



Summary of the Top Ten WaterWise Integration Strategies Bend Utility Department, July 2018

The City of Bend WaterWise Program has been the familiar face of its water conservation and efficiency efforts since first established back in 2000. Even though the City of Bend WaterWise Program remains the key public face for its water conservation efforts, the City has gone “Beyond WaterWise”. The City has a compelling list of other integrated strategies that support a more comprehensive approach to water conservation and efficiency – all based on their approved 2011 Water Management and Conservation Plan.

This summary guide introduces the “Top Ten” conservation integration strategies (Figure 1) with brief summaries, examples and direct web links that provide additional information, reports and accomplishments for each. The goal of this document is to give readers a better understanding of each strategy and how they help to ensure a fully integrated, efficient and long-term resilient water supply for Bend.

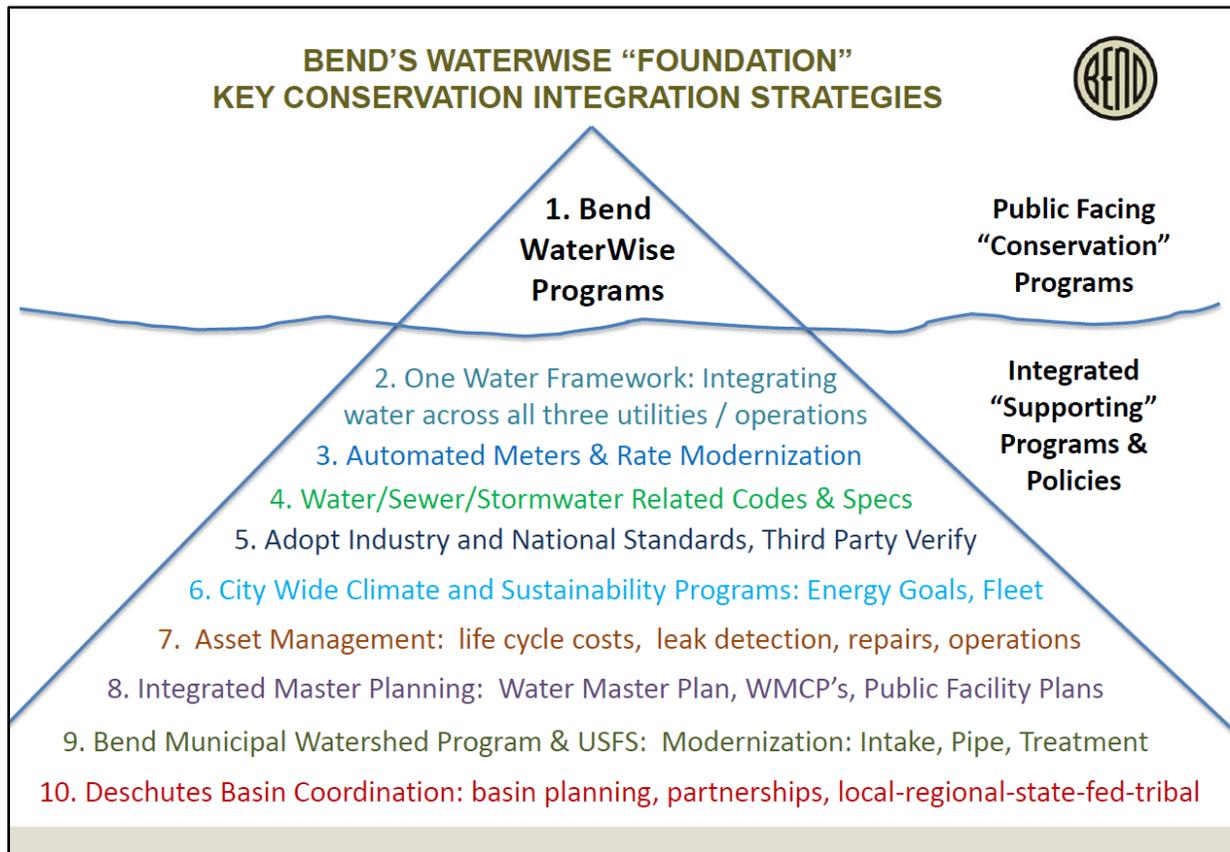


Figure 1 – Bend Top Ten Conservation Integration Strategies

Integrating Conservation and Efficiency in Bend Oregon Top Ten Strategies Being Implemented

1. Bend Utility Department – Current List of Bend *WaterWise* Programs*

LINK: <https://www.bendoregon.gov/conservation>

Indoor Water Use Programs*

- Indoor Efficiency Program – Free Kits/ Plumbing codes / fixtures and appliances, WaterSense product recommendations (toilets, appliances, etc)

Outdoor Irrigation & Landscape Programs*

- Large Landscape Program
- Sprinkler Inspection Program
- Public Education/ Contractor & K-12 Programs
- Water Waste Prevention Program

Products & Publications*

- WaterWise Plant Guide and Pictorial Plant Website
- WaterWise Landscape Guide
- WaterWise Irrigation Guide
- WaterWise Streetscape Guide
- OSU- WaterWise Plant Guide
- Fact sheets and information
- Bend Utility Advertising Campaigns

* Key programs designed to meet requirements in 2011 State Approved Water Management Conservation Plan

NEW: Drought Updates – Web Page

<https://www.bendoregon.gov/government/departments/utilities/water/drought-information-2018>

2. Adopting U.S. Water Alliance’s “*One Water*” Framework: Integrating water across all three Bend Utility services: Water – Sewer – Stormwater.

LINK: U.S. Water Alliance “One Water Roadmap”

<http://uswateralliance.org/one-water/roadmap>

“*One Water*” Vision: Recognition that all water has value and should be managed in sustainable, transparent, inclusive, and integrated ways.

Best example: The City of Bend recently reorganized all three water related utility services, Water, Sewer and Stormwater into its newest stand-alone department – the *Bend Utility Department*. This effort is creating new efficiencies and better alignment around the goal of water stewardship, a core value of its overall service delivery model. This industry wide effort is providing training, education and many ways to create efficiencies, adopt proven technology and more.

3. Rate Modernization & Automated Meter Infrastructure

LINK: <https://www.bendoregon.gov/government/departments/finance/utility-billing/rate-modernization-project>

Best examples: New sewer rates based on quantity of indoor water use (winter quarter average); Full implementation of Advanced Metering Infrastructure (AMI); New analytics software – WaterSmart. This program is now providing a near real-time online *Customer Portal* and a new way for the Bend Utility Bill team to communicate with customers, and add measurement support to customers participating in the Large Landscape and Sprinkler Inspection Programs. WaterSmart also provides automated *Leak Detection Alerts* for leaks detected on the customer side of the meter. In 2017 alone, Bend notified over 7000 customers about leaks representing over 241 million gallons of water, which is equal to about 5% of total water produced in 2017. Most leaks are resolved quickly!

4. Adoption of Water Waste and other Water Related Codes and Standards

Bend Specifications and Standards – Design:

<https://www.bendoregon.gov/home/showdocument?id=34153>

LINK: Bend Code: Title 14:Water; Title 15:Sewer; Title 16:Stormwater

<http://www.codepublishing.com/OR/Bend/>

Best Examples: New Water Waste Code provisions, Hours of Day irrigation regulations, Source Water Protection Updates (Stormwater code), Specification and Standards – Design Standard updates for Outdoor landscaping requirements

5. Adopt Industry and National Standards with Verification Processes :

Background: Water Loss and Control – Alliance for Water Efficiency

http://www.allianceforwaterefficiency.org/Water_Loss_Control_Introduction.aspx

AWWA M36 Water Loss and Control Manual & Description

<https://www.awwa.org/store/productdetail.aspx?productid=51439782>

AWWA G480 Standard – Find Bend on the Leaderboard Link!

<http://www.allianceforwaterefficiency.org/G480-Conservation-Standard.aspx>

Best Examples: Bend Utility team is now in its fifth year of completing annual water use audits based on the new AWWA M36 Standards. Bend now has a cross-department team which uses this new industry standard framework to guide efficiency investments in repair projects as well as new capital projects. Adoption of the AWWA G480 Conservation Program standard has strengthened the Bend conservation program framework and confirmed our focus on the need for more data, use of water budget rates as well as the need for implementing additional efficiency based code changes.

6. City Wide Climate and Sustainability Programs: Climate Plan, Energy Goals, Fleet Management

City of Bend Climate Action Plan and Committee

<https://www.bendoregon.gov/government/citizen-committees/climate-action-steering-committee>

Sustainability: <https://www.bendoregon.gov/community/sustainability>

Fleet Program: <https://www.youtube.com/watch?v=CT1dMsy4lls>

Best Examples:

Ameresco Contract – Bend has contracted with this Energy Services Contractor to implement energy saving investments in facilities and major utility processes to help meet energy, sustainability and climate goals. Water conservation is embedded in many of the proposals.

Also, the Surface Water Modernization Project (See #9) – is making our water supply more resilient and climate adapted. Also, the related planning efforts in #8, the optimization efforts now include integrated looks at energy & water from source choices to conservation program design. Vehicle Fleet Modernization Program is another key piece of the puzzle – See Bend Video – link above.

7. GIS Based Asset Management System: Utility Modernization Efforts - life cycle costs, leak detection, repairs, integrated operations

LINK: Utility Modernization Efforts – Asset Management <https://youtu.be/8ekkN9pGGk8>

Best Examples: Bend has implemented a Utility Asset management system that collects and tracks information for over \$400 million dollars in utility assets. The goal is to track assets, repairs, efficiency and more. This information is used to replace, repair or redesign to meet the ever changing efficiency and operational goals as we also continue to modernize, map, and automate systems.

8. Integrated Master Planning & Reporting:

Links to Water Master Plans, Water Management and Conservation Plans, Public Facility Plans
<https://www.bendoregon.gov/government/departments/engineering/master-plans-and-analyses/water-system-planning>

Link to Annual Water Quality Report – includes broad programs including conservation and water supply information

<https://www.bendoregon.gov/home/showdocument?id=36805>

Best Examples: Source water optimization modeling that guides source choices based on energy use, water quality, cost and more (see links above). Water Master Planning, Conservation Plans and Land Use Plans are now done concurrently and include integration and shared data sets.

9. Bend Municipal Watershed Program & USFS: Modernization project: Rebuilt surface water intake, Transmission line, added Membrane Filtration Treatment

LINK: Bend Municipal Watershed & Special Use Permit Operation Plans and Reports
<https://www.bendoregon.gov/watershed>

Best Examples: Since 1926, the City has been a partner with the USFS – Deschutes National Forest in the establishment and ongoing management of the Bend Municipal Watershed. The latest \$70 million dollar modernization effort, rebuilt the surface water intake, replaced old and failing transmission pipelines with a single pipe and added a state-of-the-art membrane filtration facility to comply with new EPA drinking water rules for Cryptosporidium (That treatment process is over 99% efficient and maximizes use of diverted water while adding robust watershed monitoring and measurement, fish screening to ensure environmental compliance and track watershed health).

10. Deschutes Basin Coordination: basin planning, partnerships, projects

City of Bend: Participation in Deschutes Basin Water Planning and Coordination Efforts:
Link: 2018 Updated Fact Sheet:

<https://www.bendoregon.gov/government/departments/utilities/water>

Link: Upper Deschutes Bureau of Reclamation – Basin Study:
<https://www.usbr.gov/pn/studies/deschutes/>

Best Examples: the Deschutes Basin has a long history of collaborative work on water and Bend has been involved. See a list of successful collaborative efforts in which Bend has been a key player, link above.

The latest effort was a 1.5 million dollar, three-year Upper Deschutes Basin study done in partnership with Reclamation. The reports will be out in Fall of 2018 and will include four key elements:

- State-of-the-art projections of future supply and demand by river basin.
- An analysis of how the basin's existing water and power operations and infrastructure will perform in the face of changing water realities.
- Development of strategies to meet current and future water demands.
- A trade-off analysis of strategies identified.

City of Bend Water Production Summary Data 2000-2017

Maximum Day Demand (MDD) & Average Day Demand (ADD) with Service Connections

