A Northwest Vision for 2040 Water Infrastructure

Innovative Pathways, Smarter Spending, Better Outcomes

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Water Infrastructure: Boring? Maybe, but it’s essential!

Our communities rely on water systems to serve vital basic needs.

- Provide people an uninterrupted flow of clean water
- Process local wastewater and sewage to protect public health
- Prevent local flooding in big rainstorms
Innovative Pathways, Smarter Spending, Better Outcomes

- In OR and WA, our utilities are spending roughly $3B/year on water and wastewater infrastructure (storm/flood is add’l)

The Multi-Billion Dollar Question:

How do we get smarter about how we’ll invest this money?

- ‘Smart Spending’ = optimize long-term community value from these investments
- ‘Better Outcomes’ = Affordable-Sustainable-Resilient-Integrated
The Design Question:

How can Oregon and Washington develop one of the most sustainable, resilient, and affordable water infrastructure systems in the world - spanning water supply, wastewater, and stormwater-flood infrastructures?
Constructing a 2040 Northwest Vision for Water

- **Sit-down interviews** with 40 West Coast water leaders:
  - Utility execs, design innovators, engineers, non-profit leaders, tribal officials, and equity advocates

- **Thorough review** by 20-member Executive Review Team
Great Challenges Facing Water Utilities

Important, because we need healthy utilities:

- Disruptive Efficiency
- Really Old Infrastructure
- Capacity Deficit + Retirement Wave
- New Solutions Require New Playbook
- Earthquakes and Climate Disruption
The New Solutions Portfolio

- Water supply, wastewater, stormwater-flood infrastructure managed much more holistically

- Networks of micro-infrastructure optimally blended with legacy central systems

- Smart sensors and cameras inside pipes and other facilities supply real-time visibility (that is GIS-mappable)

- Green infrastructure at all scales reduces burden on gray infrastructure
Dynamic green building movement is pursuing ‘net-zero’ water buildings

Micro-Infrastructure examples:

- Cisterns that capture rainwater for onsite use and buffer stormwater flows
- Maximize water reuse and efficiency
- Bioswales and green roofs to capture rainwater and keep it from drains
- Technologies to process and purify wastewater at the building/district scales
Green Infrastructure Complements Gray

- GI deploys vegetation, natural systems to reduce the burden on legacy gray systems.
- Often costs less per gallon than expanding gray infrastructure facilities, yet adds multiple benefits for the community.
- GI works from the small- to landscape-scale. Examples:
  - Bioswales, rain gardens, green roofs/walls, urban wetlands and tree cover, watershed restoration, and headwaters protection.
- GI can:
  - filter water supply sources
  - cool wastewater discharge
  - slow and filter stormwater
Some Keys to Success

- Integrate across supply, treatment, stormwater - One Water
- Practice ‘the new investment discipline’
- Forge cost-share partnerships for multi-benefit projects

TOP 5 THINGS TO DO: Utilities, Policymakers
Build a Better Business Case ("Value Planning")

- Before committing real money to business-as-usual projects and programs:
  - Invite innovative ideas
  - Thoroughly compare options to find ones with the most community-wide benefits

- Measure full benefits and costs, and to do it on a life-cycle basis.
  - Within the department silo, to government more broadly, and to the community.

Shining Example: Seattle Public Utilities
Rethinking Investment Value

- Best investments ‘do more than one thing’ for the system - Can we stack Value Streams?

- For multi-benefit projects, can we cost-share with other investors?
Washington’s HB 1677: Smarter Spending, Better Outcomes

- HB 1677 enables the Public Works Board to make **grants to locals** for **pre-construction planning** that reflects the “**new investment discipline**”, specifically value planning and sustainable asset management.

- Creates **a vehicle for more comprehensive reform** -- a “System Improvement Team” looking across state infra programs to foster better integrated, more sustainable, resilient and affordable infrastructure systems.

Other key HB 1677 text:

“In providing loans and grants for public works projects…the board may require a local government to have **sustainable asset management** best practices in place…and undergo **value planning** at the predesign project stage, where the greatest productivity gains and cost savings can be found.”
Golden Economic Opportunity!
Infrastructure jobs = 11% national employment

A pro-active strategy to modernize infrastructure will:

✓ Build the green jobs talent pipeline for sustainable water infrastructure
✓ Bring on the next generation of utility leaders
✓ Bridge the urban-rural divide
  ▪ Restore gray and green infrastructure in the broader watershed
  ▪ Modernize irrigation
LinkedIn: Transforming Our Vulnerable Water Infrastructure - Rhys Roth

CH2M Webinar: June 8th

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Top 5 Things for Utilities To Do

Action Checklist for water, wastewater and stormwater agencies:

▶ Practice the New Investment Discipline
▶ Get on a Glide Path to Rate-Based Financing
▶ Bridge Silos and Forge Creative Cost-Share Partnerships
▶ Commit to Capacity and Innovation
▶ Tap Private Innovation
Top 5 Things for Policymakers to Do

Action Checklist for state and local leaders can do to help optimize water infrastructure spending:

- Align on Principles
- Set Goals, Get Lean
- Regulate to Performance, Manage for Outcomes
- Support Local Capacity Building
- Strategically Invest in Infrastructure Jobs