



INTEGRATED WATER MANAGEMENT ROADMAP

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ACKNOWLEDGEMENTS

This Integrated Water Management Roadmap was prepared by ProGov21, written by Maria Manansala, and Walker Kahn.



ProGov21 is a shared resource for progressive local policy makers and advocates alike. Operated and maintained by COWS, a national think-and-do tank based at the University of Wisconsin-Madison, ProGov21 offers a fully searchable digital library of progressive policies, practices, and other resources for 21st century local government.

The Problems & Progressive Local Solutions

Critical updates are needed across the water infrastructure in the United States. The last major national update to water infrastructure occurred after the Clean Water Act was passed in 1972. The updates that occurred in the 1970s largely impacted wastewater systems, leaving water infrastructure, especially drinking water infrastructure, to rapidly deteriorate. Many pipelines are still made from lead, a relic from the construction practices of the 1920s that still impacts community health today. Climate change is further exacerbating the weaknesses of our water systems – many utilities and cities struggle to address climate-induced challenges that are becoming more common, such as harmful algal blooms, increased precipitation or extended periods of drought.

Cities and water utilities are faced with a dilemma: if water service rates are increased to maintain and improve infrastructure, some local residents will face financial hardship and be priced out; however, if water rates remain static so as not to price out ratepayers, that may come at the expense of increasingly aging and failing infrastructure. At the fulcrum of this choice sits those most vulnerable to increases in rates: low-to-moderate income households, which are disproportionately made up of women and/or people of color.

Local governments should address water infrastructure as a critical investments in



public health, and develop an integrated water system framework to manage stormwater, waste water, and drinking water together. Through thoughtful updates local governments can, improve water quality and address climate change-related challenges, without overburdening local ratepayers. Some of these investments include removing lead-lined pipes, investing in stormwater infrastructure, and finding creative ways to make sure water is affordable.

Available Local Levers & Current Reforms

There are multiple ways to engage your local government in improving water infrastructure. Mayors, City Councils, public works directors, utility directors, county boards, county executives, and utility commissions can and should all be engaged to develop a water infrastructure plan with an eye towards affordability. Private utilities may be less susceptible to local pressure but are possible to engage.

The first step in moving forward with water infrastructure is developing a framework for integrated water management (IWM), and ProGov21 has the resources to make this happen. IWM is a system-level approach that focuses on the “triple bottom line” of social, environmental, and economic outcomes. Rather than viewing wastewater, stormwater, or groundwater sources as separate, IWM treats all water flows as interconnected. IWM strategies include:

- Surface water conservation that protects drinking water and drives recreational opportunities and economic development
- Wastewater reclamation and reuse that increases water total availability and allows utilities to transform biosolids into profitable products
- Stormwater infrastructure can not only filter and slow runoff to reduce erosion which protects water quality and reduces flooding risks, but can be coupled with rainwater harvest that reduces drinking water demand.

These programs can drive public health improvements, job creation, and economic development. There are a few different guides to help: American Rivers wrote a guide about [Integrated Water Management](#) (IWM), the Mayors Innovation Project also put together a brief on [IWM for cities](#). Another similar framework is “[One Water](#),” which was developed by the US Water Alliance. These frameworks help a city address its water infrastructure and resources holistically.

There are a number of great resources available on affordability around drinking water specifically. The University of North Carolina Environmental Finance Center has a [brief exploring the legal pathways towards assistance and water affordability](#). The National Academy of Public Administration explores “[Developing a New Framework for Community Affordability of Clean Water Services](#).” Seattle, WA has taken a [conservation of water approach](#), but still has centered making sure it is affordable. Philadelphia, PA in a water-rich area centering affordability with their [Tiered Assistance Program](#) that has developed income-based rates for their low-income residents.

But utilities and local governments will still need to finance these upgrades. The Mayors Innovation Project has a [guide for financing water systems](#), and Jersey Water Works has a brief on [how to access funding](#) for water systems that features state-level case studies.

Taking it to the Next Level

Many local governments have been taking the next step, and this is a combination of efficiency with building for climate change. Sheboygan, WI is one of these with their water treatment plant,



Philadelphia has made water a part of their sustainability plan, and LA's Green Retrofit Ordinance includes language on water-efficient landscaping and irrigation.

Further, the American Council for an Energy Efficient Economy has a toolkit for improving efficiency in water and wastewater treatment, while the EPA has published A Guide to Developing and Implementing Greenhouse Gas Reduction Programs in water and wastewater treatment.

The Center for Neighborhood Technology has a brief about protecting homes and businesses from rain during climate change, they also explore "The Value of Green Infrastructure." The Natural Resource Defense Council put together a case study on Syracuse, NY on green infrastructure. Washington, DC includes increased risk of flooding and stormwater in their plan for climate adaptation. For cities that aren't as rich in water resources, Tucson, AZ put together a long-term water plan centering conservation.

Beyond rates and climate change, the American Sustainability Business Council explores in Clean Water in the Upper Mississippi River Basin: Economic Importance, Threats, and Opportunities and The Business Case for Clean Water in the Upper Mississippi River Basin, why investing in water and clean waterways is a path towards economic development.

Allies, Comrades, and Helpers

The Mayors Innovation Project

The Mayors Innovation Project is a national learning network for mayors committed to shared prosperity, environmental sustainability, and efficient democratic government.

The Center for Neighborhood Technology (CNT)

CNT is a non-profit delivers innovative analysis and solutions that support community-based organizations and local governments to create neighborhoods that are equitable, sustainable, and resilient.

UNC Environmental Finance Center

The Environmental Finance Center at the University of North Carolina at Chapel Hill reaches local communities and state and federal programs through delivery of applied training programs and technical assistance, resource and interactive tool development, and in-depth applied research on best and emerging practices.

Water Center at Penn

The Water Center at the University of Pennsylvania is a trans-disciplinary applied research center focused on solving today's urban water challenges. Aligning the University of Pennsylvania's academic resources with water practitioner expertise, the Water Center at Penn combines policy, science and technology to create equitable, resilient and sustainable solutions.

US Water Alliance

The US Water Alliance is a member-supported non-profit, that educates the nation about the true value of water and proactively advances policies and programs that manage water resources to advance a better quality of life for everyone.

American Council for an Energy-Efficient Economy (ACEE)

The American Council for an Energy-Efficient Economy (ACEEE), a nonprofit research organization, develops transformative policies to reduce energy waste and combat climate change.



We continue the conversation of Integrated Water Management on **ProGov21's Podcast**. Our latest episode features Emily Miota & Katya Spear from the Mayors Innovation Project. Listen to our podcast on [our website](#), [Spotify](#), [Apple Music](#), or [Amazon Music](#).