



City of Ashland's Water Supply

USING OUR RESOURCE WISELY

JULIE SMITHERMAN, WATER CONSERVATION SPECIALIST

PNWS-AWWA BOISE CONFERENCE MAY 6, 2016



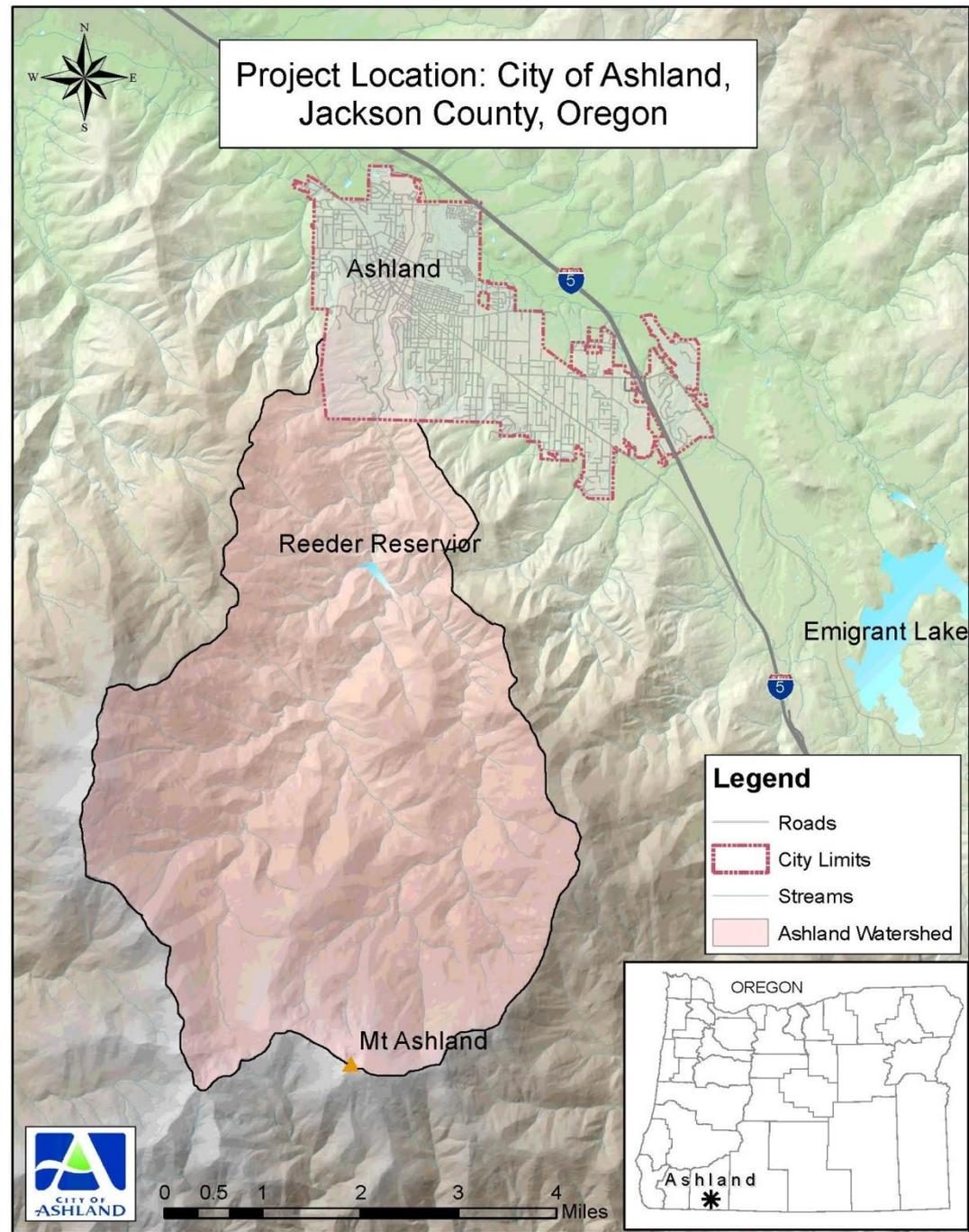
City of Ashland, Oregon

- Location: Southern Oregon
- Population: 21,000
- Elevation: 2,000 feet
- Annual Rainfall: 18 inches
- Average Summer Temp: 90 degrees



Ashland Creek Watershed

- Depend on surface runoff
- Especially snowpack
- Approx. 14,425 acres
- Runoff collected in Reeder Reservoir
- Mount Ashland: 7,500 ft
- Geology: Granitic



Water Supply Issues

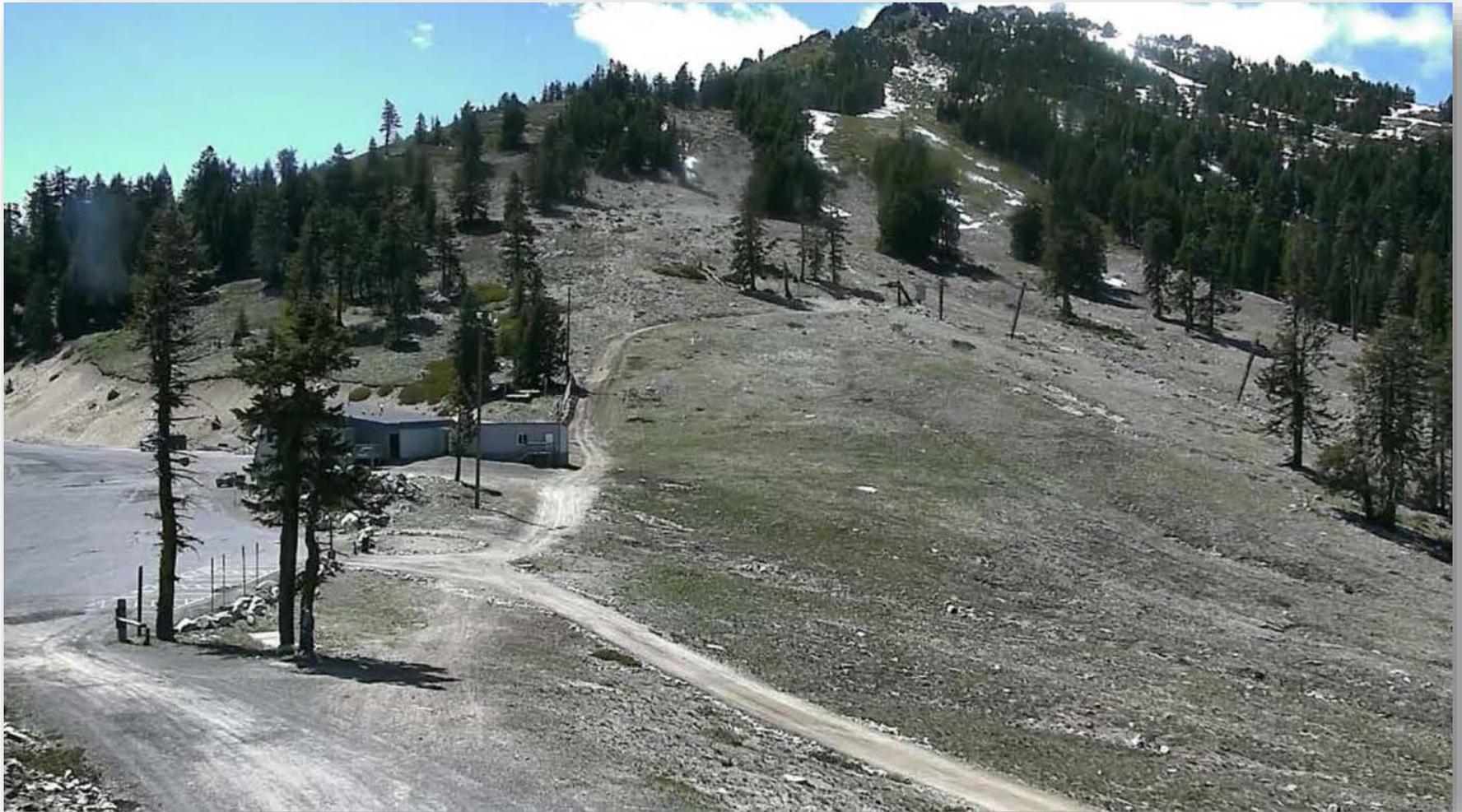
- Insufficient aquifer storage
- July 2015 flows: 3 MGD
- July 2014 flow 2 MGD
- Normal flows: 15-18 MGD
- Water use 6.5 MGD
- Reservoir holds 177 million gallons (MG)
- Reservoir storage lasts for 45 days



Mt. Ashland in a “Normal” May



Mt. Ashland May 2015



What can we do?

Irrigation Water



Buy Water



Use Efficiently



Talent Irrigation District (TID)



- Canal runs along the hillside parallel to the City.
- Source - Hyatt and Howard Prairie Lake.
- Used when snowpack is low.
- 2 million gallons per day.
- Treated to drinking water standards.
- Only available May to mid Sept.

Talent Ashland Phoenix (TAP)

- Emergency Water Supply
- Completed in August 2014
- Source – Medford Water Commission (Big Butte Springs and Rogue River)
- Water Right – 2.13 (MGD)
- Already treated to drinking water standards.



Water Distribution System

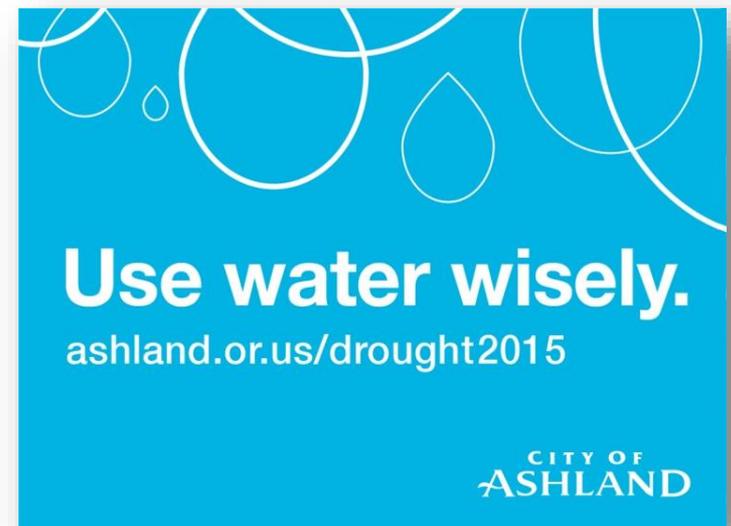


2015 Drought Response Plan

- Ask the community to reduce to between 4.5 and 5 MGD.
- Keep the reservoir full as long as possible
 - Add TID water when Ashland Creek water does not meet daily demand
 - Shut off a portion of the TID ditch to allow more water to be treated at the WTP
 - Add TAP water when both Ashland Creek and the TID water cannot meet our community's demand
- USE WATER WISELY

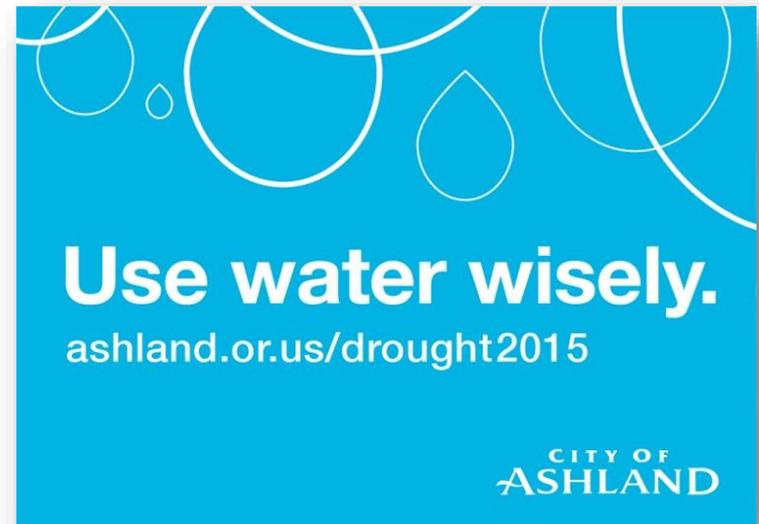
Use Water Wisely Campaign

- Use Water Wisely signs were placed throughout town
- Presentations to civic groups and community organizations
- Provide information on how the water system works
- Drought website and FAQs
- Signs to restaurants and hotels
- Large water users reduced usage
- Conservation programs



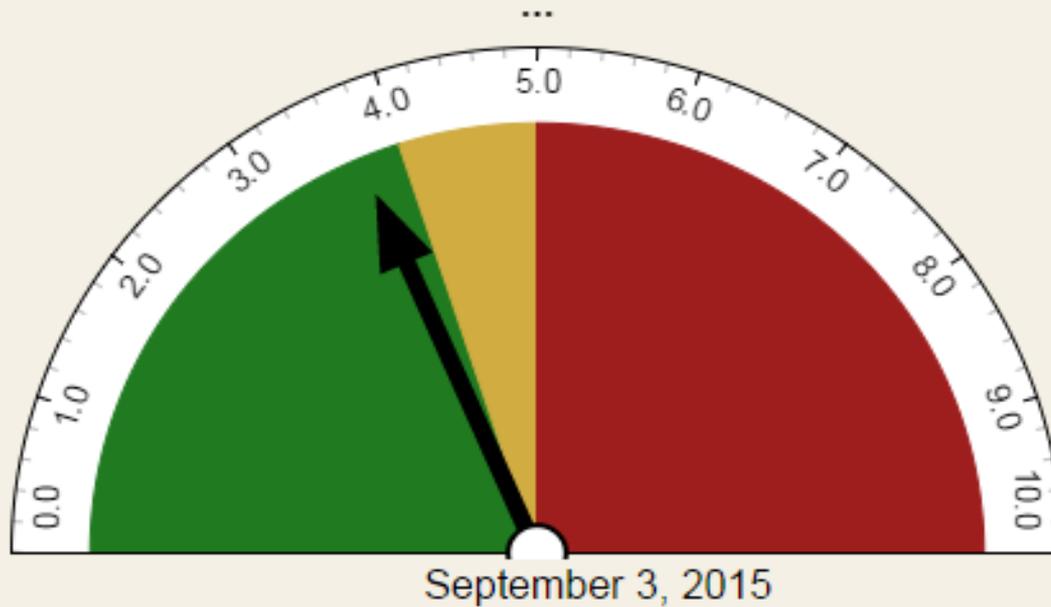
Use Water Wisely Campaign

- 30% water use reduction – 6.5 mgd to 4.5mgd
- Proactive - get ahead of the situation
- Presented the problem to the community – asked for help and to be a part of the solution
- Request the community reduce wherever they could.
- Provided attainable solutions and resources
- Voluntarily – no restrictions



Drought Update

Previous Day's Water Usage, Millions of Gallons



Ashland's Water Supply



Water Conservation Programs

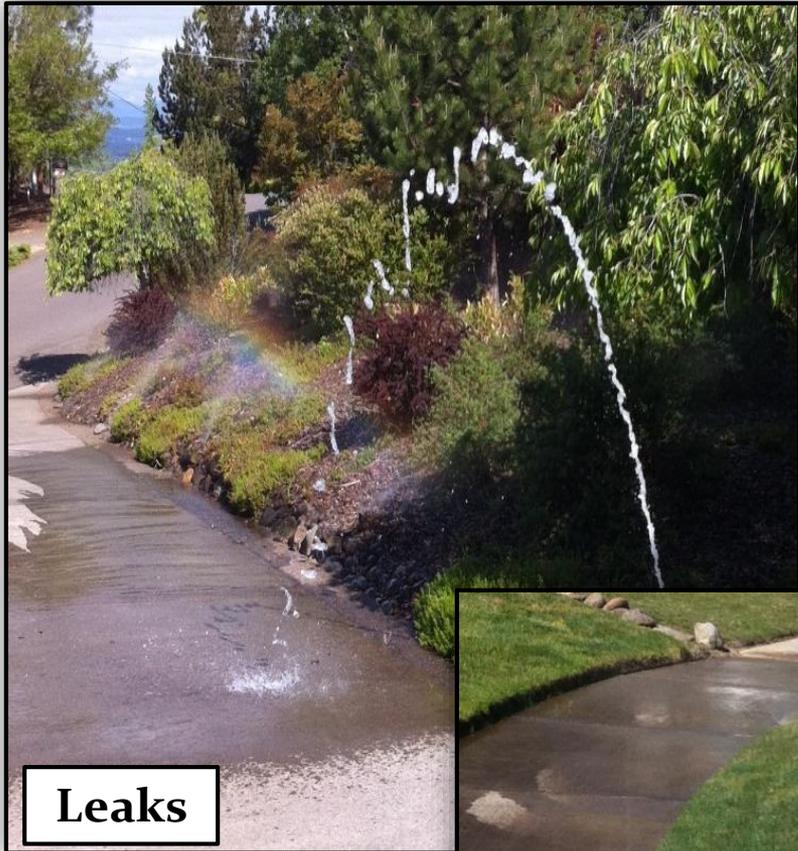
- Irrigation Evaluations
- Lawn Replacement Program
- Water Wise Landscaping Website
- Indoor Water Use Evaluations
- Appliance Rebates (toilets, washing machines, dishwashers)
- Giveaways (showerheads, bathroom & kitchen aerators, toilet dye tablets, soil moisture meters)
- Public outreach & resources



Irrigation Evaluations



My Sprinklers Are Fine!



Leaks



Broken Sprinklers



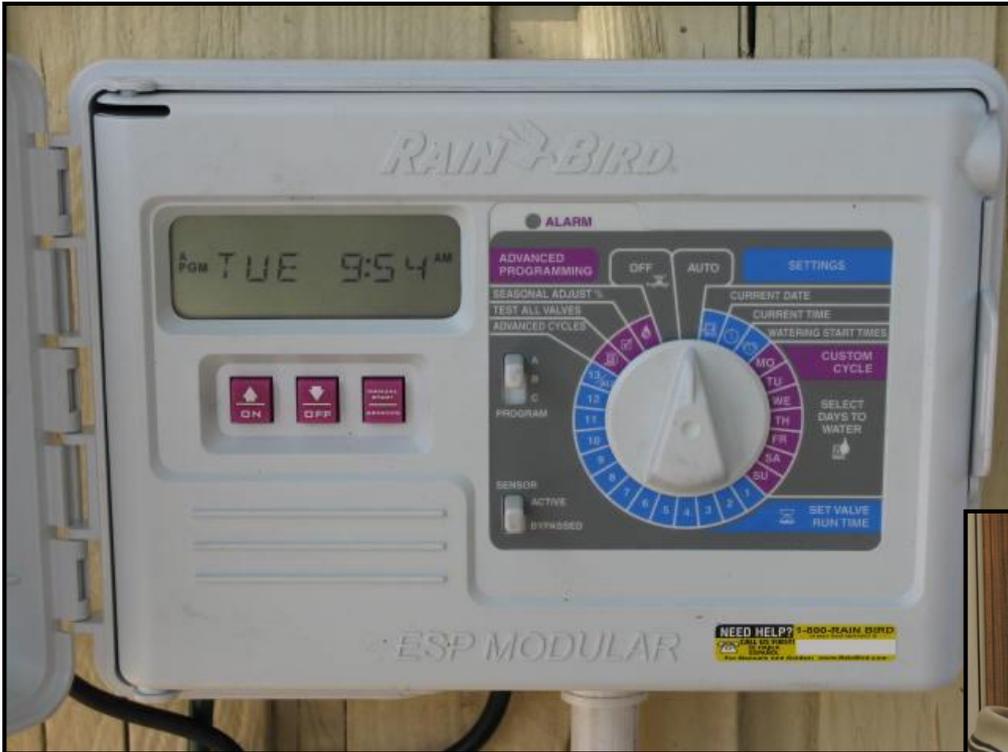
Sprinkler Overspray

Sprinkler Controllers

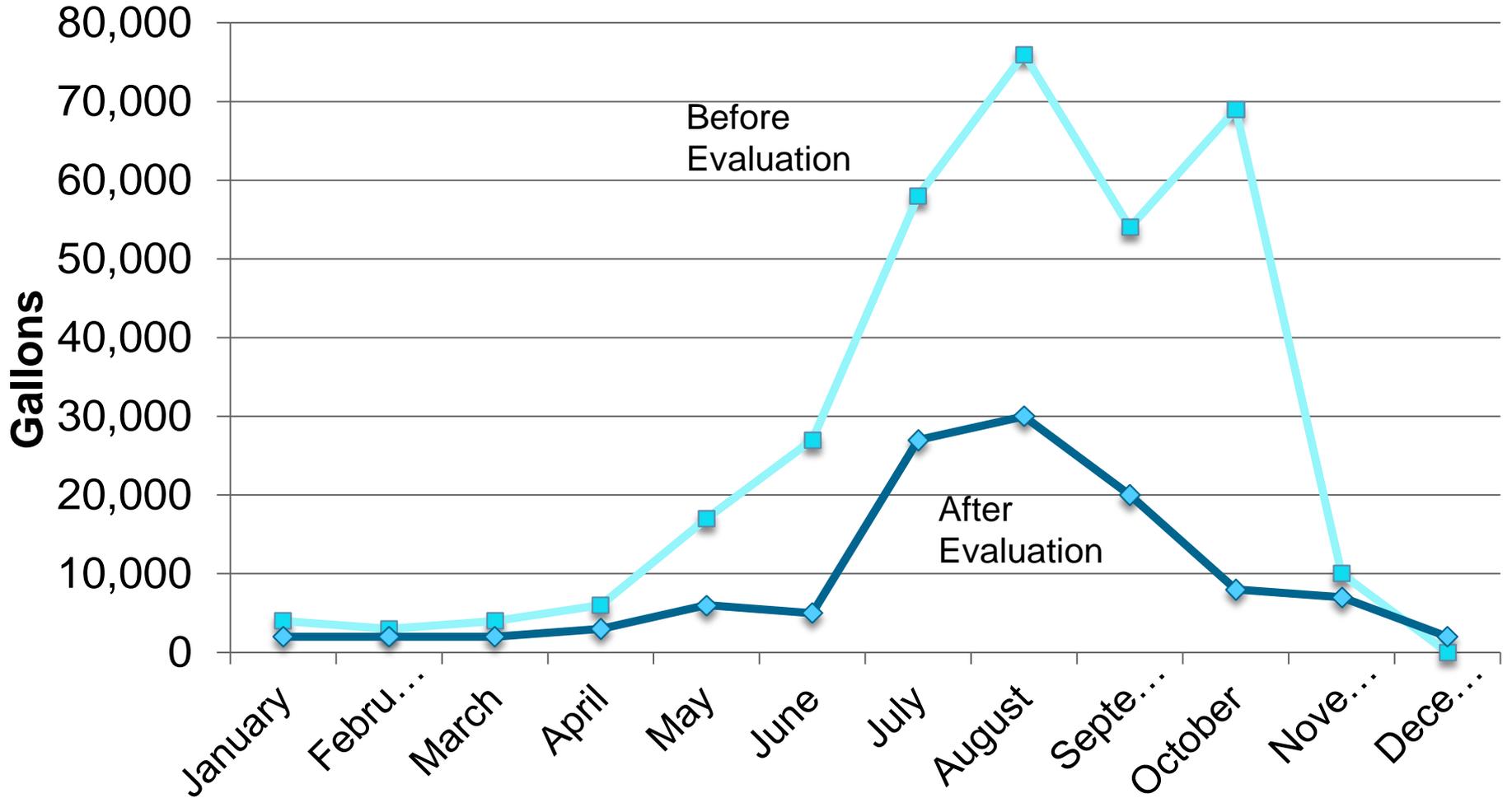
**Set it and Forget it??
NO!**

**Regular Adjustments
Reduce up to 60%**

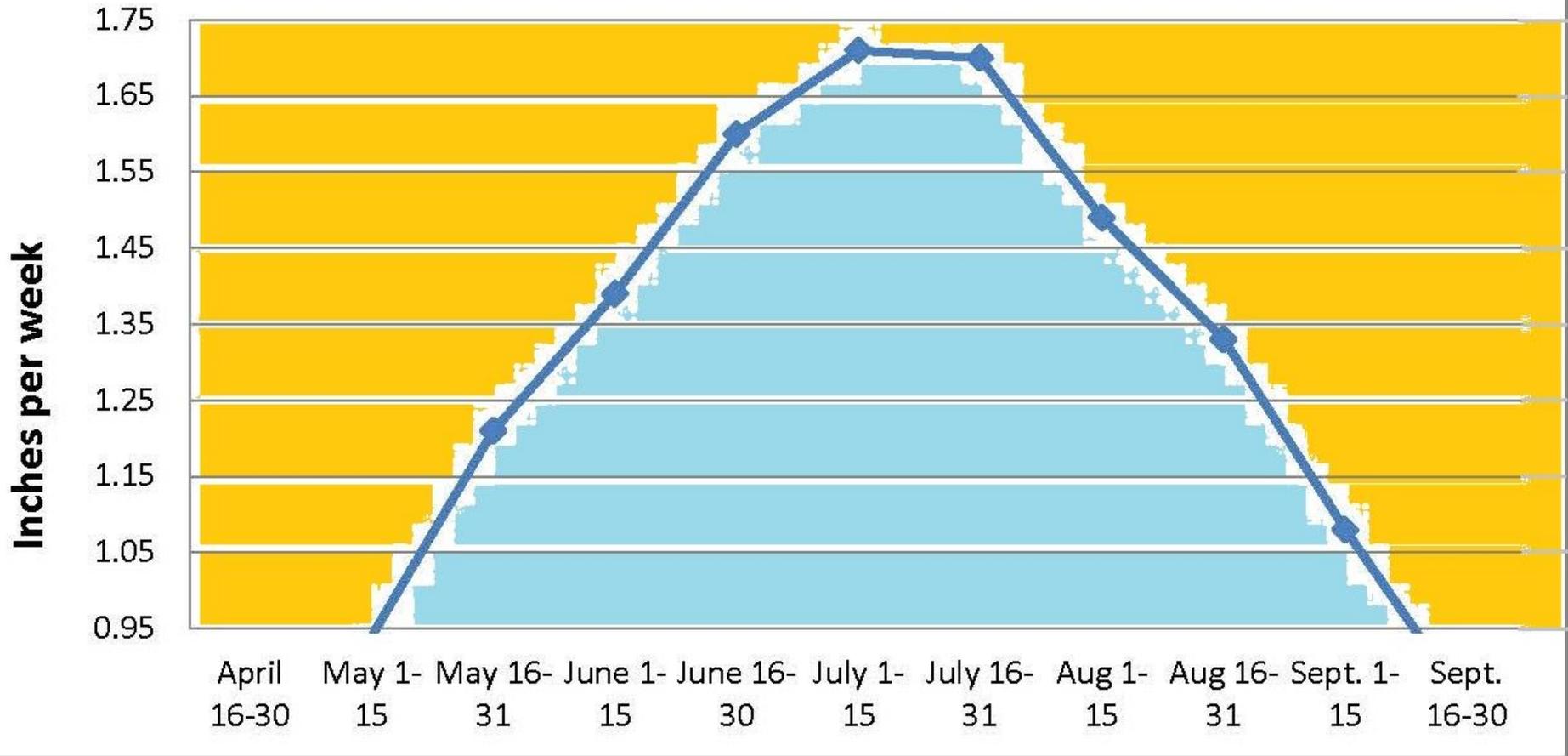
- **Use % Adjust**
- **Hand water dry areas**



Scheduling & Savings



Plant Water Needs in Summer



Water Need

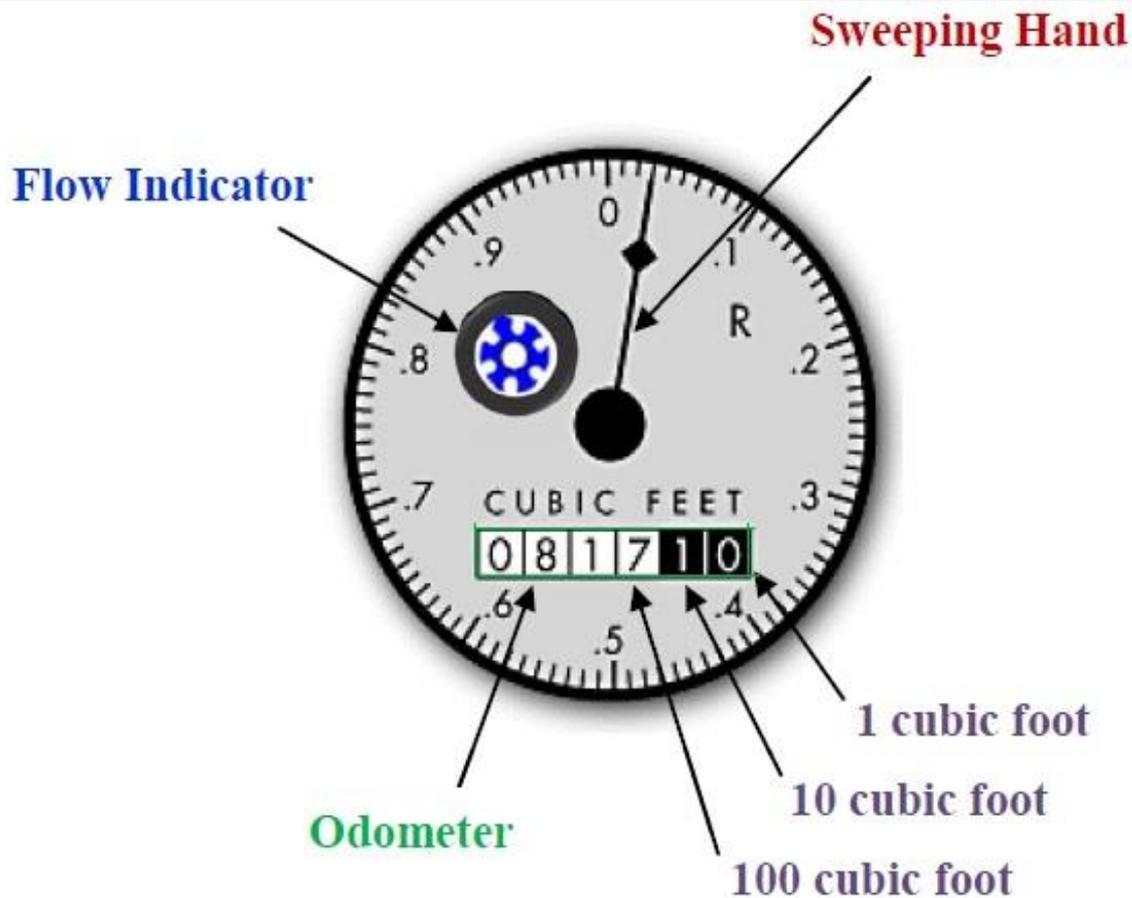


Water Wasted

Soil Moisture Meters



Locate Your Water Meter





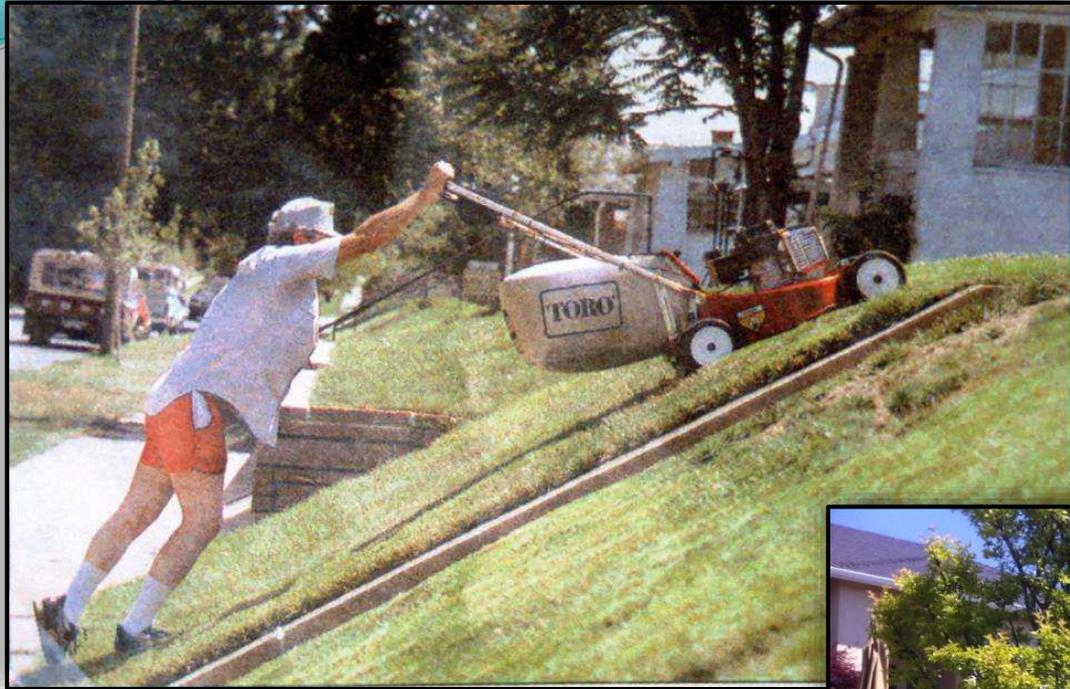
Visit the City of Ashland's Water – Wise Landscaping website at www.ashland saveswater.org



ASHLAND



WATER WISE LANDSCAPING



Lawn Replacement Program (LRP)

Savings:
10,000 -30,000
gallons per summer!



Mt. Meadows Project

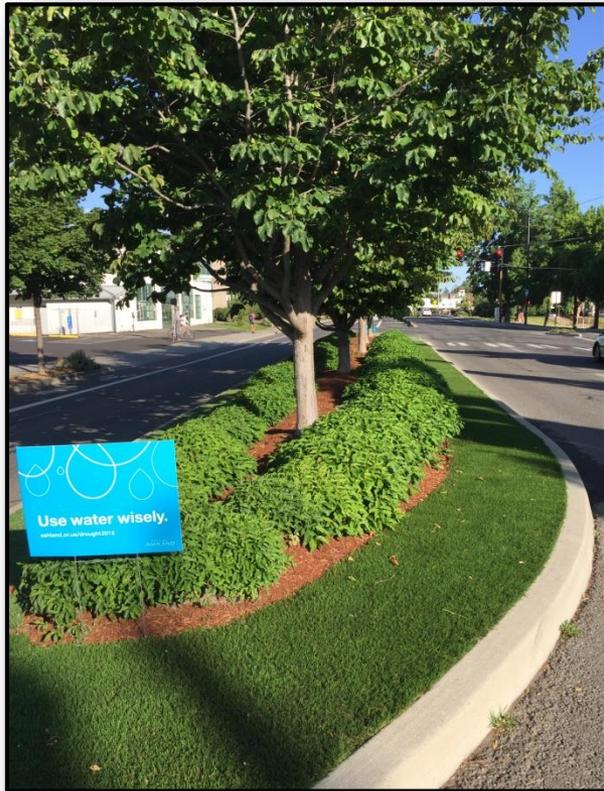
- One of the City's highest users - 60% outdoors
- Replaced over 20,000 ft² of lawn
- Reduced water use by 35% in the last two years
- Projects
 - Lawn Replacement
 - Pressure Regulating Valves
 - Drought Tolerant Turf



City Median Project



Pilot Projects



Synthetic Turf



**Drought
Tolerant Plants**



**Drought
Tolerant Turf**

Water Savings Potential

(Family of 4)

Toilets = 40 gpd

Washers = 25 gpd

Showers = 30 gpd

Aerators = 30 gpd

= 45,000 gallons per year



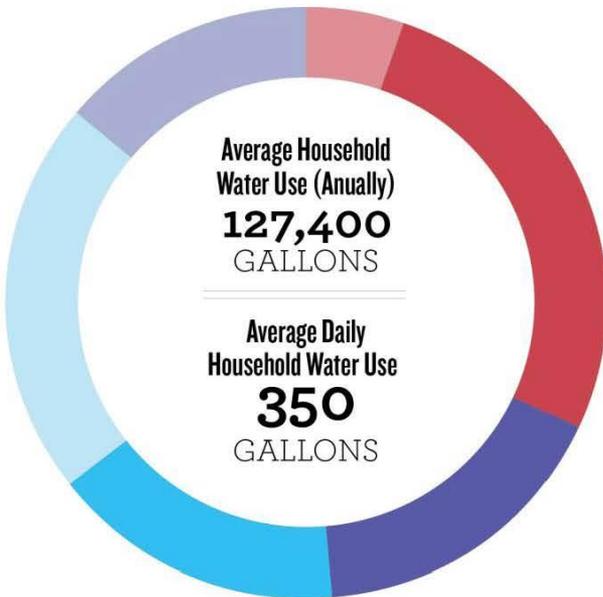
Resources & Giveaways



Save Water With Us



The Water Conservation Department is offering **FREE** showerheads, bathroom aerators, kitchen aerators, and moisture meters in addition to **rebates** for toilets, dishwashers, and clothes washers



Showerhead



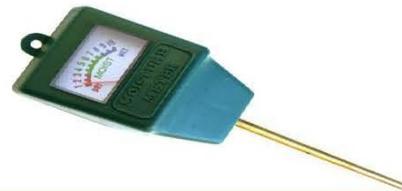
Bathroom aerator



Kitchen aerator



Moisture Meter



2015 Program Savings

Incentive Programs	Gallons Saved
Toilets	1,064,705
Showerheads	4,252,250
Aerators	2,956,500
Kitchen	239,531
Washing Machine	297,110
Dishwashers	16,848
Outdoor Audits	275,000
2015 LRPs	998,287
Total Savings	10,100,232

Looking Forward

- **Is this the new normal? Long term changes important**
- **Be proactive and present many solutions**
- **Invest in water efficient technologies – hardware changes**
- **Encourage change in habits – will change over time**
- **Use water appropriately without diminishing quality of life**
- **Keep the momentum – ongoing education & public outreach**
- **Understanding the water system: become more water conscious and are less likely to waste it.**

Questions?

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541-552-2062

Drought Website:

www.ashland.or.us/drought2015

Water Conservation:

www.ashland.or.us/conserve

Water-Wise Landscaping Website:

www.ashlandsaveswater.org

Q: What percentage of total home water use is used on landscapes?

- Under 15%
- 25%
- 40%
- Over 50% ←



Q: What is the largest use of water in an average home in the US?

- Showers
- Toilet Flushing ←
- Dishwashing
- Clothes Washing



Sprinkler Application Rates (PR)

Fixed Spray
Sprinklers



Rotating
Sprinklers



Standard spray sprinklers apply water at a faster rate than rotating sprinklers, so should be run half as long.



SAMPLE WATERING GUIDE



LAWN WATERING

Biweekly Period	Approximate Lawn Water Needs (ET) (Inches per Week) ⁽¹⁾	Total Watering Time Per Week for Standard Spray Heads ⁽²⁾	Total Watering Time Per Week for Rotary Heads ⁽²⁾
May 1-15	0.94	38 Minutes	90 Minutes
May 16-31	1.21	48 Minutes	116 Minutes
June 1-15	1.39	56 Minutes	134 Minutes
June 16-30	1.60	64 Minutes	154 Minutes
July 1-15	1.71	68 Minutes	164 Minutes
July 16-31	1.70	68 Minutes	164 Minutes
Aug 1-15	1.49	60 Minutes	144 Minutes
Aug 16-31	1.33	54 Minutes	128 Minutes
Sep 1-15	1.08	44 Minutes	104 Minutes
Sep 16-30	0.85	34 Minutes	82 Minutes

(1) Plant water need is often described as inches of water needed per week. *Evapotranspiration (ET)* is the sum of evaporation from the soil and water being used and transpired by the plants.

(2) These run times are based on an average application rate of 1.5 inches per hour for standard spray heads, and 0.625 inches per hour for rotating sprinklers.

Example water requirement calculation:

Weekly irrigation = 1.70 in. (ET) / 1.5 in/hr (application rate of sprays) x 60 = 68 minutes per week

SHRUB AND TREE WATERING: The watering times above apply only to lawns. Most shrubs and trees prefer deeper, less frequent watering. The following is a recommendation for determining other vegetation water needs:

- Vegetables: 75-100% of lawn (ET)
- Shrubs & Perennials: 50-60% of lawn (ET)
- Waterwise plants: 30-40% of lawn (ET)
- Trees: Newly planted trees need regular water for the first couple of years, while established trees may need only a deep soak once or twice in summer.



CITY OF ASHLAND



The Permit Process for

OUTDOOR

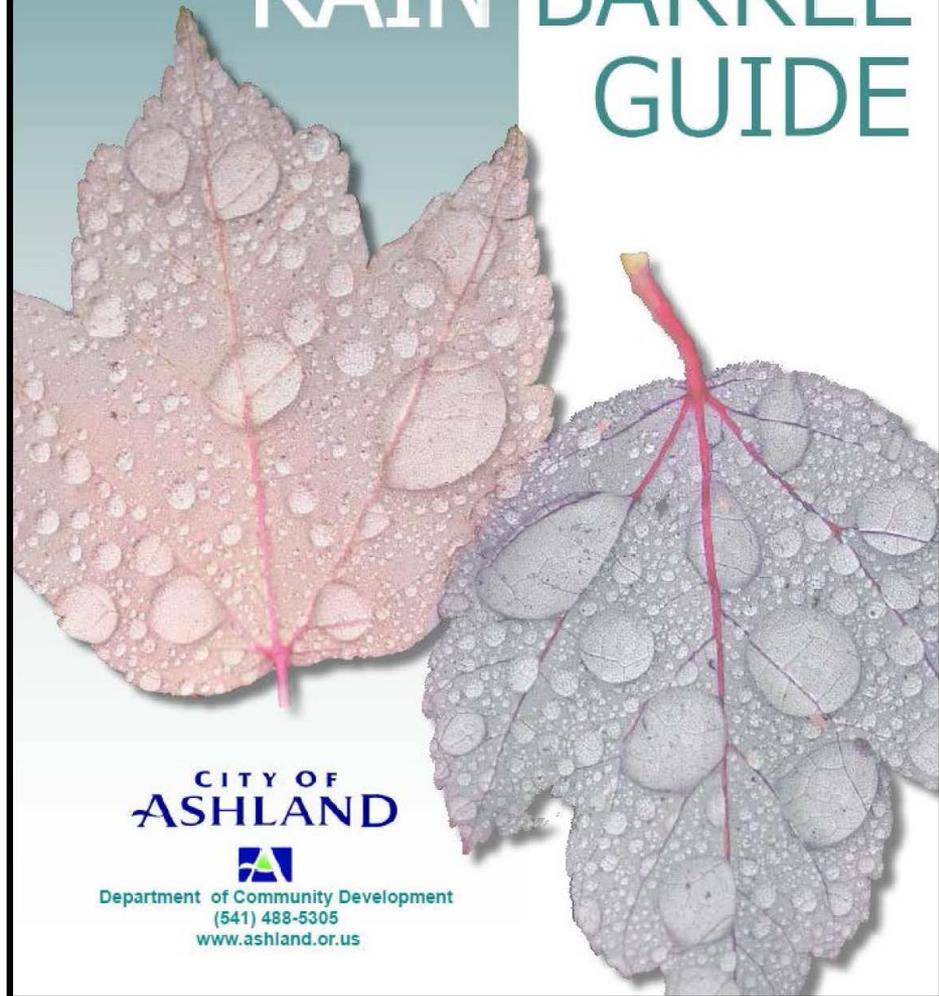


GRAY WATER

Applications



RAIN BARREL GUIDE



CITY OF
ASHLAND



Department of Community Development
(541) 488-5305
www.ashland.or.us



FIXTURE	TYPE	WATER USE RATE		FAMILY SIZE		
				1	2	4
TOILETS		Gallons / Flush	* Uses / Day	Daily Water Use (Gallons) 1 gal = 0.133 cu.ft.		
	Older than 1950	6.0	5.0	30.0	60.0	120.0
	1950 - 1980	5.0	5.0	25.0	50.0	100.0
	1980 - 1994	3.5	5.0	17.5	35.0	70.0
	1994 or newer	1.6	5.0	8.0	16.0	32.0
	WaterSense	1.3	5.0	6.5	13.0	26.0
	Dual Flush	1.0	5.0	5.0	10.0	20.0
SHOWERS		Gallons / Minute	* Minutes / Shower	Daily Water Use (Gallons) 1 gal = 0.133 cu.ft.		
	Older than 1980	5.0 - 7.0	10.0	50.0 - 70.0	100.0 - 140.0	200.0 - 280.0
	1980 - 1994	3.5	10.0	35.0	70.0	140.0
	1994 or newer	2.5	10.0	25.0	50.0	100.0
	WaterSense	2.0	10.0	20.0	40.0	80.0
	WaterSense	1.5	10.0	15.0	30.0	60.0
KITCHEN & BATHROOM FAUCETS		Gallons / Minute	* Minutes / Day	Daily Water Use (Gallons) 1 gal = 0.133 cu.ft.		
	No aerator	7.0	8.0	56.0	112.0	224.0
	Older than 1980	5.0	8.0	40.0	80.0	160.0
	1980 - 1994	3.0	8.0	24.0	48.0	96.0
	1994 or newer	2.5	8.0	20.0	40.0	80.0
	Standard	2.2	8.0	17.6	35.2	70.4
	WaterSense	1.5	8.0	12.0	24.0	48.0
	WaterSense	1.0	8.0	8.0	16.0	32.0
BATHTUB (22" x 54")	Water Depth	Gallons / Use	* Uses/Person/Day	Daily Water Use (Gallons) 1 gal = 0.133 cu.ft.		
	4 inches	21.0	1.0	21.0	42.0	84.0
	8 inches	41.0	1.0	41.0	82.0	164.0
CLOTHES WASHERS		Gallons / Full Load	* Loads/Person/Week	Daily Water Use (Gallons) 1 gal = 0.133 cu.ft.		
	Older than 1980	55.0	2.0	15.7	31.4	62.8
	Top Load	40.0	2.0	11.4	22.8	45.6
	Front Load	25.0	2.0	7.1	14.2	28.4
	Energy Star	14 OR LESS	2.0	4.0	8.0	16.0

* Actual usage may vary. Table by Julie Smitherman Sources: American Water Works Association (AWWA), Residential End Uses of Water, 1999. Amy Vickers, Handbook of Water Use and Conservation, 2001. Environmental Protection Agency (EPA), Water and Energy Savings from High Efficiency Fixtures and Appliances in Single Family Homes, 2005. EPA, WaterSense & Energy Star



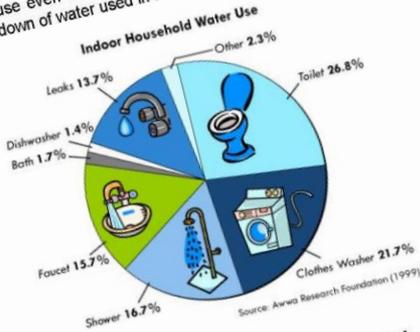
WATER SAVINGS GUIDE



INDOORS

Did You Know?

The average single family residential customer in Ashland uses around 5,000 gallons (668 cubic feet) of water per month indoors. Homes with 1 to 2 residents often use even less. The chart below shows the typical breakdown of water used in the home. (1 cu. ft. = 7.48 gal)



In the Kitchen

- Your dishwasher uses the same amount of water whether it is full or not, so wait until it's full to run it. Consider replacing your old dishwasher with an Energy Star® model to save even more water, and energy too.
- Keep a container of drinking water in the refrigerator, instead of letting the faucet run until the water cools down.
- Avoid letting the water run when rinsing vegetables, cleaning dishes or to defrost food.
- Fix leaks promptly! Even a small faucet drip can waste 20 gallons of water each day. Large leaks can waste hundreds of gallons per day.

In the Laundry Room

- Wait until you have full loads of laundry to run your washing machines. Otherwise, just adjust the water level to fit the size of the load.
- Replace old washing machines with efficient Energy Star models, which can use 40 - 75% less water and energy than older machines.

In the Bathroom

Toilet

- Replace an old toilet with water efficient WaterSense® labeled models and use 20-75% less water each time you flush.
- For water savings with an existing toilet, install early-closing flappers or place small containers filled with water inside the tank to displace the existing water.
- Toilet leaks are common and can easily be repaired with inexpensive replacement parts.
- Check for toilet leaks by adding about 10 drops of food coloring to the tank. If the toilet is leaking, color will appear in the bowl within 15 - 20 minutes.
- Avoid using the toilet as a wastebasket.

Shower

- Replacing a shower head can be easy and relatively inexpensive. Today's standard models use 25-50% less water than older models. WaterSense models can save even more, while also being certified to perform well.
- Taking shorter showers can save many gallons of water. A bath can use more or less than a shower depending on how high it is filled.

Faucets

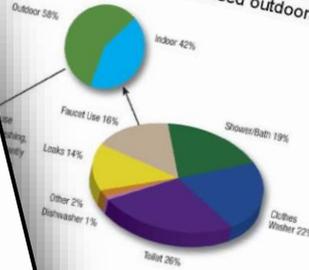
- Changing an aerator is both simple and very low cost. Look for WaterSense aerators that flow 0.5 to 1 gallon per minute for bathroom faucets. These function well while using half as much water as current standard faucets and up to 80% less than older faucets. If the faucet currently has no aerator at all, savings from adding one will be even more.
- Avoid letting the water run while brushing your teeth or shaving.

Many products are now WaterSense certified. Look for WaterSense labels to help you identify products that meet high water efficiency standards and perform well too.



Did You Know?

In the summer, average residential water use is approximately 5 times higher than in the winter; mainly due to landscape irrigation. The chart below shows the breakdown of water used outdoors.



United States (typically 200 gallons per day per household). Source: U.S. Department of Water, 1992.

OUTDOORS

Sprinkler Care

- Adjust sprinklers to avoid watering sidewalks and driveways.
- Be sure to fix all leaks promptly no matter how small they may seem. Even a small leak can waste hundreds of gallons of water.
- Give your sprinkler system an occasional checkup. If you haven't observed your system operating lately, turn it on and make sure sprinklers are all facing the right direction and functioning properly.

Yard Maintenance

- Mulching and adding compost to soil can help soil absorb and store water, minimize evaporation, reduce erosion and help control weeds.
- Use a broom instead of a hose to clean your driveway or sidewalk. A hose can use 100 gallons in 10 minutes.
- Raise your lawn mower level to 3 inches. This encourages grass roots to grow deeper, shades the root system and holds soil moisture better than a closely clipped lawn.
- Keep your lawn mower blades sharpened. Dull blades tear grass, forcing it to use more water.

Car Washing

- Consider using a commercial car wash that recycles water.
- If you use a hose to wash your car, be sure to use a hose nozzle that turns the water off when you are not using it. Washing a car for 10 minutes can easily use 100 gallons of water if you let the water run the entire time.
- Wash with a bucket of water and use the hose only for quick rinses.
- Wash items such as bicycles and trash cans on the lawn to prevent the water from running down the storm drain.

Questions? Contact Us.

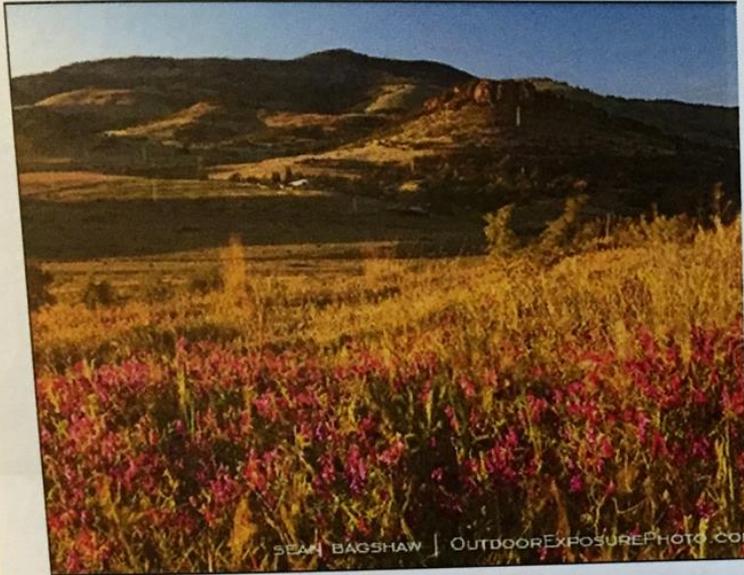
Conservation Division
51 Winburn Way
Ashland, Oregon 97520

Phone: (541) 552-2062



Water-wise: www.ashlandsaveswater.org Watering Hotline: 541-552-2057

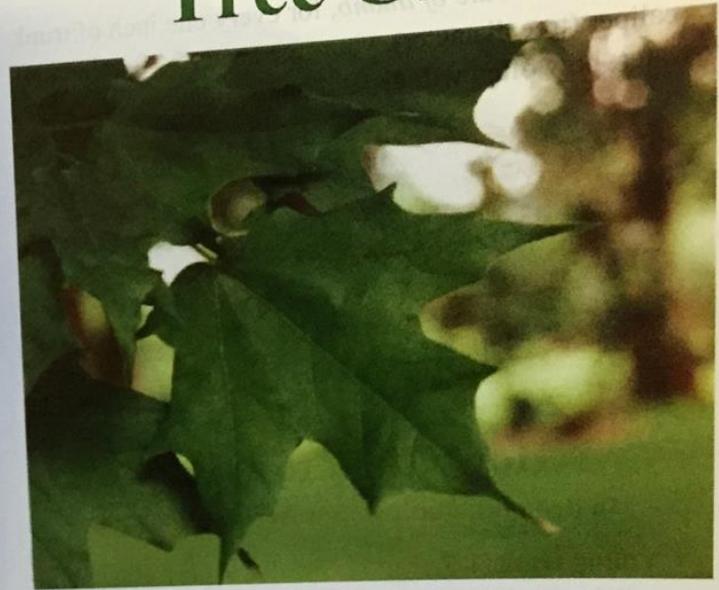
Surviving Drought



A Guide for Water Conservation

Learn how you can help to
preserve Ashland's precious water

Tree Care



A Guide for Watering Trees

Learn how Ashland residents
can properly and efficiently
water their trees

Reading Your Meter & Calculating Water Use



1.) Example



Reading #1



Reading #2

(Days or minutes between readings)

First Date or Time: _____ Second Date or Time: _____

2.) Water Use (Cubic Feet):

Reading #2 _____ (cubic feet)
 Reading #1 - _____ (cubic feet)
 = _____ (cubic feet used)

3.) Average Water Use:

Cubic Feet Used: _____
 + _____ (# of days or minutes between readings)
 = _____ (average cubic feet per day or per minute)

4.) Water Use (gallons):

Cubic feet used: _____
 x 7.48 gallons
 = _____ (gallons used)

5.) Practice

(Days or minutes between readings)
 First Date or Time: _____ Second Date or Time: _____

Water Use (cubic feet):

Reading #2 _____ (cubic feet)
 Reading #1 - _____ (cubic feet)
 = _____ (cubic feet used)

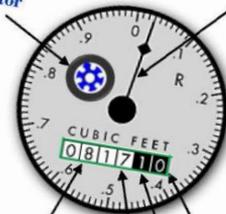
Water Use:

Cubic Feet Used: _____
 + _____ (# of days or minutes between readings)
 = _____ (average cubic feet per day or per minute)

7.48 gallons
 _____ (gallons used)

Flow Indicator

Sweeping Hand



Odometer

1 cubic foot

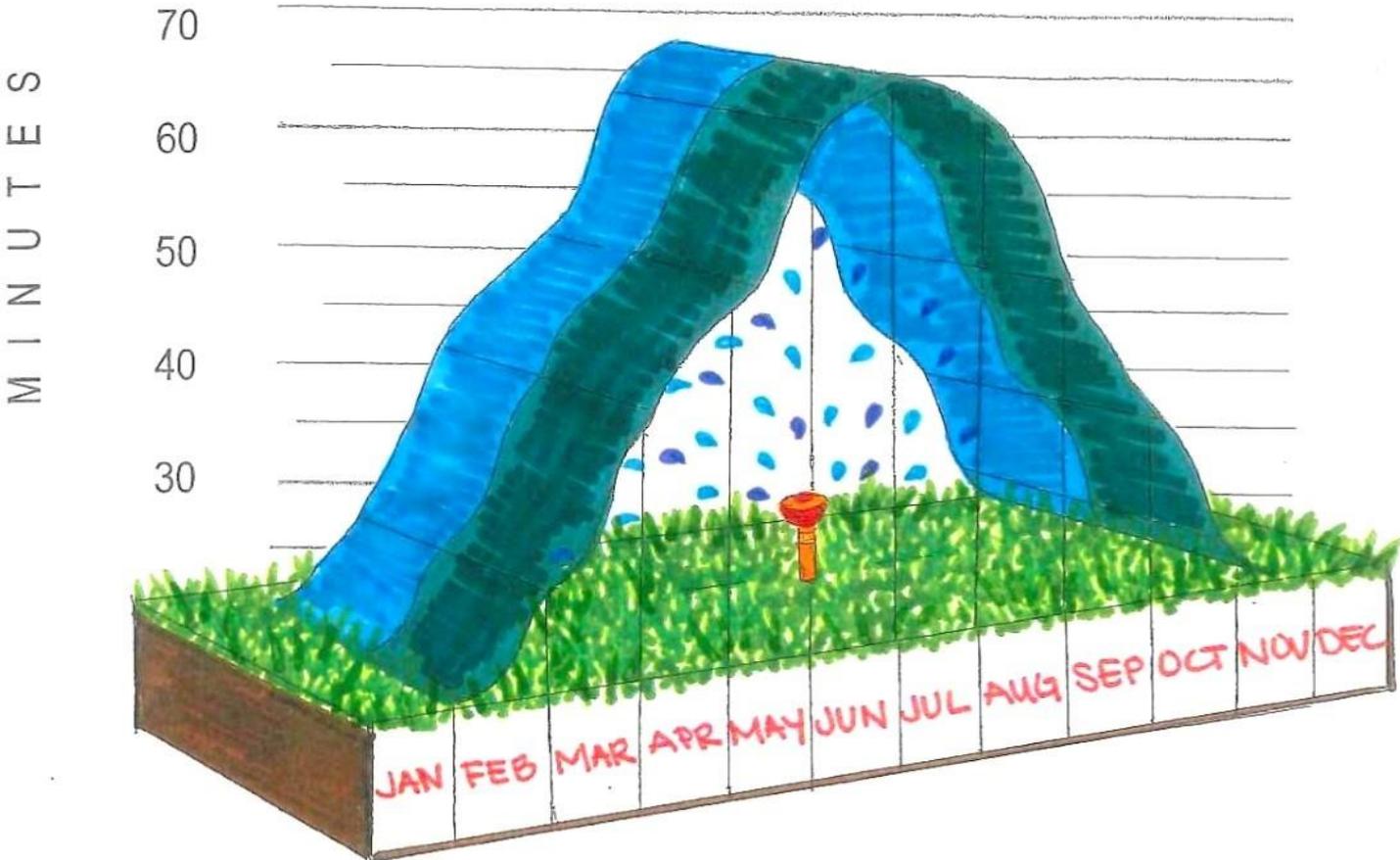
10 cubic foot

100 cubic foot

your
 ed by the
 This will

inklers for 5 minutes
 minute
 = 80 cubic feet / week
 (gallons)
 = 2,393 gallons)

LAWN WATERING GUIDE



These run times are based on an average application rate of 1.5 inches per hour for standard spray heads.