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 \(\textit{\text{storm/flood is add’l}}\)

The Multi-Billion Dollar Question:

How do we get \textit{smarter} about how we’ll invest this money?

- ‘\textit{Smart Spending’} = \texttt{optimize long-term community value from these investments}
- ‘\textit{Better Outcomes’} = \texttt{Affordable-Sustainable-Resilient-Integrated}
5 Big Goals for 2040: #2 in the Series -> WATER

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
Micro-Infrastructure Nested in Legacy Central Systems

- 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:
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