

# Council Study Session

May 4, 2020

<b>Agenda Item</b>	2020 Water Supply Update & Drought Management Plan	
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<b>Item Type</b>	Requested by Council <input checked="" type="checkbox"/> Update <input type="checkbox"/> Request for Direction <input type="checkbox"/> Presentation <input type="checkbox"/>	

## **SUMMARY**

Before the Council is an update on water supply and the drought management strategy for the 2020 season along with information regarding the City's robust conservation program.

## **POLICIES, PLANS & GOALS SUPPORTED**

Council Goals:

Essential Services

- Water

Value Services

- Address Climate Change

Department Goals:

- Maintain existing infrastructure to meet regulatory requirements and minimize life-cycle costs
- Deliver timely life cycle capital improvement projects
- Maintain and improve infrastructure that enhances the economic vitality of the community
- Evaluate all city infrastructure regarding planning management and financial resources

Plans:

- Water Master Plan - "Adopt an integrated water master plan that addresses long-term water supply including climate change issues, security and redundancy, watershed health, conservation and reuse and stream health."
- Water Management & Conservation Plan
- Climate and Energy Action Plan (CEAP)
  - Manage and conserve community water resources
  - Conserve water use within city operations

## **BACKGROUND AND ADDITIONAL INFORMATION**

Water Supply Sources: The City has three distinct sources of water; Reeder Reservoir and Ashland Creek water, Talent Irrigation District (TID) and the Talent-Ashland-Phoenix (TAP) Intertie from the Medford Water Commission.

- Reeder Reservoir has a storage capacity of 260 million gallons (MG) of flows from the east and west forks of Ashland Creek and typically supplies all the City's raw water required for residential and commercial use. The City has water rights totaling approximately 29 cubic feet per

second (cfs) from Ashland Creek flows and a storage right of 800-acre feet in Reeder Reservoir (1927). Storage, especially in the summer months is the limiting factor.

- TID – the City has rights to a total of 1,369 acre feet of domestic/municipal and irrigation water rights. The irrigation season generally runs from April to October. This year TID is expected to start charging the canal systems in early May
  - 769-acre feet (Hyatt Reservoir via Ashland Canal) – perpetual domestic right
  - 600-acre feet BOR/TID municipal use (Howard Prairie via Ashland Canal)
- TAP – the City has the rights to 1,000 acre feet of water for municipal use from Lost Creek Lake through the Medford-TAP project. Water is delivered using two vertical turbine pumps for a total capacity of 2.13 MGD pumping at a rate of 1,480 gpm.
- Treated Water Storage – The City has four storage reservoirs with a total of 6.8 MG. (Crowson, Alsing, Granite each have 2.1 MG, and Fallon is 0.5 MG)

**Current Conditions:**

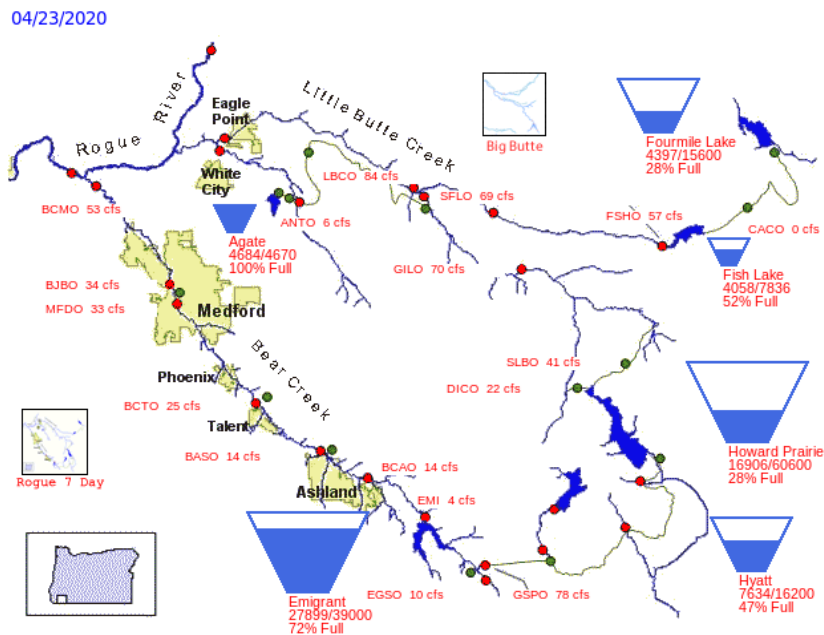
Water Treatment Plant staff started filling Reeder in middle April. Due to the lower than average snowpack and significantly warmer weather it was best to begin filling the reservoir in preparation for summer season. Typically, the reservoir reaches full capacity in May and spills through the spillway for some time before demand outpaces inflow at which time the reservoir begins its drawdown. As of April 27, Reeder Reservoir was 77.6 percent full and continuing to fill at about one to two percent a day. The average demand over the past 10 days has been 2.84 MGD.

**TID:**

Talent Irrigation District (TID) will begin charging their canals and infrastructure on May 1. TID storage reservoirs are also impacted by the current drought conditions (55 percent of average 4/14/2020). TID expects an impacted irrigation season due to the drought conditions.

**Water Management Strategy for Drought:**

As a matter of previous practice, recommended by Ashland Water Advisory ad hoc Committee (AWAC) and approved by the City Council, Public Works follows a specific strategy for drought management. That strategy is to utilize TID waters early in the season to supplement Reeder Reservoir water, protecting the Reeder Supply for as long as possible. Once TID water delivery ends for the season then the City has access to the TAP system for additional supply, if needed. The TAP supply is available all year, but under the approved drought strategy utilized after TID in the scenario. Public Works also performs a multi-week functional test of the TAP pump station annually, generally in September or October.

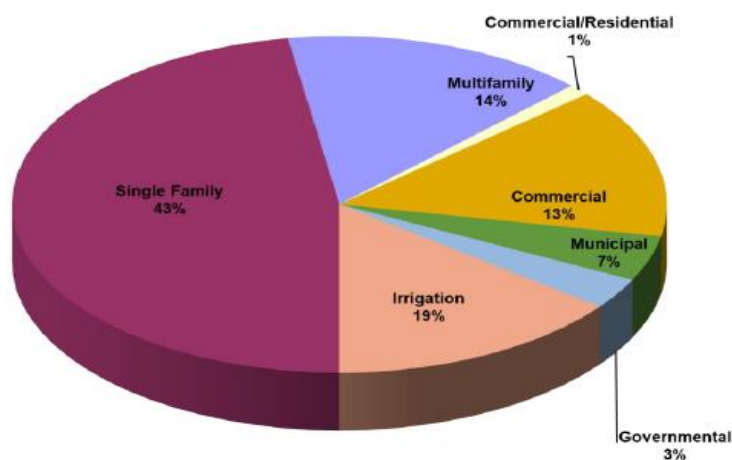


Public Works plans to begin the pumping of TID waters from the Terrace Street pump station in early May. The reasons for this are twofold: one to utilize TID water for potable domestic use per the drought strategy and second to perform a full functional operational test of the Terrace Street Pump Station. The Terrace Street Pump Station improvement project was completed in 2019, but staff only ran a short test on the system to ensure contractor compliance with the construction requirements. It is expected to run the pump station upwards of a month. This could change based on domestic water use and weather patterns. The last time this strategy was employed was the summer of 2018 when snow levels and snow water equivalents (SWE) were similar to this year.

Treated Water Use Statistics (2018):

- Average daily demand = 2.9 MGD
- Population (2018) served by the water system was approximately 21,500.
- 8,717 customer connections;
  - 80% single family,
  - 7% multi-family,
  - 7% commercial,
  - 4 % irrigation,
  - 1% commercial/residential, and
  - 1% gov/municipal.
- Winter average daily = 1.5-2 MGD
- Summer average daily = 4.5-5.5 MGD
- Summer peak day = 5.55 MGD
- Irrigation about 19%; mostly summer use

2018 Water Consumption by Customer Class



Snow Pack:

As of April 27, 2020, there was 28 inches of snow with a SWE of 14.1 inches, recorded at the Big Red Mountain SNOTEL site just southwest of Ashland. There are also three additional sites on Mt. Ashland that are measured manually at the end of each month by the Jackson County Water Master. These SNOTEL sites provide valuable snowpack and related climate data that allow us to analyze the City’s water supply conditions for the year. While this year there wasn’t as much snow as last year, there was still more snowpack recorded on this day than in 2015. See the table below.

Snow Course/Aerial Marker Sites	Snow Depth (inches)				Snow Water Equivalent (SWE) inches			
	2015	2018	2019	2020	2015	2018	2019	2020
Big Red Mountain SNOTEL Site* 6,050 ft.	7	22	50	28	3.9	10.1	24.5	14.1
Caliban 6,500 ft.	9	32	66		4.2	11	30.2	
Mt. Ashland Switchback 6,430 ft.	4	23	90		1.3	8	27.5	
Ski Bowl Road 6,070 ft.	0	6	31		0	2.2	15.1	

\* Big Red Mountain SNOTEL site is an automated site that provides daily snowpack data. The three additional sites are measured manually by the Jackson County Water Master at the end of each month. The Big Red Site information is from April 27, 2020.

### Conservation Strategies and Programs:

The City continues to encourage customers to use water efficiently and invest in long term conservation measures, not only to minimize the impact of future limitations, but to also ensure there is a sufficient supply to sustain the community for years to come.

In conjunction with water supply strategies, the water conservation team offers water customers the following programs:

- Lawn Replacement Rebate - for removal of irrigated lawns that are replaced with low water use landscapes and efficient irrigation systems.
- Irrigation System and Indoor Water Use Evaluations - free for residents and businesses. Evaluations of individual systems uncover ongoing water waste and leaks.
- Smart Irrigation Controller Rebate – to install a *WaterSense* labeled smart controller.
- Appliance Rebates - are also available for installing high efficiency *WaterSense* labeled toilets and *Energy Star* labeled washing machines.
- Giveaways - free low flow showerheads, faucets aerators and spray rinse valves for commercial dishwashing are available for residences and businesses.
- Water Wise Landscaping Website ([www.ashland saves water.org](http://www.ashland saves water.org)) - to help people design landscapes with plants that use less water. The site includes a watering calculator and links to City's programs and rebates.
- Public Presentations - on long term water efficiency changes, as well as information on the City's drinking water system.
- City Website - with descriptions of programs, savings tips, weather data and watering recommendations, educational handouts, and more.

### Additional Measures:

- *Love Your Water* Campaign – reusable bags and soil moisture meters for customers who sign up for a water evaluation, either indoor or outdoor.
- Monthly City Source - newsletter articles in utility bills that discuss water savings tips and provides information about the City's water efficiency programs and rebates.
- Movie Theater Advertisement - to help promote the efficient use of the community's resources, a combined water and energy conservation ad will play at both movie theaters during the months of July through September.
- City Owned Property Irrigation Upgrades – continue to identify and replace inefficient sprinklers on City and Parks owned properties.
- Waterwise and Firewise Demonstration Garden - was installed in front of Fire Station #1 downtown. The garden also incorporates deer resistant and pollinator plants.
- Southern Oregon Landscape Association - provide education and resources to local landscape contractors on water efficiency in the landscape.
- Ongoing Research - of new technologies in water efficiency and continue to evaluate future programs and incentives to help our customers.

Many of the City's residents take advantage of the City's efficiency programs and as a result there is an estimated long term reduction in water use over the past two years of approximately 6 million gallons.

### **FISCAL IMPACTS**

The water fund is appropriately funded for the remainder of the biennial budget.

**DISCUSSION QUESTIONS**

Is the City’s prioritization of raw water use appropriate?

Is staff’s approach to water conservation measures pertinent for the summer of 2020?

**SUGGESTED NEXT STEPS**

N/A

**REFERENCES & ATTACHMENTS**

Attachment 1: Historic Snowpack Data for the Ashland Creek Watershed

## SNOWPACK DATA FOR THE ASHLAND CREEK WATERSHED

Big Red Mountain: Elevation - 6,050 ft. <span style="float: right;">May 1st</span>									April 27th	
	2009	2012	2013	2014	2015	2016	2017	2018	2019	2020
SWE *	18.4	24.5	18.1	3.6	0	24.1	39	10.1	24.5	14.1
% of Median SWE**	78%	104%	77%	15%	0%	103%	166%	43%	103%	58%
Snow Depth (in.)	42	58	35	6	0	53	83	22	50	28

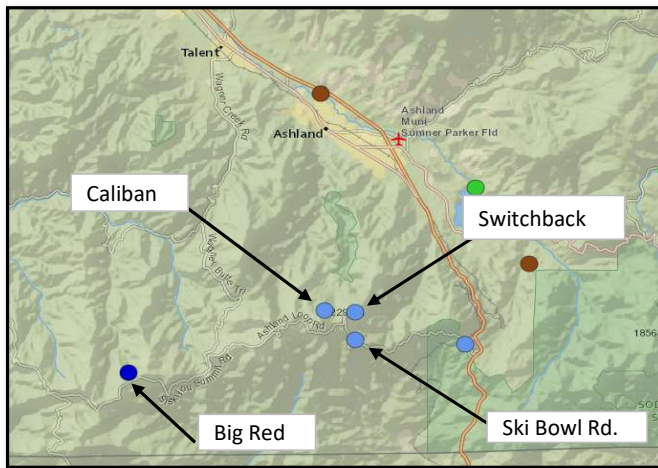
Caliban: Elevation - 6,500 ft. <span style="float: right;">May 1st</span>										
	2009	2012	2013	2014	2015	2016	2017	2018	2019	2020
SWE *	17.8	32.6	24.2	0	2.8	27.7	47	11	30.2	
% of Median SWE**	61%	112%	83%	0%	10%	95%	161%	38%	103%	
Snow Depth (in.)	42	75	52	0	6	60	104	32	66	

Mt. Ashland Switchback: Elevation - 6,430 ft. <span style="float: right;">May 1st</span>										
	2009	2012	2013	2014	2015	2016	2017	2018	2019	2020
SWE *	17.2	32.3	20.7	0	0.8	29.9	44.3	8	27.5	
% of Median SWE**	56%	106%	68%	0%	3%	75%	145%	26%	90%	
Snow Depth (in.)	41	74	44	0	1	50	99	23	90	

Mt. Ashland Ski Bowl Road: Elevation - 6,070ft. <span style="float: right;">May 1st</span>										
	2009	2012	2013	2014	2015	2016	2017	2018	2019	2020
SWE *	12.7	22.2	5	0	0	11.6	28.7	2.2	15.1	
% of Median SWE**	59%	103%	23%	0%	0%	54%	133%	10%	70%	
Snow Depth (in.)	30	52	10	0	0	24	62	6	31	

\* **Snow Water Equivalent (SWE)** - Amount of water held in the snowpack.

\*\* **Median** - the middle point of a number set, half the numbers are above the median and half are below.



Big Red Mountain SNOTEL Site is an automated site that provides daily snowpack data. The three additional sites are measured manually by the Jackson County Water Master at the end of each month.

Oregon Snow Survey - Natural Resource Conservation Service (NRCS)

<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/or/snow/?cid=stelprdb1266968>