

# *working for clean rivers*



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ENVIRONMENTAL SERVICES  
CITY OF PORTLAND



**Planning and Sustainability  
Commission**

**Stormwater  
Management &  
Land Use Planning**

# Overview

- **Stormwater Management 101**
- **What's Portland doing?**
- **Why should planners care?**
- **Updating the Comp Plan**
- **What's ahead?**



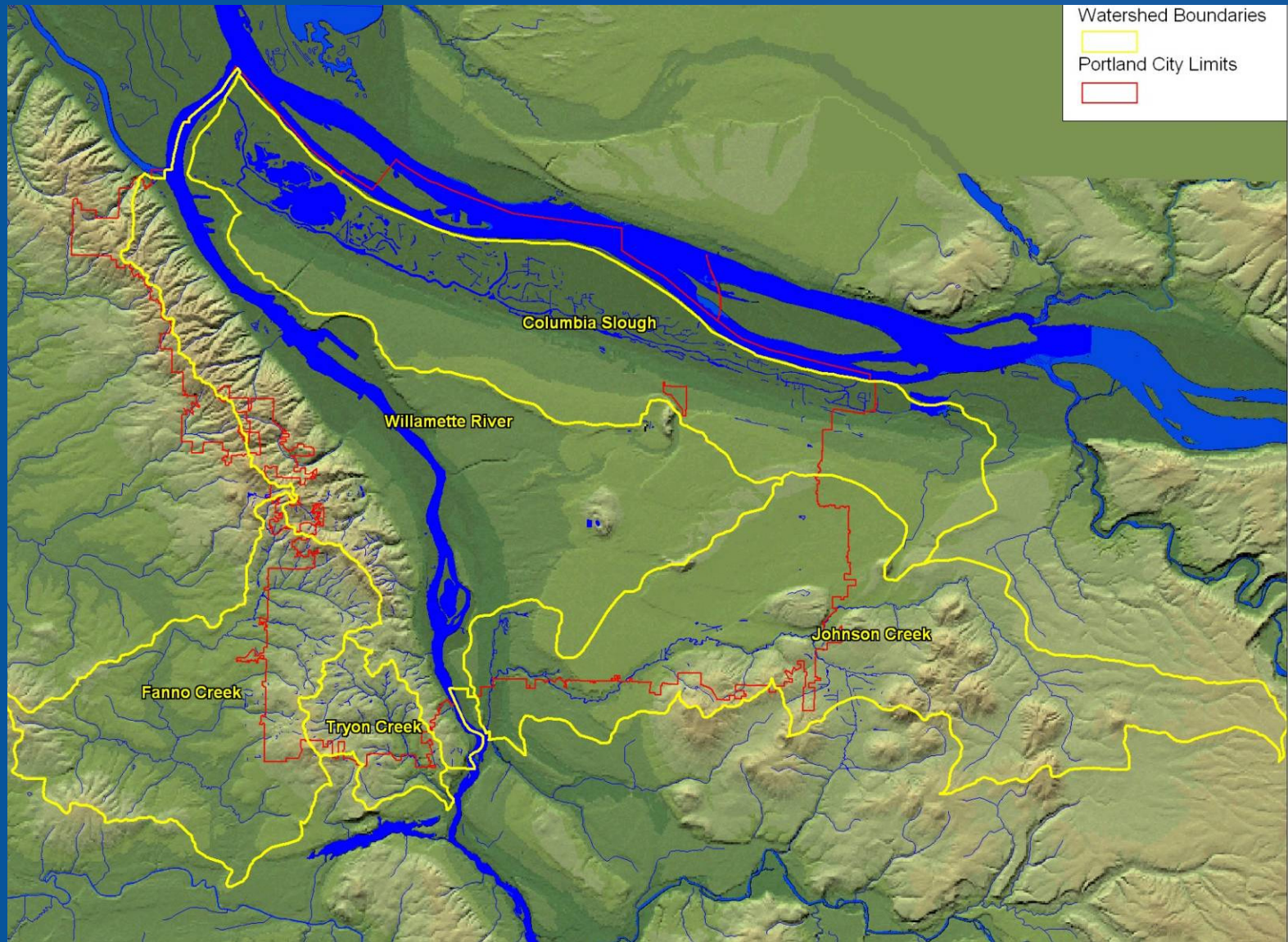
# Where does the rain go?

<http://vimeo.com/19983664>





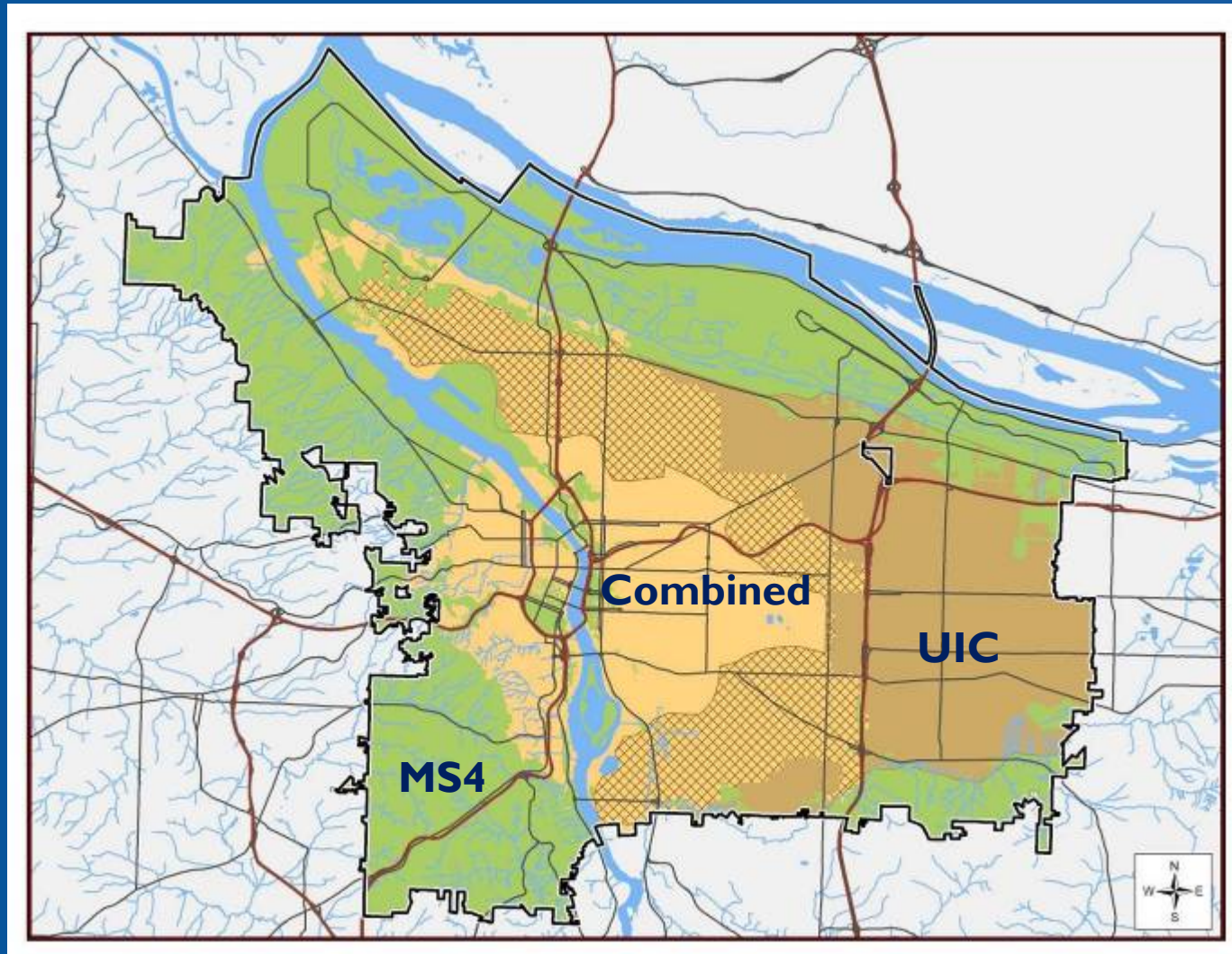
# STORMWATER MANAGEMENT 101



## Portland's Watersheds



# STORMWATER MANAGEMENT 101



**Portland's Regulated Stormwater Systems**



# STORMWATER MANAGEMENT 101

## Unmanaged stormwater roofs, roadways and parking areas



- **Pollutants** (*water quality or pollution prevention*)
- **Volume/velocity** (*detention or flow and volume control*)
- **Conveyance** (*approvable discharge point*)



# STORMWATER MANAGEMENT 101



**Erosion**



**Stream impacts**



**Combined sewer overflows**



**Poor infiltration**

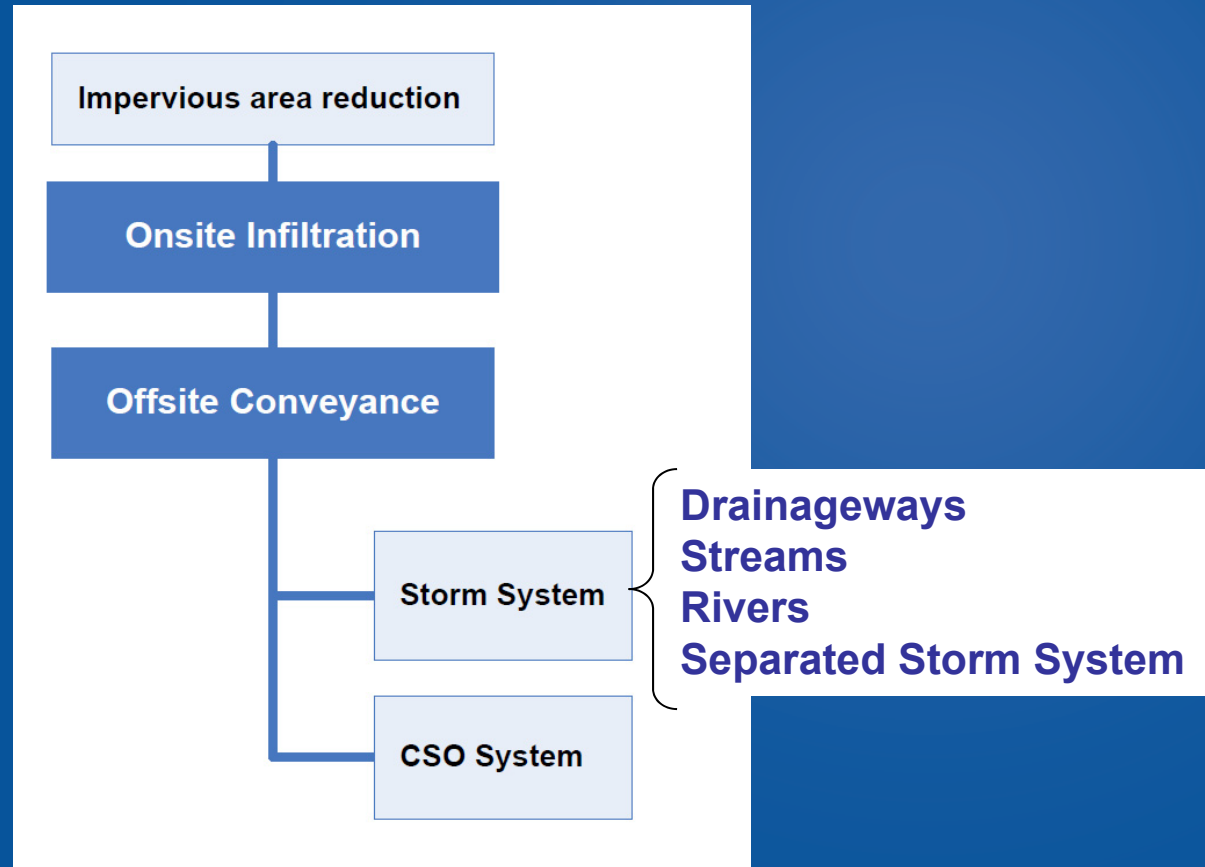


**Flooding**





## Stormwater Hierarchy





# WHAT'S PORTLAND DOING?

## A LOT!



CITY OF PORTLAND  
2014 Stormwater Management Manual

Table of Contents

- Introduction
- Chapter 1: Requirements and Policies
- Chapter 2: Facility Design
- Chapter 3: Operations and Maintenance
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- Definitions
- Appendix A: City Code, Policy Framework and Revision Process, Drainage Reserves, Culverts & Outfalls and Retrofits
- Appendix B: Submission Guidelines for Manufactured Stormwater Treatment Technologies
- Appendix C: Simplified Approach Sizing Calculations
- Appendix D: Submittal Guides, Forms
- Appendix E: Pollution Reduction Storm Report
- Appendix F: Soil and Landscape Specifications
- Appendix G: Typical Details
- References and Resources
- Index



System Improvements

## Stormwater Management Manual



Grants & Partnerships



Incentives and Technical Assistance



# WHY SHOULD PLANNERS CARE?

## Challenges for developers...

*Finding a place to put the water*

*Managing project costs*



## ...and possible directions

*Low impact development*

*Integrated design*

*Incentives and technical assistance*





# WHY SHOULD PLANNERS CARE?

## Challenges for neighbors...

- Basement flooding*
- Runoff and erosion*
- Costs of property damage*



## ...and possible directions

- Depaving projects*
- Drainage protections*
- Natural area acquisition*





# WHY SHOULD PLANNERS CARE?

## Challenges for Ratepayers...

*Water quality in the Willamette and local streams*

*Stormwater fees*

## ...and possible directions

*Green infrastructure investments*

*Integrated infrastructure planning and design*



# WHY SHOULD PLANNERS CARE?

## Challenges for Transportation Planning...

*Impacts to roadways*

*Substandard and unimproved  
streets*

*Costs of street improvements*

## ...and possible directions

*New standards for  
unimproved streets*

*Cooperative Local  
Improvement Districts*

*Regional facilities*





# WHY SHOULD PLANNERS CARE?

Challenges for Planners... ...and possible directions

*Urban + Nature*

*Design preferences vs.  
functional need*

*Design guidance*

*Integrated planning*





# WHY SHOULD PLANNERS CARE?

## Integrating stormwater into the design



# WHY SHOULD PLANNERS CARE?

Challenges for Planners... ...and possible directions

*Site coverage and feasibility*

*Retrofitting impervious areas*

*Managing multiple interests*

*Updated land use tools*

*Off-set impervious areas*



## Stormwater Policy and the Comprehensive Plan

- Policies
- Public Facilities Plan
- Comp Plan Map





# COMPREHENSIVE PLAN

## Current Comprehensive Plan

*Stormwater management  
primarily a utility issue*

*Does not address:*

- *Connections with land use and transportation*
- *Green infrastructure*
- *Stormwater systems*



# COMPREHENSIVE PLAN

## Comprehensive Plan Update

### Watershed Health and Environment

- *Ecosystem services*
- *Watershed-specific policies*

### Public Facilities

- *Green infrastructure*
- *Transportation*

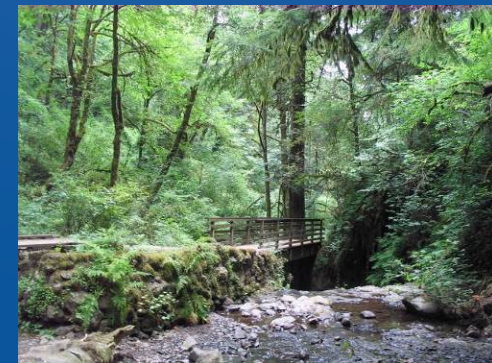




# COMPREHENSIVE PLAN

## Comprehensive Plan Update *Urban Design and Development*

- *Urban Design Framework*
  - *Civic Corridors*
  - *City Greenways*
  - *Habitat Corridors*
- *Design with Nature*





# WHAT'S AHEAD?

## BES Comp Plan Implementation

### Stormwater System Plan

- Citywide stormwater system risk assessment
- Local-scale alternative analyses
- Prioritized projects and operational change recommendations

### Stormwater Management Manual

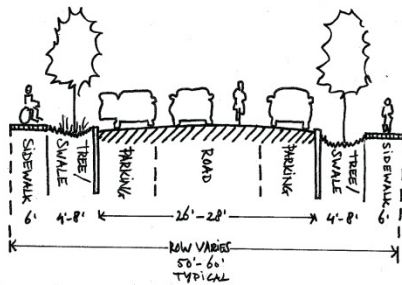
- Policies and Regulatory Requirements
- Development Standards for both private property and the public right of way
- Process improvements that bring consistency, efficiency and transparency across all levels of decision making



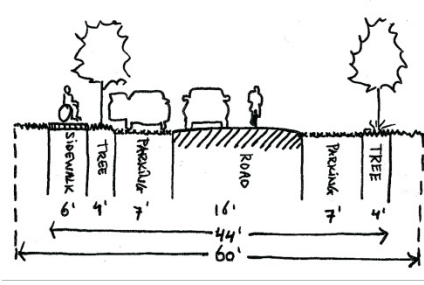
# WHAT'S AHEAD?

## Street by Street

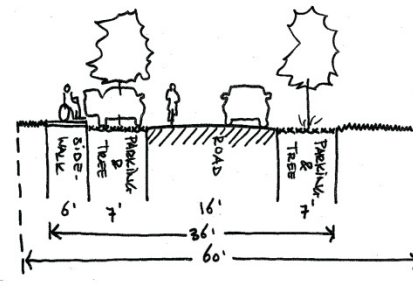
#1 TRADITIONAL STREET DESIGN



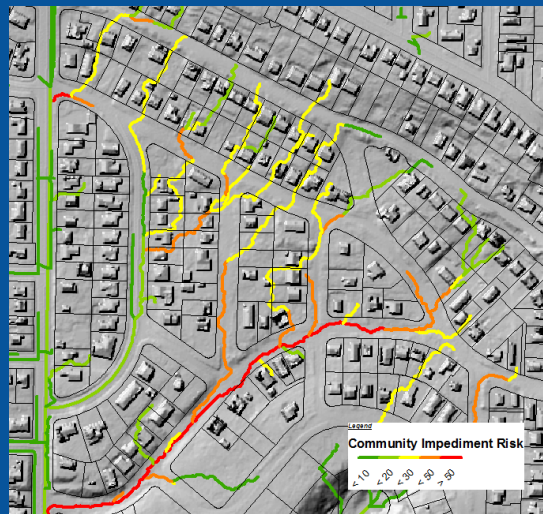
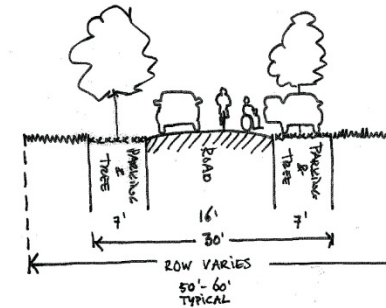
#2 STREET DESIGN: SEPARATED



#3 STREET DESIGN: PARKING + TREES

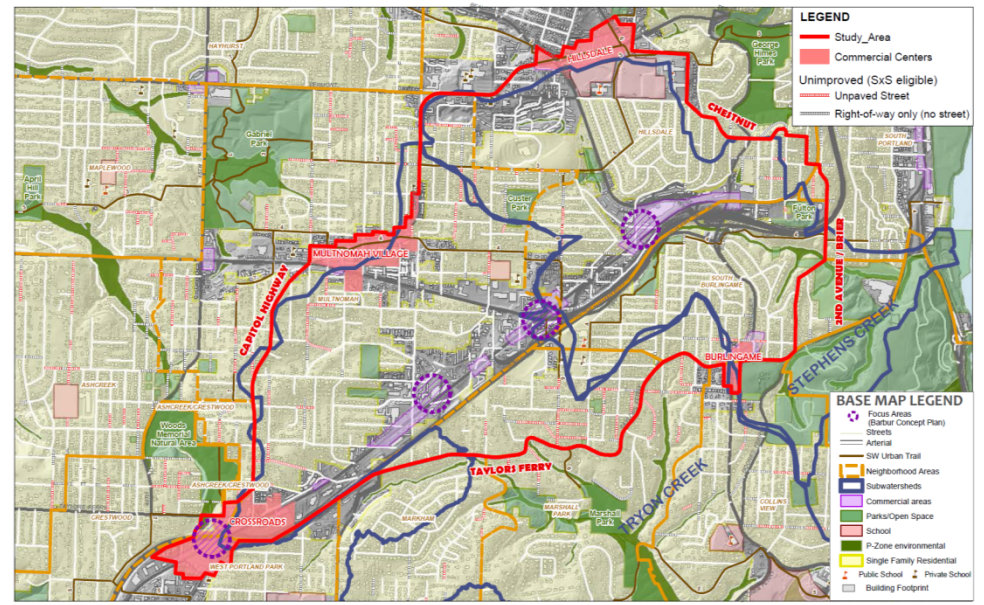


#4 STREET DESIGN: SHARED



Errol Heights

2013 TGM GRANT: TRYON-STEPHENS NEIGHBORHOOD STREET PLAN



Tryon and Fanno Creek – Active Transportation and Stormwater







## WHAT'S AHEAD?

**We met the CSO challenges and we can meet the stormwater challenges!**

**But it's going to be different...**

- Can't solve the problems with huge capital investments
- Need to work within our means and do hundreds, if not thousands, of small things that all add up to a solution
- Partnerships, programs, small investments, private investments, recruiting help from across BES and across the City to harness the cumulative effect of many actions



*working for clean rivers*



ENVIRONMENTAL SERVICES  
CITY OF PORTLAND

*Thank you!*

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