). (3 = excellent)			
Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Service Area Match	Customer Acceptance / Equity	Additional Service Area Benefits	Total Score	Pass Yes or No	Comment					
6C	Advanced Meter Infrastructure (AMI)	Targeted AMI to Irrigation or Large User Accounts	ALL	Requirement	Require that larger or irrigation customers install such AMI meters as described above and possibly purchase means of viewing daily consumption by landscape/property managers, or business either through the Internet (if available) or separate device. The AMI system would, on demand, indicate to the customer and Utility where and how their water is used, facilitating water use reduction and prompt leak identification. This would require Utility to install an AMI system.		Will be discussed in the Master Plan Update Combine with 2B			0	Yes	Same response as the previous metering question, this needs addressed in the update and a decision made at council level. (5)				
9A	Submetering	Mobile Home Park Submetering	MF Indoor	Incentive or Ordinance	Require or provide a partial cost rebate to meter all sites within a mobile home park that is currently master metered, pattern after Santa Clara Valley Water District program. Oregon state law now appears to require submetering for new parks, and major expansion of existing parks.		2	5	3	10	Possible	The important issue to the water Dept. would be making sure the additional metering would'nt in some way make us accept now private water mains as public(2) <a href="http://www.valleywater.org/EkContent.aspx?id=2123&amp;terms=submetering">http://www.valleywater.org/EkContent.aspx?id=2123&amp;terms=submetering</a>				
9B	Submetering	MF Submeter Incentive	Existing MF Indoor	Incentive	Provide a rebate (per unit) to assist MF building owners installing submeters on each existing individual apartment or condominium unit.		4	5	3	12	Yes	Could be a grant...				
9C	Submetering	MF Submeter Incentive	New MF Indoor	Incentive	Provide a rebate (per unit) to assist MF building owners install submeters on each new individual apartment unit.		4	5	3	12	Yes	Possible , we don't currently have a program like this. (3)				
9D	Submetering	Require Multi Family Submetering for New Developments	New MF Indoor	Ordinance	Require the metering of individual units in new multi-family, condos, townhouses, mobile-home parks and business centers (less than four stories and with water heater in the units).		4	4	3	11	Yes	Possible , we don't currently have a program like this. (3)				
	Indoor Plumbing Fixtures	Real Customer Water Loss Reduction - Leak Repair and Plumbing Emergency Assistance	SFR, MFR	Voluntary / Mandatory	Customer leaks can go uncorrected at properties where owners are least able to pay costs of repair. These programs may require that customer leaks be repaired, but either subsidize part of the repair and/or pay the cost with revolving funds that are paid back with water bills over time. May also include an option to replace inefficient plumbing fixtures at low-income residences.		Combine with Measure 4 "Leaks"			0	Yes					

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 Potential Water Conservation Measures for Southern Oregon

Potential New Programs  
 Recommended for Modeling

Measures							Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)		Ranking and Criteria (0 to 3). (3 = excellent)	Total Score	Pass Yes or No	Comment
Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Service Area Match	Customer Acceptance / Equity	Additional Service Area Benefits				
Indoor Plumbing Fixtures	Pressure Reduction	ALL	Incentive	Provide incentive to install pressure regulating valve on existing properties with pressure exceeding 80 psi.		Combine with measure 5B			0	Yes		
12B Indoor Plumbing Fixtures	High Efficiency Urinal Rebates	CII	Incentive	Provide a rebate or voucher for the installation of a high efficiency urinals. WaterSense standard is .5 gpf or less, though models flushing as low as 0.125 gpf (1 pint) are available and function well, so could be specified. Rebate amounts would reflect the incremental purchase cost and have been about \$50.		5	5	3	13	Yes	Opportunity to advertise other water saving fixtures or programs, which could also save on hot water costs	
16A Hot Water on Demand	Require Hot Water on Demand / Structured Plumbing in New Developments	SF Indoor	Ordinance	Work with developers to equip new homes or buildings with efficient hot water on demand systems such as structured plumbing systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater or to move the water heater into the center of the house and/or reduce hot water waiting times by having a an on-demand pump on a recirculation line.		5	5	2	12	Yes		
16B Hot Water on Demand	Provide a Rebate for Hot Water on Demand Pump Systems	SF Indoor	Incentive	Provide a rebate to equip homes with efficient hot water on demand systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to reduce hot water waiting times by having a an on-demand pump on a recirculation line. Can be installed on kitchen sink or master bath, wherever hot water waiting times are more than 1/2 minute. Requires an electrical outlet under the sink, which is not common on older home bathrooms but is on kitchen sinks.		5	5	2	12	Yes		
17B Clothes Washers	High Efficiency Washer Rebate	CII Indoor	Incentive	Provide a rebate for the installation of a high efficiency commercial washer (HEW). Rebate amounts would reflect the incremental purchase cost. Program will be shorter lived as it is intended to be a market transformation measure and eventually would be stopped as efficient units reach saturation.		5	5	3	13	Yes	Opportunity to advertise other water saving fixtures or programs, which could also save on hot water costs	
22 Irrigation	Financial Incentives for Irrigation and Landscape Upgrades	ALL	Incentive	For SF, MF, CII, and IRR customers with landscape, provide a Smart Landscape Rebate Program with rebates for substantive landscape retrofits or installation of water efficient upgrades; Rebates contribute towards the purchase and installation of water-wise plants, compost, mulch and selected types of irrigation equipment upgrades. Rebate for residential accounts and up to 50% more for commercial customers.		5	5	3	13	Yes		

Water Conservation Measure Screening  
 Potential Water Conservation Measures for Southern Oregon

Measures											Potential New Programs	Comment
Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)											Ranking and Criteria (0 to 3). (3 = excellent)	
Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Service Area Match	Customer Acceptance / Equity	Additional Service Area Benefits	Total Score	Pass Yes or No	Comment	
24	Irrigation	Weather-Based Irrigation Controller Rebates	ALL	Incentive	Provide a rebate for the purchase of a weather based or soil moisture irrigation controller. These controllers have on-site weather sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly. Requires local irrigation contractors who are competent with these products, so may require sponsoring a training program in association with this measure.		4	5	2	11	Yes	
25B	Irrigation	Rebate or Free Rain Sensors	Outdoor ALL or Selected	Incentive	Provide a rebate or free rain sensor shut-off device for existing irrigation controllers. These cancel scheduled sprinkling when sufficient rain has been received. This measure is most effective in areas with intermittent rain in peak watering seasons.		Combine with measure 22 "Smart Landscape"			0		
25D	Irrigation	Rotating Sprinkler Nozzle Rebates	ALL Outdoor	Incentive	Provide rebates to replace standard spray sprinkler nozzles with rotating nozzles that have lower application rates. Nozzles cost about \$6 and rebates have been on the order of \$4 with a minimum purchase of about 20 nozzles.		Could be combined with 22			0		Could be combined with 22
25F	Irrigation	Drip Irrigation	SF	Incentive	Offer drip conversion kits (RainBird 1800 Retro).		Could be combined with measure 22 Smart Landscape			0		
25G	Irrigation	Pressure Regulation	ALL	Incentive	Provide incentives for the installation of pressure regulators or ACV.		Could be combined with measure 5b			12	Yes	
28B	Rainwater Catchment	Provide Incentive for Large Rainwater Catchment Systems	MFR CII IRR Outdoor	Incentive	Provide incentive for installation of large rainwater catchment systems. This could involve rebates, grants and other cost share methods. Might require simultaneous installation of water efficient landscaping to assure that amount of water collected is capable of lasting into the peak irrigation season.		5	5	2	12	Yes	
29A	Gray water	Gray water Retrofit SF	SF Outdoor	Incentive	Provide a rebate to assist a certain percentage of single family homeowners per year to install gray water systems.		4	5	3	12	Yes	Building inspections, PR, opportunity for additional actions
29B	Gray water	Require Plumbing for Gray Water In New SF Development	SF Outdoor	Incentive or Ordinance	Provide a rebate or require builders of single family homes to provide plumbing for and/or install a gray water system in new homes.		4	3	3	10	Possible	Building inspections, PR, opportunity for additional actions

Water Conservation Measure Screening  
 Potential Water Conservation Measures for Southern Oregon

Measures											Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)		Ranking and Criteria (0 to 3). (3 = excellent)	Total Score	Pass Yes or No	Comment
	Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Service Area Match	Customer Acceptance / Equity	Additional Service Area Benefits							
29C	Gray water	Rebate for Gray Water Systems In New CII Development	CII Outdoor	Incentive	Provide a rebate for gray water systems in new CII development.		4	5	3	12	Yes	Building inspections, PR, opportunity for additional actions				
29D	Rebate Lavatory Sink Water Recycle System For Toilet Flushing	SFR, MFR	Indoor	Ordinance or Rebate	Recycle lavatory sink water for toilet flushing, such as an Aqua System.		4	4	2	10	Possible					
30	Other Outdoor	Require or Rebate Swimming Pool Covers	ALL Outdoor	Incentive	Provide a rebate through pool equipment supply stores for purchase of a swimming pool cover.		Could be combined with measure 22 Smart Landscape			0	Yes					
31B	Other Outdoor	New Zero Runoff Landscape - Mulch Program	ALL Outdoor	Incentive	Subsidize delivery charges for mulch so it is completely free to customers. Goal would be to keep irrigation and storm water on site and reduce runoff. The benefit water savings would be to keep the soil moist for 2 to 3 weeks per year in the spring and fall. Pattern after the City of Santa Barbara, California program.		Could be combined with measure 22 Smart Landscape			0						
33B	CII Equipment	CII Rebates to Replace Inefficient Equipment	Existing Customers CII	Incentive	Provide up to a \$1,000 rebate for a standard list of water efficient equipment. Included would be x-ray machines, icemakers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, replace once through cooling, and add conductivity meters on cooling towers. Pattern after San Diego County Water Authority or Seattle Water Department programs. Assume 10% market saturation.		5	5	3	13	Yes	<a href="http://www.savingwater.org/Businesses/CommercialIndustrial/index.htm">http://www.savingwater.org/Businesses/CommercialIndustrial/index.htm</a>				
34	CII Equipment	Require Plan Review for new CII	CII Indoor / Outdoor	Ordinance	Require plan reviews for water use efficiency for all new business customers.		5	5	2	12	Yes					
36	CII Equipment	School Building Retrofit	CII Indoor / Outdoor	Incentive	School retrofit program wherein school receives a grant to replace fixtures and upgrade irrigation systems. Pattern after MWD of Southern California program.		5	5	2	12	Yes					
39	CII Equipment	Dry Vacuum Pump	CII Indoor	Incentive	Provide a rebate to assist CII with installation of dry vacuum pumps. (Possibly combine into Measure #33B CII Inefficient Equipment)		Combine with 33B			0	Yes	<a href="http://www.regionalh2o.org/water-conservation">http://www.regionalh2o.org/water-conservation</a> <a href="https://www.portlandoregon.gov/water/29334">https://www.portlandoregon.gov/water/29334</a>				

Potential New Programs  
 Recommended for Modeling

Water Conservation Measure Screening  
 Potential Water Conservation Measures for Southern Oregon

Measures											Potential New Programs	
											Recommended for Modeling	
							Ranking Criteria and Score (0 to 5) (0 = poor; 5 = excellent)		Ranking and Criteria (0 to 3). (3 = excellent)			
	Equipment or Program Type	Specific Program	Focus of Program	Voluntary, Incentive or Required of Customers (Ordinance)?	Measure Description	Program	Service Area Match	Customer Acceptance / Equity	Additional Service Area Benefits	Total Score	Pass Yes or No	Comment
41B	Public Education	Media Campaign: such as "Take Control of your Controller"	ALL	Voluntary	"Take Control of your Controller" focused social media based campaign. Consider determining appropriate usage and media campaign message with marketing study/focus groups.		5	5	3	13	Yes	
41C	Public Education	Billing Report Educational Tool	ALL	Voluntary	Example: Water Smart Software with online and print billing consumptions to customers.		4	4	3	11	Possible	
42A	Public Education	Recognition Programs for Water Savings by Residences & Apartments Program, Recognition Programs for Water Savings by Businesses	SFR Outdoor, CII Indoor / Outdoor	Voluntary	Sponsor an annual awards program for residences and multi-family properties that significantly reduce water use. They would receive a plaque/recognition. This could include innovative customers that install compost toilets, gray-water, bio-swales and rainwater cisterns in an effort to maximize practical home water use efficiency., Sponsor an annual awards program for businesses that significantly reduce water use. They would receive a plaque/recognition.		4	4	3	11	Possible	We used to have a similar program called the Green Business Program. We may be able to jump start that one again.
42B	Public Education	Recognition Programs for Water Savings by Residences & Apartments Program	SFR Outdoor	Voluntary	Sponsor an annual awards program for residences and multi-family properties that significantly reduce water use. They would receive a plaque/recognition. This could include innovative customers that install compost toilets, gray-water, bio-swales and rainwater cisterns in an effort to maximize practical home water use efficiency.		4	4	3	11	Possible	Haven't done other sectors besides businesses through the previous program
42C	Public Education	Recognition Programs for Water Savings by Businesses	CII Indoor / Outdoor	Voluntary	Sponsor an annual awards program for businesses that significantly reduce water use. They would receive a plaque/recognition.		4	4	3	11	Possible	We used to have a similar program called the Green Business Program. We may be able to jump start that one again.
49	Other	Prohibit Once through Cooling, Non Recycling Fountains, Water Wasting Fixtures and Practices	CII	Ordinance	Prohibit certain obvious wastes of water in new facilities, such as those listed. Consider requiring retrofits of existing situations, allowing reasonable time for compliance.		5	3	2	10	Possible	Water Waste Code
51	Other	Low Impact New and Remodeled Development	ALL	Ordinance	Utility would require developers of new/remodeled sites to follow Low Impact Development concepts/standards/Best Management Practices for stormwater and water conservation benefits. Encourage or require use of bio-retention facilities, rain water cisterns, graywater plumbing, etc.		5	5	3	13	Yes	This is something that may be mandated in the near future through EPA and Oregon DEQ