

# NATIONAL WATER REUSE ACTION PLAN

## COMPLETED ACTION



**Action 11.3:** Develop and Highlight Case Studies Relevant to the Water in Circular Economy and Resilience (WICER) Framework

## Background

Communities interested in identifying alternative solutions for their water supply issues can learn from other communities' experiences with implementing innovative water reuse solutions. The World Bank developed a streamlined approach for preparing water reuse case studies from around the world as part of the [WICER framework](#). The WICER framework focuses on three key outcomes: delivering resilient and inclusive services, designing out waste and pollution and regenerating natural systems. Building on this previous work, Action 11.3 leveraged knowledge of U.S. water reuse projects and experiences to identify and share learning opportunities and reuse benefits tailored to the needs of underserved Americans and similar international communities.

The action team developed case studies that highlight the financial, institutional and policy aspects of U.S. water reuse projects. These case studies are useful resources for all communities—regardless of their size or experience with water reuse—because they share contextual information, motivation, tips for success, challenges and lessons learned. Action team members took on various roles to draft, participate in a review committee and validate the final case studies.

## Accomplishments/Impact

- Published nine [case studies](#) accessible on a public landing page to inform stakeholders on different ways that water reuse benefits communities (e.g., increase water supply, recharge aquifers and prevent flooding). The case studies describe various aspects of each project, including its source water, end use and treatment technologies; ability of project proponents to navigate the local policy, institutional and regulatory environment; financial or contractual agreements; benefits; and lessons learned. As of January 2024, case studies were individually authored by the World Bank, GHD, Jacobs, Stantec, New York City Department of Environmental Protection and EPA. Published examples include:
  - Corkscrew Swamp Sanctuary in Florida treats wastewater onsite for toilet flushing ([link](#))
  - Alaska Department of Environmental Conservation holds an onsite non-potable reuse competition to address rural water needs ([link](#))
  - City in Kansas uses lagoon system to treat wastewater for golf course irrigation (a *low-input technology*) ([link](#))
  - Fairfax, Virginia reuses water for landscaping and industrial cooling water ([link](#))
  - Microsoft reuses water which helps improve local groundwater supply in Washington State ([link](#))

## Action Team

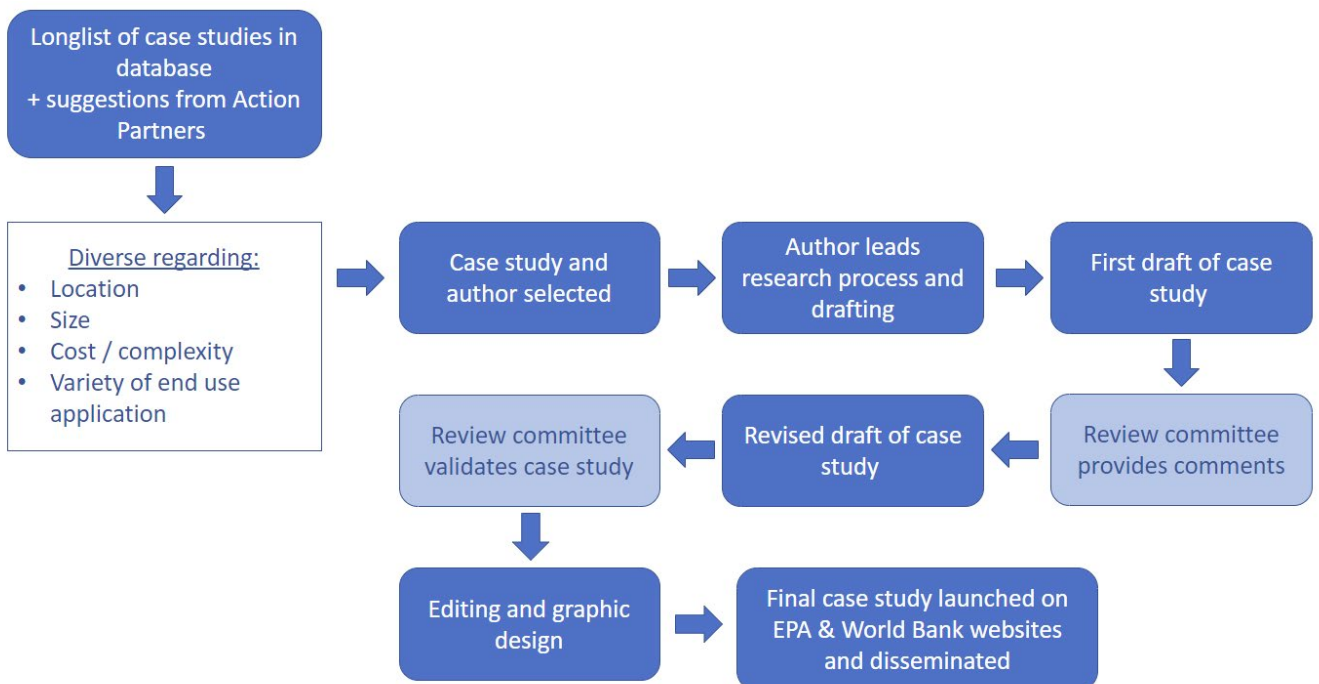
### Action Leaders

- The World Bank**
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### Action Partners

- American Water Works Association (AWWA)**
- CDM Smith**
- CHD**
- International Water Management Institute (IWMI)**
- Jacobs**
- Stantec**
- U.S. Department of State (DOS)**
- Xylem**

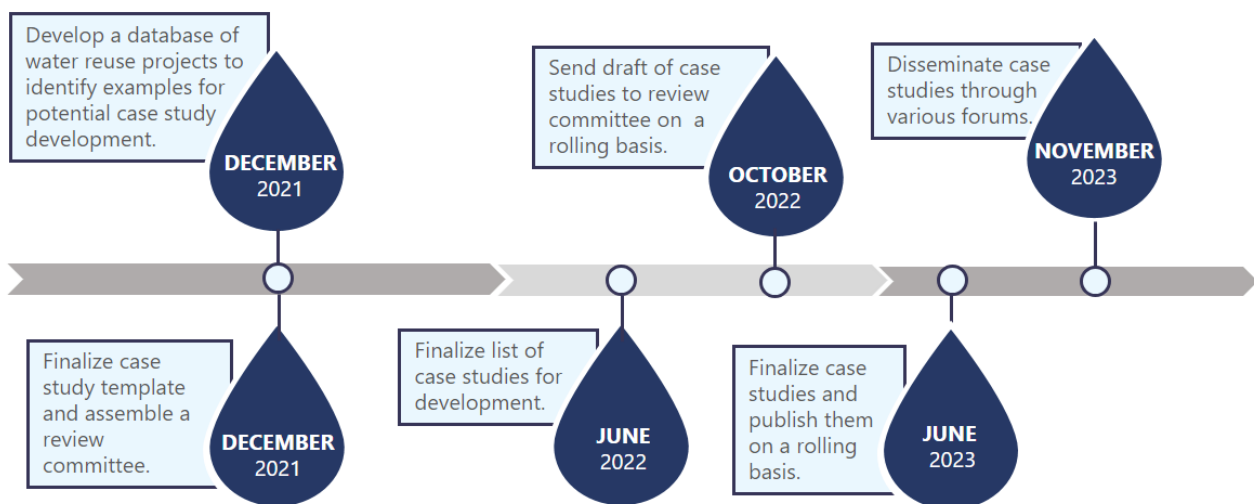
- Brooklyn, NY leverages new development project to reduce potable demand and improve sewer capacity ([link](#))
- Native American Tribe utilizes treated municipal wastewater for irrigation and wetland restoration ([link](#))
- Georgia city reuses treated wastewater for landscape irrigation and wetland maintenance ([link](#))
- LA County diverts stormwater for beneficial reuse to reduce experienced water stress ([link](#))
- Disseminated the case studies through various channels, including partner networks (e.g., AWWA and EPA newsletters), conferences (e.g., WateReuse California 2023 and ACE23), and websites (e.g., the World Bank's [WICER webpage](#) and EPA's [Water Reuse Hub](#)).
- Prior to case study development, the team compiled a [list](#) of water reuse projects. This list helped the action team ensure that the selected case studies were diverse in location, scale, complexity, cost and reuse type (e.g., water source and end-use application).
- Created a case study template based on the WICER framework to highlight different water reuse approaches that communities have taken to meet their water quality and quantity needs. This template addresses the categories decision-makers would seek information if were they to adapt and replicate these success stories to their own context, including lessons learned to capitalize on.
- Created a process for case study development to ensure consistency and opportunity for multiple rounds of feedback.



## Impact

- The case studies highlight water reuse in communities across different geographic regions of the United States. Case studies from areas with abundant annual rainfall (i.e., New York, Virginia) help to demonstrate drivers for water reuse projects that are unrelated to real or perceived water scarcity.
- The case studies include water reuse projects in communities of different sizes. Information shared in each case study can be used by communities who are looking to implement similar projects based on their needs, desired outcomes, and water source(s) and reuse application(s), among others. Reuse case studies that include low-input technologies (i.e., low-energy, low-cost, and/or low-maintenance technologies), such as lagoon treatment systems, are particularly relevant for small communities around the world.
- Publishing the case studies helps improve access to information about water reuse projects to the public. The collaboration with the World Bank and other global action partners ensures the case studies are disseminated to an international audience.

## Action Implementation Process



## Potential Future Activity

- Case studies will continue to be authored, published, and disseminated on a rolling basis.
- The action team will become an informal community of practice for continued exchanges.
- The Regulations and End-Use Specifications Explorer ([REUSExplorer](#)) tool links to summaries of state water reuse regulations or guidelines and is searchable by source of water and end-use application. EPA plans to link to the case studies on the REUSExplorer homepage to help users find tangible, successful examples of water reuse implementation.



## Additional Resources

- The World Bank. 2021. *Circular Economy: An Opportunity to Transform Urban Water Services*. <https://www.worldbank.org/en/news/feature/2021/09/16/circular-economy-an-opportunity-to-transform-urban-water-services>
- The World Bank. 2021. *Circular Economy Strategies Harness the Full Value of Water*. [https://youtu.be/xTwQxoq\\_Rg4](https://youtu.be/xTwQxoq_Rg4)
- The World Bank. 2019. *Wastewater? From Waste to Resource*. <https://www.worldbank.org/en/topic/water/publication/wastewater-initiative#casestudies>