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# Utilities Public Advisory Group

May 1, 2024 • 11 am–12:30 pm

MS Teams Meeting

Lori Faha, P.E., Environmental Resources Manager

Austin Somheygi, Stormwater Master Plan Project Manager

Elisabeth O'Keefe, Stormwater Program Manager

Aubrie Koenig, Facilitator

# Purpose & Agenda

*Feedback on Stormwater Master Plan visioning and prioritization. Input on potential changes to Underground Injection Control location and design standards.*

1. Introduction
2. Stormwater Master Plan
   - Visioning and prioritization
3. Groundwater Protectiveness
   - Demonstration report highlights
   - UIC/drywell standard updates
4. UPAG Discussion
5. Summary and Closing

# June 5 tour preview and logistics

- 11 am tour start at **Pageant Park** (near intersection of Nashville Ave and Harmon Blvd)
- Stormwater walking tour of Newport Avenue
- 12:30 pm return to **Pageant Park** for lunch

***If you haven't yet, please RSVP!***


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# Summer subcommittee

**Meeting Topics & Tentative Times**

- July Meeting: Erosion Control Standards and Permitting
  - July 10 11a-12:30p in-person
- August Meeting: Stormwater Master Plan
  - August 7 11a-12:30p online

**UPAG Volunteers**

- Mike Szabo
- Rick Martinson
- Brian Wilkinson
- Tom Headley
- Stephanie Wascha
- Others?

# **April meeting reflections:** water conservation topic

Turf removal pilot program input:

- Appreciate rollout of a comprehensive approach that leads with incentives, not just consequences
- Noted HOAs are seeking consistency and have asked for turf removal design guides – pilot program is an opportunity for a road show/to connect HOAs to resources
- Potential challenges:
  - Completing the application (lots of information requested)
  - Relatively short time between application and completion
  - Local landscape contractor capacity/availability
- Encourage continuing direct payments to reduce barriers for renters, etc., to participate
- May be useful to consider longevity if property changes hands; could potentially use utility bill to recoup costs if participant doesn't follow through

# **April meeting reflections:** stormwater topic

EcoBiz certification program feedback:

- Idea to have Gasoline Alley businesses become champions/case study for broader adoption of EcoBiz certification (quantify time investment, etc.)
- Potential challenges:
  - Lack of clarity on business benefit
  - Cost of staff time for training
  - Turnover of trained staff
- Encourage finding other incentives to help recruit participants such as qualifying for certified contractor list or other promotion of certified businesses

# Stormwater Master Plan

## Visioning and Prioritization

**Trista Kobluskie & Erin Foote Morgan**

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# SMP Overview Recap

- Update conveyance and drainage projects from 2014 Stormwater Master Plan
- Identify and assess new conveyance/drainage issues
- Create a long-term plan for reducing risk to groundwater from drill holes and drywells (UICs)
- Create a plan for improving the quality of runoff discharged to the Deschutes River through the City's outfalls
- Develop a capital program incorporating conveyance/drainage projects, UIC retrofits, and outfall retrofits

# Project Timeline

At-a-glance

## PLANNING

Define the project scope, objectives, and deliverables.

Communications planning.

Manage the project over time.

2024

Jan – Closeout

## DISCOVERY

Intake data and reports.

Assess existing conditions & identify issues to be solved.

Study outfall retrofits.

Study drywells and drill holes.

Study climate change.

2024

Feb - Sept

## VISIONING

Assess and document values surrounding stormwater and goals for plan among various groups, including staff, stakeholders, and community.

Use values and goals to prioritize issues, capital projects, and inform policy recommendations.

2024

Feb - Dec

## SOLUTIONS

Select capital improvement projects (CIPs).

Develop CIP fact sheets.

Develop policy white papers.

2024 - 2025

Jun – Mar

## IMPLEMENT

Write and deliver Stormwater MP.

Develop content for implementation tracking web page.

2025

Feb - Jul

# UPAG Input Focus Areas

**Vision**

- What is most important to you and the community?
- What is the story of stormwater needs and solutions in Bend?

**Priorities**

- How will we prioritize stormwater capital improvements?

**Policy Solutions**

- What are the opportunities and impediments to regional facilities?
- What are the opportunities and impediments to managing runoff from private properties in the rights-of-way?
- How much emphasis on climate change in the next SMP?

# Key considerations from March

- Refining stormwater solution set for higher density development and smaller lot sizes
- Education resources for residential onsite stormwater management requirements
- Align master plan and codes related to residential runoff in the right-of-way
- Maintenance resources for privately owned (sometimes failing) stormwater facilities
- Continued focus on groundwater protection

# Problem Prioritization Topics

- Ponding and Flooding
- Erosion and Sediment
- Groundwater Quality
- Surface Water Quality

# Ponding and Flooding

## Main Issues

- Roadway safety
- Property damage
- Inconvenience
- Cost to respond


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# Erosion and Sediment

## Main Issues

- Property damage
- Clogging storm system
- Contributes to degradation of groundwater
- Contributes to degradation of surface water
- Contributes to ponding / flooding
- Cost of maintenance

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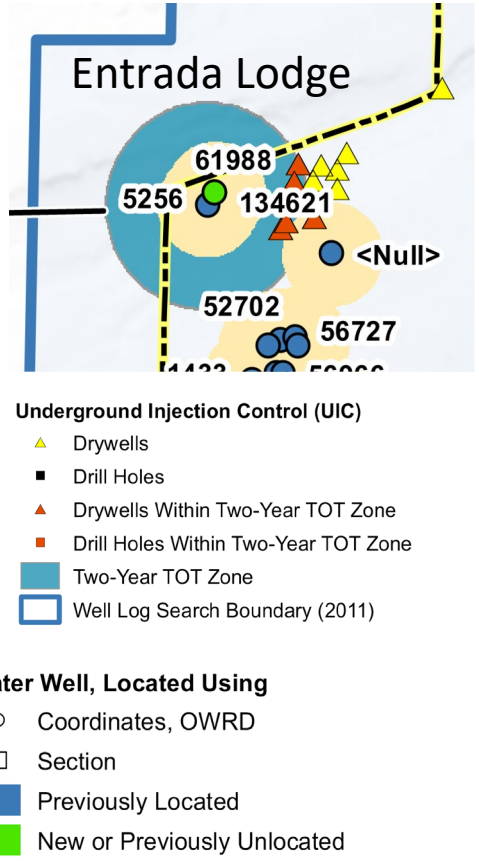
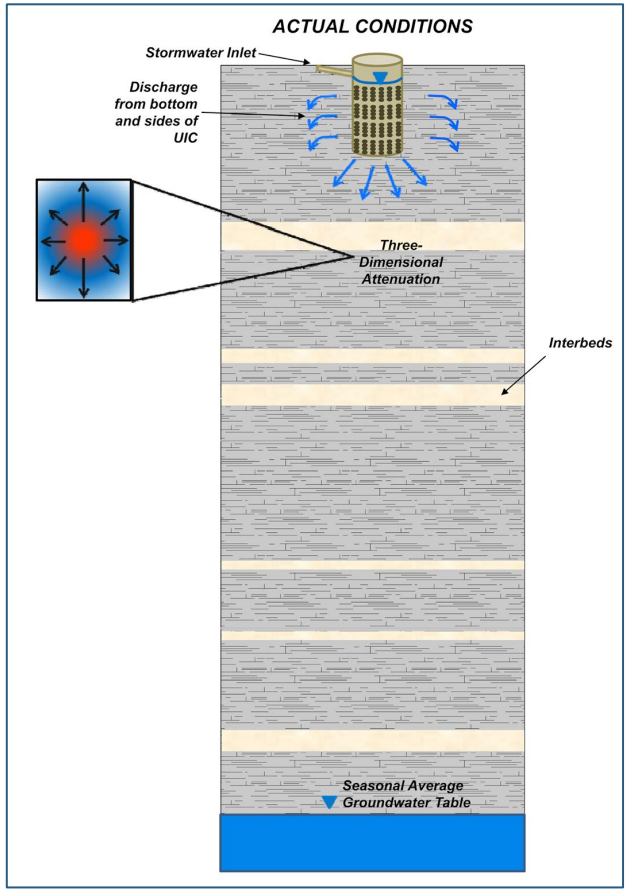
# Groundwater Quality

## Main Issues

- Safety of drinking water supply
- Compliance with WPCF Permit




Excerpt of Map – UICs within Setback to Wells




Conceptual Model for UIC Discharge in Bend

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# Surface Water Quality

## Main Issues

- Suitability of river for aquatic wildlife habitat
- Suitability of river for recreation and enjoyment
- Compliance with NPDES Permit
- Possibility of future regulation via TMDL

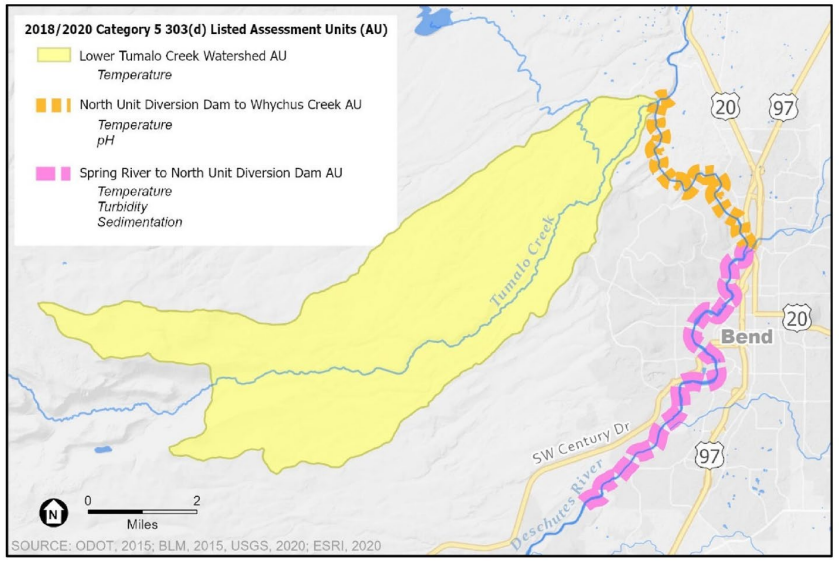


Figure 8. 2018/2020 Category 5 303(d) Listed Assessment Units (AU) for the Tumalo Creek

Figure 4. Example of the Deschutes River as it enters the City of Bend

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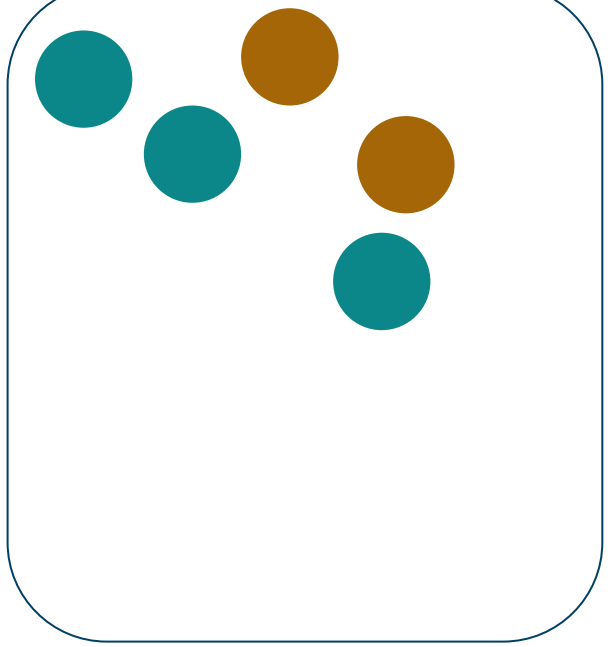
# What is more important?

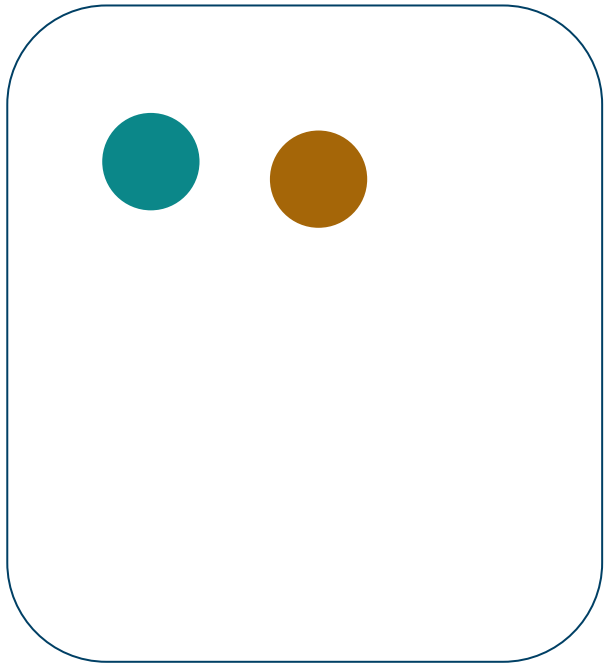
**Use the bubbles to indicate your priorities. Green=1st priority. Orange=2nd priority.**

Reducing ponding or flooding across the city

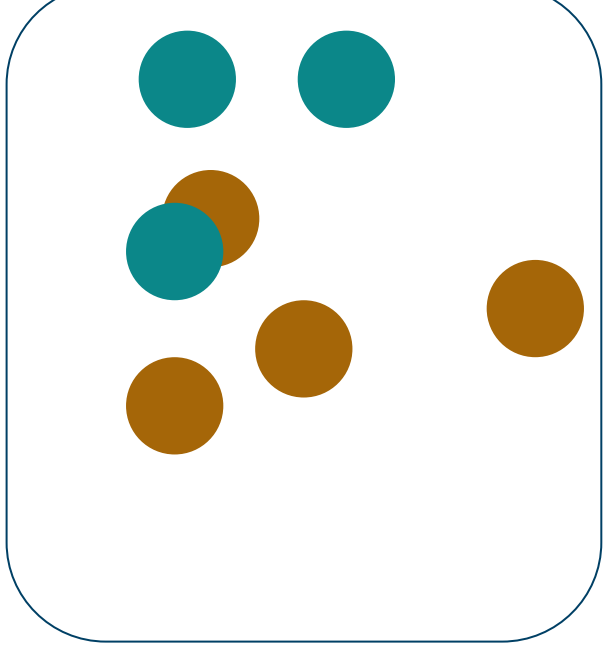
Protecting groundwater



Managing erosion and sediment



Protecting the Deschutes River



# Solution Categories

## 1. Maintain/Repair Existing System

- Increase maintenance frequency
- Fix broken or degraded pipes
- Construct small structure to improve removal of pollutants before entry to drainage system
- Construct small structure to improve capacity of existing drainage system
- Replace failing UIC
- Reconfigure poorly performing swale

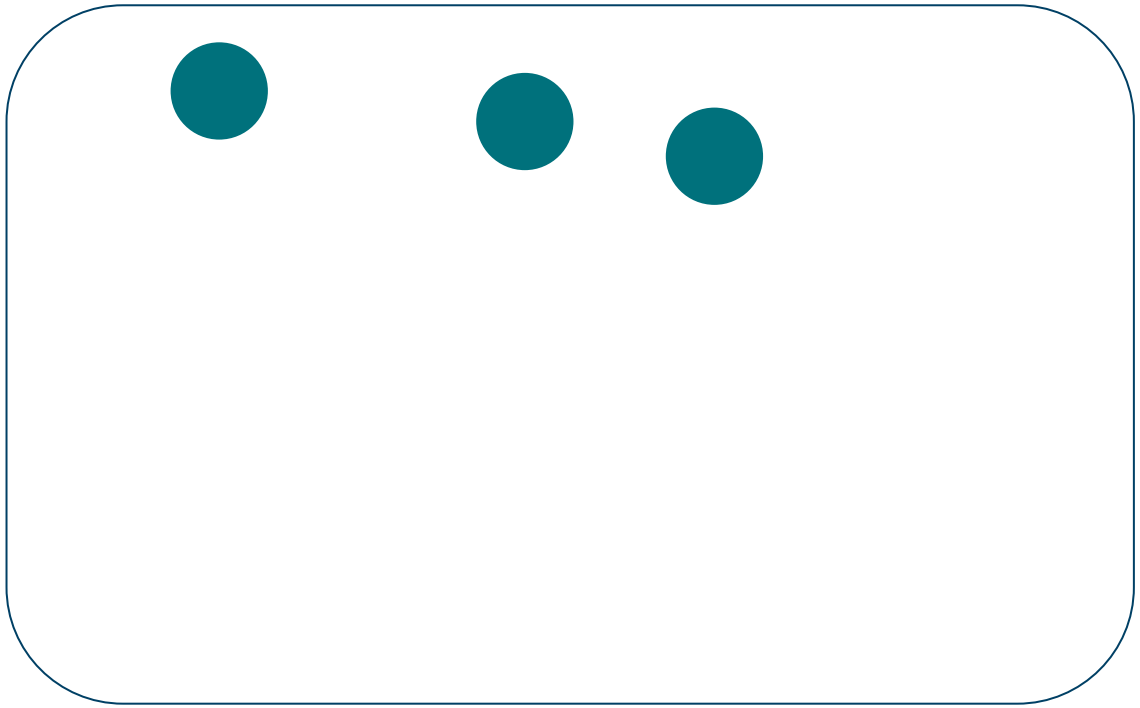
## 2. Install New Facilities

- Construct drainage system in neighborhood where none / little exists
- Build regional stormwater swales to manage runoff in focused redevelopment areas (e.g. Central District)

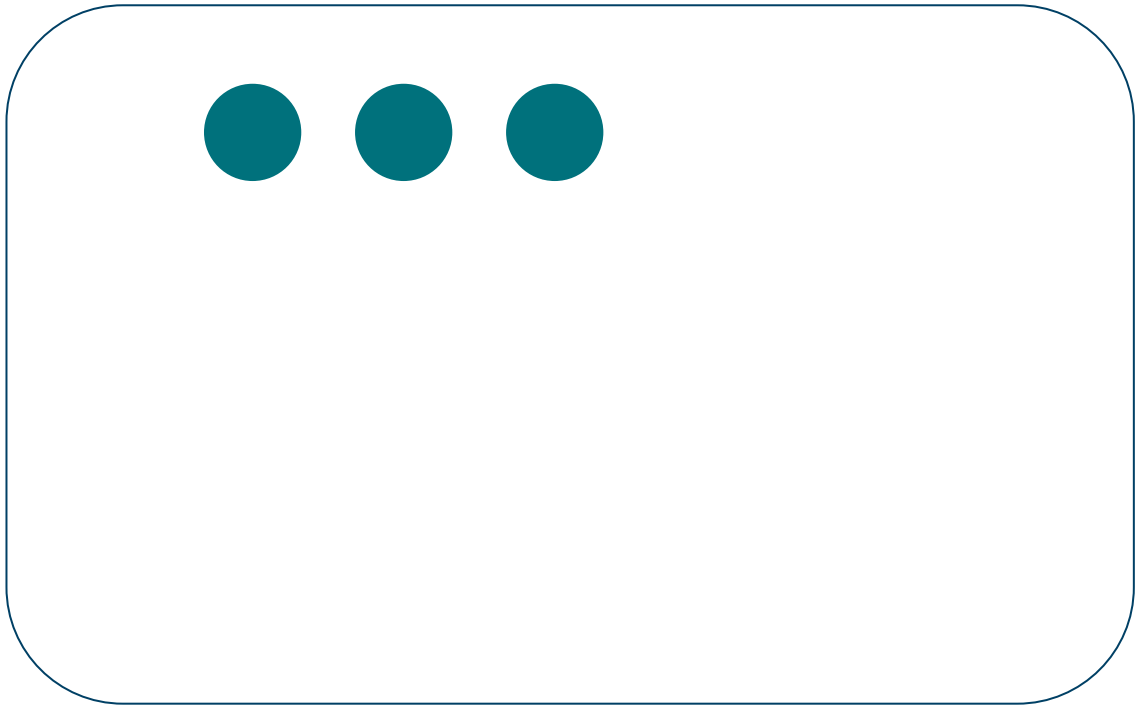
# Which of the following is most important to you?

**Please use a bubble to indicate your selection.**

Maintenance, repair and replacement of existing facilities



New facilities to improve conveyance, groundwater and surface water quality



# What is your top priority outcome from this SMP?

## Use a box to briefly describe your thoughts.

Mitigating Erosion and Sediment as it applies to all 4 action items, Ponding, water quality, etc. Also consistency across the plan.

Preserving water quality and resource

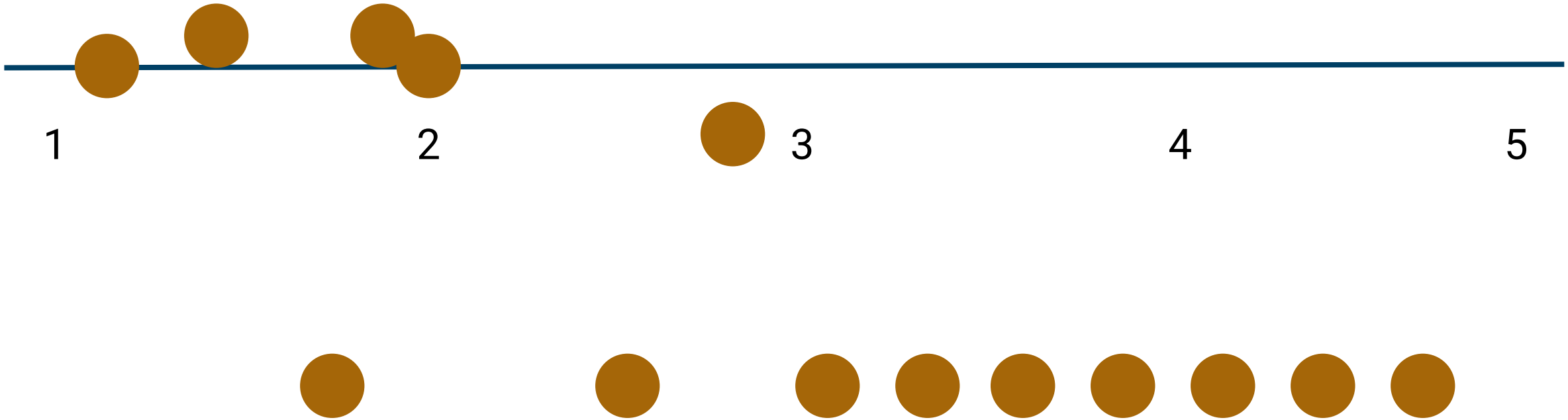
Stormwater management options that recognize we are moving toward urban dense development

Preserving water quality (surface and groundwater)
Stormwater reuse
Ecological approach to mitigating the effects of climate change.

I will +1 to everything the person to my left has written

# STORMWATER FUNDING

**How well informed do you feel about how we pay for stormwater management?**
**(With 1 being not at all and 5 being extremely well)**



# 2024 Groundwater Protectiveness Demonstration & UIC Standards

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# Why did the City do a new study?

Previous study completed in 2011:

Unsaturated zone, 1D model

5 ft vertical separation

Increased development density and challenges meeting existing horizontal well setbacks in City design standards (500ft)

Interest in new technologies for deep drywell systems (up to 100 ft deep)

Provide more clarity on what meets protectiveness (horizontally and vertically).

Better understand risk of more persistent and mobile emerging pollutants not analyzed in the 2011 study

Goal: Set policy that ensures stormwater is protective of groundwater based on best available data and hydrologic modeling, tailored to Bend's unique geology and stormwater infrastructure.

# Differences Between 2011 and 2024 Study

| 2011 Model | 2024 Model |
|---|---|
| Original intent: Demonstrate protectiveness of existing UICs within DEQ setbacks<br>• Sedimentary soils<br>• Unsaturated zone only<br>• Determined vertical separation only (5 ft)<br>• Pollutants: Copper, lead, benzo(a)pyrene, naphthalene, pentachlorophenol, toluene, di(2- ethylhexyl)phalate, and 2,4-D | Intent: Protectiveness guidance for both existing and newly installed UICs<br>• Fractured basalt bedrock<br>• Unsaturated and saturated zones<br>• Determined horizontal and vertical separation distances<br>• Pollutants: emerging pollutants **PFAs** (highly mobile and persistent) and **Simazine** |

# PFAs and Simazine


**PFAs**: a group of human-made chemicals that have been manufactured and used for a wide range of consumer and industrial products since the 1940s. Break down very slowly over time.

**Simazine**: herbicide used to control broad-leaved weeds and annual grasses.



*Source: Google images*

Both identified as high risk in 2022 stormwater emerging pollutant report for mobility, persistence, and toxicity.

# Background
# Perched Groundwater in Bend

<u>Perched Water Table</u>
~110 ft below ground (North Bend)
~10 ft below ground (Old Mill District)

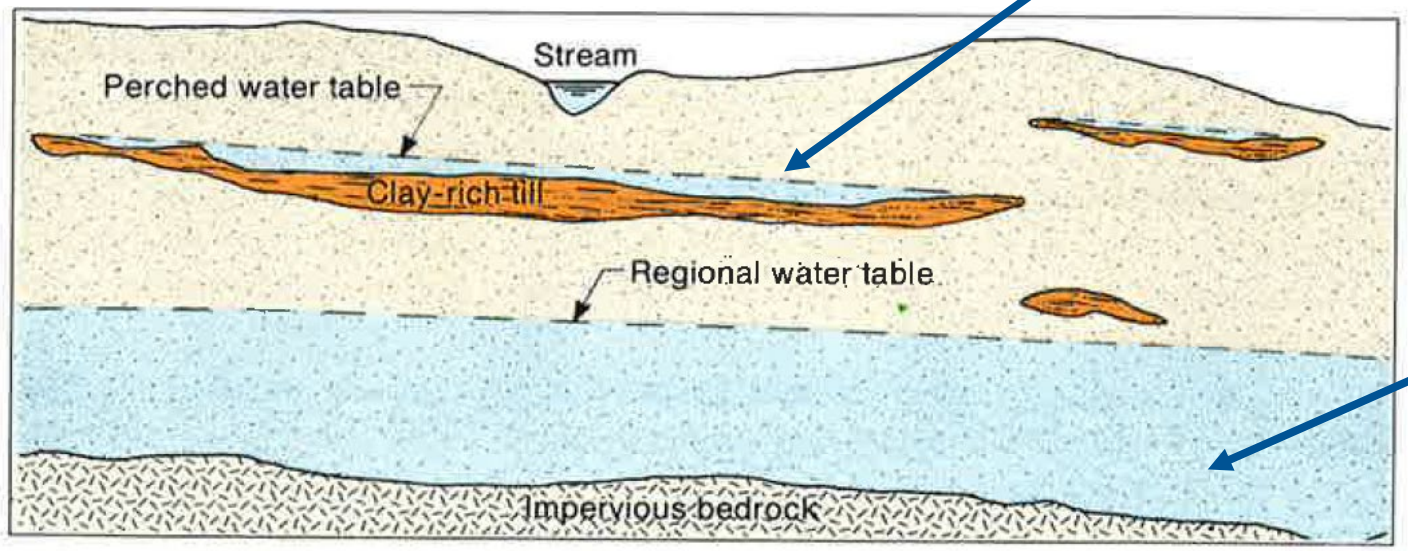



Figure 5.3. Perched water table supported by stringers of clay-rich till.

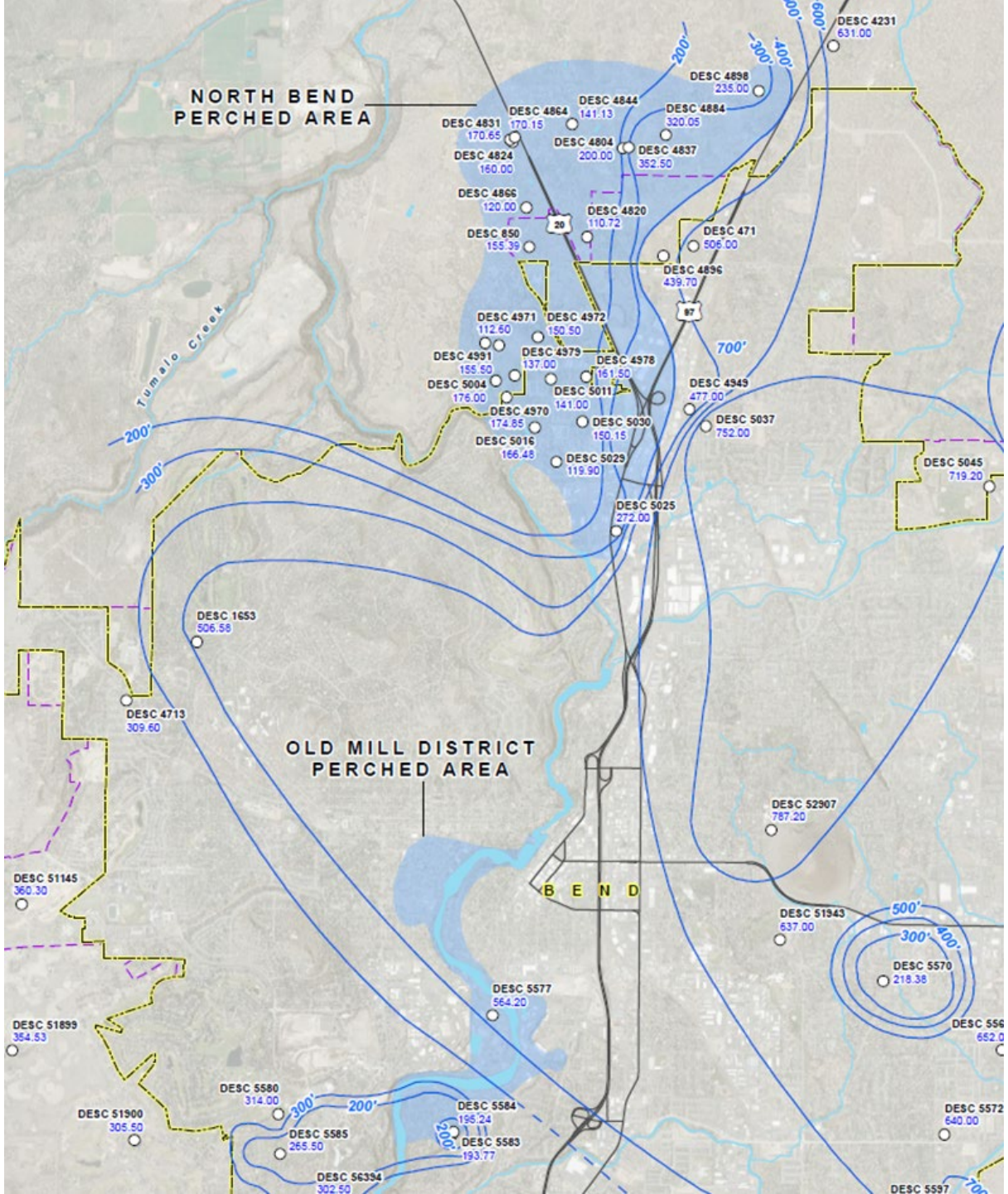
<u>Regional Water Table</u>
300-750 ft below ground



*Source: GSI Water Solutions, Inc.*

# Perched Groundwater in Bend

- North Bend
- Old Mill District

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*Source: GSI Water Solutions, Inc.*

# Report highlights

- PFAS and Simazine do not reach the regional water table (300 to 750 feet bgs)
- PFAS (53 feet of vertical transport) and Simazine (36 feet of vertical transport) reach areas with perched groundwater. Horizontal setback distances are:

| Perched Groundwater Area | PFOA Required Horizontal Setback | Simazine Required Horizontal Setback |
|---|---|---|
| North Bend Perched Area | 75.5 | < 10 |
| Old Mill District Perched Area | 98.4 | 39.5 |

- PFAS transports 29 feet horizontally in the unsaturated zone (Simazine: 24 feet)

# Existing UIC Standards for City of Bend

**<u>City of Bend Standards</u>**:

- UICs not allowed within 2-year time of travel zones (public municipal wells)
- For drinking water wells without a 2-year time of travel: Maintain 500-foot horizontal setback
- *Requirements based on DEQ's Water Pollution Control Facility permit*

**VS**

**<u>Existing (2011) Protectiveness Demonstration Report:</u>**

- Maintain 5 ft vertical separation from bottom of a UIC
- *No requirement on horizontal separation. Report demonstrated protectiveness of UICs within existing DEQ setbacks (500 ft or 2-year time of travel)*

# Potential Revised UIC Standards

| Objective | Potential Standards for New UIC Installations in the City |
|---|---|
| (1) Provide UIC installation standards that are simple and implementable | a) Base standards on perched vs non perched locations of the City |
| (2) Maintain minimum setback requirements from water wells that align with both Oregon Health Authority requirements and study results for stormwater disposal. *Provides coverage for UIC's installed around pre-existing wells.* | a) Perched area horizontal setback minimum of 100 ft from all water wells.<br>Non perched areas, horizontal setback minimum of 100 ft from all water wells **and** 53 ft vertical separation. *(Unless a 2-year time of travel has been established)* |

# Next Steps

- Gather feedback from ACWA members ☑
- Discuss study and outcomes with DEQ ☑
- Gather feedback from UPAG
- Use study recommendations to develop new location-based design standards for various types of UIC installations in Bend
- In coordination with the Stormwater Master Plan revision, develop alternatives for stormwater disposal in areas where requirements cannot be met (such as surface infiltration).

# UPAG focus questions

- Do you feel area-specific standards or simplified standards that can apply to broader areas would be more beneficial/implementable?
- What are your top concerns about potential new UIC standards?

# Discussion & Feedback

# Look ahead

**June 5, 2024: Stormwater Walking Tour**
11am-12:30pm Meet at Pageant Park (details via email)

*A chance to see and discuss local stormwater management, right-of-way and school landscapes, and education approaches in practice.*

**July-August, 2024: Summer Break!**

*Subcommittee will meet once in July (stormwater/erosion control topic) and once in August (stormwater master plan topic).*

**September 4, 2024: Regular UPAG Meetings Resume!**

# 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 or (541) 317-3025; Relay Users Dial 7-1-1.