Water Sustainability

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Water Sustainability - Discussion Questions

1. What are the elements of water sustainability?
2. Do we have a common understanding of what constitutes “water sustainability”? Does one exist? Do we need one?
3. What is the ideal geographic scale to consider water sustainability?
4. What is the ideal timeframe for considering water sustainability?
5. How do we achieve progress toward water sustainability?
6. What is EPA’s role and opportunities to support progress toward water sustainability?
7. What are the right questions?

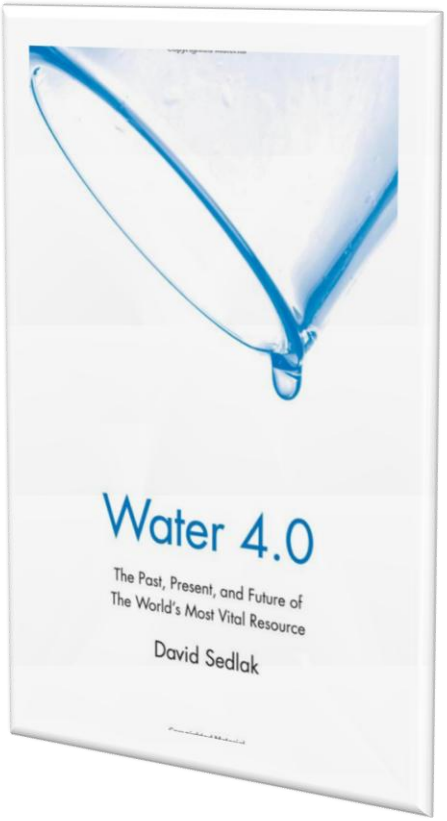
The Conversation is Happening

The Path to Water Innovation (Stanford & Brookings)

- Change in the water sector has historically been reactive instead of proactive.
- Identifies numerous barriers to innovating in the water sector.
- Several key recommendations:
  - Price water to the full economic cost
  - Revised reg. frameworks to make governance open and flexible
  - Financing and funding mechanisms (e.g., public benefit charge on water)

The Conversation is Happening

Water 4.0 – The Past, Present and Future of the World's Most Vital Resource (David Sedlak)



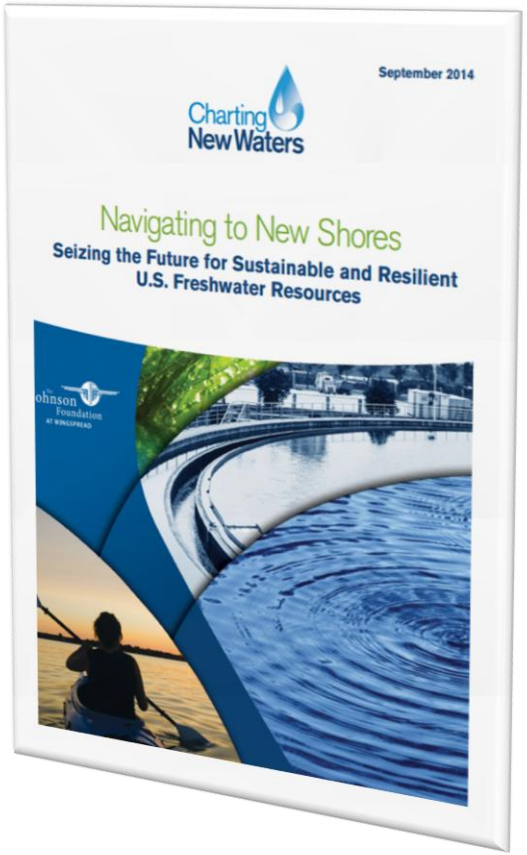
- **Water Supply**—Upgraded, centralized systems with imported water will be supplemented or replaced by desalination and potable water recycling along with array of water conservation incentives and measures.
- **Waste Treatment**—Centralized sewage treatment will evolve to systems that recover water, energy, and nutrients from sewage.
- Integration of water systems.

"To make informed decisions about the future, we need to understand the three revolutions in urban water systems that have occurred over the past 2,500 years and the technologies that will remake the system."

The Conversation is Happening

Navigating to New Shores – Seizing the Future for Sustainable and Resilient U.S. Freshwater Resources (Johnson Foundation)

- Elevate the profile and community involvement of utility managers.
- Researchers and their advocates cannot let up on new innovations.
- Policymakers need to prioritize flexibility to make room for innovative solutions.
- Elected leaders must champion the cause and maintain government investment.



"Across the nation, we are poised to adopt and scale up the most innovative technologies, management practices, policy incentives and financing strategies."

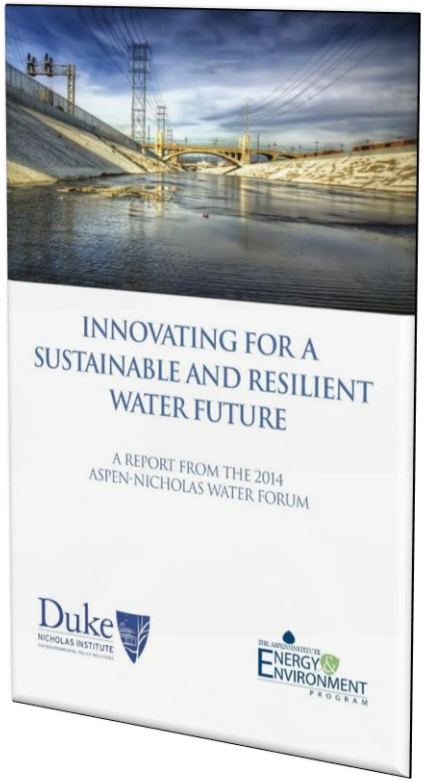
The Conversation is Happening

Expertise Represented

- Finance & Investment
- Utility Management
- Federal & State Policy
- Ecosystem Management
- Environmental Protection
- Technology
- Land Use Planning
- Energy
- Agriculture
- Communications

Innovating for a Sustainable and Resilient Water Future (Aspen-Nicholas Water Forum, 2014)

- Identifies challenges and near-term actions to address them.
- Discusses innovations in water finance and water technologies.
- Outlines priorities for the U.S water sector:
  - Disseminate and scale innovative practices
  - Focus on resilience as framework
  - Generate awareness of the value of water
  - Define & monitor the country's water budget
  - Help address federal-state-local water tensions.

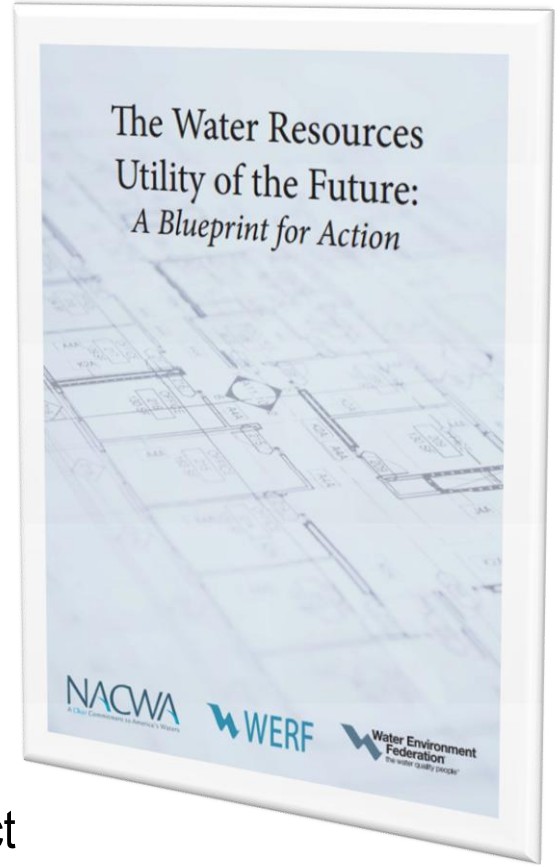


"State and federal authorities need to find a way to 'say yes' to new opportunities and then to help disseminate, translate, and scale the effective and efficient ideas."

The Conversation is Happening

The Water Resources Utility of the Future: A Blueprint for Action

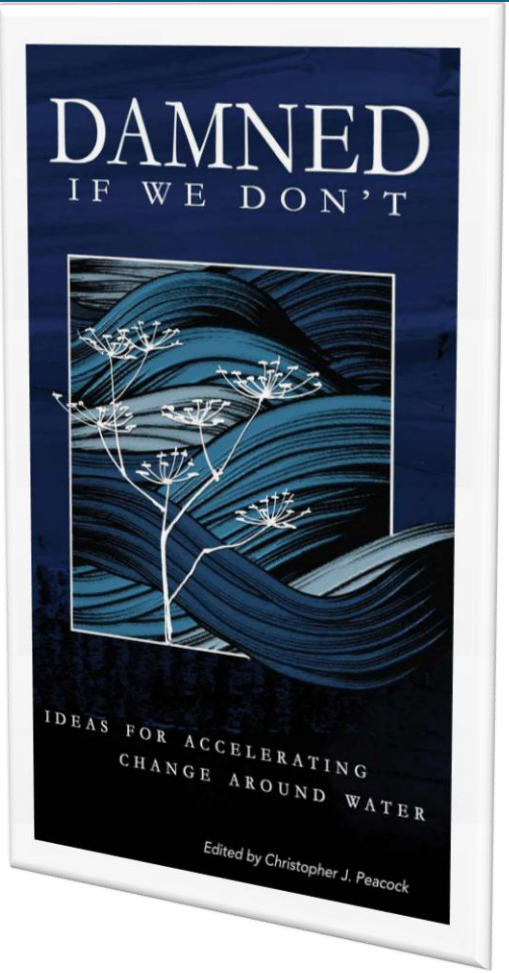
- Makes the business case for innovation.
- Comprehensive discussion of how to create an environment that encourages innovation.
- Identifies tangible steps in key areas of the water sector:
  - Regulatory environment
  - Financial support and investment mechanisms
  - Utility-led initiatives
- Describes concrete steps that can help enact the vision it lays out.



The Conversation is Happening

Damned If We Don't – Ideas for Accelerating Change Around Water - (Ed. by Christopher Peacock)

- Contains a series of essays written *for* and *by* members of the water sector.
- Essays highlight actions the authors and others are taking on a daily basis to accelerate change in the water sector.
- Changes discussed range from policy ideas to behavioral change and from new engineering to new technologies.



"Aside from getting people thinking about new ideas and engaging them in deeper dialogue, the real purpose for this book is to become a catalyst and mobilize a revolution around water."

EPA

The Conversation is Happening

Water Technology Innovation Blueprint – Version 2 (EPA)

- Ten “market opportunities” can be considered avenues for ongoing and future innovation.
- Identifies potential EPA actions that could encourage or make room for new techs.
- Water sustainability should be viewed holistically, by integrating what are often considered discrete actions.
- Report aggregates case studies, resources, and partners that support or exemplify innovation in the water sector.

http://www2.epa.gov/innovation/watertech

Market Opportunities for Water Technology Innovation – Blueprint Version 2

1. Conserving and Recovering Energy
2. Recovering Nutrients
3. Improving and Greening of the Water Infrastructure
4. Conserving and Eventually Reusing Water
5. Reducing Costs and Improving Techniques for Water Monitoring
6. Improving Performance of Small Drinking Water Systems
7. Reducing Impacts from Energy Production
8. Improving Resiliency of Water Infrastructure to the Impacts of Climate Change
9. Improving Access to Safe Drinking Water and Sanitation
10. Improving Water Quality of Our Oceans, Estuaries and Watersheds
11. **Putting It All Together – Achieving Water Sustainability!**

EPA

11. Putting It All Together: Achieving Water Sustainability

- **Challenge:** Our programs and priorities are frequently "siloed" and disconnected.
- **Aspirational Goal:** Imagine if we could integrate our programs and objectives and address/achieve all of the market opportunities (e.g. water, energy, nutrient recovery, climate resiliency) and achieve water sustainability!

EPA Actions to Promote Water Sustainability

- Advocate for technology innovation
- Communicate actions and successes
- Create regulatory space to foster technology innovation
  - Effluent guidelines that consider sustainability and innovation
  - Explore how NPDES permits can foster technology innovation
- Support for speeding delivery of proven technologies
  - Technology evaluation (e.g. LIFT, STEPP)
  - Regional Technology Clusters
- Facilitate Innovative Financing and Funding
- Support research, development, and demonstration projects

"We are making real strides, at EPA and across the entire water sector, to support the use of innovative technologies and practices to achieve a sustainable water future" – EPA Administrator Gina McCarthy

EPA

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