RECLAMATION Managing Water in the West

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Research and
Development Office
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The Knowledge Stream

Research Update

Tool for Planning Temporary Water Supplies for Drought Emergencies

Compendium of information and guidance to assist communities challenged by drought

Bottom Line

The tool is an interactive compilation of information for water utilities and city planners to help plan for an emergency water supply during droughts or other shortage situations.

Better, Faster, Cheaper

City planners and others can access one location to find the information they need to plan for water sources in a drought emergency.

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Collaborators

Reclamation:

- **Oklahoma-Texas Area Office**
- **Nebraska-Kansas Area Office**
- **Office of Policy's Drought Program**

Texas Water Development Board

Texas Division of Emergency Management

Texas Commission on Environmental Quality

Problem

Droughts are common in the arid west, and planning for emergency water supplies during droughts is critical. However, every situation is unique, involving different potential water sources and water issues. Cities and smaller municipalities often do not have access to the expertise needed to plan for droughts or to develop emergency water supplies. Nearly 1,000 Texas communities were directly impacted by drought in 2011-2012. These small towns are being challenged to expand their concept of "usable" water. However, there are institutional and financial barriers to implementing temporary water supplies for drought responses. Local utilities may not know about advanced water treatment methods that can salvage good water from sources with high salt content, high turbidity, or organic carbon contamination from high temperatures and low precipitation.

Solution

We developed a tool to help local governments (both in cities and rural areas) to plan for water shortages. This tool is an interactive cd/powerpoint guide with links to websites, documents, and worksheets. In this guide, users can find information on alternative sources, treatment processes, distribution options, short-term equipment solutions for treatment, and the regulatory process for emergency situations.

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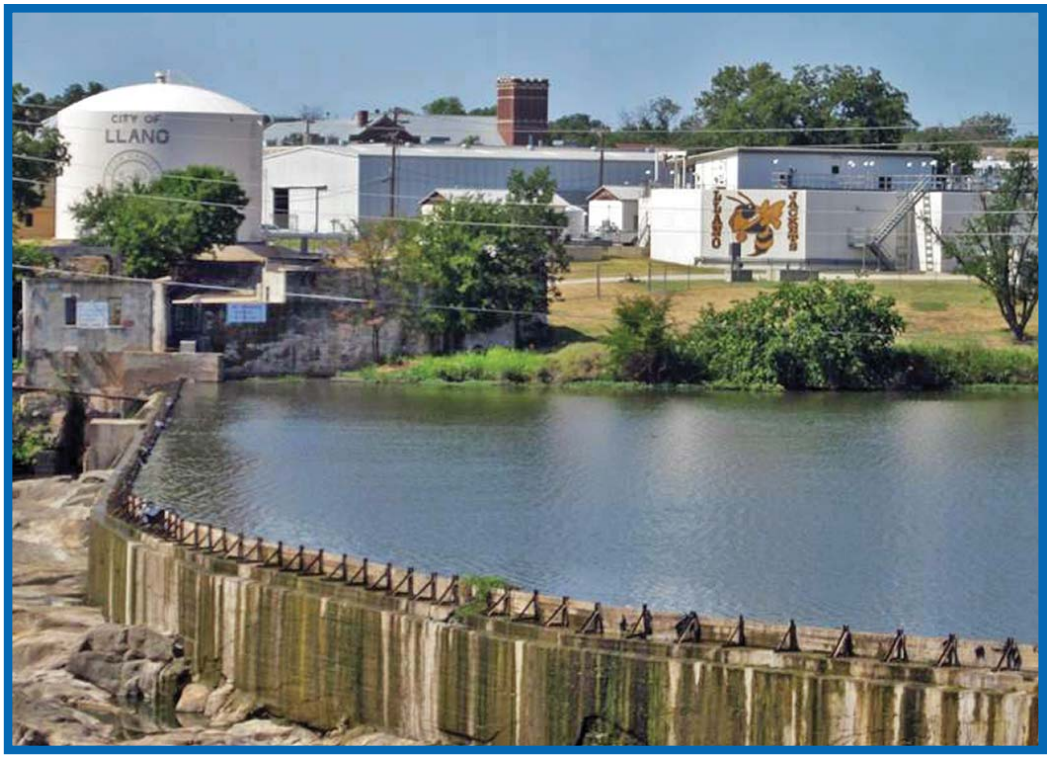

Temporary flashboards help expand water storage in Llano, Texas, 2012. This impounded supply would last for 186 days.

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Reclamation's Science and Technology Program provided the seed money for this program for a short guide in 2012. Other Reclamation offices (the Oklahoma-Texas Area Office and the Office of Policy's Drought Program) saw the value in this work and took on the challenge of expanding the guide and tools. To test the usefulness of the Drought Tool, we conducted case study interviews in four Texas towns: Llano, Florence, Haskell, and Hale Center.

Through interviews and analyses in these case studies, we found that:

- The city managers are very knowledgeable about their potential backup sources of water, but were not always certain how to secure the backup supply, how to treat it, or how it would be permitted.
- The city managers are interested in investing in permanent solutions rather than temporary solutions; however, much of the drought relief funding available was for temporary measures.
- Regulatory personnel are passionate about protecting public health and community resources. Lack of information can lead them to advise small rural communities to haul water from approved water utilities in an emergency, which can be the most expensive alternative.

The tool covers key topics for planners, such as:

- Drought contingency planning resources
- Determining emergency water capacity needs
- Evaluating alternative water sources
- Regulated contaminants
- Treatment processes
- Waste management
- Water system regulations—who to call for what
- Temporary treatment equipment resources
- Public relations ideas

Each section provides information on a decision that planners must make to prepare a practical plan for emergency water supplies.

The tool provides:

- Links and explanations of Texas' drought planning resources
- A worksheet to estimate emergency water supply requirements
- Links for guidance and worksheets to determine potential sources of emergency water
- Guidance and links for treating those sources and managing the waste that will be generated
- Ideas for distribution of emergency water
- A clear plan for navigating the regulatory process

"This work is an impressive effort. I see this tool as a foundational contribution that will evolve with use and time—which will in itself be a good measure of success."

Jorge Arroyo,
Director, Texas Water Development Board,
Innovative Water Technologies

Water rationing in Florence, Texas, helped stretch water supplies after the city's main well was out of commission.

More Information

The Drought Tool is available on request.

Future Plans

This year, we will provide a similar tool for Oklahoma and Kansas, with funding from the Office of Policy's Drought Program and the Nebraska-Kansas Area Office.