

City of Bend Erosion Control Training

"Erosion Control...Because dirt has commitment issues..."

Erosion and Sediment Control Overview

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Agenda

Part I

- Stormwater Program Intro
- Why erosion control matters in Central Oregon
- City of Bend Requirements
- Compliance Overview

Part II

- Local Best Management Practices
- Case Studies
- Final Takeaways

Part I: Stormwater Program Introduction





CITY OF BEND

Water System

Drinking Water
Source Springs

(B) Underground pipes
take stormwater to
outfalls at the river

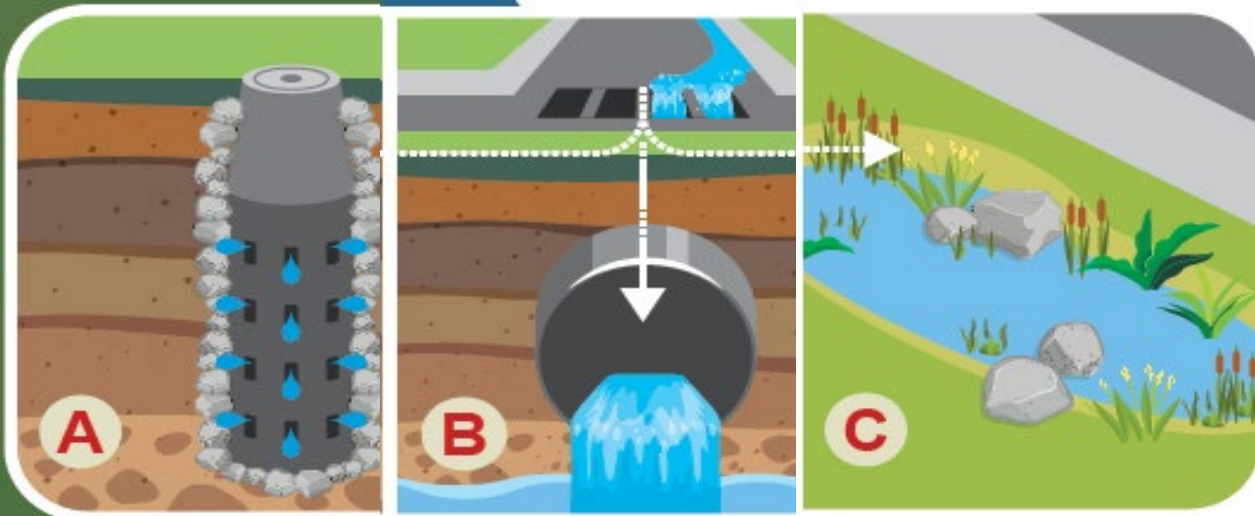
Drinking
Water Well

Drinking
Water Well

Drinking
Water Well

(C) Surface infiltration
facilities

(A) Underground injection devices
infiltrate to groundwater
(drywells or drillholes)

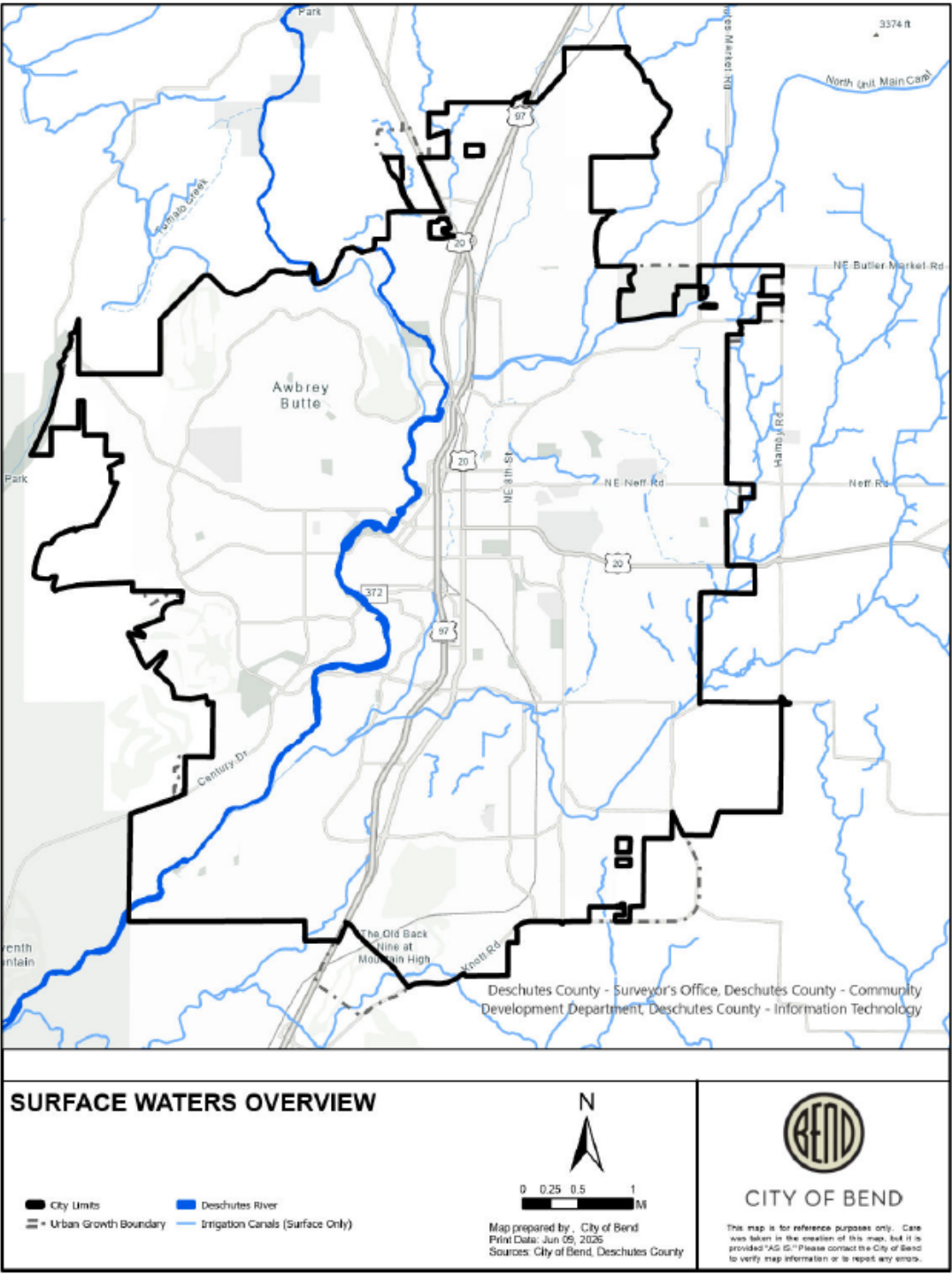


Surface Waters Overview

— Deschutes River



— Irrigation Canals (Surface Only)



Public Stormwater System

- 7,500 UIC devices infiltrating stormwater into the ground
 - (approximately 1,000 drill holes and 6,500 known drywells)
- 10,500 catch basins receiving stormwater runoff throughout the City
- 36 outfalls
- **Private property/privately owned UIC's not included in these counts.*

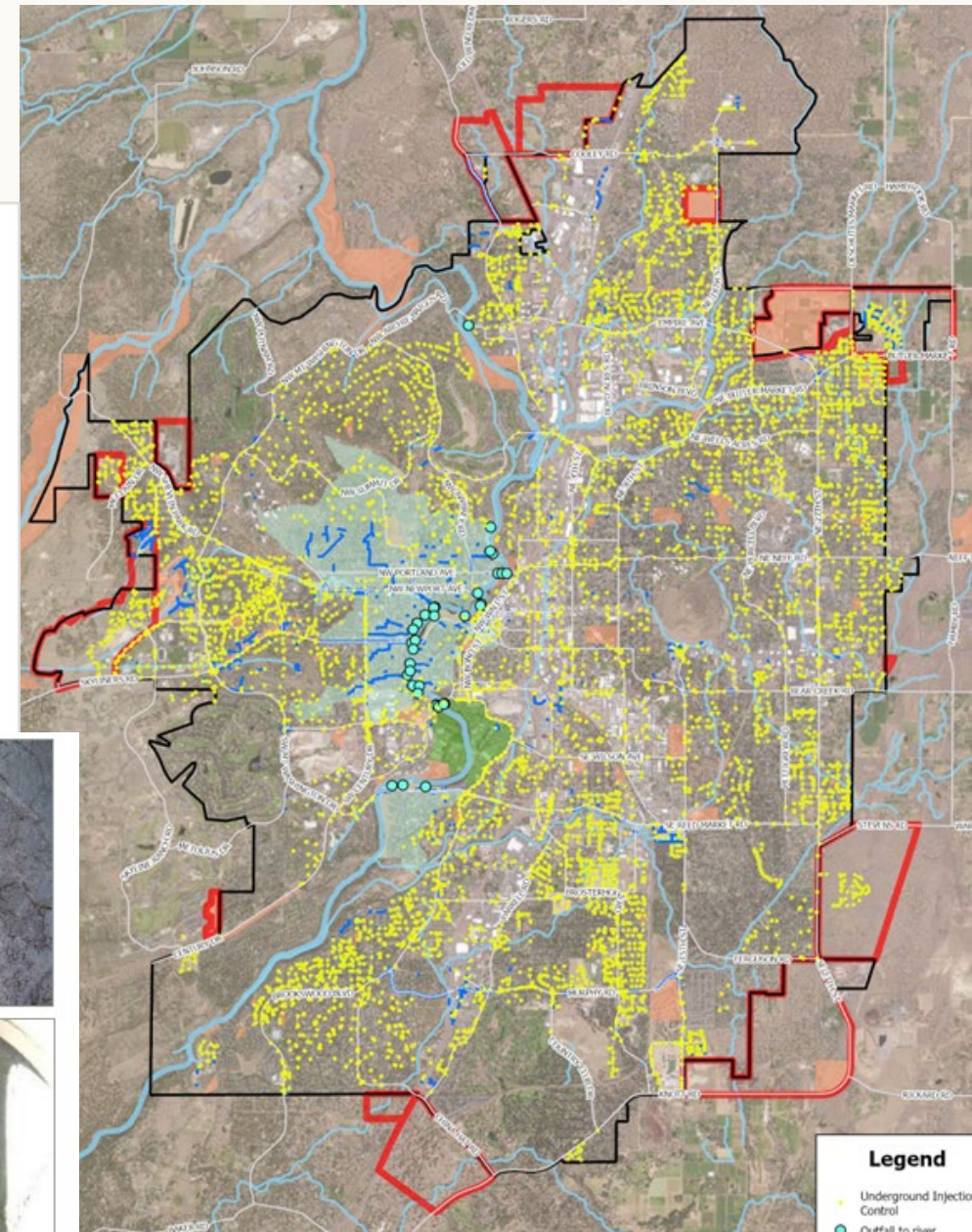
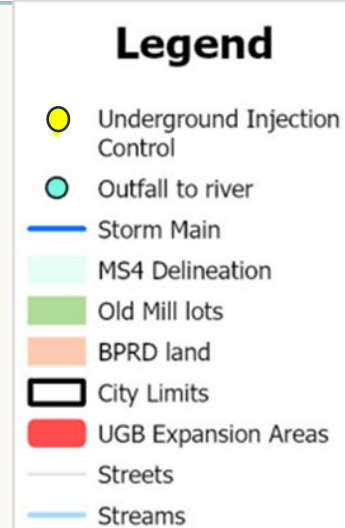


Figure 1-1. Drill hole (top);
drywell interior (bottom)

Erosion Control Considerations

- Regulatory requirements from Oregon Department of Environmental Quality (DEQ)
- Flooding issues, public health & safety
- Protection of infrastructure
- Impacts to surface and groundwater quality



DEQ Regulatory Stormwater Permits

Surface Water Permit (MS4)

- Regulates water quality for stormwater runoff through pipes to the river
- Requires that the City implement:
 - Public education and outreach
 - System maintenance
 - Spill prevention and illicit discharge controls
 - **Construction site runoff controls**
 - Long-term stormwater management for development projects
 - Outfall inspections

Groundwater Permit (WPCF- UIC)

- Regulates water quality for stormwater runoff discharged into the ground via drywells and drill holes
- Requires: Mapping public drywells, monitoring stormwater pollutants, **reducing pollutant discharges, and protecting drinking-water wells.**



Construction site runoff controls
help meet the above requirements

DEQ 1200 C Permitting (Applicable to Bend)

1200-C Construction Stormwater Permit (Statewide permit)

Covers:

- Construction activities that have the potential to impact **surface** water quality
- Reference [DEQ's website](#) to learn which construction activities require permit coverage

Does NOT Cover:

- Post-construction discharges
 - MS4 Permit or 1200-Z Permit
- Underground injection control (UIC) systems
 - UIC Permit
- In-water work
- Other activities covered by Federal & State permits

When a Project Needs Coverage

- Disturbs ≥ 1 acre, or
- Disturbs < 1 acre but is part of a larger common plan that will exceed 1 acre, or
- DEQ determines the activity has potential to impact water quality

Other 1200 Series Permits (Not applicable to Bend)

1200-CA Permit

- For **public entities** performing capital improvement projects

1200-CN Permit

- For **jurisdictions** having qualified local programs
- Projects receive coverage without having to submit an application to DEQ

The City of Bend is not a 1200-CA entity, so each City capital project would apply for their own 1200-C permit.

The City of Bend also does not have 1200-CN coverage so it does not implement 1200C requirements on DEQ's behalf.

What erosion permits and inspections occur on my construction project in Bend?

City of Bend

Permit

- Permit varies depending on type and size of work conducted

Inspections

- Initial, routine, and final inspections
- Additional follow-up inspection(s) if non-compliant
- Complaint inspections

State of Oregon

Permit

- Permit based on size and location
- If all stormwater **discharges to UICs** then exempt from 1200 C permit
- If portions or phases of project may **discharge to surface water** then subject to 1200 C permit
- DEQ makes determination of permit coverage

Inspections

- Primarily complaint-driven but can occur at any time.

**Why does erosion
control matter in Bend?**



Water Quality

- The Deschutes River is impaired for sediment, temperature, pH, and turbidity (i.e. cloudiness)
- Sediment is a common pollutant found in construction site runoff
- Other construction site pollutants including hydrocarbons, heavy metals, nutrients, bacteria, and other toxic substances can bind to sediment and/or alter the pH of water.
- Non-stormwater discharges can change the chemical and physical composition of water and be deadly to fish and other living organisms.



Infrastructure

- Fine material including sediment can clog infrastructure
- Erosion results in material sorting which can reduce infiltration
- Repairs can be costly!



City of Bend Requirements



Erosion Control Requirements

- Bend Code Title 16
 - Establishes legal authority to implement and enforce requirements
 - New updates that require small sites $\geq 5,000$ SF land disturbance to meet requirements
 - Development permits provide coverage including grading, site improvement, infrastructure, and building permits

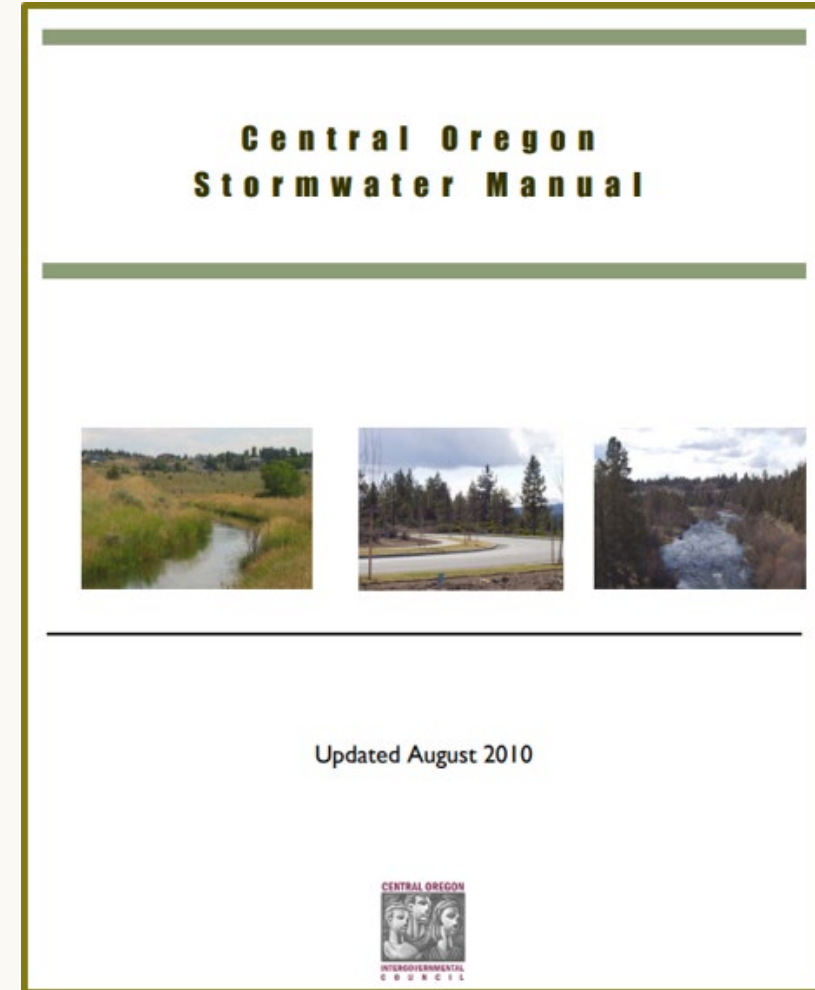
Erosion Control Requirements

- Bend Standards and Specifications
 - Outlines standards specific to Bend
 - Part II – Design Std. – Chapter 7
 - Part III – Special Provisions to OSS
 - Part V – Standard Drawings



Erosion Control Requirements

- Central Oregon Stormwater Manual
 - Includes several topics related to stormwater including erosion control
 - Provides greater detail into BMP effectiveness and considerations
 - Applies to communities throughout Central Oregon



Compliance Overview

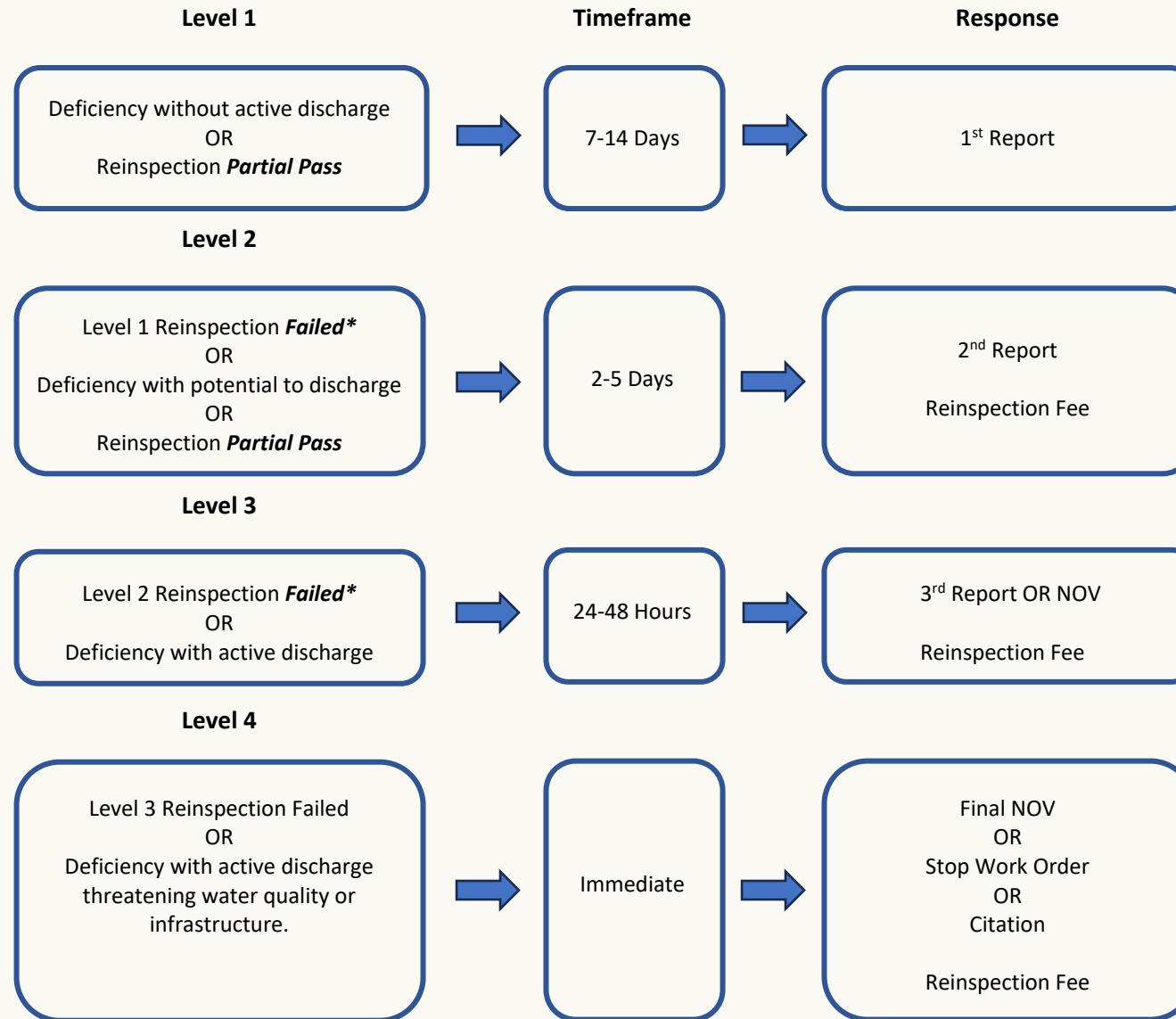


Compliance Overview

Requirement	Small Site	Large Site
Project Type	1-4 residential units disturbing $\geq 5,000$ SF	All other types of disturbance $\geq 5,000$ SF
Permit Type	Building permit	Grading, Site Improvement, Infrastructure, Building permits
Plan Review	No (signed erosion control template)	Yes (site specific erosion control plan)
City Inspection	Photo Review, Final *Complaint	Initial, Routine, Final *Complaint
Escalating Enforcement	Yes	Yes

*Complaint inspections can be staff-initiated if sediment is observed leaving the project site, or they can be generated if a complaint is received.

Escalating Enforcement



End of Part I

