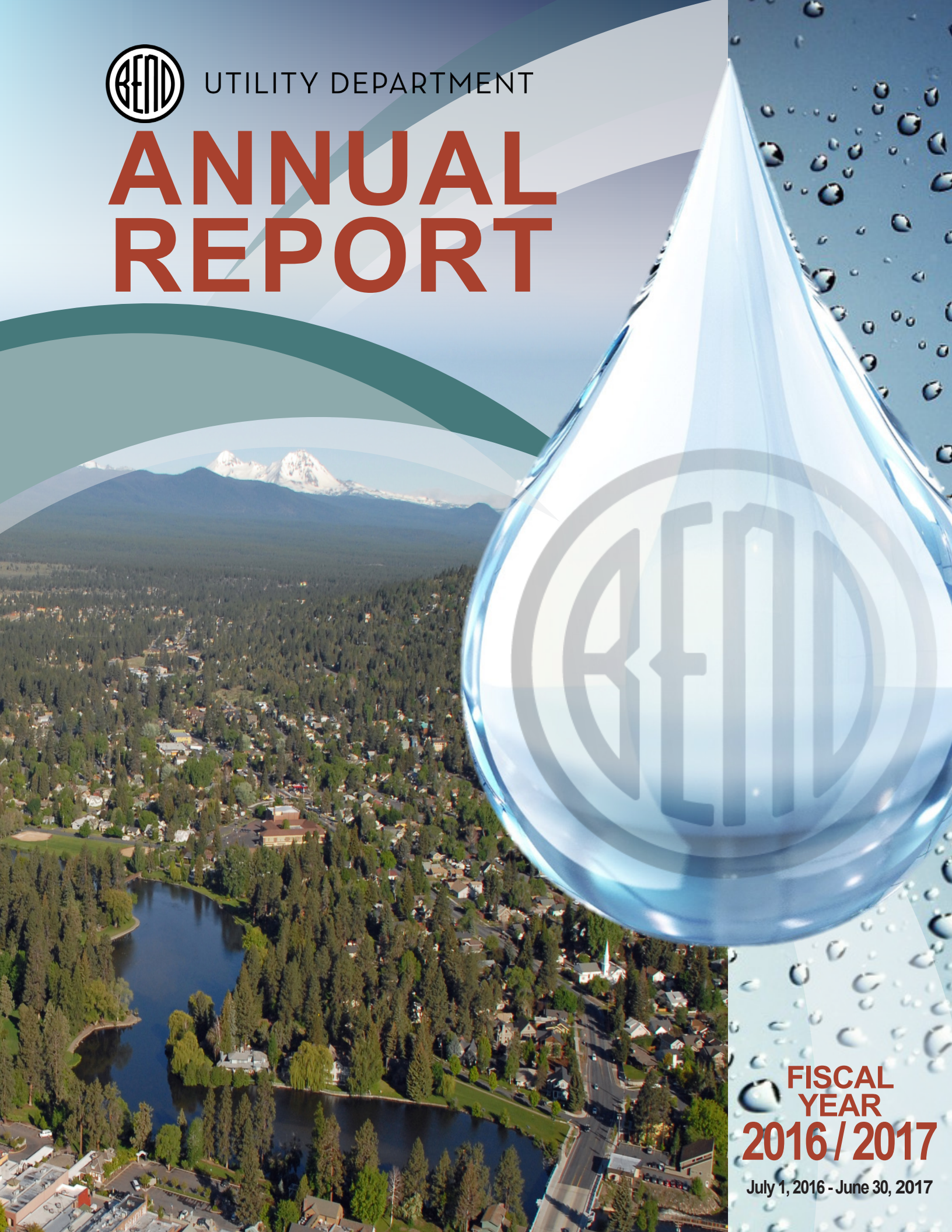




UTILITY DEPARTMENT

ANNUAL REPORT



FISCAL
YEAR
2016 / 2017

July 1, 2016 - June 30, 2017

DIRECTOR'S MESSAGE



Greetings to our utility customers and fellow city employees who are taking this opportunity to read the Utility Department's third annual report. Time is going by so fast that it seems like just last month I was putting together the Director's opening letter for last year's annual report. Time seems to be speeding by as a result of the busy work we are doing in operating, maintaining, and upgrading a growing Utility. The beauty of our community and the services and recreation it provides continues to attract residents and businesses. This means that the infrastructure and services we provide as a utility will continue to expand as well.

We are well positioned for the growth of our City and our Utility. City Council has been supportive in providing the appropriate financial resources for us to design, construct, operate, and maintain the necessary facilities to treat, deliver, and collect water whether it's in the form of stormwater, drinking water, or wastewater. This past April marked the one year anniversary of successfully operating the new Water Filtration Facility (WFF). The WFF is consistently providing safe drinking water for all of our residential and industrial water demands. The water operations staff learned very quickly and proficiently how to operate our first ever water treatment facility. They continue to explore new and innovative processes to make the plant efficient and highly productive, delivering the best tasting, high-quality drinking water to our customers.

Likewise, our wastewater operations staff have witnessed many improvements to the Water Reclamation Facility (WRF) and are doing a great job starting up new equipment and facilities. The WRF is operating under two different treatment modes, but staff have it operating quite well, and are looking forward to the remainder of the scheduled facility improvements to be completed in 2019.

It takes a team of dedicated individuals to manage a utility of our size, especially with the growth of utility infrastructure we are anticipating with the UGB expansion and our projected population increase. The utility profession and our colleagues in other Public Works areas, like Streets and Engineering, are all preparing for a wave of retirements in the coming years. In addition to accepting new infrastructure to operate and maintain, we will face the challenge of recruiting and retaining the proper certified and non-certified staff to fulfill our commitment to the community. We are working closely with current staff and Human Resources Department on recruitment efforts. I am confident that with our current and future employees, we will be able to properly manage, operate, and maintain Central Oregon's largest Utility.

I hope you enjoy reviewing this annual report and learning about the many different programs that make up our Utility. It is a pleasure serving as your Utility Director.

Sincerely,

Paul Rheault
Utility Director

We are committed to our customers, our environment and our community!

HOW WE SUPPORT COUNCIL GOALS

The City of Bend Utility Department is committed to supporting the goals and objectives set by the Bend City Council which include: **Growth, Transportation, Modernization, Affordable Housing and Public Safety.** Utility Department 2017 – 2019 goals correspond with Council objectives: **Maintain Sustainable Infrastructure;** **Improve Organizational Culture;** and **Expand and Refine Public Outreach Strategies.**

Maintaining the water, sewer and stormwater infrastructure is the core of what the Utility Department does. Key repair and replacement projects, in addition to expanding our utility systems, are essential to the **growth** of the City and **public safety** fire protection.

Synergy projects, like the Riverside / Broadway waterline replacement project, that coordinate with transportation and accessibility help meet the **transportation** objective to move people efficiently, safely and reliably around Bend, as well as provide safe routes of travel for **public safety.**



The Utility Department works hard to provide highly reliable services at the lowest cost possible because we understand that **affordability** is a key concern for our customers. Year after year, as a department, we continue to invest in and utilize technology to **modernize** the way we do business. From automated metering infrastructure to leak detection, we continue to work better, smarter and faster to provide services to our Bend community.

Coordinating and working in tandem with our council goals provides a strong, reliable and vibrant utility.

Utility Department Goals

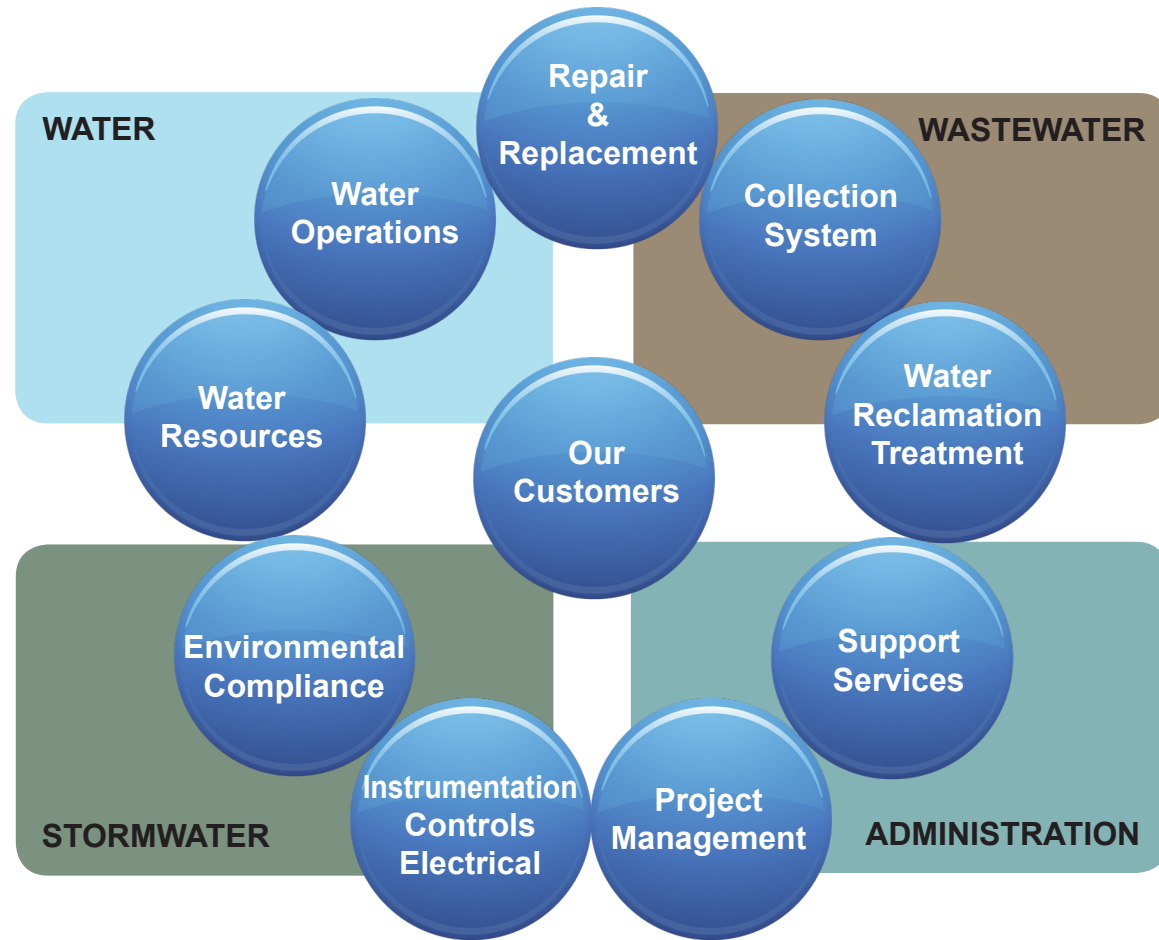
- **Maintain Sustainable Infrastructure**
- **Improve Organizational Culture**
- **Expand and Refine Public Outreach Strategies**

A comprehensive view of Council Goals and Objectives are available on our webpage <https://www.bendoregon.gov/government/city-council>.

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Within the City of Bend Utility Department, there are nine divisions: Water Resources, Water Operations, Repair and Replacement, Collection System, Water Reclamation and Treatment, Environmental Compliance, Instrumentation Controls and Electrical, Project Management and Support Services. These nine divisions incorporate four service areas of the utility: Water, Wastewater, Stormwater and Administration.



Each division is made up of programs that are vital to our Utility services. Some programs are operational which may include collecting, filtering, and distributing of drinking water or collecting and treating of wastewater and stormwater. Other programs are regulatory driven and report to the Department of Environmental Quality and/or the Oregon Health Authority.

WATER

- **Water Resources** - Water special use permits, agreements, and management
- **Water Operations** - Treatment and delivery of water
- **Repair & Replacement** - Maintenance of distribution system
- **Safe Drinking Water** - Backflow prevention installation and monitoring

WASTEWATER

- **Collection System** - Sewer delivery to wastewater facility; maintenance of sewer lines and pump stations
- **Industrial Pretreatment (IPP)** - Monitors pollutants such as chemicals, oils, greases and brewery waste before it goes to the Water Reclamation Facility
- **WRF Treatment** - Treatment of wastewater, production of biosolids and recycled water for land-use application

STORMWATER

- **Operations** - Maintenance, treatment and collection of storm flows
- **Regulatory** - Compliance with local, state and federal requirements

ADMINISTRATION AND OTHER

- **Support Services** - Communications, budget/finance, purchasing, data services, HR, safety/risk management and customer service
- **Instrumentation, Controls & Electrical (I.C.E.)** - Instrumentation and remote controls that operate the distribution and collection of water and wastewater
- **Project Management** - Design and construction of medium-sized Utility projects

Together these programs are part of one utility, providing services that help Bendites take care of their lives, families and jobs.

WATER

Water Operations and Maintenance

- Water Treatment
- Water Sampling
- Reservoir Maintenance
- Hydrant Flushing
- Data Collection
- Membrane Filtration Rack Maintenance
- Pressure Regulating Valve Inspection

Water Resources

- Water Rights
- Watershed Management
- Water Supply Planning and Partnerships

WATER

Water Resources/Conservation (WaterWise Program)

- Sprinkler Inspection
- Large Landscape
- Water Waste Prevention
- Curbing the Flow
- Indoor Water Conservation

Water Quality

- Safe Drinking Water/Backflow

Wastewater Treatment

- Biosolids Management
- Recycled Water Use
- Groundwater Monitoring Plan

WASTEWATER

Collection System

- Flow Monitoring
- Line Cleaning and Pipe Inspection
- Odor Control
- Lift Station Operations & Maintenance

Industrial Pretreatment (IPP)

- Industry Monitoring
- Brewery Monitoring
- Fats, Oils and Grease
- Auto Shop Monitoring
- Extra Strength
- Special Projects - Local Limits - pollutants into the WRF

STORMWATER

Operations

- Storm Drain Maintenance
- Drill Hole Maintenance
- Drywell Maintenance
- Flooding Prevention
- Green Infrastructure Operations and Maintenance

Regulatory

- Stormwater Management Planning and Reporting
- Underground Injection Control (UIC) Registration and Decommissioning
- Public Education/Outreach
- River Stewardship

COMBINED DIVISIONS

Laboratory

Water Quality Laboratory Field Sampling and Measurement Program

Serving the following programs

- Water Operations
- Industrial Pretreatment
- Stormwater
- Water Reclamation Facility
- Biosolids Management
- Water Resources
- Water Quality Monitoring
- Illicit Discharge Investigations



The City of Bend Utility Department is consistently in a state of movement providing a valuable public service by maintaining, updating and repairing crucial infrastructure at the lowest possible cost while being stewards of our environment and protecting our resource. Listed below are a few of the City of Bend projects that impacted your water, stormwater or wastewater for the fiscal year 2016-17.

WATER

Water Resources

- Water Management and Conservation Plan Progress Report/Benchmarks - *Completed*
- USFS Special Use Permit - *Ongoing*
- Upper Deschutes Basin Study - *Ongoing*
- Bridge Creek Pipeline, Intake and WFF - Key support - *Ongoing*
- AWWA Water Audit - *Completed*
- WaterWise Guides for Landscape, Irrigation and Streetscape - *Completed*

Water Treatment and Distribution

- Broadway and Riverside Waterline Replacement Project - *Completed*
- Bridge Creek Pipeline Project - *Completed*
- Water Filtration Facility - *Completed*
- Mueller and Hixon Water Main Replacement - *Completed*

Water Conservation

- Boyd Acres Landscape Improvements - *Completed*
- Cumberland Facility Landscape Improvements - *Completed*

WASTEWATER

Wastewater Collection System

- Colorado Ave. Lift Station - *Completed*
- North Area Sewer Improvements - *Under Construction*
- Treatment Plant Interceptor Sewerline Rehab Project - *Under Design*
- Southeast Interceptor Project (SEI) - *Under Construction*

Wastewater Facility

- Water Reclamation Facility Capacity Expansion Project - *Under Construction*
- Biosolids Upgrades - Production of Class A Biosolids for land-use application - *Ongoing*

STORMWATER

Stormwater

- South Awbrey Butte Drainage Study - *Ongoing*
- Hixon Storm Line Replacement - *Completed*
- Open grate drywell retrofits - *Ongoing*

ADMINISTRATION

Safety & Training

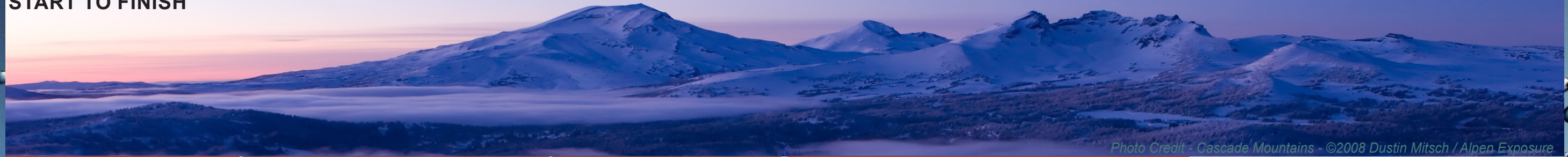
- Modernized access to chemical safety information with new web-based software - *Completed*
- Public Works 5 Year Safety Plan - *Created and Implemented*
- Emergency Operations
 - Table Top Exercise - *Completed*
 - Wildfire Response Plan - *Created and Implemented*
 - Cascadia Rising Exercise - *Completed*



Bend's infrastructure projects respond to the growth and change of our city while planning for the future.

LIFECYCLE OF OUR WATER START TO FINISH

WE ARE ONE WATER



Heidi Lansdowne Intake Facility on Bridge Creek



Water Filtration Facility



Water Control Center



Water Reclamation Facility

WATER

Water Operations

- **4.7 billion** gallons of high quality drinking water produced*
- **2,908** fire hydrants inspected and maintained
- **776** meter boxes installed for new construction

Safe Drinking Water

- **29,720** backflow assemblies on City water connections
- **23,156** backflow tests received*
- **454** residential meters were upgraded and premise isolation backflow assemblies were added

Water Conservation

- **238** indoor water conservation kits sent to utility customers
- **212** sprinkler inspections
- **86** customer water waste complaints investigated

ADMINISTRATION

Customer Service

- **9,067** line locates performed
- **4,288** calls to the Utility Call Center

Safety & Training

- **29%** reduction in on the job accidents

COMBINED SERVICE AREAS

Laboratory

- **14,019** lab analyses performed



STORMWATER

Stormwater Operations

- **502** yards of stormwater debris removed from catch basins and UICs
- **12,203** storm drains cleaned and inspected
- **5,848** drywells cleaned and inspected
- **18** drill holes reconditioned to solve flooding issues in troubled areas
- **127** swales maintained monthly during spring/summer
- **81** miles of stormwater pipelines inspected and cleaned
- **13,557** catch basins inspected and cleaned
- **16,108** cubic yards of material picked up by street sweepers (partially funded by stormwater)



WASTEWATER

Collections

- **61** miles of gravity sewer main cleaned
- **20** miles of sewer main Closed Circuit Television (CCTV) inspected

WRF Recycled Water

- **2.2** billion gallons of wastewater treated
- **106** million gallons recycled water produced for irrigation
- **2,318** cu. yds. of biosolids produced for soil amendments on local farms crops



Hatfield Evaporation Ponds



Water Reclamation Facility Drying Beds and Biosolids





Field Sampling and Measurement

The Field Sampling and Measurement Program is responsible for collecting samples and managing field data and instruments for regulatory compliance serving:

- IPP - Industrial and Categorical Users-DEQ/EPA; Extra Strength Discharge; Local Limits-DEQ
- Stormwater - UIC-DEQ
- Drinking Water - Oregon Health Authority ground and surface water sampling
- Water Quality Monitoring - Sampling of the Deschutes River, Tumalo and Bridge Creeks
- Biosolids - Sampling and analysis for Class A standards
- Illicit Discharge - Investigate spills or illegal discharge sites

Water Quality Laboratory

The City of Bend Water Quality Laboratory analyzes a wide variety of water and solid samples to protect our environment, safeguard public health and ensure the compliance of many City programs and operations. Accredited by state and federal authorities, the Laboratory helps the City plan for and respond to public health and environmental concerns by providing quality data and technical expertise. Safe drinking water, wastewater treatment, recycled water, groundwater protection, biosolids management and infrastructure systems are all aided by data that is generated in the Laboratory.

Safe Drinking Water

The City of Bend Safe Drinking Water Program is a vital component in the delivery of safe potable drinking water to our homes and businesses. Located at almost every City of Bend residential water meter is a City-owned backflow assembly which prevents potentially contaminated water from flowing backward into clean water pipes. Regulated by the State of Oregon Health Authority and the City of Bend Code, each backflow is required to pass an annual test. The City tests the city-owned backflow assemblies, while customers are required to test their privately owned assemblies.

Stormwater Quality

The Stormwater Program is designed to minimize pollutants and illegal dumping of waste into the area storm drains. The City of Bend is both a designated small Municipal Separate Storm Sewer System (MS4) owner/operator and a stormwater Underground Injection Control (UIC) owner/operator. The City owns approximately 30 permitted outfalls that drain to the Deschutes River. Controlling and protecting runoff water quality is critical to the environment, to our local economy, and for public safety. The program meets requirements of the Oregon Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA).

The Stormwater Program coordinates and oversees compliance with the National Pollutant Discharge Elimination System (NPDES) permit that regulates the piped system that drains stormwater to the Deschutes River. The Stormwater Program also implements the Water Pollution Control Facility Permit for stormwater Underground Injection Controls.

To meet these permits, the Stormwater Program enforces the City's environmental codes related to water quality, and is responsible for the overall coordination among applicable City departments of the Integrated Stormwater Management Plan. Required activities addressed in the plan include public education, public participation, illicit discharge detection and elimination, municipal maintenance activities, construction site activities, new and redevelopment stormwater controls, and stormwater monitoring.

Industrial Pretreatment

The City of Bend Industrial Pretreatment Program (IPP) protects our sewer system from potentially toxic pollutants that are discharged by residential and industrial wastewater sources. The program identifies harmful or excess pollutants and regulates the safe removal and disposal of chemicals, fats, oils, grease and other excessive liquid waste or sludge that typically would go into the sewer, damaging our collection system pipes and pumps and creating excessive overloads at the Water Reclamation Facility. IPP also works with the Stormwater Program to assure regulated waste from businesses is not dumped into the area stormwater drains.

Sub-programs within IPP include:

- Industrial Compliance - Inspecting and sampling industrial wastewater discharge
- Fats, Oils & Grease (FOG) Program - Preventing the discard of fats, oils, and grease from entering the sewer system and creating obstructions or blockages
- Extra Strength Program - Businesses who generate more pollutants than a typical household are charged additional sewer fees to help recover the increased cost of treatment, based on the concentration of the wastewater. Businesses such as restaurants, bakeries, breweries, large grocery stores and commercial laundries are among some of the industries who are in this program.

IPP is subject to U.S. Environmental Protection Agency regulations enforced by the Oregon Department of Environmental (DEQ).

Bend delivers high quality water and sewer services while responsibly managing and balancing our natural environment and resources.



PUBLIC OUTREACH AND EDUCATION

Serving the public and reaching out to our customers and community has been one of our Strategic Plan Goals: Implement Public Outreach Strategies. Our Utility Department Communication Plan has grown to encompass coordinated media messages, multi-media campaigns, professional quality printed material, community presentations, facility tours, children's programs and more. A variety of tools were used to communicate these strategies to our target audiences, including: community events, social media, print and broadcast communications, public meetings, facility tours and cooperative school programs. We have also involved business partners in the outreach of our Water Conservation and Stormwater awareness campaigns. Education is the key to understanding. The City of Bend Utility Department is focused on serving and providing information to our customers.

Events

- CityQuest @ Summerfest
- 21st Annual Deschutes River Clean-up / Stream Stewardship Day - 1 ton of garbage removed from the river
- Oktoberfest
- Earth Day and Storm Drain Marking



Community Presentations

- Lunch and Learn 3 Part Series - Bend Senior Center
- Overturf Butte Pine Beetle Eradication Project - Bend Park and Recreation District
- WaterWise Program at Hollinshead
- Leadership Bend

Presentations for Professional Groups

- Curbing the Flow - Water Conservation
- Hollinshead Master Gardener - Water Conservation
- Water Use Impacts of Plant Choice - Water Conservation
- Backflow Tester's Meeting - Safe Drinking Water
- COCC Sustainability Group - Water Conservation
- Oregon Landscape Contractors Association - Water Conservation
- Environmental Center / Americorp - Water Conservation
- Central Oregon Builders Association - Water Conservation
- AWWA Regional Conference - Water Resources
- NW Environmental Business Council - Stormwater - "Managing Stormwater in Oregon"
- Certified Erosion and Sediment Control Lead Training - Stormwater

Customer Surveys

- Sprinkler Inspection Program

Public / School Tours

- Water Filtration Facility
- Water Reclamation Facility
- Source to Brewer to Sewer
- Water Reclamation Facility Virtual Tour

Youth Programs

- Environmental Center Youth Education Program
- Science Day at Buckingham School
- Teacher's Night Out
- Clean Water Works/BendFilm/ Zolo Media Video Contest
- Clean Water Works Poetry Contest



Social Media

- City of Bend Website
- City of Bend Twitter
- City of Bend Facebook

Newsletters

- Conservation Connection
- City of Bend Utility Bill Newsletter

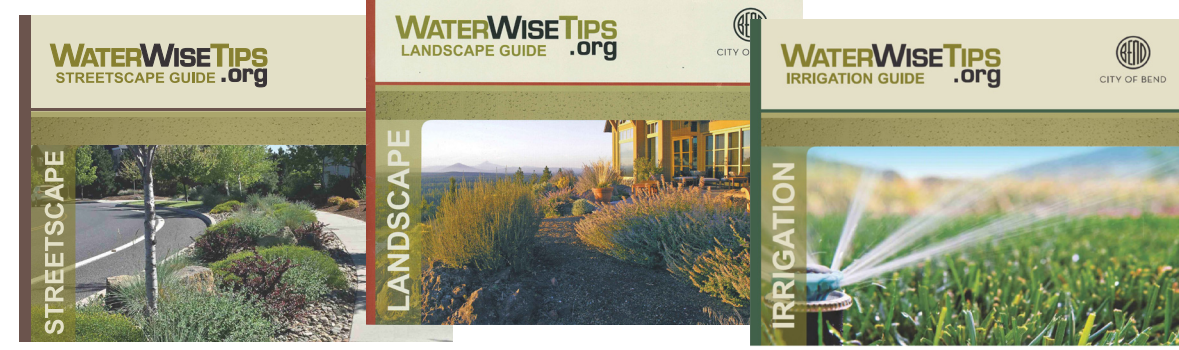
Postcards

- WaterWise Short Plant List

Fact Sheets

- Choosing a Landscape Contractor
- Choosing a Plumbing Contractor
- Large Landscape Program
- Common Irrigation Problems (English/Spanish)
- Homeowners Tap Sample Collection Project
- Proper Disposal of RV Wastes
- WaterWise Irrigation Sprinkler Information - Water Conservation
- Landscape Maintenance
- Looking to Hire a Landscape Maintenance Service?
- Pressure Washing and Surface Cleaning - Stormwater
- What to Know Before You Power Wash - Stormwater

WE ARE ONE WATER



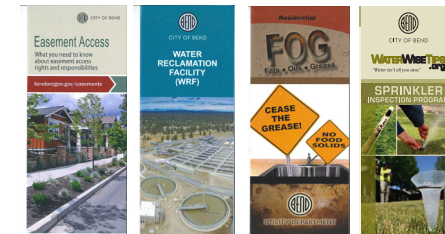
Professional Publications

Booklets

- WaterWise Landscape Guide
- WaterWise Streetscape Guide
- WaterWise Irrigation Guide
- OSU Extension Services Guide (Contributing Authors)
- IPP FOG Children's Activity Book

Brochures

- IPP FOG Residential
- Pool & Hot Tub Water Disposal
- Sprinkler Inspection Program
- Easement Access



Reports

- Water Quality Report 2016
- Utility Department Annual Report FY 2015-2016



Multi-Media Campaigns

- Clean Water Works Education and Partner Program
 - Print - Newspaper, Catalogues
 - The Source - What's in your STORM DRAIN, Love your River - Partners
 - Bend Bulletin/Go Magazine - What's in your STORM DRAIN, Love your River - Partners
 - Smart Shopper - What's in your STORM DRAIN
 - TV and Radio Outreach
 - TV Commercials - Clean Water Works, Partners, Dirty Water
 - Radio Commercials - Rain, Clean Water - Funding, Clean Water Illicit Dumping, Clean Water Sediment, Partners 5, 6, 7, and 8; Clean Water Works - (Spanish)
 - City Edition - City of Bend Video Magazine
 - Social Media
 - Bend Bulletin Website Clean Water Works - Love Your River - Partners



Community Partners

- Bend Park and Recreation District
- Bend-LaPine Schools
- Oregon State University Extension Service
- Central Oregon Master Gardeners
- Central Oregon Community College
- Pilot Butte State Park
- The Environmental Center
- BendFilm
- Zolo Media
- Upper Deschutes Watershed Council

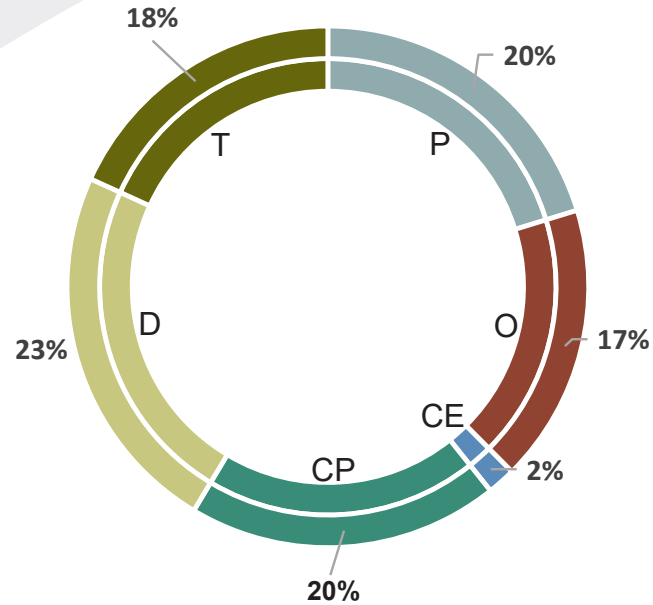
Clean Water Works Discount Card Partners

- 900 Wall
- Bleu Bite Catering
- The Cleaning Clinic
- Everist Irrigation
- Mother's Juice Café
- Naturally Clean Carpet Cleaning
- Tierra Landscaping
- 5 Fusion
- Artscape Handyman
- Collins and Sons Excavating
- North of South Landscapes
- BendFilm
- Renew Plumbing Services
- The Environmental Center

UTILITY FINANCIALS

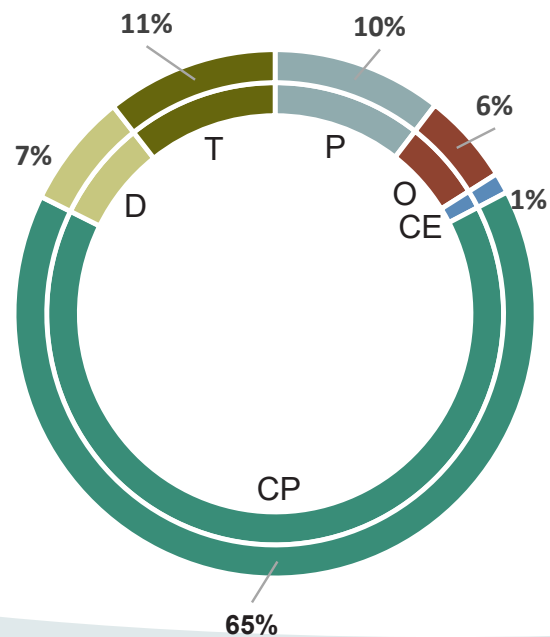
The Utility Department is primarily funded by rates; no tax dollars supplement Utility operations. Our department is comprised of three separate utility enterprise funds. Each fund is unique in the distribution of expenses based on the needs of that year. For additional information on the utility funds, contact the Utility Department at 541-317-3000, ext. 2 or email to utilities@bendoregon.gov.

WATER FUND

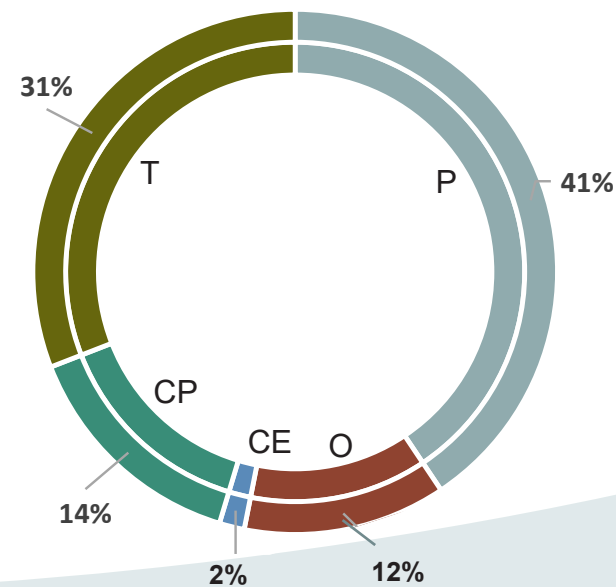


- **Personnel (P):** Direct salaries and benefits for Utility employees
- **Operating Supplies (O):** Non-capital supplies and services needed to maintain the existing Utility infrastructure
- **Capital Equipment (CE):** Equipment, parts or vehicles over \$5,000
- **Capital Projects (CP):** Replacement or new infrastructure that extends the life, expands the capacity and/or meets regulatory requirements of the system
- **Debt Service (D):** Annual principal and interest payments on the debt issued to fund major capital projects
- **Transfers (T):** Money transferred to internal services within the City that support the Utilities (Engineering, Finance, HR, IT, etc.)

WATER RECLAMATION FUND



STORMWATER FUND



LOOKING AHEAD

In FY2016/17, the Utility Department received the results from an asset management assessment which indicated several opportunities for improved maintenance and sustainability of our assets. Building on that assessment, in FY2017/18 we will begin enhancing and modernizing our asset management program.



“Asset management is the critical foundation for understanding near and long-term operational and capital needs” – EPA Water Infrastructure Financial Leadership: Successful Financial Tools for Local Leadership, September 2017.

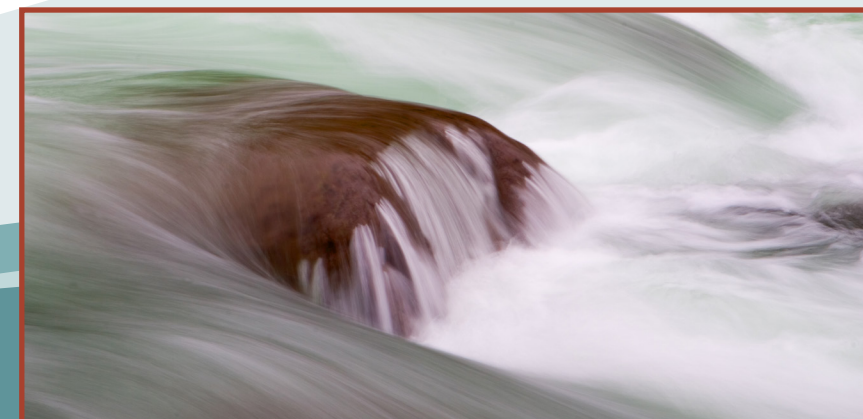
With Bend’s continued growth, it is essential that we embrace a culture of continuous improvement and strive for excellence. A sound asset management strategy and execution plan are the tools we need to reach our goals.

In FY2017/18, we will focus on engaging employees at all levels within the organizational structure by recognizing the commitment and dedication of the hard-working, talented Utility teams that provide water, sewer and stormwater services to the community of Bend.

Feedback is important to our organization. If you have information on how we can better provide services or if you have questions about any of the City of Bend Utility Department programs, please don’t hesitate to contact us at (541) 317-3000 ext. 2, or utilities@bendoregon.gov.

Asset management is the critical foundation for understanding near and long-term operational and capital needs.

- EPA





UTILITY DEPARTMENT

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*Photo contributions by staff include: Erynne Fore,
Sam Borgognoni, George McConnell, Scott Winter,
Troy Beck, Stuart Rounds, Mary Packebush, Julie Price*



Accommodation Information for People with Disabilities

To obtain this information in an alternate format such as Braille, large print, electronic format, etc. please contact the Utility Department at 541-317-3000, ext. 2 or email utilities@bendoregon.gov.