



CITY OF BEND

# Utilities Public Advisory Group

February 7, 2024 • 11 am–12:30 pm

Hybrid Meeting • MS Teams or Bend Utilities Department Deschutes Conference Room

Lori Faha, P.E., Environmental Resources Manager

Dan Denning, Water Conservation Program Manager

Elisabeth O'Keefe, Stormwater Program Manager

Aubrie Koenig, Facilitator

# Purpose & Agenda

*Build shared knowledge of Bend's unique water systems and provide time for UPAG members to ask "burning questions."*

1. Introduction
2. Bend Water Systems
  - Key Questions
  - History & Future
3. UPAG Discussion
4. Summary and Closing



# Hybrid meeting tips

- Direct comments to the in-person or online moderator who'll help facilitate discussion
- Say your name when you start to talk and speak toward the nearest mic
- When someone else is talking, stay on 'mute' and avoid side conversations
- Let us know if you like this format or if there's something we can improve!



# December meeting reflections

More Information	<ul style="list-style-type: none"><li>• How new development types interface with water policy</li><li>• Regional strategies for water scarcity</li><li>• Discussion around equitable/multi-benefit solutions</li><li>• Measuring conservation progress</li></ul>
Process & Format	<ul style="list-style-type: none"><li>• Integration of water topics (storm, conservation, etc)</li><li>• Insights/expertise of landscape industry professionals</li><li>• Continued interagency/cross-discipline collaboration</li><li>• Collaboration leading to tangible outcomes</li><li>• Involve/coordinate with Avion/Roats</li><li>• More in-person UPAG meetings</li></ul>
Potential Future UPAG Topics	<ul style="list-style-type: none"><li>• Graywater issues</li><li>• Practical options for dry well testing</li><li>• Public awareness of aquifer challenges</li><li>• Education around desert aesthetic (not a 'rock garden')</li><li>• Outreach w/in City to develop UPAG topic wishlist</li></ul>



# Bend's Water History





WALL ST. BEND  
1910



CITY OF BEND





CITY OF BEND







# To Our Water Users--

*Please read the following letter received from  
the Oregon State Board of Health today:*

September 11, 1923.

Mr. T. Foley, Manager  
Bend Water, Light & Power Company,  
Bend, Oregon--

Dear Sir:

In order to make the water situation clear to the citizens of your city, I am writing this letter and sending copies to the press and City Officials.

Your Company is undoubtedly much interested in providing a safe water supply for the City of Bend. A water to be fit for domestic use must be absolutely pure and free from animal or human contamination. I have been unable to find such a supply in the Bend district. The samples taken from Spring River and Tumalo Creek were polluted and unfit for domestic purposes.



CITY OF BEND

# Bend's Waters Today

**SURFACE WATER  
GROUNDWATER  
WATER CONSERVATION  
RE-CHARGE & RE-USE**





# Bend Water Supplies – Surface Water

## Bend Municipal Watershed

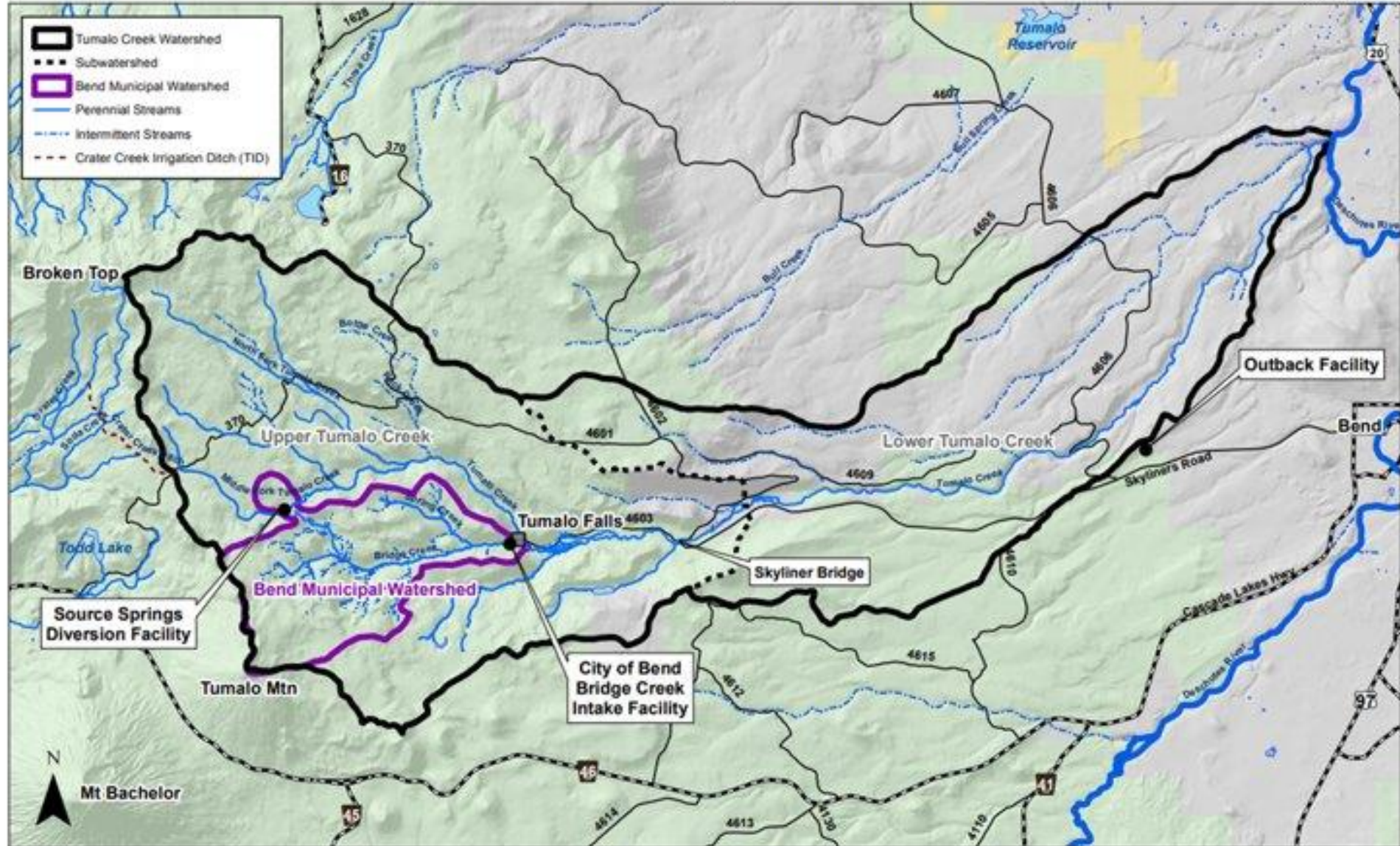
- Established in 1926
- Our primary source - approx 60% of water supply
- Gravity fed, low carbon footprint
- Protected watershed in partnership with USFS
- Take no more than 18.2 cfs per code and USFS Special Use Permit, and only take what we use
- Issues: Fire, Climate Change, some turbidity at times

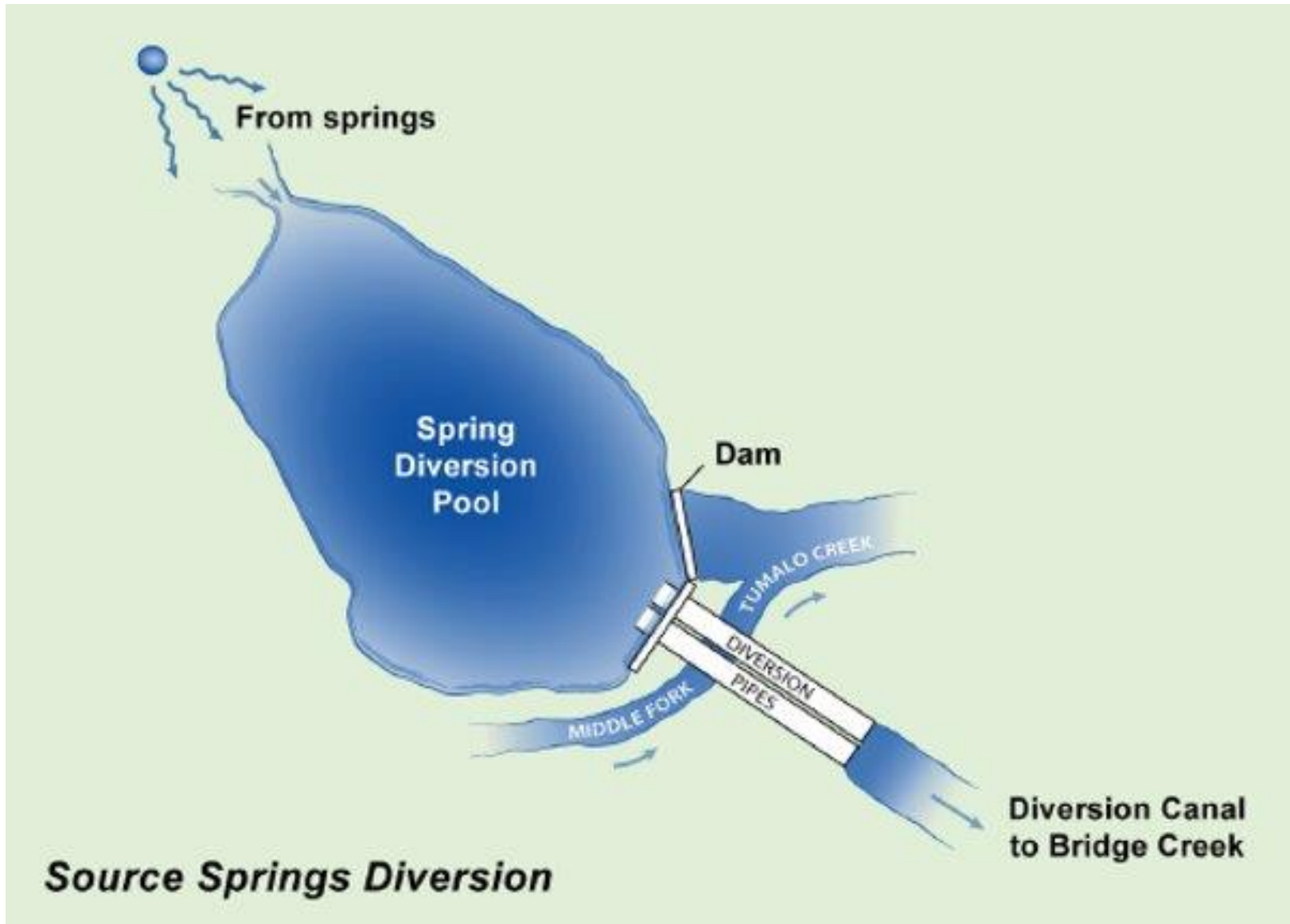




# Bend Municipal Watershed - Map 1 Tumalo Creek Watershed

Version 3/7/2018









CITY OF BEND





CITY OF BEND





CITY OF BEND









CITY OF BEND





CITY OF BEND



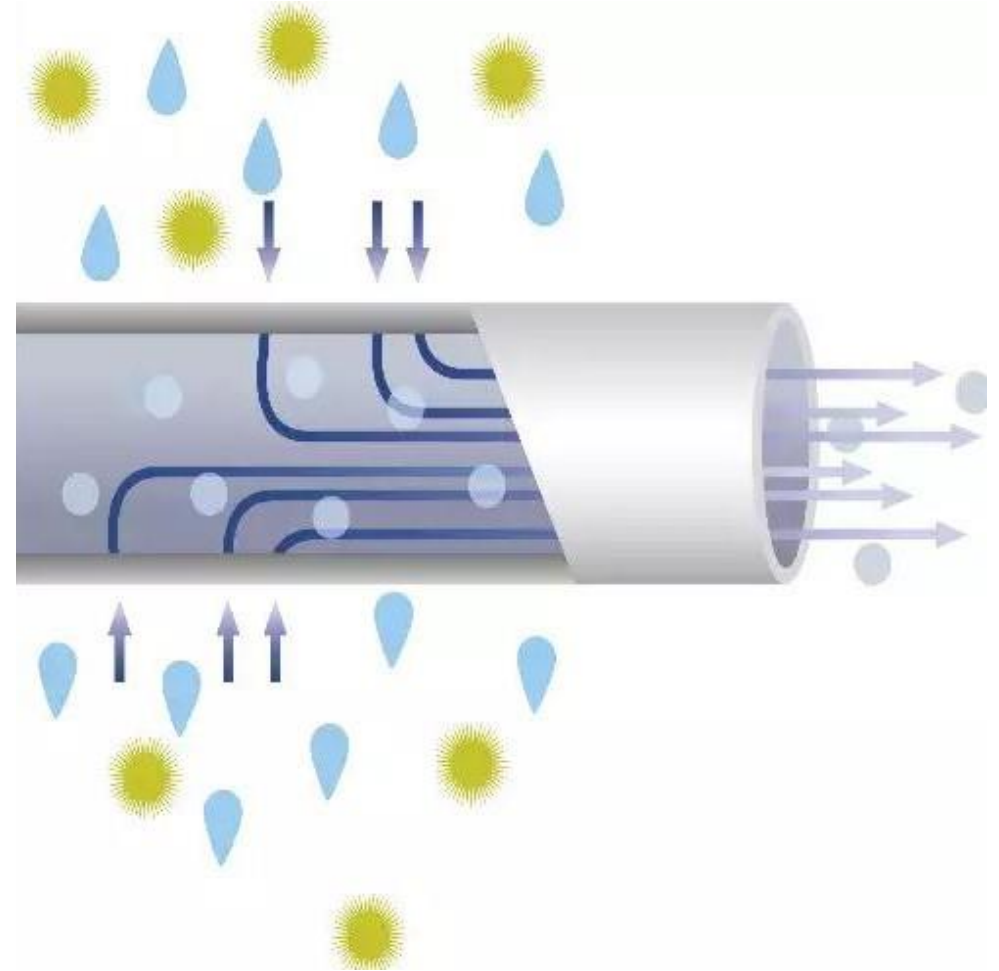


Water Filtration  
Facility





# Water treatment / water filtration



# Bend Water Supplies – Groundwater

- 20 wells supply approx. 40% of our water
- Used when demand is high (summer) and as back-up
- Wells are deep in the thick, regional Deschutes Aquifer
- Initial wells installed in 1980s
- High energy use / carbon footprint - approx. 2x more expensive than surface water delivery
- Mitigation requirements
- Issues: Groundwater levels, Ability to obtain more water rights in the future

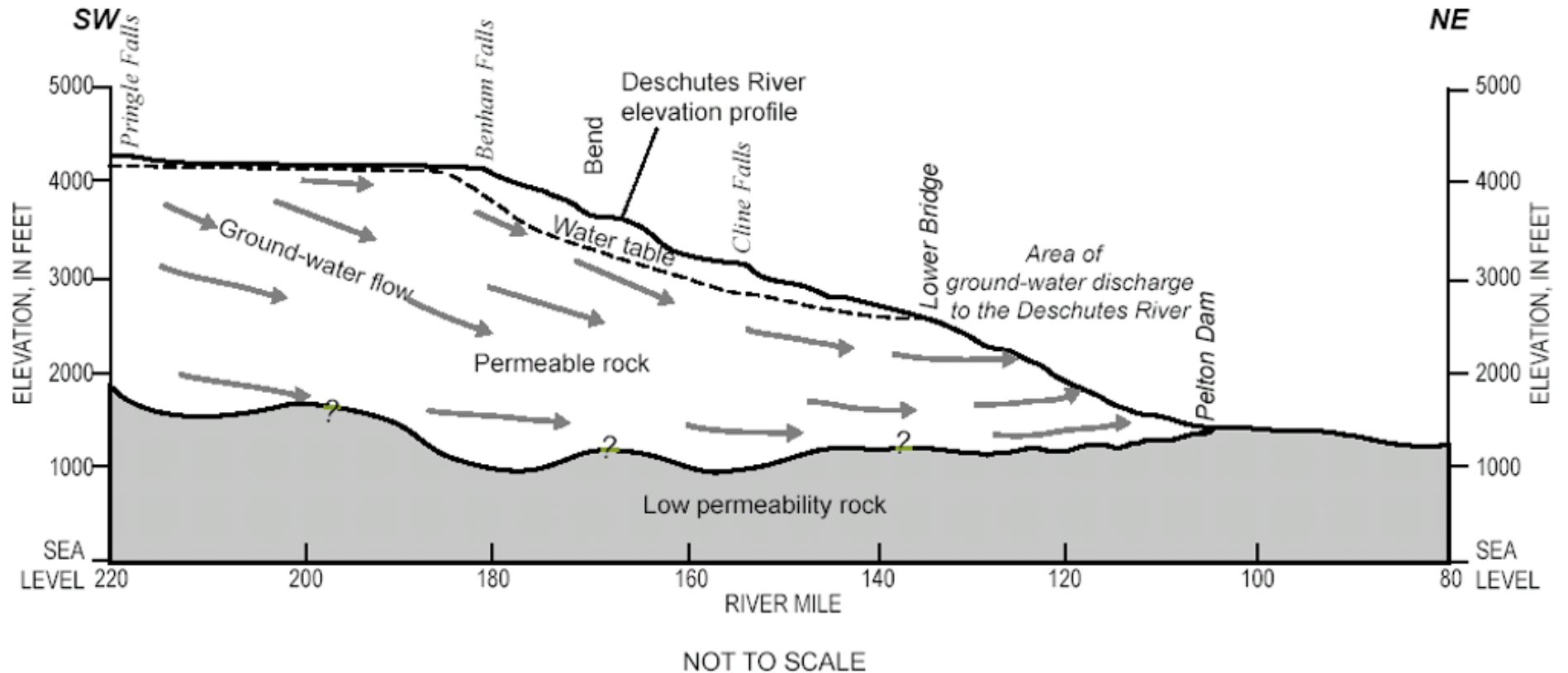




**Massive Aquifer that recharges 2.4 billion gallons per day... (3800 cfs annually)**

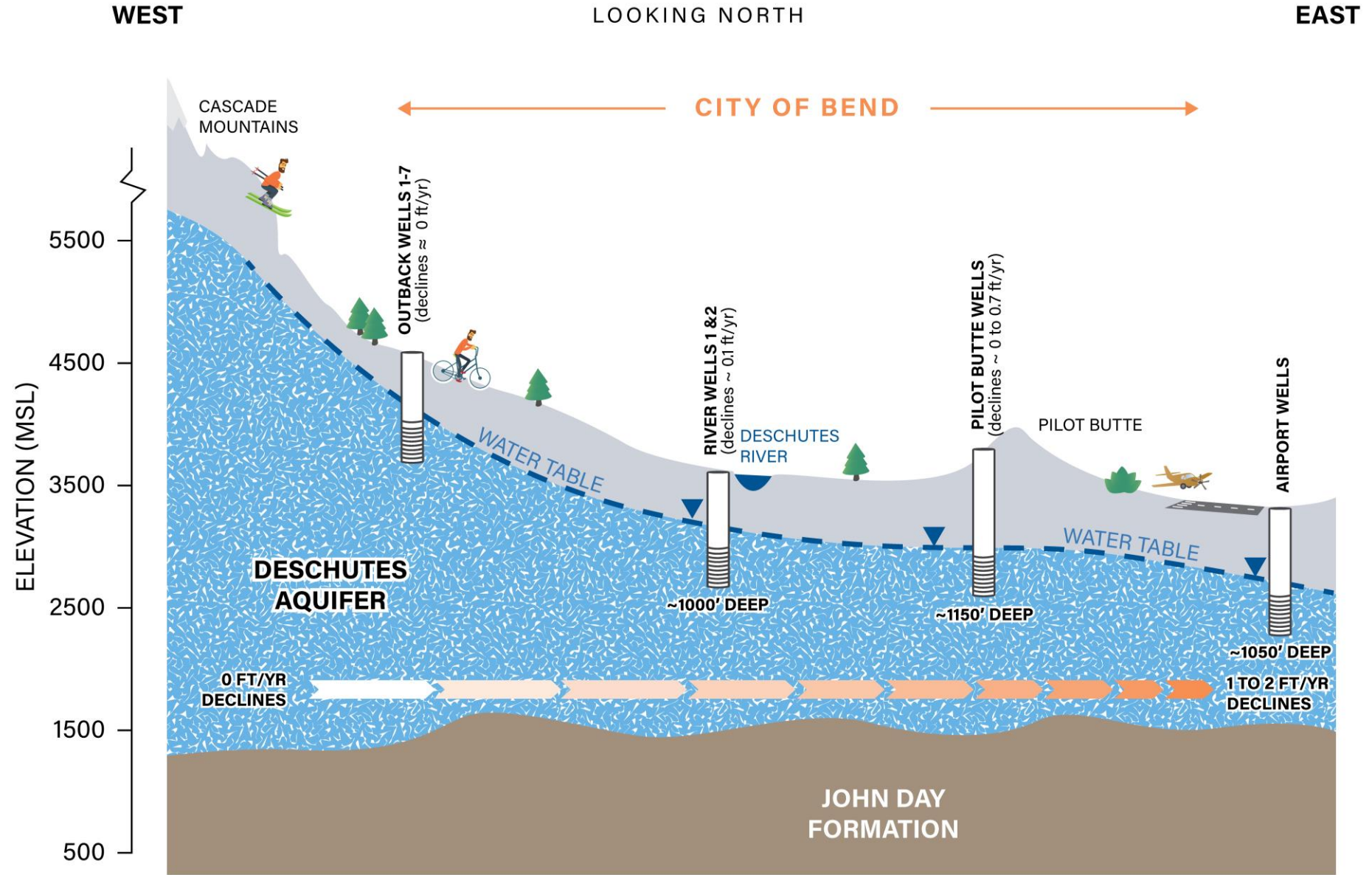
**Think huge underground reservoir...**

North –South  
X- Section:  
Deschutes  
Aquifer



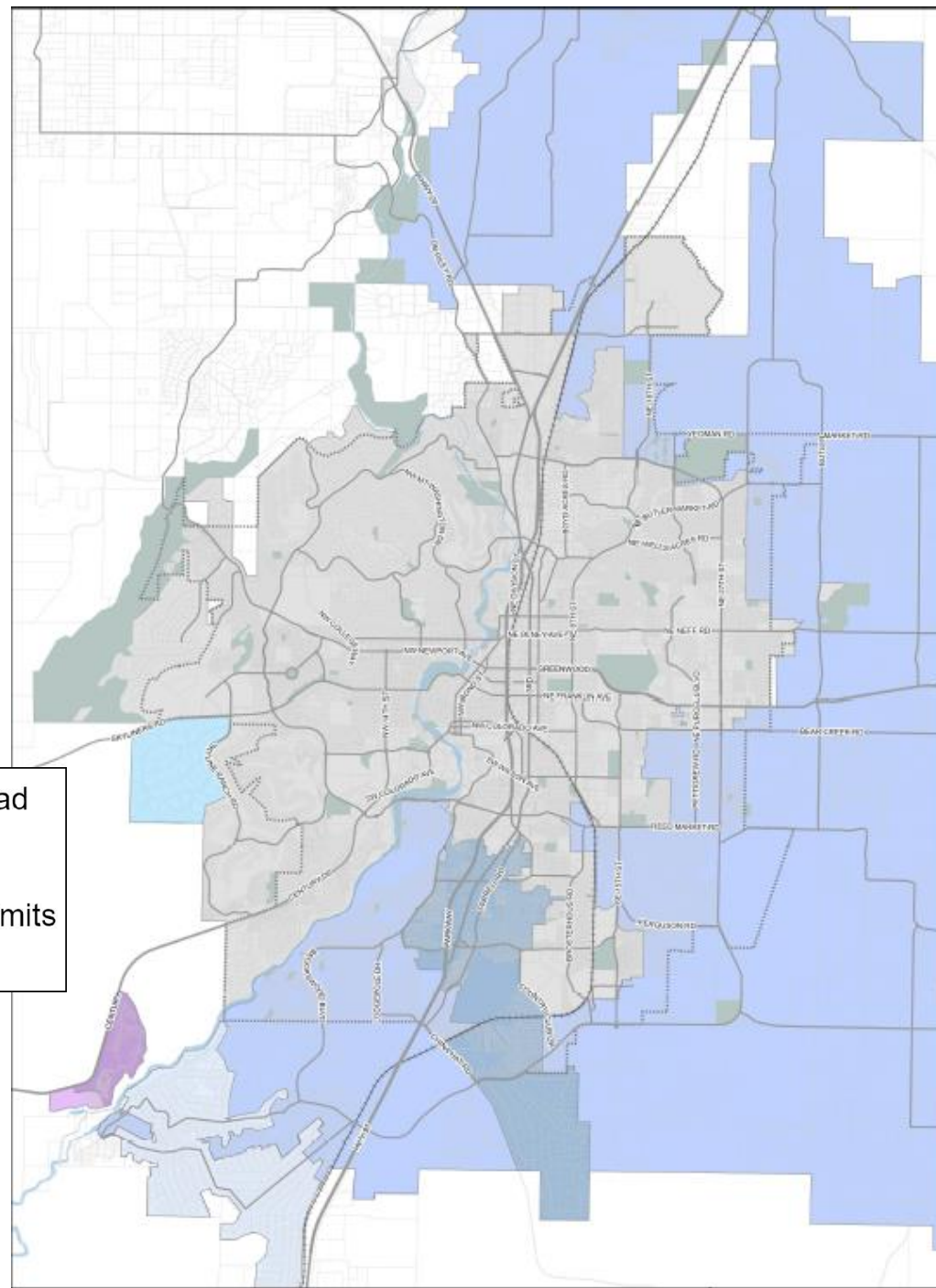
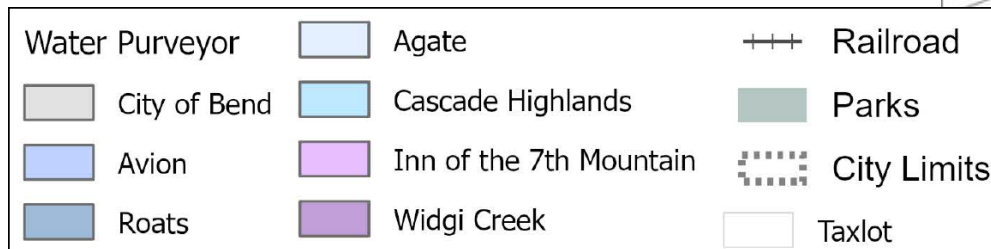
CITY OF BEND

# Bend's Groundwater Supply Wells



# Who Provides Your Drinking Water?

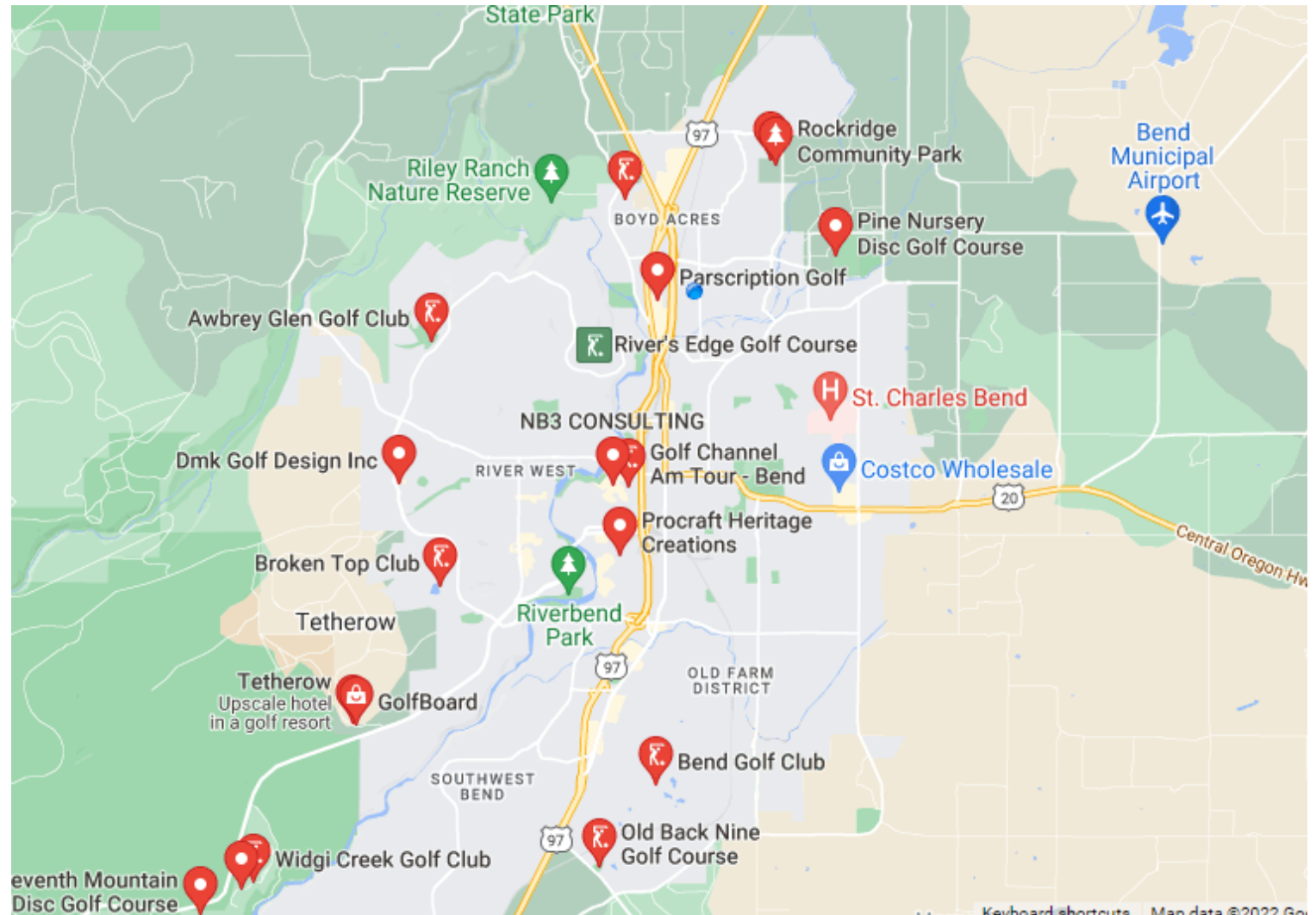
It depends...





# MYTH BUSTER

Q: How many golf courses in Bend are irrigated with city drinking water?

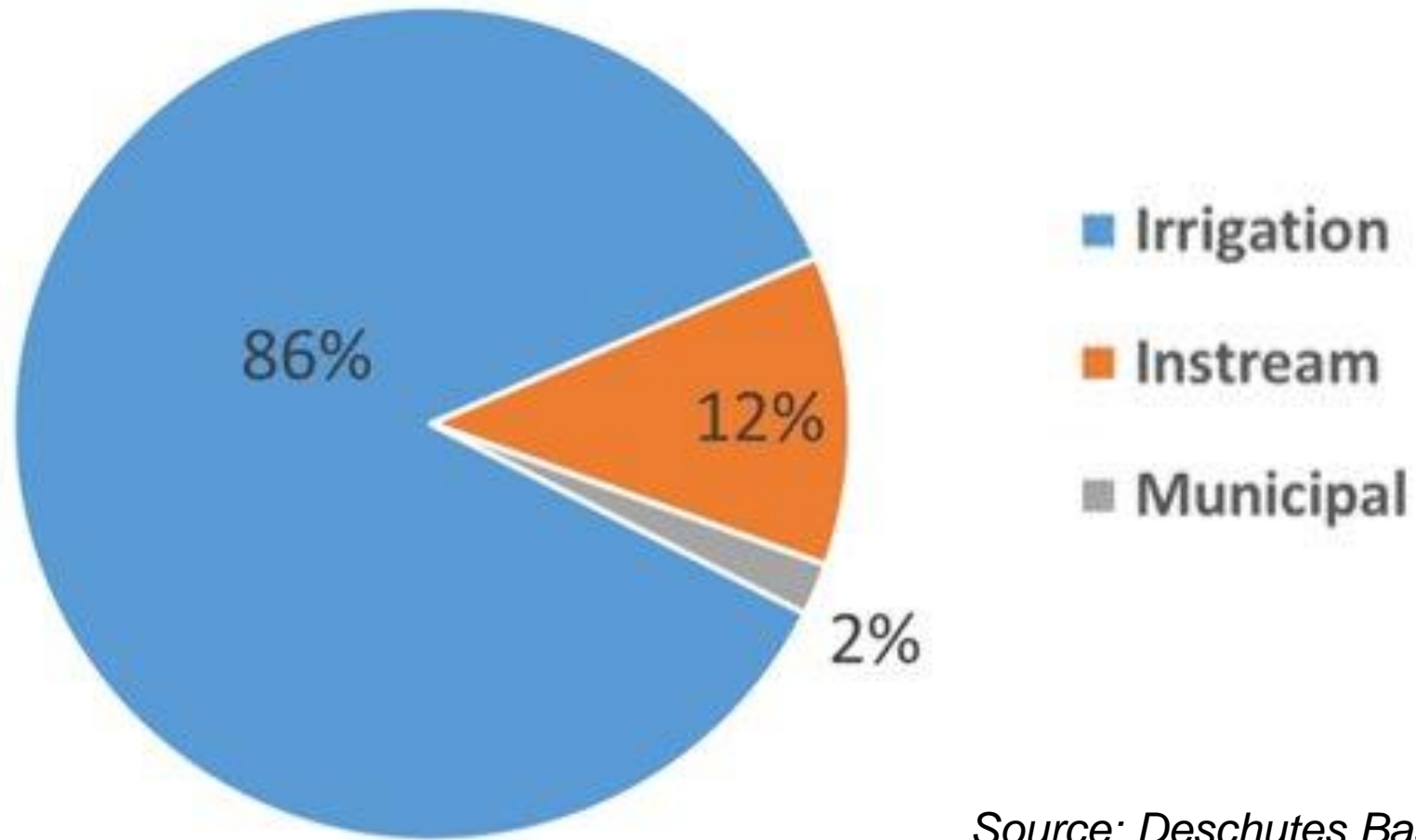


Source: Google Maps



CITY OF BEND

# Deschutes Basin Water Rights Distribution

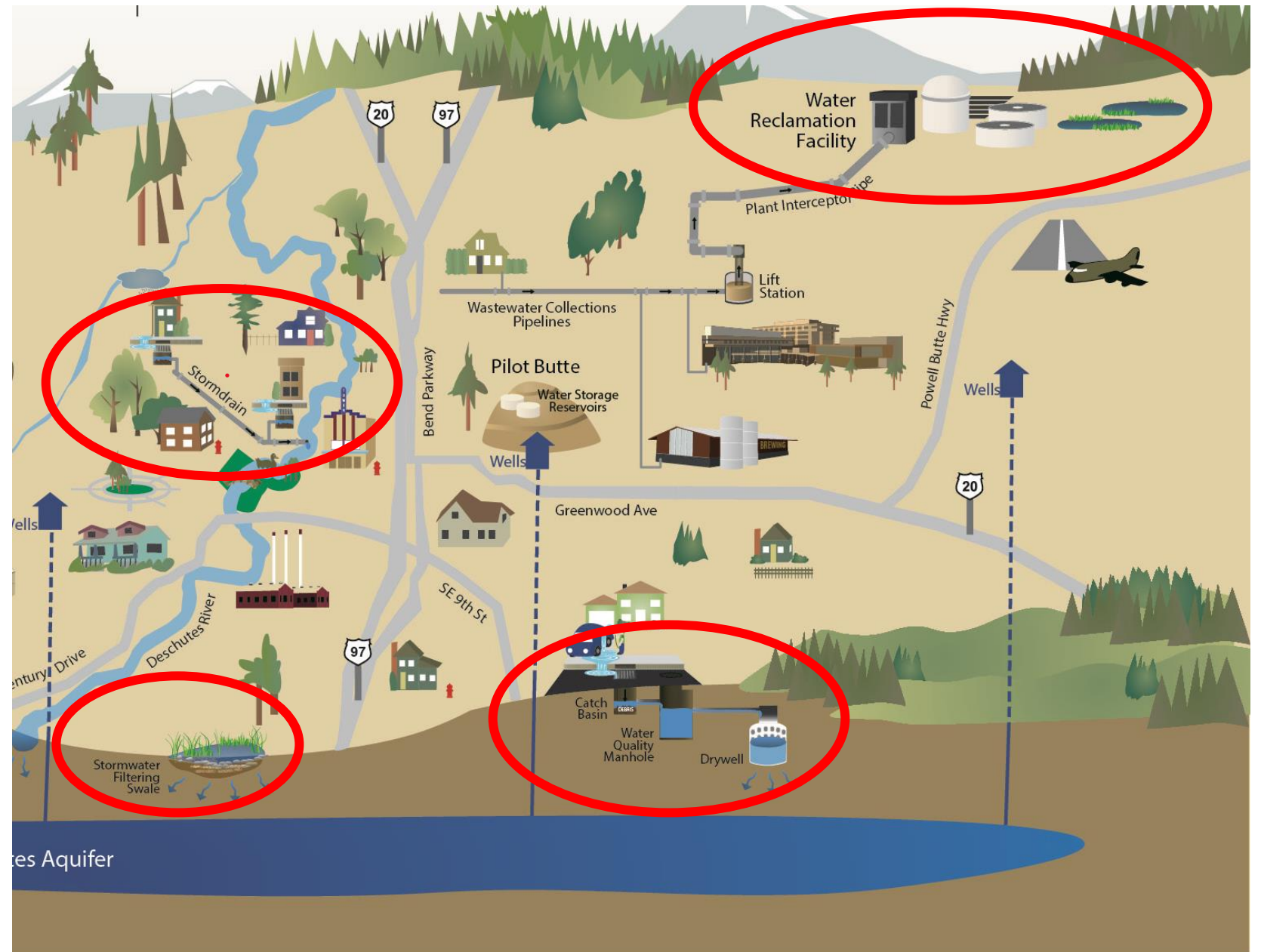


*Source: Deschutes Basin Study*



# Bend's Water – Re-Use and Recharge

- Water Reclamation Facility
- Stormwater Systems





# Where does the Wastewater Go?

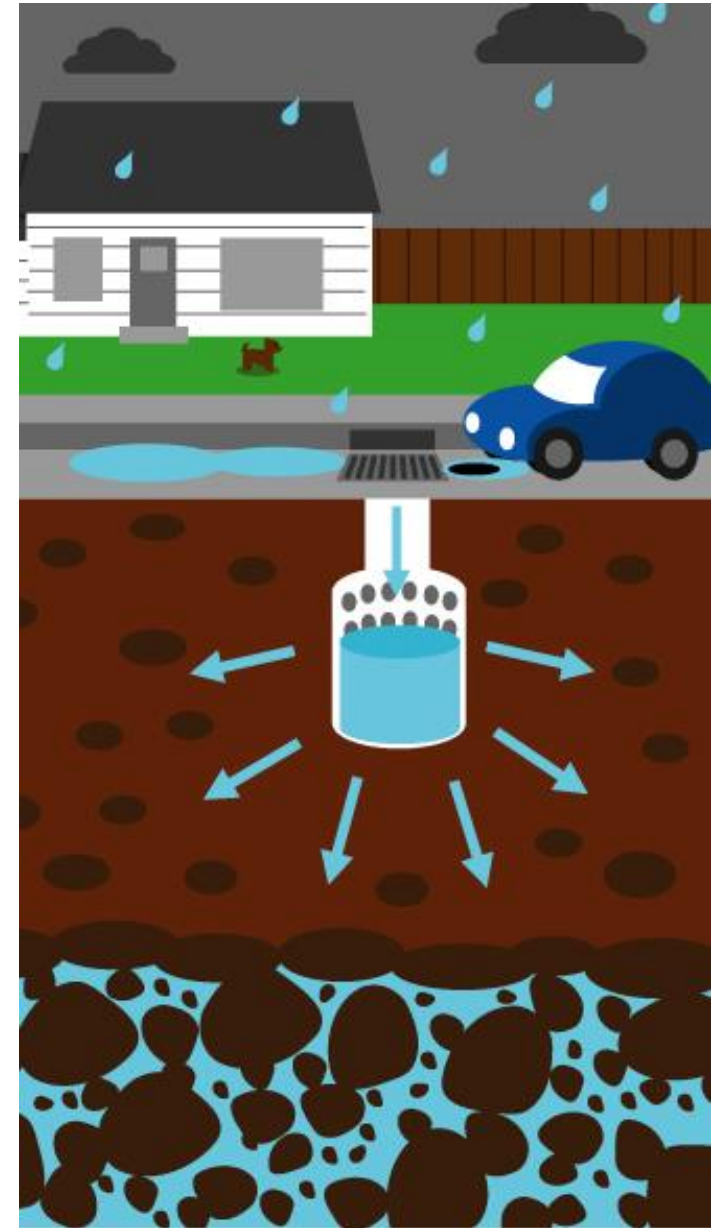




# Beneficial Reuse, Recharge & Biosolids



# Where Does the Stormwater Go?



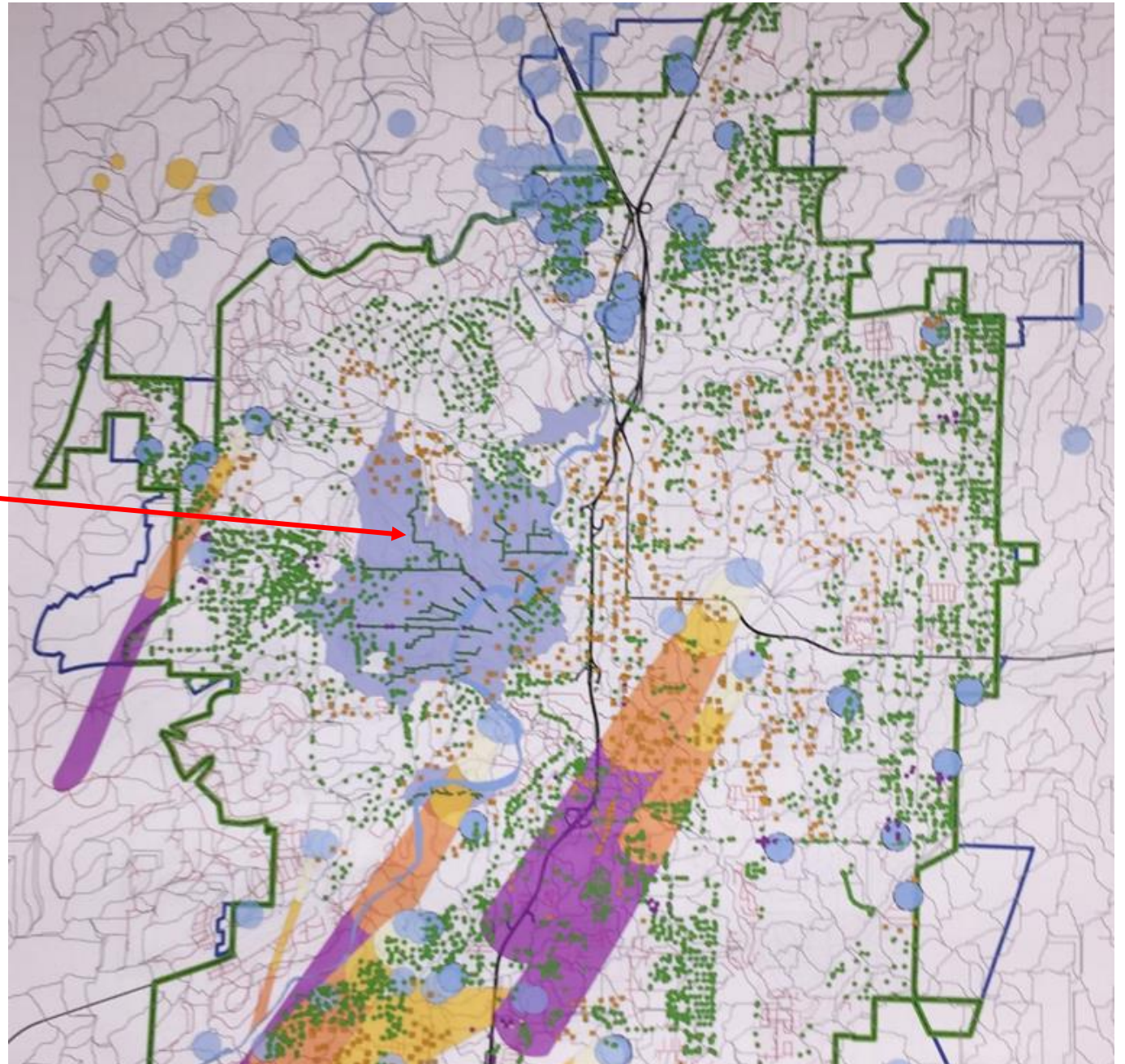


# BEND'S STORMWATER SYSTEM

Pipes to river

Recharge (dots)

Time of Travel Zones overlay



# PLANNING, CONSERVATION & WATER QUALITY



# Water Stewardship

## Plan Ahead for the Future

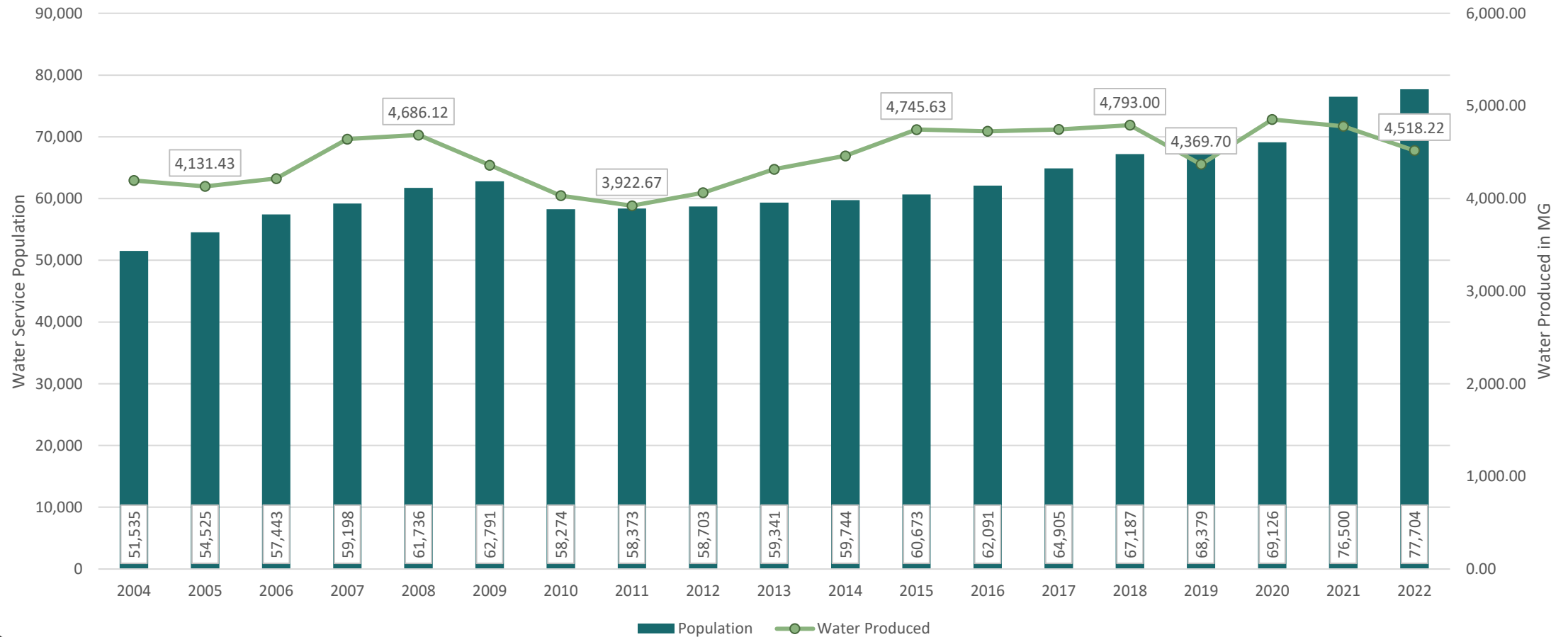
- WMCP and Master Plan
- New Water Right
- Mitigation Credits

## Focus on Efficiency

- Remove barriers to use (filtration, pre-treatment)
- Water Rights Optimization
- Land Use – density benefits
- Water Conservation program

# Annual Water Production

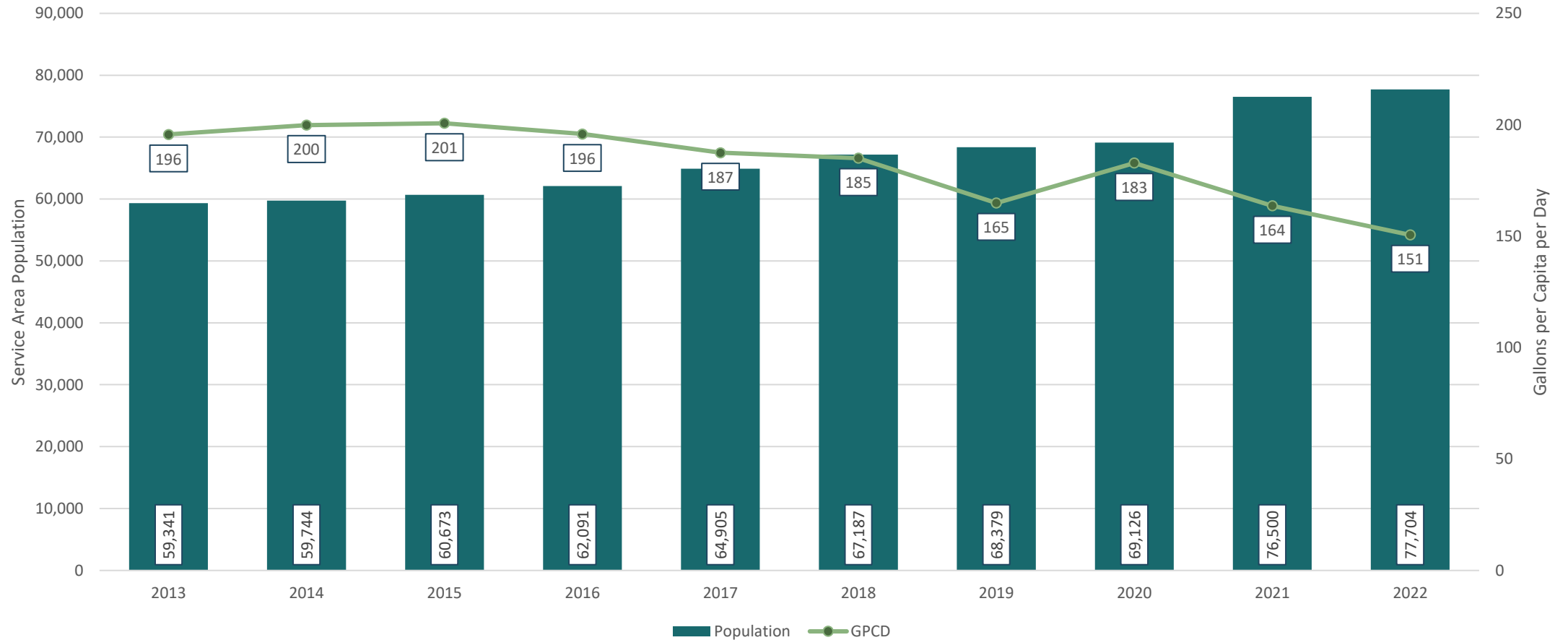
City of Bend  
 Water production in MG vs. Service area population  
 2004-2022





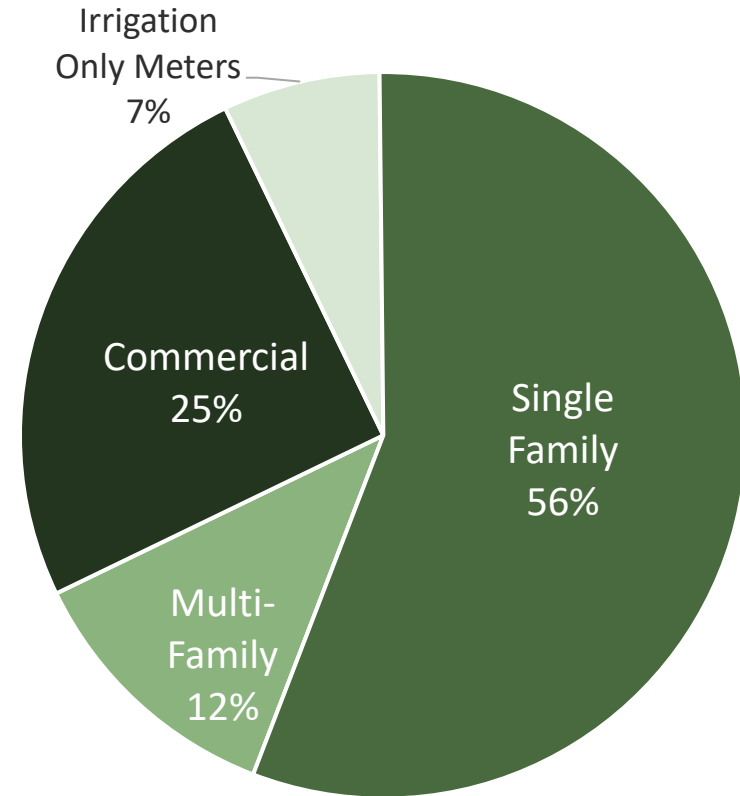
# Individual Water Use - City of Bend Customers

City of Bend  
(GPCD) Gallons per Capita per Day vs. Service area population



# How Bend Uses Water

2022 Total Water Production  
with Surface Water Production  
(MGD)

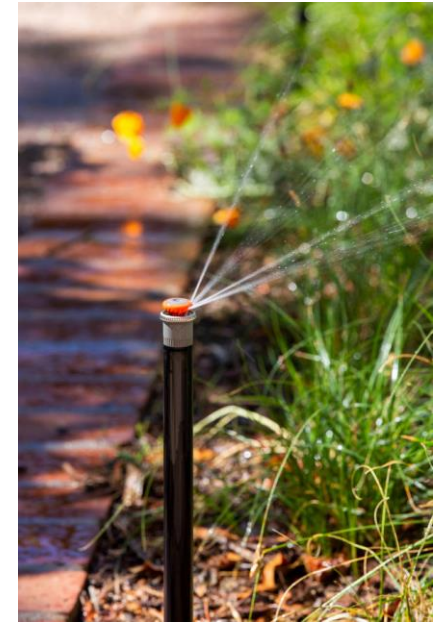
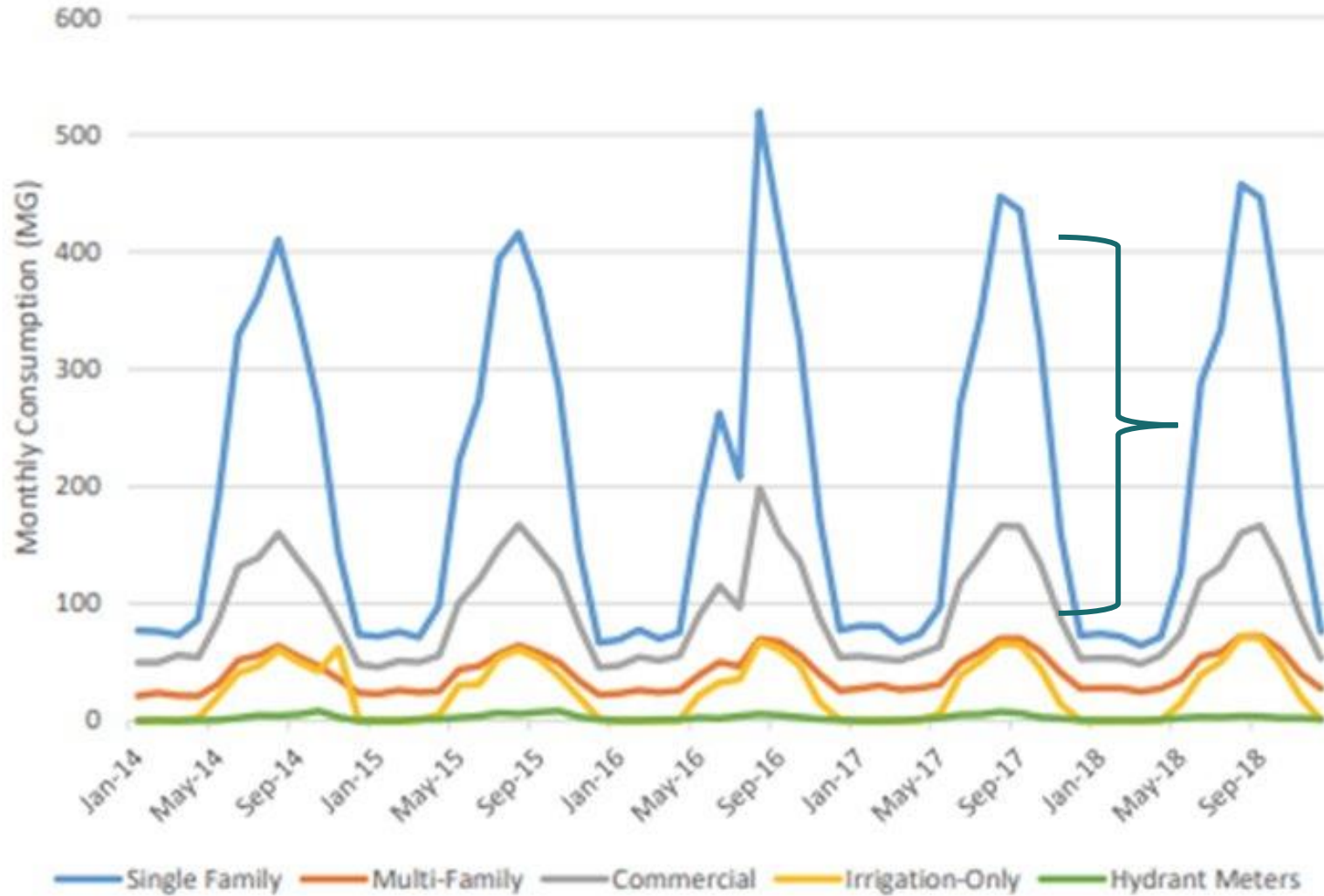


■ Multi-Family ■ Commercial ■ Irrigation Only Meters ■ Single Family





# Patterns of customer water use



# Water Quality Testing Parameters

- **Drinking water:** Coliform bacteria, E. coli, cryptosporidium, nitrate, organic compounds, trace metals, disinfection by-products, lead and copper, PFAS
- **Stormwater:** Organic compounds, trace metals, lead, copper, 6PPD Quinone, pollutants of concern
- **Wastewater:** Nitrate, E. coli, organic waste (BOD), organic compounds, suspended solids, trace metals, pollutants of concern, PFAS





# Bend's Water Future

# Water Management & Protection Topics

- Climate & Resiliency
- Outback Expansion – Land, Pre-sedimentation, in-conduit hydro, more well & reservoir sites, supplemental fire-fighting water source
- Watershed – watershed plan, fire/fuels management, access management
- Do we need more water, when, and is any available? (Water rights)
- More Water Conservation
- Beneficial Re-Use Options
- Groundwater Protectiveness
- Emerging Contaminants
- Deschutes River water quality - TMDLs





# Discussion

# Look ahead



## **March 6, 2024: Water Conservation, Stormwater Master Plan & Erosion Control Updates**

11am-12:30pm Hybrid Meeting (Boyd Acres or MS Teams)

***Outcome:** Initial input on master planning priorities. Input on water conservation program priorities.*

## **April 3, 2024: Water Conservation & Stormwater Management**

11am-12:30pm Hybrid Meeting (Boyd Acres or MS Teams)



**Thank you!**

# Accommodation Information for People with Disabilities



To obtain this information in an alternate format such as Braille, large print, electronic formats, etc. please contact Lori Faha at [lfaha@bendoregon.gov](mailto:lfaha@bendoregon.gov) or (541) 317-3025; Relay Users Dial 7-1-1.

