



Water Harvesting Assessment Toolbox

Why a Water Harvesting Assessment Toolbox (WHAT)?

WHAT is a prototype decision aid designed to help communities in the Southwest US understand the role water harvesting can play in meeting water resource challenges while providing multiple additional benefits, such as mitigating urban heat island effects, reducing energy costs and meeting stormwater quality regulations. Developed at the University of Arizona, Water Resources Research Center, the project was funded through the Desert Landscape Conservation Cooperative, in conjunction with the US Bureau of Reclamation's WaterSMART program.

The need for a water harvesting assessment aid was evident because:

- Climate change impacts on supply and demand balances increase the value of water harvesting as a component of community response;
- Water harvesting has been identified as a method of sustainable stormwater management;
- Water harvesting can address water quality issues traditional stormwater infrastructure cannot;
- The costs and benefits of water harvesting have not been assessed comprehensively in the Southwest, so adoption can face resistance as an untested strategy; and
- Research on water harvesting has largely been conducted in more humid regions of the country, providing less guidance to jurisdictions in Southwestern states.



The Toolbox

The Toolbox was developed through consultation with technical experts and extensive outreach with municipalities, organizations, and water utilities in southern Arizona. These consultations ensured the Toolbox addressed the expectations and concerns of potential users.

The Water Harvesting Assessment Toolbox enables users to

- Identify and address water challenges in the community
- Learn the basics of water harvesting and its potential benefits
- Identify the possible challenges and barriers to implementing water harvesting
- Assess community water harvesting potential and select suitable techniques from a variety of options
- Determine and communicate their community's water harvesting priorities
- Develop a step-by-step plan to implement water harvesting in the community

Using the Toolbox

Designed to be used in a group setting by multiple community representatives with diverse perspectives and interests, such as water management, planning, sustainability and transportation, the Toolbox provides tools to carry out a facilitated, consensus-based assessment process. Detailed facilitator instructions are included, along with links to additional information and planning resources.

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The screenshot shows the website interface. At the top is the logo and navigation menu (Toolbox, Experts Directory, Publications, Resources). Below is a video player for "Guide to Assessing Rainwater and Stormwater Harvesting Potential to Meet Multiple Challenges and Provide Multiple Benefits". Underneath is a grid of 43 numbered information icons. A list of five tools is provided:

- 1 Water Harvesting Assessment Presentation:** The video presentation entitled "Guide to Assessing Rainwater and Stormwater Harvesting Potential" is a narrated, 95-slide, 54-minute video that leads users through eight steps, from general orientation to water harvesting strategies and techniques to specific water harvesting implementation options. The presentation is filled with visually appealing examples of water harvesting practices in arid and semi-arid environments, and prompts periodic discussions and real-time analysis of local water harvesting potential using the Tool 2 and Tool 3 spreadsheets.
- 2 Water Harvesting Assessment Spreadsheet:** This Excel spreadsheet consists of four data tables and associated charts that allow users to insert location-specific data to tabulate water resource challenges, water harvesting benefits, and future water harvesting priorities.
- 3 Catchment-to-Canopy Area Ratio Spreadsheet:** This Excel spreadsheet assists users in determining the optimum ratio of water harvesting catchment area to plant-canopy area. Rainfall, evapotranspiration, and plant water demand data are provided within the spreadsheet for urban areas in the Southwest US. The formulas and analysis process can also be used for other geographic locations by inserting location-specific data.
- 4 Water Harvesting Resource Website:** This website hosts links to numerous resources and in-depth information about the water harvesting topics introduced in the Presentation. Access these resources by clicking on the numbered orange circles as indicated during the Presentation. Further water harvesting resources are available through the Desert Water Harvesting Initiative main page.
- 5 Decision-Maker Presentation Template:** This customizable PowerPoint presentation allows users to insert their own site-specific water harvesting assessment results, graphs, photographs, and recommendations to provide a concise and effective PowerPoint presentation for decision-makers and the public.

