



CITY OF BEND

Water Advisory Group

January 8, 2025 • 11 am–12:30 pm

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

Lori Faha, PE, Environmental Resources Manager

Austin Somhegyi, PE, Stormwater Master Plan Project Manager

Trista Kobluskie, Stormwater Master Plan Consultant Lead

Aubrie Koenig, Facilitator

Purpose & Agenda

Discuss potential stormwater management strategies to address drainage and development density.

1. Welcome & Introductions
2. Stormwater Drainage & Density Policy Discussion
 - Stormwater considerations
 - Types of development and stormwater tools
3. Summary & Closing



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Welcome to the WAG

- A new name for a new year – introducing the **City of Bend Water Advisory Group (WAG)**
- Same purpose and membership – community stakeholders invited by the City of Bend to **provide input to Water Services staff on programs and policies** for stormwater management, water conservation, and other City water system topics
- **Timing:** 1st Wednesday monthly 11am-12:30pm through spring 2025
- **Format:** Hybrid (MS Teams+Boyd Acres)
- **Materials:** bendoregon.gov/UPAG



December meeting reflections

Topics of greatest interest:

- FireWise/WaterWise program coordination
- Water conservation program & performance
- Stormwater standards updates (consistency/alignment, new best practices, stakeholder considerations)

Additional interest areas/questions:

- Stormwater/street tree right-of-way implementation (new urban forester as guest)
- Water/stormwater rates
- **Drainage/density** potential new codes and standards (core area case study)
- Code development (multi-disciplinary input)
- Code and standard updates:
 - City code language clarity on separation distance between water and storm systems
 - UIC updated standards details, including implementation in 2-yr time of travel areas
 - Code/standards/Central Oregon Stormwater Manual updates for trash enclosures



Stormwater Management Policies

Drainage and Density



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Drainage & Density

- Stormwater Master Plan Work Scope
 - “White Paper” summarizing issues, regulatory requirements, recommendations (next steps)
 - Focus topics:
 - Infill development
 - Use of regional facilities & context for master plan or district specific areas
- Today's discussion:
 - Summary – background, context
 - Onsite/Offsite options discussion for various types of development



Stormwater and development

From
March
2023 UPAG
meeting

Current Typical Requirements

Development must retain all stormwater onsite

Street/ROW systems are designed to handle ROW runoff plus the front 20' of adjacent lots

UIC's (drywells with pretreatment from sedimentation manholes) typical in most ROW areas and many private sites

SF lots typically just use surface retention in the landscape

A few master planned developments send some "private" runoff into private or public ROW systems

Upcoming Changes/Needs



 = DEQ permit reqmt

Apply standards to smaller sites (5000 sf impervious area threshold, no exemptions)



Increased density, less available pervious areas ("drainage and density")

Apply standards to re-development (replacement of existing impervious)



Create hierarchy for standards – first manage onsite, then if needed have options for offsite stormwater management



Consider impacts of more frequent, short duration, high intensity storms



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Prior Work Will Inform Stormwater Updates

From
March
2023 UPAG
meeting

Past Work:

- The previous Bend Stormwater PAG discussed in detail the complexity of “drainage and density” issues in 2017-2022 (*per emailed attachment*)
- Technical work needs were identified and some progress made by the City on research, compiling gaps/needs for standards updates

Next Steps:

- Program/standards/codes updates to ensure permit compliance, and reporting steps and timing to DEQ in updated iSWMP
- Create reasonable and sustainable methods for accommodating drainage and density that:
 - Continues to prioritize onsite stormwater management
 - Provides simple tools and pathways for small and infill projects



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DRAINAGE TO UNDERGROUND DRINKING WATER PROTECTION AREAS

Small Infill Lot

- Onsite & Streetside Controls

New Developments or Large Redevelopments

- Combination: Onsite, Streetside, and Regional
- Onsite and Regional

GEOLOGIC CHALLENGES

Small Infill Lot

- Combination: Onsite, Streetside, and Regional

New Developments or Large Redevelopments

- Combination: Onsite, Streetside, and Regional
- Onsite and Regional

DENSITY OPPORTUNITY AREAS

Small Infill Lot

- Onsite
- Regional
- Combination: Onsite, Streetside, and Regional

New Developments or Large Redevelopments

- Regional
- Combination: Onsite, Streetside, and Regional

DRAINAGE TO THE RIVER

Small Infill Lot

- Onsite & Streetside Controls
- Onsite

New Developments or Large Redevelopments

- Combination: Onsite, Streetside, and Regional
- Onsite and Regional

LESS SENSITIVE DRAINAGE AREAS

Small Infill Lot

- Onsite

New Developments or Large Redevelopments

- Onsite
- Combination: Onsite, Streetside, and Regional



Stormwater Public Advisory Group Recommendations - Fall 2018



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SPAG Drainage & Density Ideas:

- Provide options for all types of development
- Green Infrastructure approaches

Glossary of Terms -

ONSITE CONTROLS seek to increase permeability, reduce impervious surface area and directly connected impervious areas to increase retention and detention through such practices as (a) reduced building and (b) parking footprints, (c) rain gardens, (d) disconnected downspouts, (e) permeable pavement or decks/benches, (f) green roofs, (g) cisterns, (h) underground injection controls.



NEIGHBORHOOD STREETSIDE CONTROLS are controls in the public right of way or private streetside designed either to retain or detain stormwater to reduce the amount or rate of runoff. These may include (a) green streets bioinfiltration, planter boxes, (b) filter strips, or underground injection controls.



REGIONAL (SUBDIVISION) CONTROLS are designed to take, detain/retain the stormwater from multiple lots through a retention or detention basin or swale.



Accommodation Information for People with Disabilities

To obtain this information in an alternate format such as Braille, large print, electronic formats, etc. please contact Utility Department at: (541) 317-3000 ext. 2, utilities@bendoregon.gov, Relay Users Dial 7-1-1.



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UPAG focus question

From
March
2023 UPAG
meeting



Given:

- There is a regulatory emphasis for on-site retention/low impact development.
- There is legislative/land-use emphasis on density.
- Ensuring long-term private maintenance of dispersed LID measures is difficult.

- Question: Under what scenarios should offsite drainage be an option for development projects?

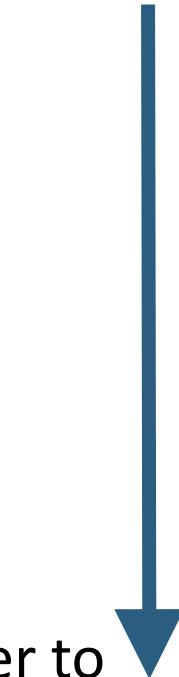


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Approaches to drainage and density

A potential stormwater hierarchy:

1. All onsite disposal
2. 25-yr storm onsite, 100-year overflow to ROW
3. Partial onsite (WQ storm?), remainder to “subdivision level” facility
4. All stormwater managed at “subdivision level”
5. Partial (or none) onsite, remainder to ROW or public regional facility



*When to allow
moving down
the hierarchy?*



Townhomes- Empire Blvd



Townhomes- Reed Market



Luderman Crossing Development

Developer gave up two lots for regional drainage facilities.

- Reduced the number of drywells by half, installing private collection systems for roof runoff.
- Subdivision is designed to keep the 100-year storm event onsite.
- HOA maintains



Discussion & Feedback



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WAG focus questions



- What are your concerns/challenges about drainage and development density?
- Where do you experience hurdles in the development process related to stormwater management?
- What new tools could be effective to help manage stormwater with smaller lot sizes and less available vegetated area?
- Should there be options for combining private and public stormwater, and who should pay and maintain them?



Naming Convention

*Need to establish naming convention to clearly identify different possible scenarios

Location of Facility	Who is Draining	Facility Owner	Development Type	Other?
Onsite	Single Lot	Private	Residential	
Subdivision	Multi Lot	Public	Commercial	
Onsite + Subdivision	Multi Lot + ROW	Other?	Industrial	
ROW	ROW		ROW	
Subdivision + ROW	Other?		Mixed Use	
Onsite + ROW			Other?	
Other?				



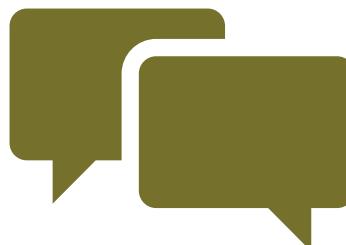
What other categories should we consider? Should any of these options be removed/added?



Strategy 1

*All Onsite Stormwater Management – Current Practice

Location of Facility	Who is Draining	Facility Owner	Development Type
Onsite	Single Lot	Private	Residential
Onsite	Single Lot	Private	Commercial
Onsite	Single Lot	Private	Industrial
Onsite	Single Lot	Private	ROW



- Examples?
- Concerns/challenges?
- Benefits?
- Thresholds?



Strategy 2

*Subdivision Level Stormwater Management

Location of Facility	Who is Draining	Facility Owner	Development Type
Onsite + Subdivision	Multi Lot	Private	
Subdivision	Multi Lot	Private	
Subdivision	Multi Lot	Public	
Subdivision	Multi Lot + ROW	Private	
Subdivision	Multi Lot + ROW	Public	

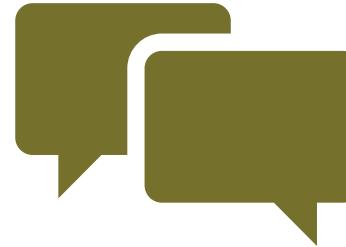


- Examples?
- Concerns/challenges?
- Benefits?
- Thresholds?
- Should this be restricted to certain development types?



Strategy 3

*ROW Stormwater Management



- Examples?
- Concerns/challenges?
- Benefits?
- Thresholds?
- Should this be restricted to certain development types?

Location of Facility	Who is Draining	Facility Owner	Development Type
ROW	Single Lot	Private	
ROW	Multi Lot	Private	
ROW	Multi Lot + ROW	Private	
ROW	Single Lot	Public	
ROW	Multi Lot	Public	
ROW	Multi Lot + ROW	Public	



April extended meeting or subcommittee?

Topic/Purpose:

- Share and collect feedback on draft drainage/density policy concept

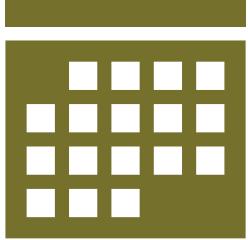
Questions:

- Are you interested?
- Would you rather:
 - Extend April 2 meeting to 11a-1:30p
 - Add new 1-hr meeting in April for subcommittee
 - Just read document and provide individual input



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Look ahead



February 5, 2025: Stormwater Master Plan Project Priorities

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

Outcome: Input on project prioritization 'tie breakers.'

March 5, 2025: Water Conservation Program Performance Measures

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



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bendoregon.gov/UPAG

Thank you!



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