

NATIONAL WATER REUSE ACTION PLAN

COMPLETED ACTION

Action 5.9 Identify Opportunities and Address Barriers to Nonresidential Onsite Rainwater and Stormwater Catchment Systems



Background

Throughout history, rainwater and stormwater harvesting have been used to extend water supplies, particularly in regions where other water resources are scarce or difficult to access. In recent years, policymakers and industry stakeholders have shown renewed interest in alternative water sources due to rising water demand, interest in conserving both water and energy, and an increased regulatory emphasis on reducing stormwater runoff volumes and associated pollutant loads.

Currently, rainwater and stormwater initiatives and treatment requirements differ by state, which can cause confusion and hinder implementation of these systems. To accelerate the adoption of rainwater and stormwater catchment systems, the action team published a literature review, a compilation of case studies, and a series of infographics illustrating the benefits and challenges of onsite rainwater catchment. Action leaders also published a white paper that highlights opportunities to remove barriers to broader implementation of rainwater harvesting.

Action Team

Action Leaders

- **ARCISA International, formally known as the American Rainwater Catchment Systems Association**
 - Heather Kinkade
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Action Partners

- **International Association of Plumbing & Mechanical Officials (IAPMO)**
- **Laborers' International Union of North America (LIUNA)**
- **United Association (UA)**
- **Rainwater Management Solutions (RMS)**

Accomplishments/Impact

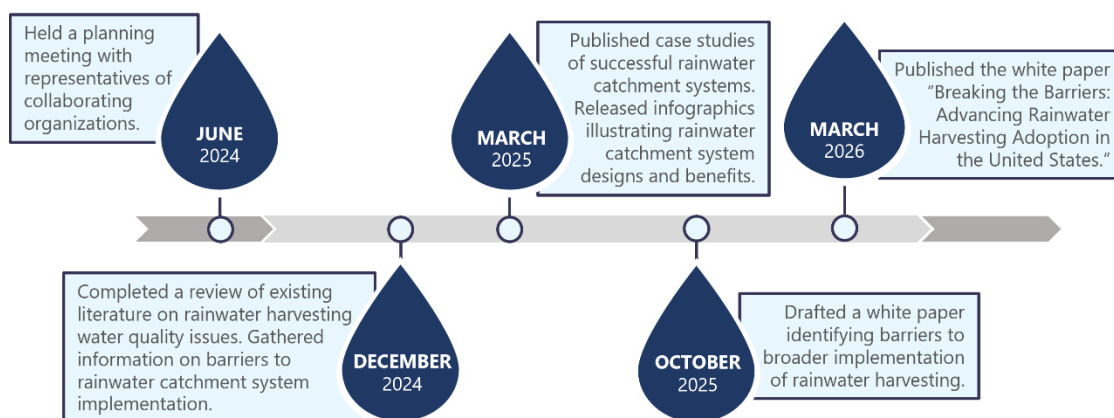
- Conducted an extensive [literature review](#) to identify research gaps related to rainwater harvesting water quality.
- Compiled [case studies](#) of successful applications of rainwater catchment systems to improve acceptance and implementation of these systems.
- Developed three infographics and a list of [rainwater harvesting benefits](#) to illustrate the basic components of rainwater catchment systems and highlight their advantages.
- Published a white paper titled "[Breaking the Barriers: Advancing Rainwater Harvesting Adoption in the United States](#)." Key takeaways from this document include:
 - Policy alignment, research and workforce development are needed to expand adoption of rainwater harvesting. Harmonized codes, national performance data and expanded professional training can significantly reduce barriers to implementation.
 - Rainwater harvesting supports water reliability and decentralized water infrastructure. By capturing precipitation at the point where it falls, rainwater harvesting can reduce stormwater runoff, supplement non-potable water supplies and strengthen community water resilience.

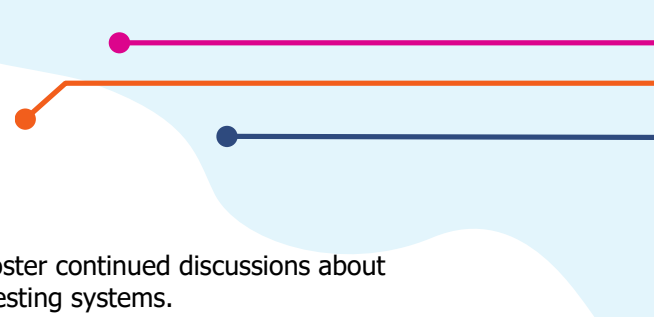
Lessons Learned

Developing the ARCSA/ASPE/ANSI Standard 63 Rainwater Catchment System Certification Program reinforced the importance of moving beyond component-based evaluation toward complete system performance verification. Throughout the development process, it became clear that one of the greatest barriers to broader rainwater harvesting adoption is the lack of consistent field verification, standardized operational review procedures, and long-term performance documentation. The work also highlighted the need for stronger alignment between design professionals, installers, inspectors, regulators and system owners to ensure that rainwater harvesting systems are not only properly designed, but also safely installed, maintained and operated over time. Perhaps most importantly, this effort demonstrated that certification programs can play a critical role in building public confidence, supporting workforce development, and advancing rainwater harvesting as legitimate distributed water infrastructure. Key lessons learned include:

- System-level verification is important; reviewing individual components alone is not as sufficient to ensuring safe and reliable system performance.
- Clear inspection procedures and standardized checklists improve consistency, accountability and long-term maintenance outcomes.
- Workforce training and professional certification are critical to successful implementation and industry credibility.
- Uncertainty and inconsistent permitting remain significant barriers to adoption across jurisdictions.
- Long-term operational data and performance monitoring are still needed to support broader engineering and municipal acceptance.
- Public understanding of rainwater harvesting improves when systems are framed as resilient water infrastructure rather than only conservation measures.
- Ongoing maintenance, documentation and renewal processes are necessary to maintain system integrity and public trust over time.
- Collaboration between industry professionals, regulators, utilities and public works agencies is essential for scalable adoption of decentralized water systems.

Action Implementation Process





Potential Future Activity

- Share findings at ARCSA International's annual conference to foster continued discussions about removing barriers to broader implementation of rainwater harvesting systems.
- Hold an annual Technical Symposium to provide stakeholders with a wider exposure to specifics of rainwater and stormwater harvesting to help align technical concepts and details across industries.
- Advance a collaborative approach to research, policy alignment and workforce development to accelerate the adoption of rainwater harvesting.
- Continue to educate state policymakers and the public on the basics of rainwater catchment systems and encourage industry to adopt a standard.

Additional Resources

- [Breaking the Barriers: Advancing Rainwater Harvesting Adoption in the United States](#)
- [Rainwater Harvesting Systems Literature Review – Water Quality](#)
- [Rainwater Harvesting Systems Case Studies](#)
- [Rainwater Harvesting System Infographic – Above Ground](#)
- [Rainwater Harvesting System Infographic – Underground](#)
- [Rainwater Harvesting System Infographic – Commercial](#)
- [Benefits to Implementing Rainwater Catchment Systems](#)
- [Barriers to Rainwater Harvesting](#)