



**ONE WATER**

WATER • WASTEWATER • STORMWATER

UTILITY DEPARTMENT  
**ANNUAL  
REPORT**

FISCAL YEAR  
2019 / 2020  
JULY 1, 2019 - JUNE 30, 2020

# LEADERSHIP

This past fiscal year was far different than any other we have ever experienced. The disruptions to our professional lives, personal lives, and life in general caused by the COVID-19 pandemic were enormous. However, there were plenty of bright spots to reflect on as the City of Bend's Utility Department navigated the seemingly endless challenges of the past year.

One of those bright spots was the additional testing for COVID-19 within the city's wastewater collection system. Staff from the department's Industrial Pretreatment and Field Sampling and Flow Monitoring Programs worked closely with Deschutes County Health Services, Oregon State University-Cascades, and others to analyze wastewater samples and better understand where COVID-19 outbreaks may exist locally. Ultimately, these efforts helped to ensure the health of our community by providing valuable data to health experts.

Leveraging data to improve the effectiveness and efficiency of utility operations also continued to be a focus in FY 2019/2020. One example of this is using the Sewer Line Rapid Assessment Tool or SL-RAT, which helped identify collection system blockages quickly for Collections staff. The SL-RAT (pictured on page 6) sends radio frequencies through collection system piping and can quickly determine whether additional resources are required to clear the blockage. This reduced the need for heavy equipment to be in the field. It also reduced the amount of time staff spent working on costly excavations due to blockages that could have been avoided.

The department also continued to engage with the community. Whether it was the "Great Water, Great Life" campaign encouraging customers to use water efficiently or the Clean Water Works Program partnering with Bend Film and Central Oregon Daily to conduct a youth video contest, the department continued to place a high value on connecting with and educating utility customers. Staff's ability to get in the field and conduct normal public events was severely limited due to COVID-19, but the annual Deschutes River Cleanup, in collaboration with the Upper Deschutes Watershed Council, proved to be a much-needed sense of a normal summer event. Many other events adapted to new online formats.

This year also marked the departure of longtime Utility Director Paul Rheault. Paul spent 16 years working for the City of Bend in various public works capacities. During his tenure, the City of Bend invested over \$100M in new utility assets that came into operation under his direction. Hats off to Paul and his contributions to this city and community!

Mike Buettner  
- Utility Director

1  
UTILITY

3  
DIVISIONS

15  
PROGRAMS

125  
TEAM  
MEMBERS

## TABLE OF CONTENTS

Leadership.....	3
Stewardship.....	4
Innovation .....	7
Infrastructure.....	8
Public Health.....	11
Financials & Data.....	12
Looking Ahead.....	15
ADA Information.....	16



# STEWARDSHIP

The Utility Department continued to demonstrate a strong commitment to environmental stewardship in FY 2019/2020 by stewarding our precious natural resource from the source, through community use, and back to the source. Many of these efforts are integrated into the daily fabric of the department. Others, such as the City's shift to reduce the use of fossil fuels as outlined in the Community Climate Action Plan, provide new opportunities to improve utility operations.

## Embracing One Water

The Utility Department continued to embrace a commitment to One Water during the fiscal year. This commitment includes the stewardship of water from the source, to treatment, through use, to treatment, and back to the source. It also included the shared use of resources across the department, where staff often engaged in multiple projects across the water, wastewater, and stormwater utilities. The One Water focus advocates a culture of collaboration across the department.

- **Public Education & Outreach** – Creating an informed community remained a key focus of multiple utility programs. While many of these efforts have regulatory drivers, they are also foundational elements of any utility focused on long-term sustainability and natural resource stewardship.
- **Clean Water Works Program** – The Clean Water Works Program connected those interested in keeping our watershed clean by promoting awareness in school-aged children with a Youth Video contest. The grand prize winner's PSA became a professionally edited PSA now airing on local TV stations.
- **WaterWise Workshops** – The WaterWise Program provided educational opportunities to the public, as well as local contractors, by hosting a workshop series at the historic Hollinshead Park. The workshops combined an in-classroom segment, and additional topics were covered in the WaterWise Garden at Hollinshead Park.
- **Youth Education** – The City continued to partner with The Environmental Center to provide in-classroom instruction and support for the Our Waters Journey program. The Program connected with 1,078 students during the year and provided tours of our facilities.
- **Public Events** – The department regularly attended public events to provide information about the City's utility services. In FY 2019/2020, the department participated in the city-wide City Quest at Fall Fest, which included using the Water Tap Board, a water bottle refilling station, and a drinking water distribution map.



26,486  
WATER SERVICE  
CONNECTIONS

4.5  
BILLION  
GALLONS OF  
WATER  
PRODUCED  
ANNUALLY

2.2  
BILLION  
GALLONS OF  
WASTEWATER  
TREATED

11,870  
CATCH BASINS  
CLEANED /  
INSPECTED  
(1-2X P/Y)

11,100  
CUSTOMER  
SERVICE  
LOCATES



# INNOVATION



The City of Bend initiated a heightened focus on innovation in FY 2019/2020. The new city-wide culture of innovation provided additional project management and support as the department leveraged data to monitor performance and improve operations.

### **Innovative Strategies, Values, and Tactics**

The city-wide focus on innovation expedited the adoption of novel strategies, values, and tactics at the department level. The City's response to the COVID-19 pandemic trickled down to the department's daily performance through remote work options for many Utility staff members. Online virtual department and one-on-one meetings were paramount in continuing business when offices were closed. Remote access to work stations, data, and projects catapulted the Utility Department's work capabilities years into the future.

### **Water Customer Leak Detection**

The recent investment in Advanced Metering Infrastructure (AMI) continued to pay off for both the water utility and our Bend water customers. The automated water meters provided reliable data regarding the water demands of the system. It allowed staff to alert customers about extended periods of use that could equate to water leaks. WaterSmart Leak Alerts were sent to the customer's email, phone, or text and provided additional informational resources to help them self-resolve their water questions and concerns.

### **Sewer Line Rapid Assessment Tool (SL-RAT)**

The Utility Department's use of new technologies continued in FY 2019/2020 with the Sewer Line Rapid Assessment Tool, or SL-RAT (pictured left). Identified by Field Operations staff to reduce mobilization time and ever-growing traffic conflicts, the SL-RAT sent radio frequencies into sewer lines to determine if it contains blockages. It was using this new technology that provided useful and reliable data while alleviating staff from mobilizing large trucks, which blocked traffic for extended periods.

### **Integrated Water Master System Planning**

The Utility Department kicked off a year-long planning effort in FY 2019/2020 that included an innovative approach to integrating two separate planning efforts. The Integrated Water System Master Plan included staff from the Engineering and Infrastructure Planning Department and the Utility Department. The two departments simultaneously focused on the water distribution system and water management, and conservation planning. Historically, these have been separate efforts by two departments. Bringing them together provided an opportunity to analyze the water system with a greater focus on future growth and water demand management.

**21,767**

LAB ANALYSES  
PERFORMED

**705**

METERS AND  
BACKFLOWS  
INSTALLED IN  
THE RETROFIT  
PROGRAM

**177**

INDOOR  
WATER KITS SENT  
TO CUSTOMERS

**1,748**

DRY TONS OF  
BIOSOLIDS  
PRODUCED



# INFRASTRUCTURE



The City of Bend continued to invest in water, sewer, and stormwater system infrastructure during FY 2019/2020. Investments in these projects replaced outdated galvanized water lines, improved aging sewer pipes, and prevented localized stormwater flooding.

## Water Investments

- **Murphy Pump Station Improvements** – The Murphy Pump Station serves pressure level 3D in SE Bend. The pump station configuration was inefficient for future anticipated interim operation flow rates due to significant land development. The improvements replaced five stations, improving capacity by 150%.
- **Water-Main Replacement NW Bend** – The water infrastructure entrenched along NW 2nd St., NW Portland St., NW Saginaw St., and NW Roanoke St. was a high-priority replacement due to a multitude of water-main and service line leaks over the past few years. In addition to the poor pipe condition, the existing water-main was undersized by current standards and did not have adequate fire hydrant spacing.

## Sewer Investments

- **Cured in Place Pipe Rehabilitation (CIPP)** – The CIPP Rehab project involved trenchless rehabilitation of concrete and clay sewer-mains located throughout the collections system. These sewer-mains were the highest priority for rehab given the condition of the pipes. Many had significant root intrusion and cracks. Using the latest trenchless technologies, the completed CIPP provides a new and structurally sound pipe within the existing host pipe.
- **Pump Station Decommissioning** – June 2019 to May 2020. Multiple sewer pump stations were decommissioned due to the completion of the Southeast Interceptor project in 2018. Decommissioning these facilities reduced maintenance and other ongoing costs such as electricity. A total of seven pump stations were decommissioned during FY 2019/2020.

## Stormwater Investments

- **Stormwater Drainage Improvements** – The intersection of 8th and Penn had insufficient drainage infrastructure, causing flooding in the intersection. The flooding occurred after significant storm events and during snowmelt events. The flooding could potentially damage private property and was a safety concern to the public-the project installed appropriate infrastructure to eliminate the flooding and improved drainage in the intersection.

457  
MILES OF  
WATER-MAINS

21  
WATER WELLS

16  
RESERVOIRS

459  
MILES OF  
SEWER PIPES

5,368  
FIRE HYDRANTS



# PUBLIC HEALTH



The City's Utility Department worked hard to ensure public health throughout FY 2019/2020. Over one hundred committed personnel provided reliable fire flow, potable drinking water services, collected and treated wastewater, and managed stormwater run-off to ensure environmental and underground water health.

#### Laboratory

The Laboratory continued to maintain its National Environmental Laboratory Accreditation Program (NELAP) status. It provided analyses of drinking water, wastewater, biosolids, reuse water, stormwater, and all environmental waters in the City. An increase in the demand for public health protection and the regulatory and operating requirements for sampling reflect in the 21,767 lab tests performed, an increase of 18% from FY 2018/2019.

#### The COVID-19 Pandemic Response / Suspension of Shut-off

The Utility Department's role in providing vital public health services was at the forefront of the COVID-19 pandemic response. Besides providing clean, potable water essential for sanitation, the city suspended water service shut-offs for non-payment in March that are expected to continue throughout the end of 2020. The Utility Department collaborated with Economic Development staff to create a COVID-19 Utility Relief Program for commercial customers hit particularly hard due to closures.

#### Biobot Study / Analysis

The COVID-19 pandemic response also generated information and data not previously collected and analyzed by our Utility Department staff. Participating in multiple collaborative analyses, our staff utilized wastewater samples to identify COVID-19 infection levels within the wastewater. The Department's recently formed Field Sampling and Flow Monitoring Program helped public health officials understand Bend's wastewater samples. The picture to the left shows field staff pulling and analyzing a sample from a Bend sewer maintenance manhole.

#### Fire Suppression

Providing adequate fire flow has been a top priority of the water utility for nearly a century. It continues to be the case today as Central Oregon and other communities in the west continue to cope with dry conditions and increased likelihood of wildfire. In addition, the impacts of increasingly frequent and significant periods of drought continued to keep fire suppression a top priority for the department.

**1,350**  
FEET OF WATER  
LINES REPAIRED  
OR REPLACED

**103.8**  
MILES OF SEWER-  
MAIN CLEANED/  
INSPECTED

**21,767**  
LAB SAMPLES  
COLLECTED AND  
ANALYZED

**31,595**  
BACKFLOW  
ASSEMBLIES  
TESTED

**6,368**  
FIRE HYDRANTS  
IN SERVICE



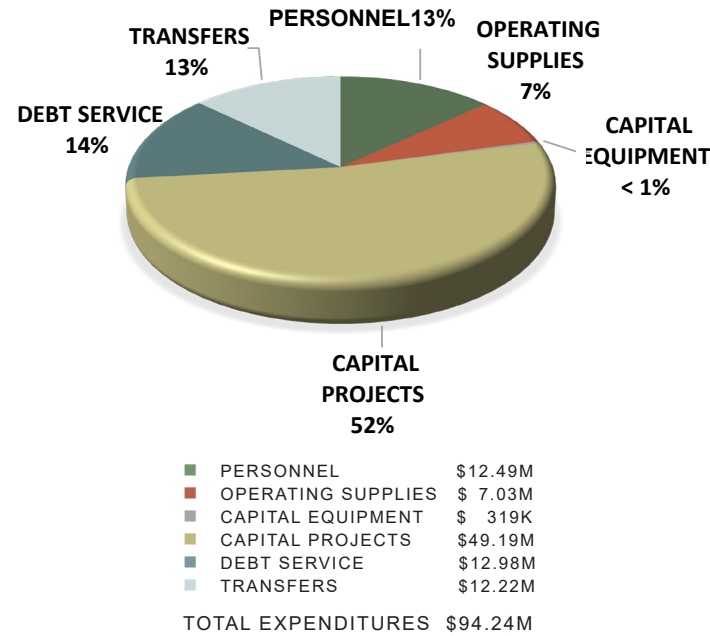
The Utility Department continued to focus on keeping costs low while still providing high service levels for customers. Utility budgets were managed closely by department staff and in alignment with the operational responsibilities.

In response to the COVID-19 pandemic, the City's Finance Department coordinated a city-wide Budget Reduction Plan in late FY 2019/2020 to prepare for possible revenue shortfalls. The Utility Department reduced operating budgets by 10%, which posed a high degree of uncertainty for the department into FY 2020/2021. Despite financial reductions, the staff was able to have a productive end to the fiscal year.

Revenue shortfalls were largely due to COVID-19 related business closures across the City and nation, which trickled down to customer non-payment of their utility bills. Staff began reviewing assistance options to help customers who were unable to pay their monthly utility bills. The City placed a moratorium on water services shut off for non-payment beginning in March 2020 to help alleviate financial stress for those affected by job loss and ensure services were available for public health.

# FINANCIALS & DATA

## TOTAL UTILITY FINANCIALS



DIVISION / PROGRAM	FY 2019/20	FY 2018/19	FY 2017/18	Stormwater				# Gallons Maximum Daily Demand (MDD)	26.34M	28.15M	28M
<b>Administration</b>				# Catch Basins Cleaned/Inspected (1-2X/y)	11,870	8,458	11,295	# Water Wells	21	21	21
# of Divisions	3	3	3	# UICs Cleaned/Inspected	5,739	4,879	6,652	# Reservoirs	16	16	16
# of Programs	15	15	14	# Swales Maintained	762	1,238	1,081	# Miles of Water Mains	457	545.18	519.31
# of Staff	124.5	112	109	# Sediment Manholes Maintained	964	952	816	# Water Service Connections	26,486	25,997	25,332
# Cumulative Staff Hrs. Worked	202,137.50	200,456	190,369	# Miles of Stormwater Pipeline Cleaned/Inspected	68	111.7	121	# New Meters Installed	540	622	641
<b>Bend's Population *</b>	92,840	91,385	89,505	# Yards of Debris Removed from Catch Basins	302	376	276	# Meters Replaced	842	529	843
Water service area population: (Est. 75% of Bend Population)**	69,630	n/r	n/r	# Cubic Yards Debris Removed by Street Sweeper	9,188	13,354	12,544	# Meter and Backflow Retrofit Program Installation	705	703	642
<b>Collections</b>				# Miles Street Sweeper Swept	27,640	19,811	17,986	# Backflow Assemblies Monitored (Calendar Years 2019 & 2018)	36,739	35,232	32,961
# Miles of Sewer Pipes	459	n/r	454	<b>Utility Billing</b>				# Backflow Assemblies Tested (Calendar Years 2019 & 2018)	31,595	30,254	28,104
# of Sewer Pump Lift Stations	403	404	411	# Single-Family Customers Bills				# Fire Hydrants	5,368	5,347	5,311
# Miles of Sewer Main Cleaned / Inspected	103.8	80	89	Water	21,764	21,346	n/r	# Repainted (Calendar Year)	990	993	n/r
# Miles of Sewer Main Closed Circuit TV Inspected	62	61	51.6	Irrigation	69	70	n/r	# Maintained (Calendar Year)	2,435	2,170	n/r
# Large Collection Pump Stations	72	74	82	Wastewater/Sewer	29,344	28,614	n/r	# Valves Exercised (Calendar Year)	3,165	1,989	n/r
# Small Collection Pump Stations	330	330	330	Stormwater	31,760	30,867	n/r	<b>Water Conservation</b>			
<b>Customer Service</b>				# Multi-Family Customers Bills				# Indoor Water Kits Sent to Customers	177	278	n/r
# Customer Service Locates	11,100	12,027	12,996	Water	1,749	1,657	n/r	# Sprinkler Inspections	162	167	204
# Call Center CSRs	2,212	2,084	n/r	Irrigation	7	7	n/r	# Customer Water Waste Complaints Investigated	89	145	n/r
# Call Center Odor Calls	28	32	48	Wastewater/Sewer	1,874	1,784	n/r	<b>Wastewater</b>			
# Work Orders Issued	388	314	n/r	Stormwater	1,705	1,596	n/r	# Gallons Treated Annually	2.2B	2.2B	2.17B
# Utility Call Center Calls Received	4,145	4,127	n/r	# Non-Residential Customers Bills				# Gallons Maximum Daily Treated	6.78MGD	6.72MGD	6.44MGD
<b>Equipment &amp; Assets</b>				Water	2,189	2,180	n/r	# Gallons Recycled Water Produced for Irrigation	0	0	0
Utility Fleet Size	91	90	90	Irrigation	333	359	n/r	# Tons of Biosolids Produced	1,748	1,577	1,488
<b>Laboratory # Samples Collected / Analyzed</b>				Hydrant	75	57	n/r				
WRF	5,357/14,825	4,525/13,038	3,889/10,159	Wastewater/Sewer	2,291	2,281	n/r				
Stormwater	100/1,821	93/1,696	75/1,067	Stormwater	2,858	2,841	n/r				
IPP	332/2,280	75/1,067	73/1,027	All Customers							
Water Ops	12,96/2,676	1,129/2,244	1,225/2,410	# Cut-Ins	5,115	5,084	n/r	* PSU Certified Population Estimates July 1, 2020			
EIPD	162/165	92/92	91/91	# Cut-Outs	5,077	5,008	n/r	** Bend's Water Service population is est. 75% of Bend's population. Other area water providers supply the remaining 25%.			
Total	7,247/21,767	5,918/17,800	5,353/14,754	# Utility Bills Produced Per Month	33,509	32,653	n/r				
<b>Service Area</b>				# Average Shut-Offs Per Month	100	96.5	n/r				
# Sq. Miles in Service Area	33.31	33.31	33.43	<b>Water</b>							
# Lane Miles in Service Area	851	850	840	# Gallons Produced Annually	4.5B	4.79B	4.61B				
# Miles Driven by Staff	426,043	384,323	382,251	# Gallons Average Daily Demand (ADD)	12.2M	13.14M	13.1M				

# LOOKING AHEAD



Meeting projected growth will continue to be a challenge for the City's three utilities – water, wastewater, and stormwater. Whether it is staff integrating new technologies into daily operations to improve efficiency and effectiveness or complying with increasingly complex regulatory requirements for water quality sampling and testing, the City's Utility Department is positioned well to deal with the challenges ahead.

### Meeting Continued Growth

Bend approached 100,000 residents this past year, according to Portland State University's annual population estimate. Meeting the growing expectations of the community will not only take additional staff and resources, but it will also require an innovative and creative approach to doing more with less in an even denser urban environment.

### Asset Management

The department continues to evolve toward a more comprehensive asset management solution to better understand infrastructure characteristics. While projects like the recent Infrastructure Report Card helped inform system quality at a high level, a more robust solution is required to manage assets in a modern organization.

### Public Works Transition / Juniper Ridge

Shortly, the City's Utility Department will likely share facilities with the Streets, Transportation and Mobility Department, and the Engineering and Infrastructure Planning Department at Juniper Ridge. This singular facility will bring together multiple workgroups currently spread across the City. By bringing these groups together at one facility, Public Works will be better aligned to deliver the services Bend citizens need and expect.

### WaterSmart Customer Engagement

Staff will continue to leverage water use data to improve the overall water efficiency of the community. Core to that effort will be a great emphasis on the use of WaterSmart Software to understand customer water use. Looking ahead, water customers will have greater access to their water use through customized Home Water Use Reports and access helpful videos and tips to reduce customer water use.

### Utility Billing Software Improvements

The City of Bend continues to invest in upgraded software solutions across the organization. This includes new software for Utility Billing that will improve the effectiveness and efficiency of the team as they continue to provide customer service directly to the city's 35,000+ utility customers. The new software is scheduled to go-live in FY 2021. It will include an increased level of security for customer information as well as added functionality for assistance programs offering financial relief for monthly utility bills.

FUTURE PROJECTS  
FY 2021/22

**1,700**  
FEET OF NEW  
8" DUCTILE IRON  
WATER-MAIN  
PROJECTED TO BE  
INSTALLED

**850**  
PROJECTED METERS  
REPLACED

**50**  
APPROX.  
MILES OF  
WATER-MAIN  
LEAKS SURVEYED

**2,500**  
APPROX. FEET  
OF CIPP LINED  
COLLECTION-MAIN  
COMPLETED







## UTILITY DEPARTMENT

City of Bend, 62975 Boyd Acres Rd., Bend, OR 97701  
541-317-3000, Ext. 2  
[utilities@bendoregon.gov](mailto:utilities@bendoregon.gov)  
[bendoregon.gov/utilities](http://bendoregon.gov/utilities)

Photo contributions by staff members Douglas Hauck and Scott Winter.



### **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](mailto:utilities@bendoregon.gov).