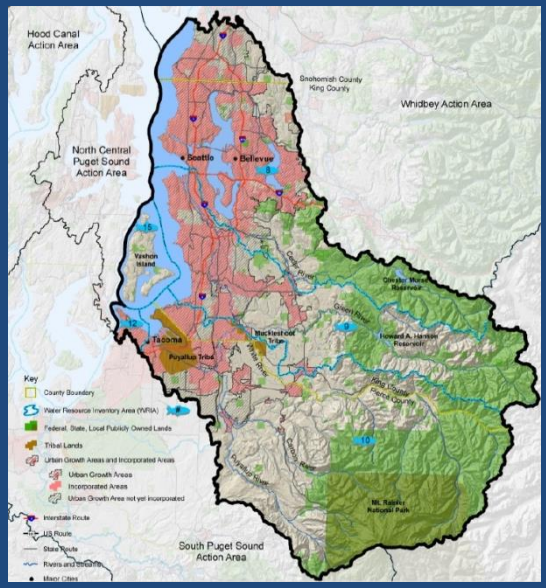
Building cities in the rain

Follow up Growth Management Policy Board discussions (May - July 2013)

Problem: "**NPDES *v* GMA**:" Are stormwater regulations making it harder to build compact cities?

Goal: Identify strategies to encourage development in dense urban centers to meet land use goals, while meeting water quality requirements.

LIO 2012/13: "Better alignment of land use planning with.. NPDES permits to reduce stormwater impacts."



South Central Puget Sound Action Area Caucus Group Subcommittee on Stormwater and Infill

+

Department of Commerce
Innovation is in our nature.

Grant from National Estuary Program to help implement PS Action Agenda

GMPB Co-Chair Ryan Mello: “NPDES + GMA”

“VISION 2040 expects **both growth to meet our GMA targets**, ***and*** **to protect the environment**. “

“Stormwater is one of those nitty-gritty details we need to wrestle with to actualize VISION. Water quality is important to us all but it’s not free, so there’s an obvious impact to our ability to create…compact dense communities…”

“Instead of pretending like the problem doesn’t exist, and like there aren’t details that might be getting in the way, we should **have the tough conversation** and figure out how to address them.”

Portfolio (contract with SvR)

Profile innovative approaches to manage stormwater for multiple benefits.

- Review profile areas (Nov 2013)
- SvR presentation to Subcommittee (~Jan 2014)
- Growth Management Policy Board presentation (~Feb 2014).

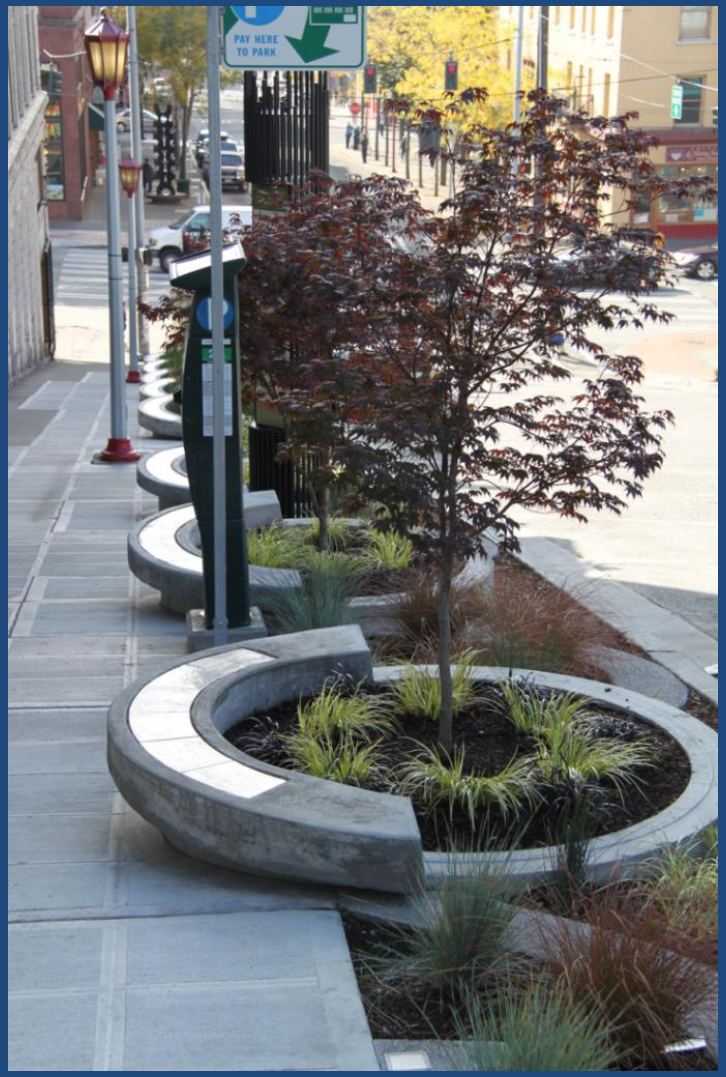


Photo courtesy SvR Design.

Portfolio jurisdictions

- **Marysville -** Downtown Comprehensive Plan/EIS
- **Kirkland -** Stormwater Code
- **Fife -** Code and Green Factor
- **Kitsap County -** Stormwater Code and Manual
- **Sammamish** - Stormwater Code
- **Shoreline -** Surface Water Master Plan/Boeing Creek Basin Plan
- **Bellevue -** Bel-Red Corridor EIS/Basin Planning

Background memo

Growth Management Policy Board presentations (May – July)

Meetings:

- American Public Works Administrators
- MBA-Pierce Co
- Pierce Co Growth Management Coordinating Committee
- Olympic Peninsula Planners Forum
- individual interviews

Building cities in the rain: background memo

Introduction

Consistent with the Growth Management Act, VISION 2040 sets forth a vision and strategy for accommodating growth in the central Puget Sound region by concentrating housing and jobs in designated growth centers. In most areas, reaching population and employment targets will require substantial infill development. In addition to encouraging efficient use of urban land through infill, VISION 2040 encourages maintaining hydrological functions, and where feasible, restoring them to a more natural state. The Puget Sound Partnership Action Agenda also calls for concentrated growth in UGAs and improved stormwater controls.

However, the Puget Sound Regional Council Growth Management Policy Board (GMPB) has heard concerns from cities that the high cost of site-by-site stormwater regulations, in combination with other costs such as demolition, brownfield remediation, historic preservation, and aging infrastructure repairs, may stifle redevelopment of urban areas. If costs are too high developers may look outside concentrated growth centers for lower cost strategies or options for their projects, or down-size redevelopment projects to avoid triggering thresholds for expensive stormwater requirements to the detriment of desired density.

Some areas have found regional stormwater facilities can help address the challenges of infill development, but those approaches may not work in all cities depending on local real estate markets, or constraints of local geology or hydrology.

The South Central Action Area Caucus Group *Subcommittee on Stormwater and Infill Development* is building on Growth Management Policy Board discussions with help from Commerce *(see sidebar)*. This memo provides background information on stormwater management challenges in infill situations based on information presented to the GMPB as well as preliminary input from interviews and meetings with builders, planners and state and local stormwater managers.[1]

Who, What and Why: *The South Central Action Area Caucus Group is a regional "Local Integrating Organization" (LIO) designated with advancing the Puget Sound Action Agenda. This project is intended to further one of the group goals: "Better alignment of land use planning with conditions for, and implementation of, municipal NPDES permits to reduce stormwater impacts."*

This memo was prepared by Department of Commerce with a grant from the National Estuary Program directed at promoting regional collaboration efforts that advance protection of Puget Sound. For information visit the project EZ-View website; or contact Tim Gates, Commerce, at 360.725.3058; or De'Sean Quinn, Caucus Group Coordinator, at 206.263.3420.

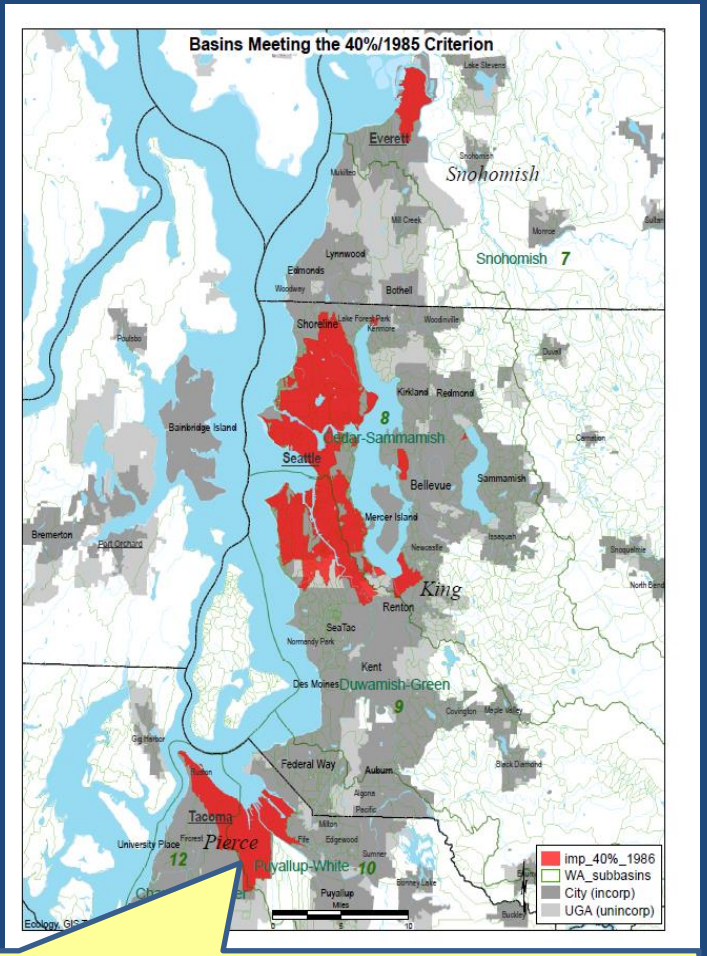
[1] Including meetings of the American Public Works Administrators; MBA-Pierce Co; the Pierce Co Growth Management Coordinating Committee.

Building cities in the rain: Background *DRAFT* *1*

Main issue is *not water quality*, but flow control

Biggest concern is **Flow Control standard** *(matching forested condition)* in areas where future plans demand very high lot coverage:

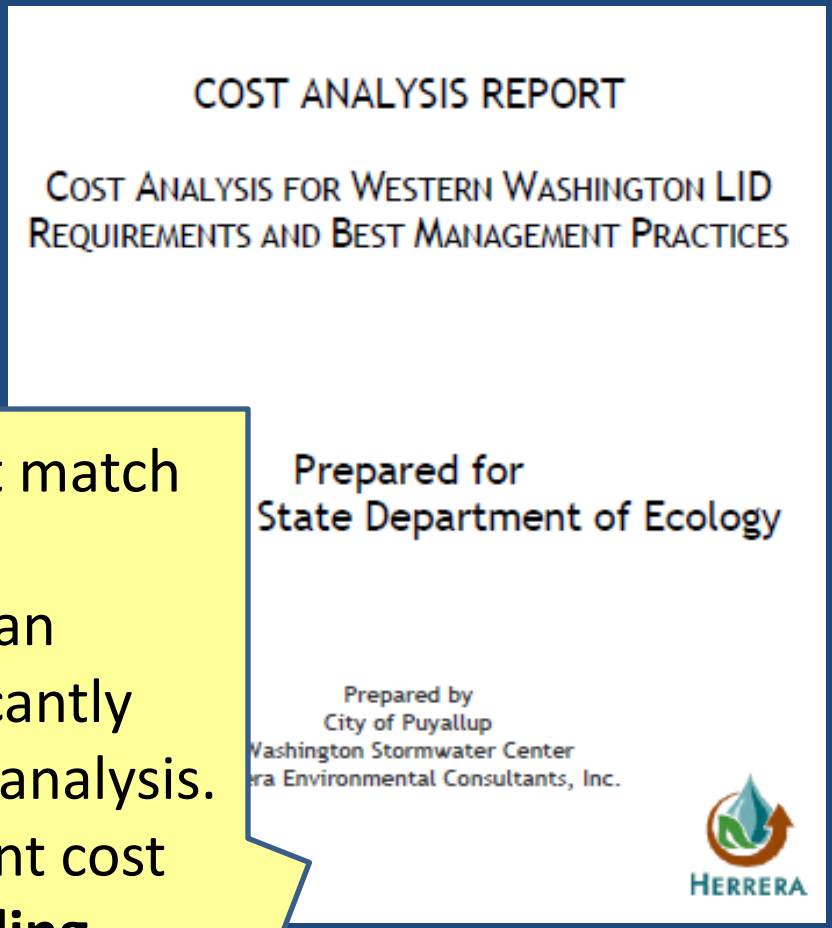
- Outside basins that have been 40% impervious since 1985 *(aka "40/20" or "red zones")*
- Where you can't pipe to flow-control exempt waters
- With limited infiltration options



Red Zone: Flow Controls only need to match *existing* conditions

Can LID reduce cost?

Recent study found 2012 Stormwater Manual using LID can reduce costs compared to 2005 manual in many scenarios.



Concern: modeled assumptions don't match many conditions.

"Stormwater approaches at ultra-urban redevelopment sites may vary significantly from the approaches included in this analysis. Different BMPs… would be a significant cost element in **scenarios where the building footprint occupies a large percentage of the parcel**."

Regional facilities?

Can help escape the “tyranny of site constraints.”

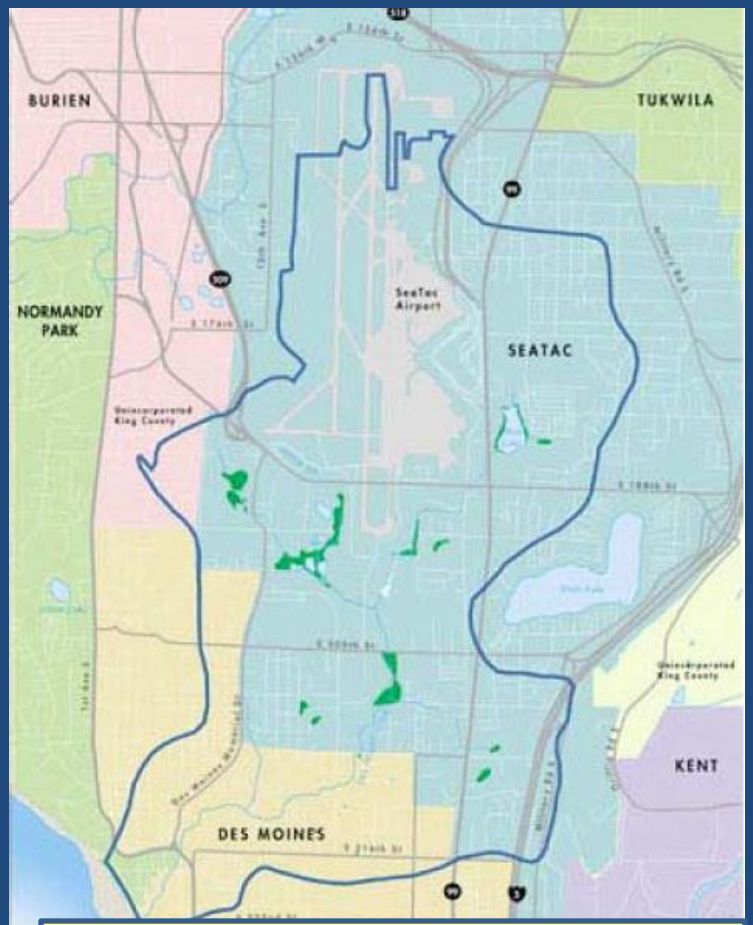
Concerns:

May not work everywhere

- Need the right geography
- Expensive, must be certain that redevelopment market will respond
- “Opportunity costs” (if affected streams are too altered to expect recovery)

Basin planning to alter Flow Control standard?

Permit allows for tailored standard through basin planning.



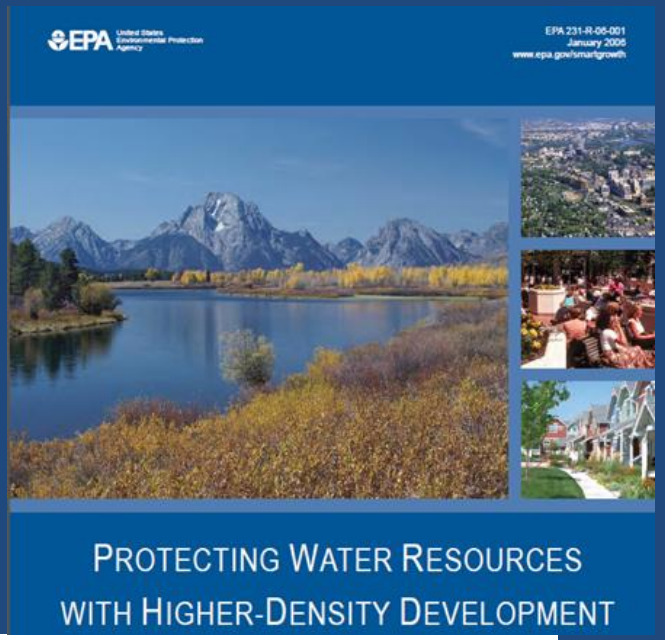
DesMoines Creek Basin Plan

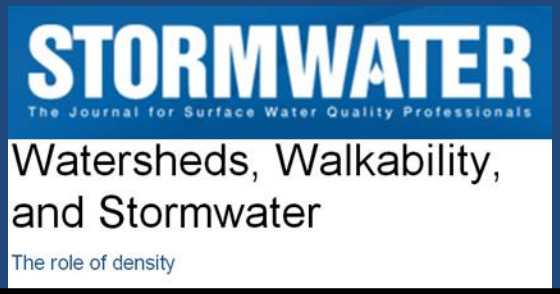
Concerns:

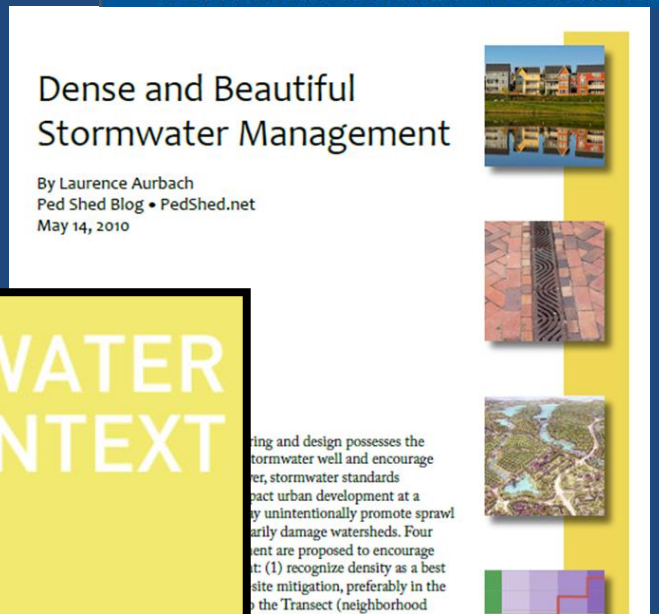
- Requires costly, time-consuming study.
- In many basins, must collaborate with multiple jurisdictions, get all to approve plan before Ecology review.
- Lack of clear criteria or approval/appeal process.

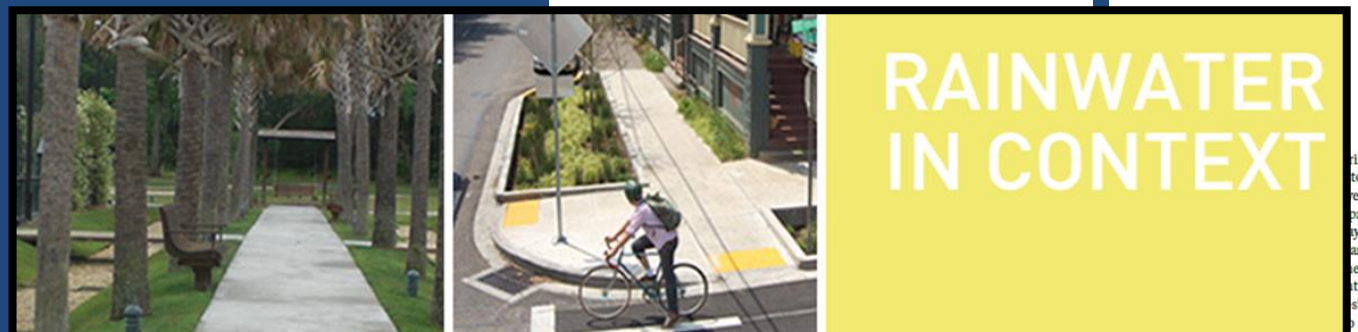
What about "context-sensitive" mitigation?

- EPA Smart Growth Office and others: Consider redevelopment as a stormwater BMP.
- Dense infill development = less impervious surface *per capita.*
- **Opportunity to address mutual goals of GMA and Water Quality laws?**



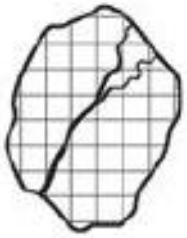
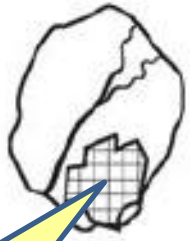
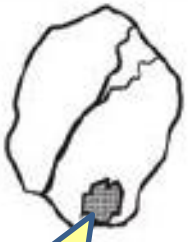






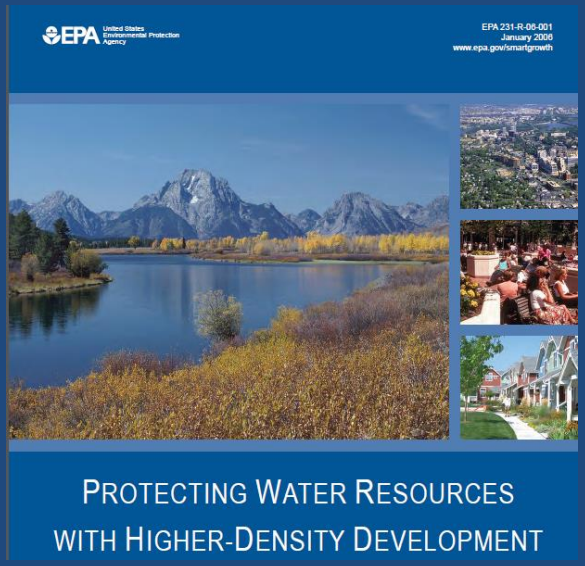
Density from the watershed's point of view

EXHIBIT 5: 10,000-Acre Watershed Accommodating 10,000 Houses

Scenario A	Scenario B	Scenario C
		
10,000 houses built on 10,000 acres produce: 10,000 acres x 1 house x 18,700 ft^3/yr of runoff = **187 million ft^3/yr of stormwater runoff** **Site: 20% impervious cover** **Watershed: 20% impervious cover**	10,000 houses built on 2,500 acres produce: 2,500 acres x 4 houses x 6,200 ft^3/yr of runoff = **62 million ft^3/yr of stormwater runoff** **Site: 38% impervious cover** **Watershed: 9.5% impervious cover**	10,000 houses built on 1,250 acres produce: 1,250 acres x 8 houses x 4,950 ft^3/yr of runoff = **49.5 million ft^3/yr of stormwater runoff** **Site: 65% impervious cover** **Watershed: 8.1% impervious cover**

4 du/acre

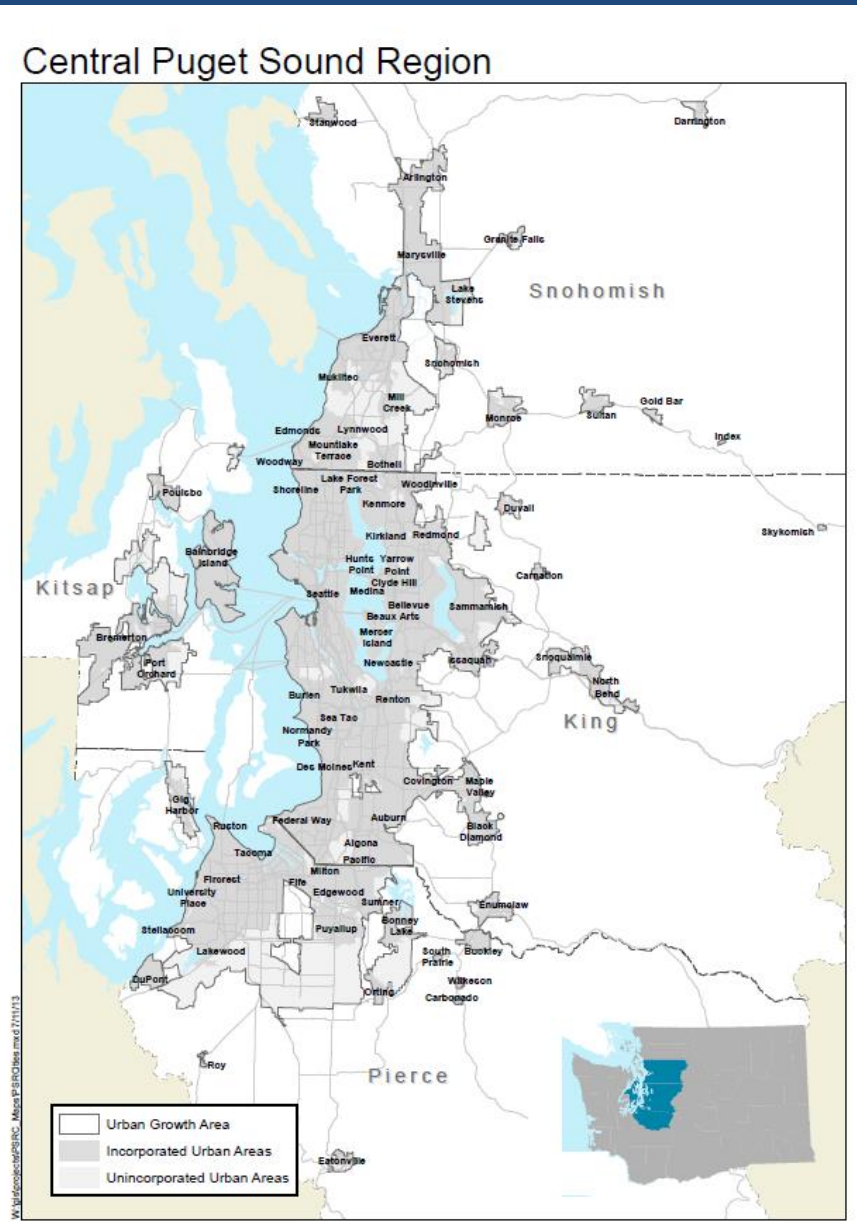
8 du/ac



Higher density creates less run-off per capita and consumes less land than lower density scenarios.

1.7 Million more residents by 2040

2 more Seattles + 2 more Tacomas



Regional strategy for distributing growth

GMA Goals

Multi-county planning policies

County-wide planning policies

Population targets for cities

Comprehensive plan

Plans & regs authorize densities to achieve targets

Regulations

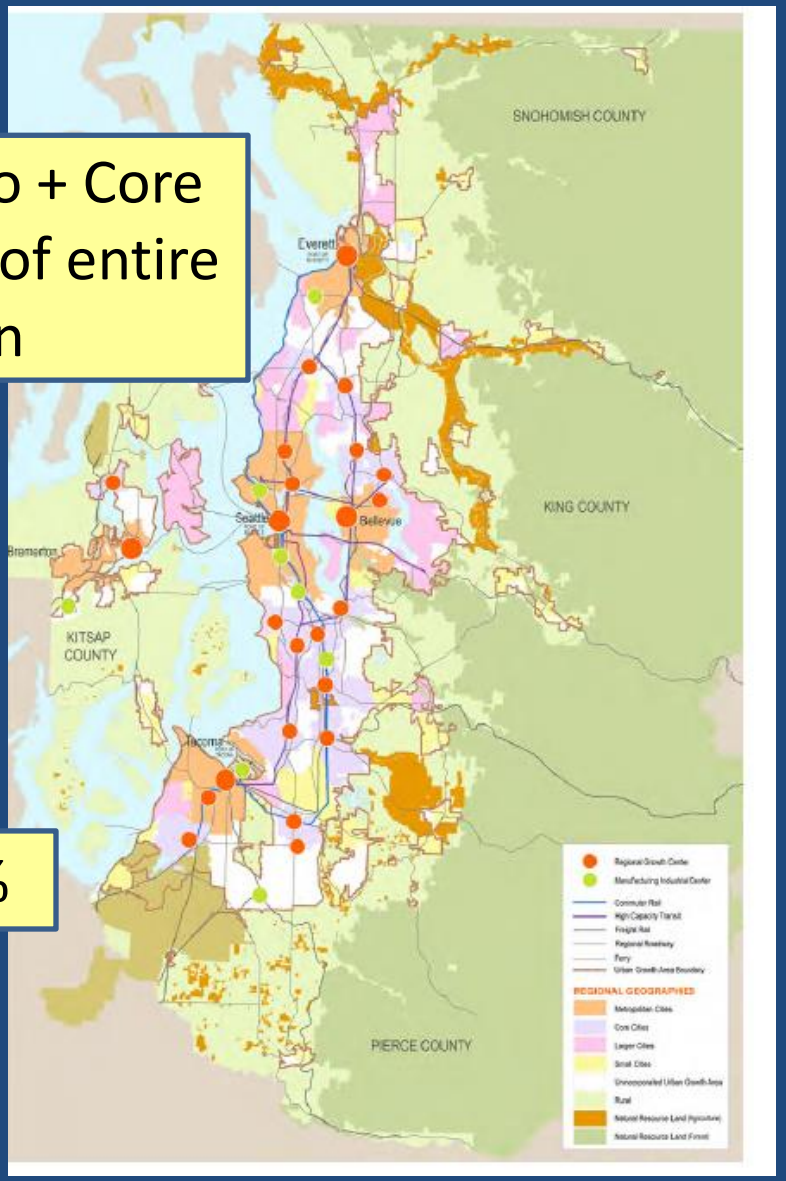
Project review

VISION 2040: anti-sprawl growth strategy

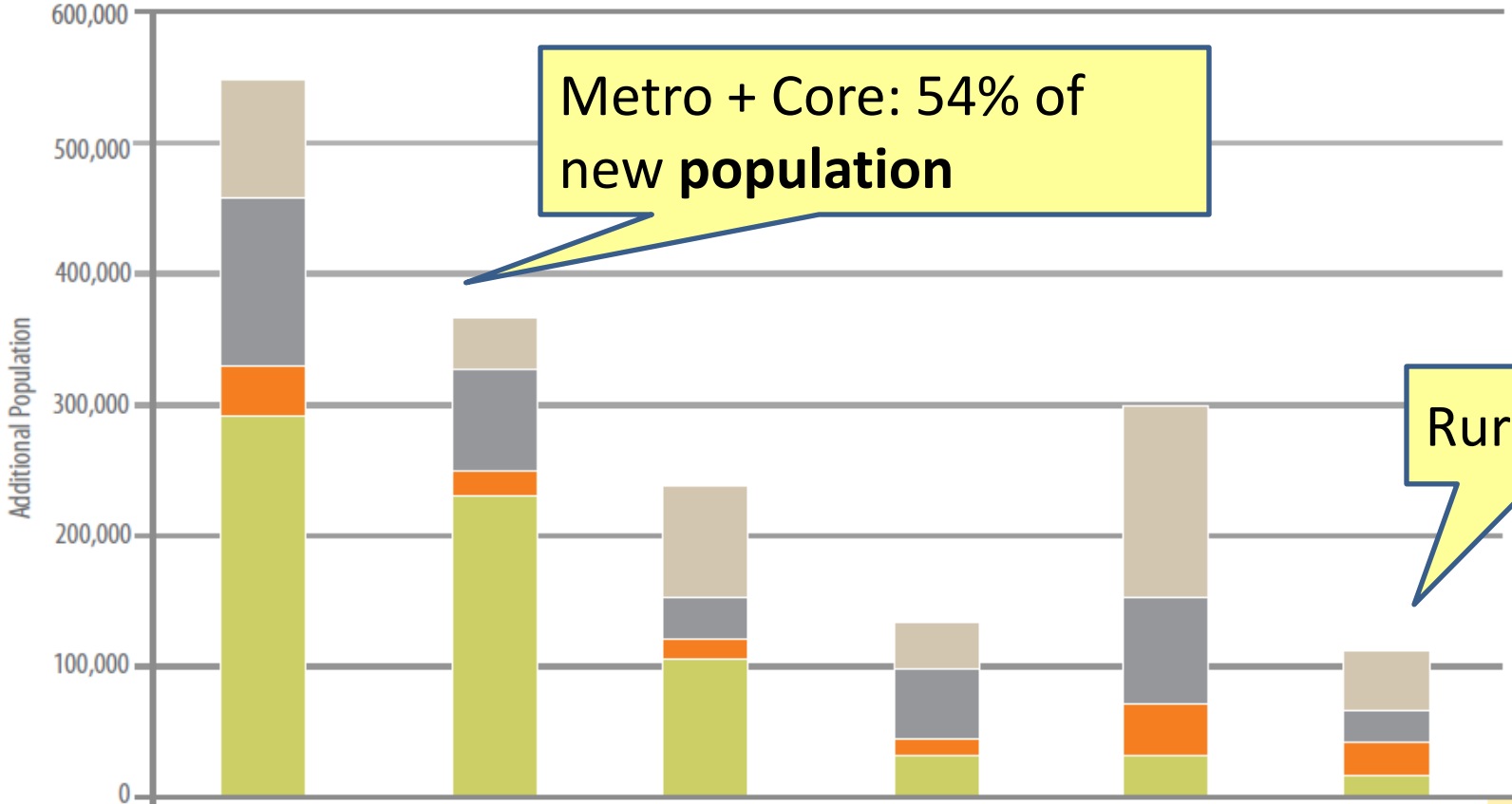
Regional geography	Sq miles
5 Metro Cities	222
14 Core Cities	212
18 Larger Cities	167
46 Small Cities	136
Unincorporated UGA	260
Rural Areas	1,464
Resource Lands	3,863
TOTAL	6,324

Metro + Core = 7% of entire region

23%



Population Growth by Regional Geography and County, 2000–2040



	Metropolitan Cities	Core Cities	Larger Cities	Small Cities	Unic'd UGA	Rural	Total
Snohomish County	20% - 90,000	9% - 40,000	19% - 85,000	8% - 37,000	33% - 148,000	10% - 46,000	26% - 446,000
Pierce County	32% - 127,000	20% - 77,000	8% - 32,000	13% - 52,000	21% - 81,000	6% - 24,000	23% - 393,000
Kitsap County	26% - 39,000	13% - 19,000	11% - 16,000	8% - 12,000	26% - 39,000	16% - 25,000	9% - 149,000
King County	41% - 294,000	32% - 233,000	15% - 108,000	5% - 35,000	5% - 34,000	3% - 20,000	42% - 724,000
Total Increase	32% - 550,000	22% - 369,000	14% - 240,000	8% - 136,000	18% - 302,000	7% - 115,000	100% - 1,712,000
2000 Base	1,007,000	601,000	403,000	210,000	586,000	470,000	3,276,000

Multicounty planning policies

MPP-DP-2: Encourage **efficient use of urban land by maximizing the development potential of existing urban lands**, such as advancing development that achieves zoned density.

MPP-DP-15: Support the **transformation of key underutilized lands, such as brownfields and greyfields, to higher density, mixed-use areas** to complement the development of centers and the enhancement of existing neighborhoods.

MPP-DP-5: Focus a significant share of population and employment growth in designated **regional growth centers**.

Regional Growth Centers

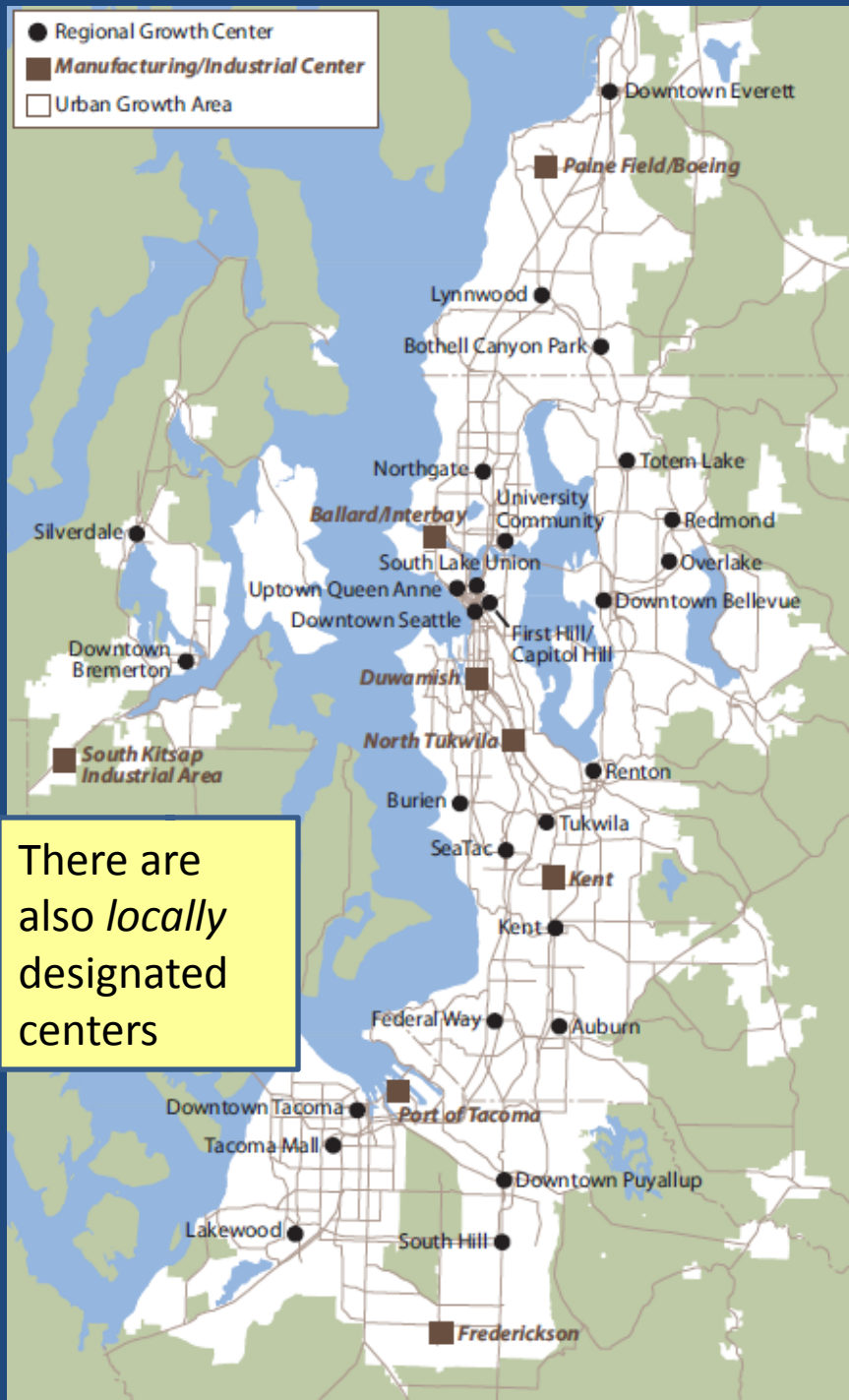
27 **Regional Growth Centers:** 2.5% of total UGA area (~25 sq miles)

- Currently 29% of regions jobs

+ 8 **Manufacturing/Industrial Centers:** 3.7% of total UGA area

Major state and local investments in centers, including:

- Connections between centers with **fast and frequent transit**



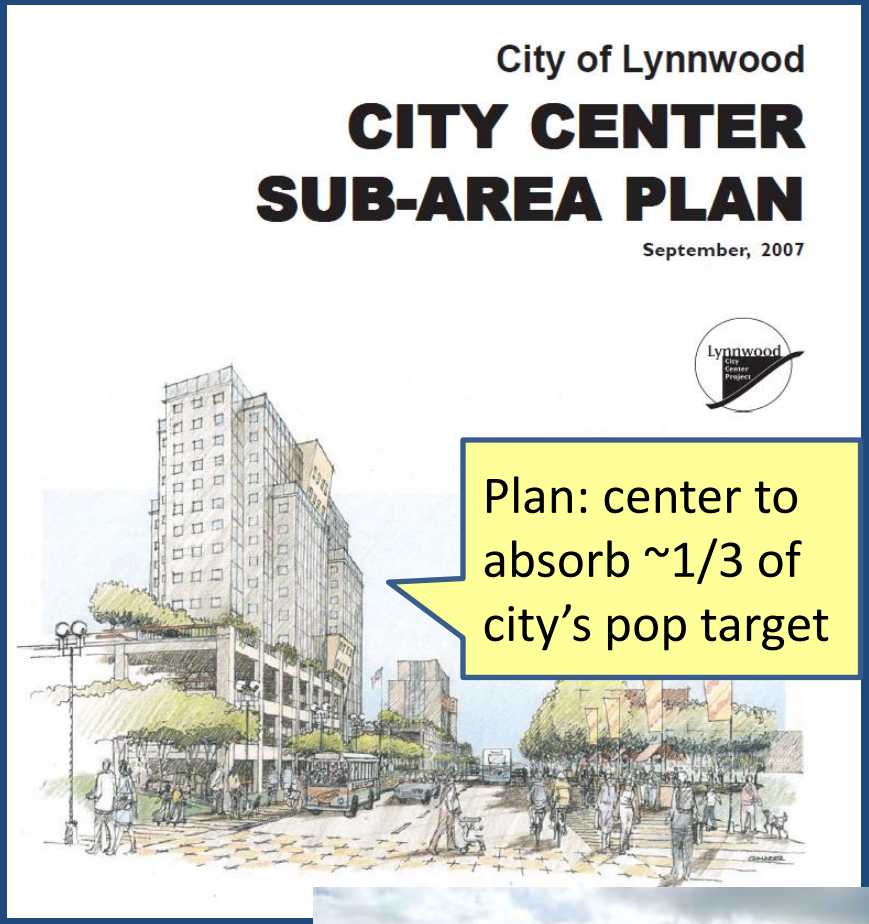
There are also *locally* designated centers

Center subarea plan

"Transit-Oriented Community"
(light rail destination)

Dense, mixed-use, pedestrian-friendly center (buildings up to 350')

New roads; parks; activity centers; quality urban design.



Plan: center to absorb ~1/3 of city's pop target

Existing:
Car-oriented, superblocks, one-story single use buildings, parking lots

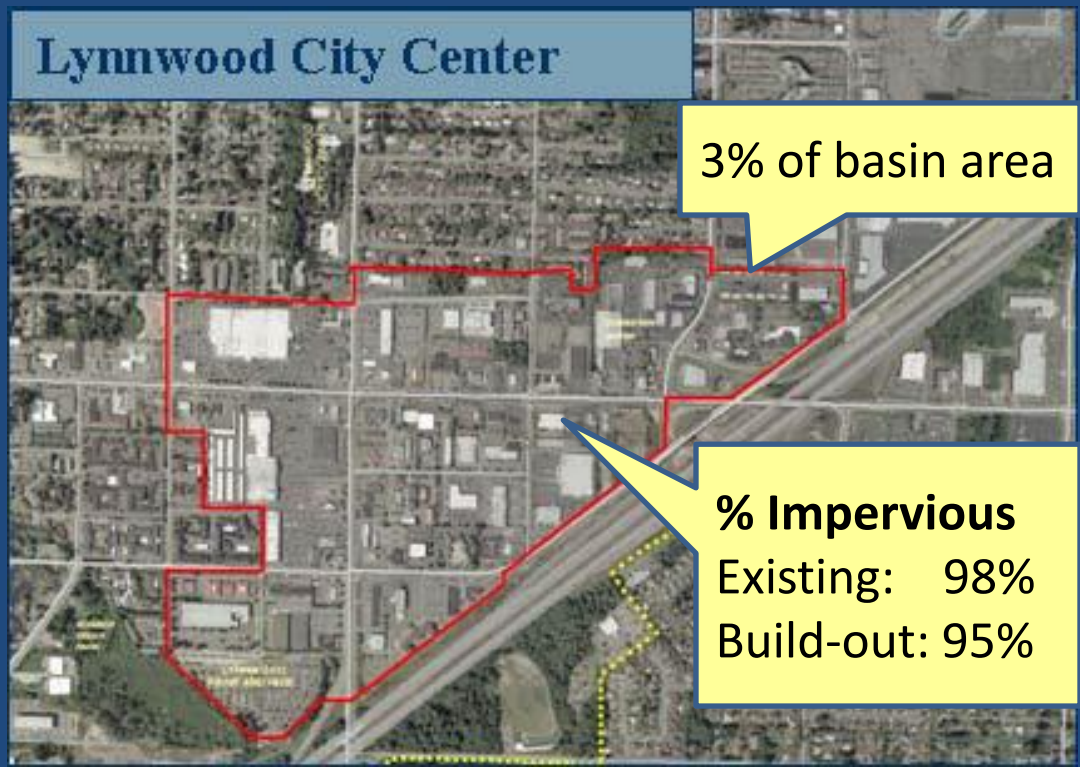
Lynwood City Center NPDES cost analysis

Herrera modeled creeks with Center at full build-out.

Environmental result:
Erosive floods would decrease from 7 ½ hours/year to 6 hours/year.

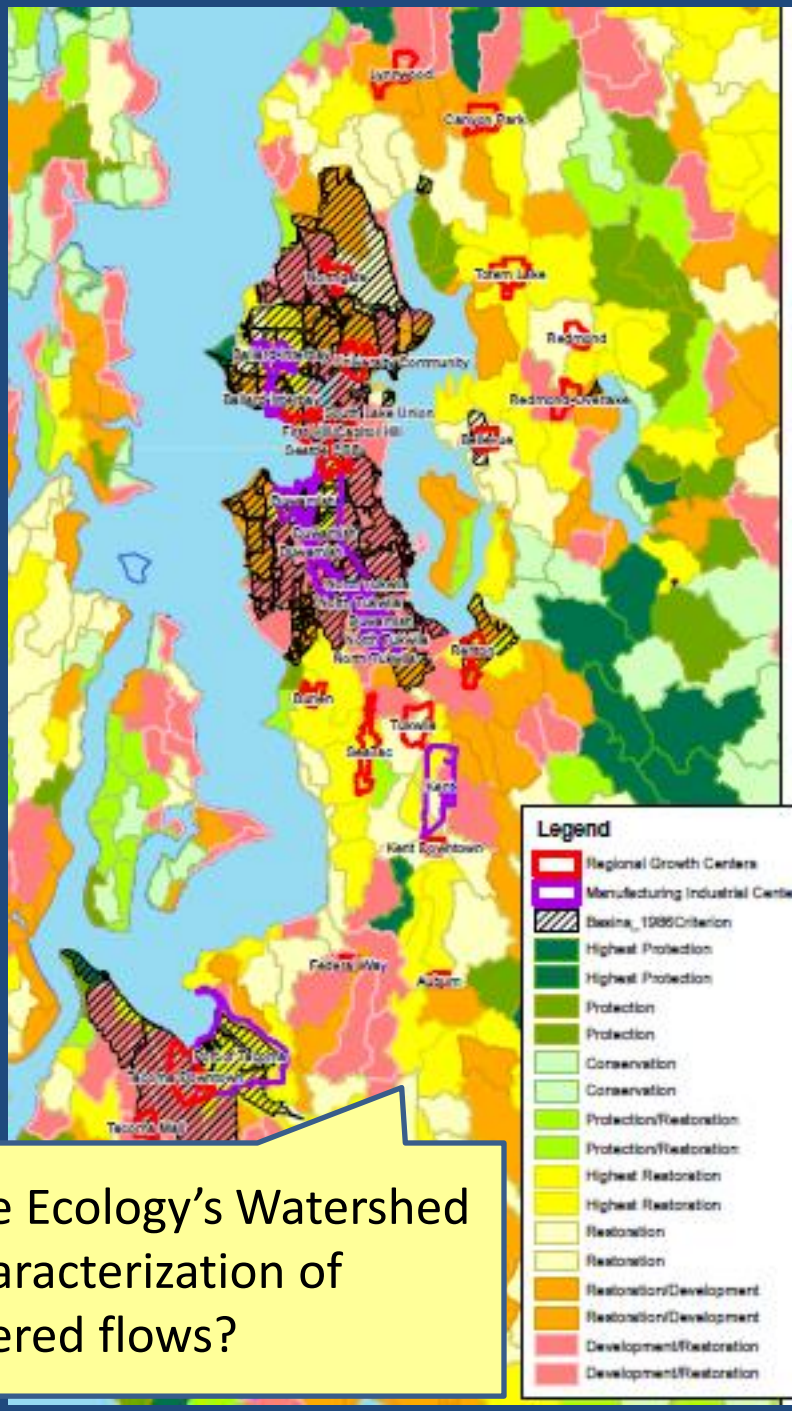
Cost: $120 Million for detention facilities to match forested conditions.

- Outside “40/20” zone
- Can’t pipe to exempt waters
- Bad soils for infiltration



Next steps?

- Grant opportunities? (Commerce/Ecology NEP due January)
- Collaborative, multi-disciplinary effort?
- Evaluate information from centers with different geographies and real estate markets?
- Develop options for stormwater management in centers?



Use Ecology's Watershed Characterization of altered flows?

Example of flexible approach?

- Regional Growth Centers: “sending areas”
- Each development still treats water quality on-site
- Developers pay fee-in-lieu for flow control (avoiding design costs and expensive land-consuming vaults)
- Spend $ on targeted improvements to stream hydrology where it makes sense

- Similar to Redmond watershed planning
- Variation of failed Clark County approach: more detail and accountability