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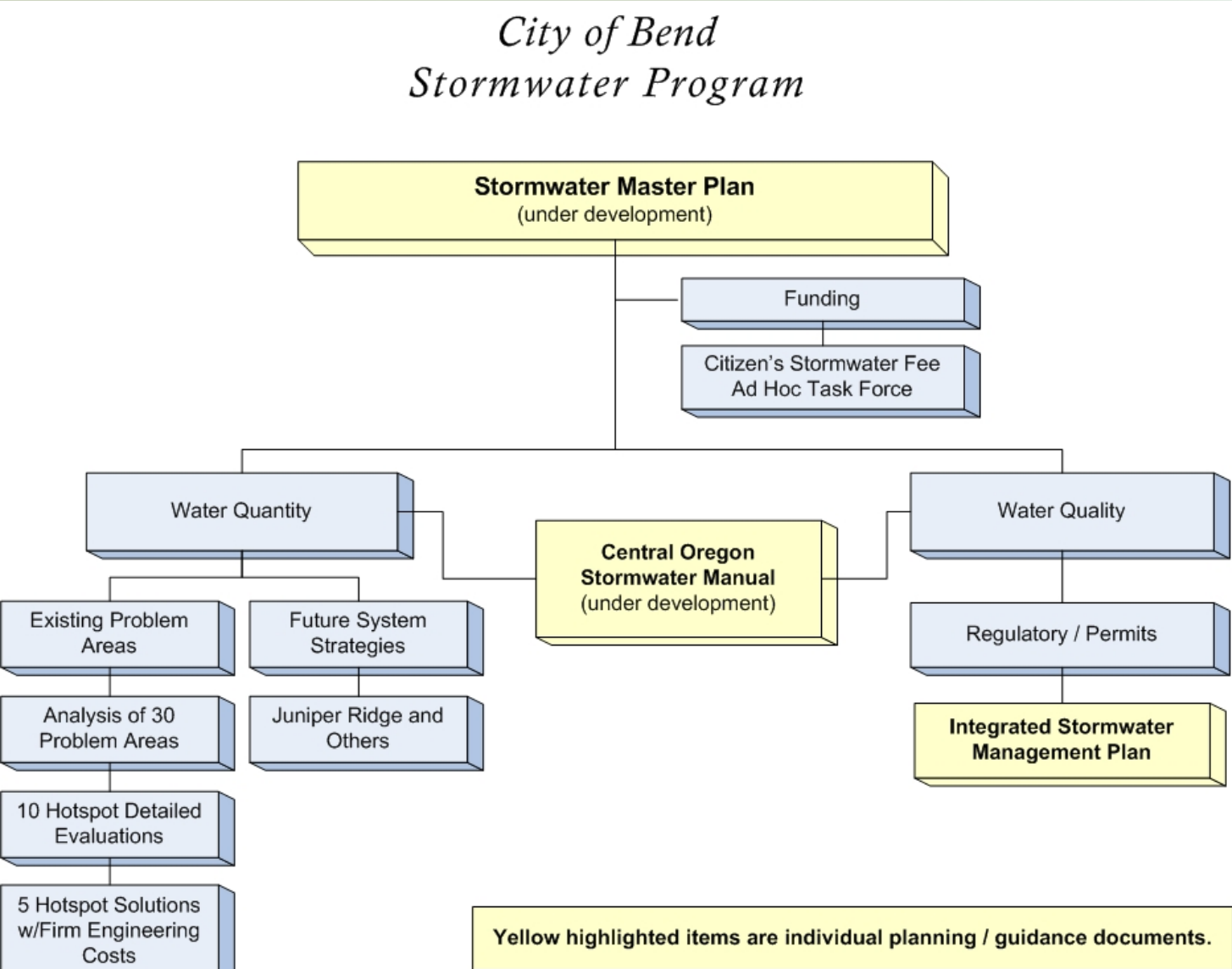


# City of Bend

Stormwater Update

February 6, 2007

# Stormwater Related Activities Chart



# Existing stormwater systems are hydraulically overloaded



# Even 1-year storm events cause problems



# System maintenance is driven by flooding



# System maintenance driven by flooding



# Development in natural drainage ways causes problems



# Development in natural drainage ways causes problems





# We need to reduce pollutant loads to Mirror Pond



# Geologic Challenges

- Fractures may be direct path to groundwater



# Geologic Challenges

- Welded (impermeable) tuff prevents infiltration



# Geologic Challenges

- Thin soil + fractured rock + welded tuff



# Regulations require system upgrades

Notice of Public Hearing: February 6, 2007

## Proposed Issuance of NPDES Permits for “Phase II” Small Municipal Separate Storm Sewer Systems

**Notice issued:** January 4, 2007

**Hearing date, time and location:**

Tuesday, February 6, 2007  
Information session: 6:00 p.m.  
Public hearing: 6:30 p.m.  
City of Bend Public Library  
Brooks Meeting Room  
601 NW Wall Street  
Bend, OR 97701

Plan outlining how stormwater pollutants discharged from their systems will be reduced or managed during the permit term.

### What will this permit regulate?

This permit regulates the planning and implementation of measures taken by communities to minimize, to the maximum extent practicable, polluted stormwater discharged through their separate storm sewer systems. Specifically, the permit requires that an



State of Oregon  
Department of  
Environmental  
Quality

Water Quality  
Division

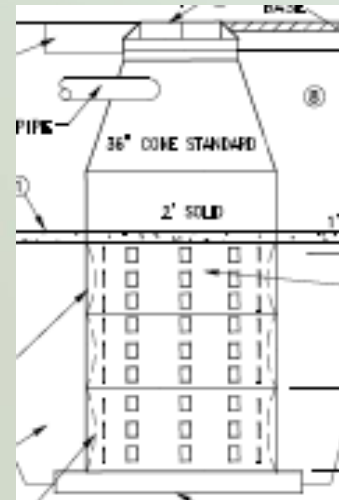
Surface Water  
Management  
Section

# National Pollutant Discharge Elimination System (NPDES) Phase II Regulations

- Regulates all City stormwater discharges to river
- Part of the Clean Water Act
- Requires:
  - City permit (expected in March)
  - Stormwater management plan (ISWMP complete)
  - Treatment of water quality storm before discharge
  - Annual progress reporting
  - Legal authority
  - TMDL compliance

# Underground Injection Control (UIC) Law

- Regulates stormwater discharges to drywells and drill holes (underground)
- Part of Safe Drinking Water Act
- Requires:
  - City permit (applied for)
  - Registration of all UICs
  - Stormwater management plan (ISWMP complete)
  - Treatment of water quality storm before injection
  - Monitoring and reporting



Some progress is being made

- New treatment system in Neff at Pilot Butte Middle School





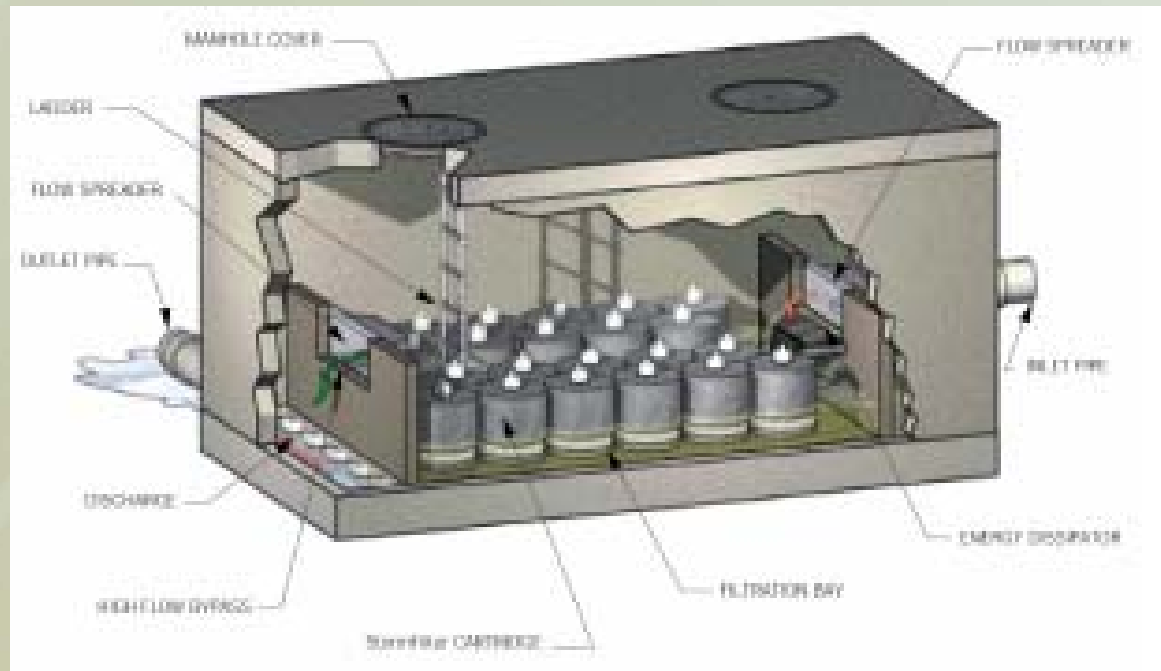
Some progress is being made

- 27th Street drainage swale



# Some progress is being made

- Newport Avenue stormwater treatment vault



# Objectives of Bend's Stormwater Master Planning

## Stormwater Analysis:

- Quantify stormwater;
- Identify water quality issues;
- Prioritize capital improvement projects;
- Evaluate 5 high-priority problems areas.

# Objectives of Bend's Stormwater Master Planning (continued)

## Programmatic Recommendations:

- Maintenance standards to protect water quality and ensure adequate drainage
- Public outreach program to engage Bend residents in water quality protection
- Funding/utility structure to support the program
- Design standards for new development

# Overall Stormwater Program Elements

## Program to meet state and federal regulations:

- Capital improvement program for flood and water quality protection
- Operation and maintenance of stormwater system
- Plan review

# Overall Stormwater Program Elements (continued)

## Program to meet state and federal regulations (cont.):

- Inspection and enforcement
- Engineering and project management
- Public outreach
- Management and administration

# Highest Priority Capital Improvements

- Fix hot spot drainage problems that threaten property and public safety



# Highest Priority Capital Improvements

- Pretreatment to reduce pollutant loads to Mirror Pond





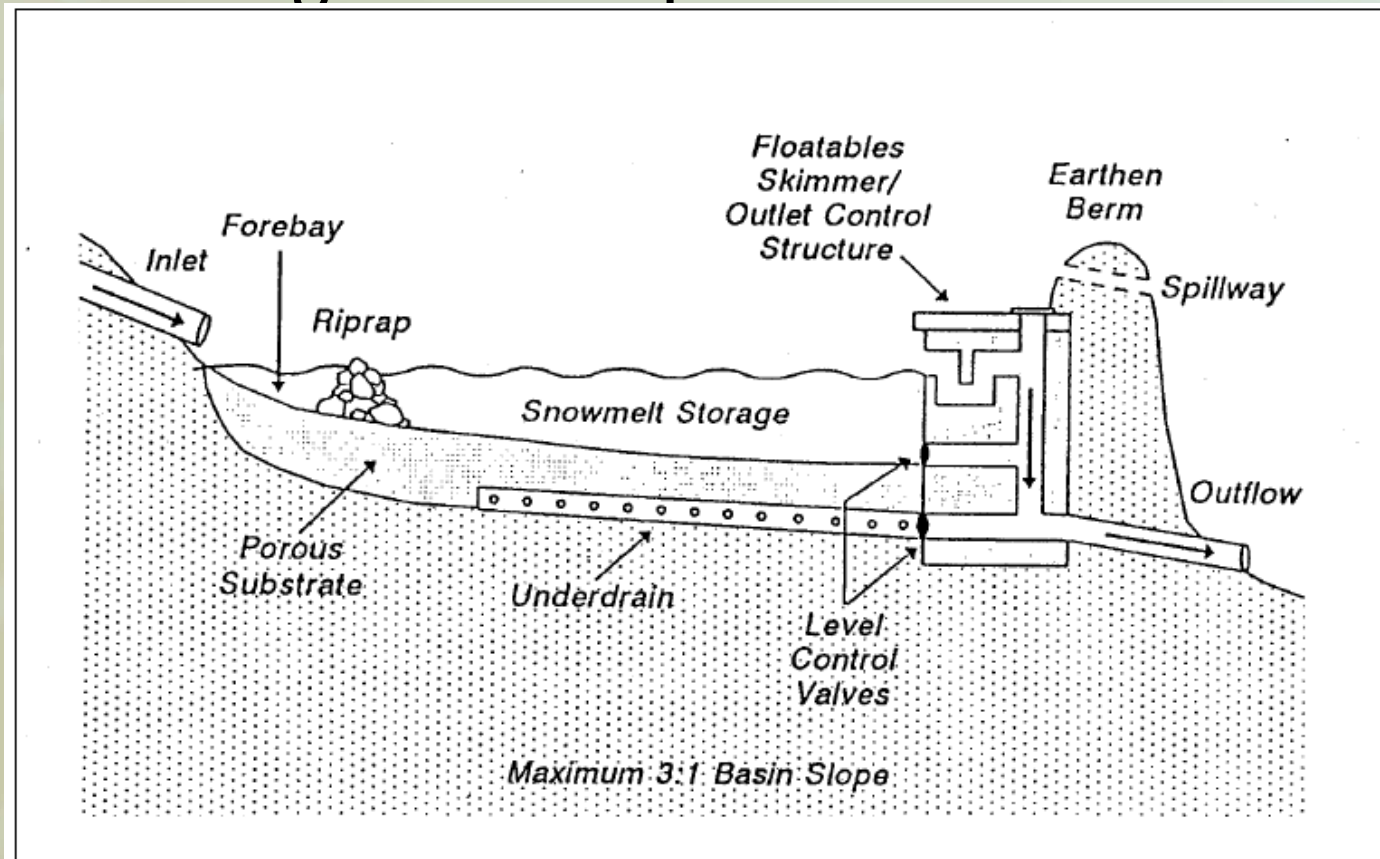
# Highest Priority Capital Improvements

- Pretreatment for drill hole UICs



# Highest Priority Capital Improvements

- Regional stormwater systems where river or underground disposal does not work

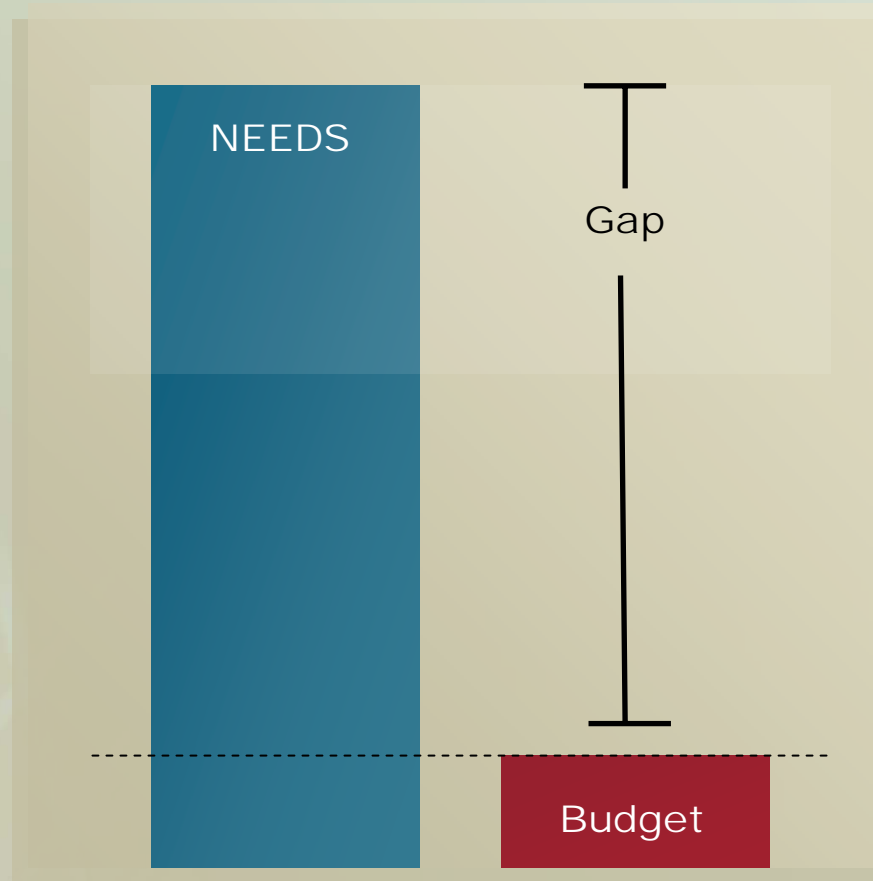


# Highest Priority Capital Improvements

- Regional infiltration ponds similar to this one



# Stormwater O&M Funding Shortfall



# Funding Issues

- Existing stormwater O&M funding is inadequate
- Using streets funds and competing for general fund \$\$\$
- Lack funding for critical capital projects

# Stormwater Program & Funding Structure

- Master Plan documents the needs and costs
- Focus now shifts to public - awareness...understanding...action
- Next steps
  - Stormwater utility ordinance adoption
  - Stormwater Fee Citizen's Task Force formation
  - Approval and Implementation of fee structure

# Preliminary Directions for Stormwater Funding

- Ensure a permanent source of revenue by establishing a service charge rate structure
- Orient the initial program toward increased system maintenance, regulatory compliance, public outreach, and ongoing commitment to capital improvements

# Preliminary Directions for Stormwater Funding (continued)

- Consider System Development Charges (SDCs) as Master Plan develops
- Establish equitable fixed fee for Single Family Residences (SFR)
- Establish a targeted, equitable system of service charge credits for non-SFR



# Service Charge Structure & Credits

- Single Family Residential (SFR) = uniform rate (one equivalent residential unit or EDU)
- Non-SFR rate based on measured impervious surface\* (aerial, satellite, site plans)
- Service charge **credit** available for private non-SFR customers with on-site stormwater facilities

\* impervious surface = roofs + paved areas

# Doing the Math...

## Hypothetical Rate for a Non-SFR Property w/o On-site Treatment



$$\frac{26,136 \text{ sq. ft.}}{3,000^* \text{ sq. ft./EDU}}$$

9 EDUs

$$9 \text{ EDUs} \times \$5/\text{EDU}^*$$

Monthly Service Charge = \$45

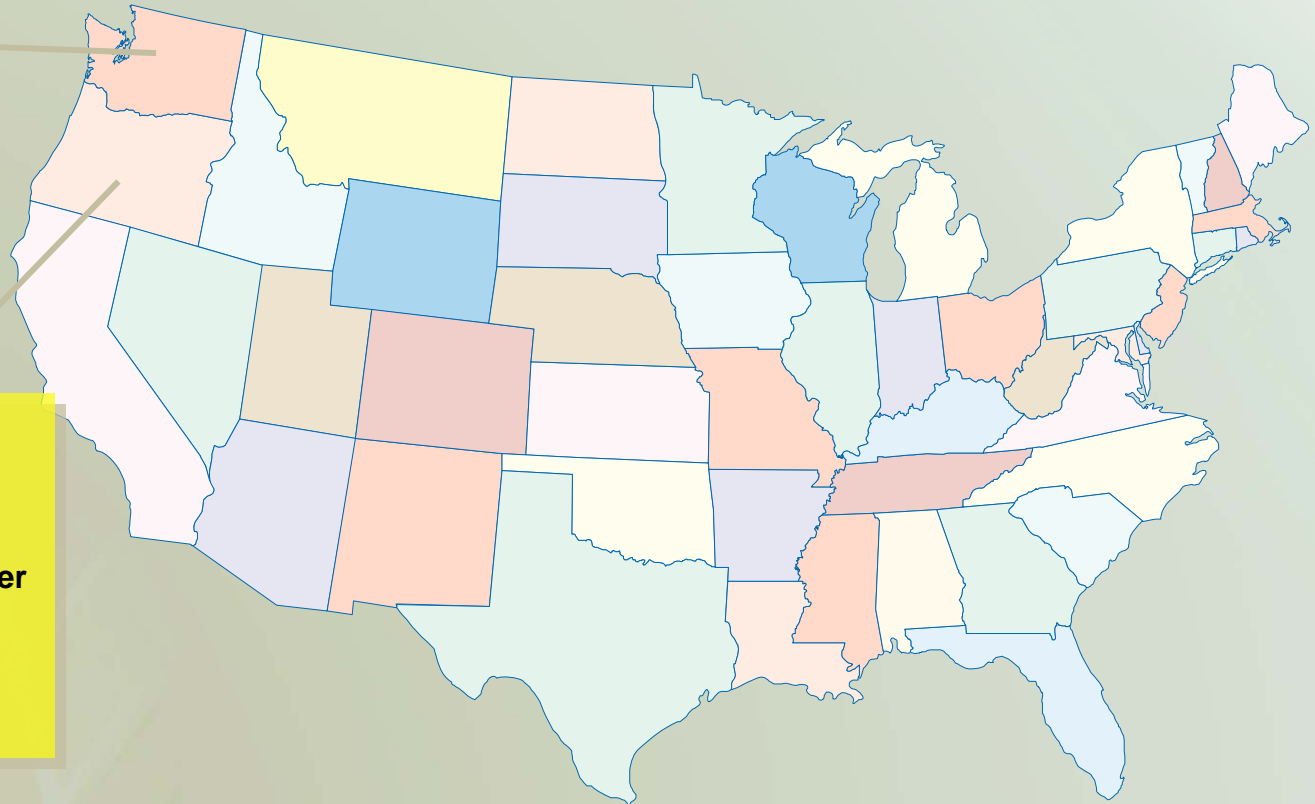
\* example numbers

# Some Examples of NW Cities With Stormwater Fees

**Spokane County  
Clark County  
Kent  
Puyallup  
Sumner  
Auburn  
Redmond  
Gig Harbor  
Lacey  
North Bend  
Snohomish Co.**

**Washington Co.  
Hillsboro  
Tualatin  
Lake Oswego  
Clackamas Co.  
Forest Grove  
Scappoose  
Ashland  
Roseburg  
Medford  
Central Point  
Talent**

**Newberg  
Troutdale  
Portland  
Gresham  
Clean Water  
Services  
Milwaukie  
Beaverton  
West Linn**



# Very Preliminary Estimate of Equivalent Dwelling Units (EDUs) in Bend

<b><u>Who Pays?</u></b>	<b><u>EDUs</u></b>
<b>Single Family Residential (SFR)</b>	<b>19,000</b>
<b>Business Parks</b>	<b>2,000</b>
<b>Churches</b>	<b>1,500</b>
<b>Hospitals</b>	<b>600</b>
<b>Community/Mixed Use</b>	<b>2,000</b>
<b>Golf Courses</b>	<b>1,000</b>
<b>Offices</b>	<b>2,000</b>
<b>Small/Res. Businesses</b>	<b>700</b>
<b>Schools</b>	<b>4,000</b>
<b>Government</b>	<b>1,500</b>
<b>Utilitys</b>	<b>1,500</b>
<b>TOTAL</b>	<b>35,800</b>

# Some Oregon Stormwater Utilities Monthly Rate & One-time SDC Comparisons for Single Family Residences

City	One-Time SDC	Monthly Rate/EDU
West Linn	\$ 455	\$ 3.75
Tualatin	\$ 275	\$ 4.00
Oregon City	\$ 630	\$ 4.00
Lake Oswego	\$ 112	\$ 7.67
Tigard	\$ 275	\$ 4.00
Corvallis	\$ 228	\$ 4.70

## Some Oregon Stormwater Utilities Monthly Rate & One-time SDC Comparisons for Single Family Residences (continued)

City	One-Time SDC	Monthly Rate/EDU
Central Point	\$ 409	\$ 5.00
Medford	\$ 520	\$ 4.80
Ashland	\$ 507	\$ 3.25
Roseburg	\$ 800	\$ 2.95

# Expected Schedule

<u>Task</u>	<u>Timing</u>
Establish Utility	March
Task Force Process	February - April
Task Force Recommendations to Council on Rates	May
Rate Adoption	May/June
Utility Implementation w/Fees	July

# Requested Action of Council

1. Establish task force to assist in utility rate design and service scope– February
2. Adopt utility formation ordinance – March
3. Adopt rate structure – May or June



# Why we need better stormwater management



# Several of our known problems areas

