Shared Waters, Shared Future
Northeastern Illinois Regional Water Supply Sustainability Workshops

Water sustainability planning framework

Sustainable water planning means planning to meet today's water use and system needs without compromising future generations' ability to meet their needs — also while avoiding unacceptable social, economic, or environmental harm. What counts as unacceptable harm will vary depending on the community, regulatory requirements, system vulnerabilities, and the needs of both people and ecosystems. It may include impacts on public health, water system levels of service, ecosystems, long-term water supply availability, or affordability.

A key challenge in sustainable water planning is defining measurable, place-based goals and outcomes. Communities need to decide what sustainability looks like to them and how progress will be measured. Some examples include:

- Keeping deep aquifer water levels above thresholds that protect municipal well performance
- Reducing chloride risks so shallow groundwater remains usable and affordable to treat
- Setting water rates that support infrastructure investment while maintaining affordable access to water (for a Lake Michigan-dependent community)

Sustainable water planning can be challenging because communities must identify priorities, translate them into measurable outcomes, and gather the data and conduct the analysis needed to set realistic targets and track progress.

The following planning framework was created to compliment the Shared Waters, Shared Future: Creating a Water Sustainability Plan workshop. It presents seven core components of a water sustainability plan, defining the purpose and outlining typical elements and outputs. The framework is meant to guide practitioners through the water sustainability planning process and can be adapted based on their community's unique needs.

1. Define the water sustainability challenge

Purpose
Establish the problem and need for action.

Typical elements

- Water supply sources and constraints
- Long-term demand pressures
- Climate, growth, or regulatory risks
- Community priorities

Outputs

- Problem statement
- Planning goals
- Planning horizon (often 20+ years)

2. Understand the system

Purpose
Build a baseline understanding of the water system.

Possible components

- Water supply sources
- Infrastructure and treatment systems
- Distribution networks
- System interconnections
- Water loss and system performance

Common tools

- Asset inventories
- Infrastructure assessments
- Water loss audits
- Source water assessments

3. Improve data and analysis

Purpose
Strengthen the information used to support planning decisions.

Possible components

- Water demand trends
- Water use reporting
- Long-term demand projections

- Aquifer or supply modeling
- Monitoring systems

Common tools
- State reporting systems (e.g., Illinois Water Inventory Program)
- Demand forecasting
- Sustainable yield analysis
- Scenario modeling

4. Coordinate across communities

Purpose
Address water supply challenges that extend beyond individual jurisdictions.

Possible components
- Regional infrastructure coordination
- Shared modeling or data systems
- Governance structures
- Intergovernmental agreements

Examples
- Regional planning alliances
- Joint water agencies
- Shared infrastructure planning

5. Build capacity for planning and implementation

Purpose
Ensure communities have the resources needed to act.

Possible components
- Technical expertise
- Staffing capacity
- Funding mechanisms
- Partnerships and support organizations

Examples
- Regional technical assistance
- Grants and financing tools
- Cross-agency coordination

6. Identify strategies and actions

Purpose
Translate planning into concrete steps.

Possible components

- Conservation programs
- Infrastructure improvements
- Source diversification
- Demand management strategies
- Land use coordination

Examples

- Water efficiency rebate programs (e.g., toilet or fixture replacement)
- Leak detection and repair initiatives
- New or expanded interconnections with neighboring systems
- Aquifer storage and recovery or alternative supply development
- Water-efficient land use or landscaping ordinances

7. Drive implementation and monitor progress

Purpose
Track progress and adapt over time

Possible components

- Implementation timeline
- Responsible organizations
- Performance metrics
- Monitoring programs
- Plan updates

Examples

- Phased capital improvement plans tied to funding cycles
- Assignment of roles across utilities, municipalities, and partners
- Key indicators such as per capita water use, system losses, or supply reliability
- Periodic progress reporting
- Periodic plan updates