Innovation in Action:
21st Century Water Infrastructure Solutions
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In the age of innovation, the concept of "infrastructure" needs an upgrade. That's especially true for water infrastructure as the climate changes and communities grow. Many, if not most, American communities are facing water management challenges – ranging from drinking water quality to managing stormwater runoff to securing water supplies. Infrastructure is the critical piece in ensuring water security, and it turns out that, as with many critical environmental solutions, distributed solutions really add up.

A new WaterNow Alliance report examines 13 programs in 12 cities and 9 states, finding compelling evidence of noteworthy water management gains in green stormwater infrastructure, conservation and efficiency programs and lead service line replacements. What links these initiatives is that **they all expand the definition of "infrastructure" to include strategies that are onsite and decentralized as a vital compliment to conventional water systems.**

Onsite strategies located at or near the point of use, and distributed across communities, have the potential to address major water challenges through an aggregation of impacts.

Distributed systems extend beyond the central water infrastructure of utility-owned pipes and plants. They include improvements, devices, and technologies installed onsite that serve the same functions as conventional water supply, treatment, and stormwater management systems. Examples include:

- Green Stormwater Infrastructure
- Onsite Re-use
- Conservation and Efficiency Programs
- Watershed Protection Efforts
- Lead Line Replacement

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The white paper highlights emerging localized infrastructure trends and patterns nationwide. The research finds that localized infrastructure solutions can often solve water challenges:

- More quickly
- More cost-effectively
- While providing more community co-benefits like cleaner air, cleaner water, better wildlife habitat, more equitable investment in green space, etc.
- In a way that helps realize the goal of fully integrated One Water water management

Localized Infrastructure Case Studies

Spotlighting projects in a diverse array of communities, landscapes, and ecosystems, the paper reviews notable successes including:

Tuscon, AZ

Thanks to an aggressive conservation program, Tucson now uses the same amount of water as in 1985, with a population increase of more than 226,000 people and 75,000 more service connections. Tucson has avoided costs of over $155 million in centralized infrastructure investments. Water rates are 15% lower than they would have been as a direct result of conservation investments.

Milwaukee, WI

Milwaukee Metropolitan Sewerage District's visionary GSI management program captures 40 million gallons per year of polluted runoff. MMSD anticipates saving $44 million in infrastructure costs. Because GSI is visible and accessible to the community, is less engineered, and can be installed on a homeowner's property, it is especially well-suited to community engagement, as well.

Madison, WI

A first-in-the-nation program successfully replaced virtually all lead services lines. At a cost of $15.5 million, the program has replaced over 8,000 lines, 5,600 of them on private property. 80% of the replacements were finished in the first six years of the program, including all lead lines serving schools and apartment buildings. The program has saved the City $2.5 million as of 2018.

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