

Workshop Guide and Interactive Templates

Texas Water Data Workshop

- Agenda
- Workshop Objectives
- Work Group Templates
- Glossary and Definitions

Connecting Texas Water Data Workshop

April 17, 2018

Doors open at 8:30 AM -- Check-in, coffee

Workshop starts at 9:00 AM

Opening Plenary Session. (9:00 AM – 10:00 AM)

- Welcome and introduction: Sam Hermitte, Assistant Deputy Executive Administrator, Texas Water Development Board.
- Introduction to the Texas Advanced Computing Center: Dan Stanzione, Executive Director of TACC and Assistant VP for Research at UT-Austin.
- Background/Orientation to the Internet of Water Initiative: Martin Doyle, Director of Water Policy Program, Nicholas Institute for Environmental Policy.
- Instructions/Workshop Process: Rudy Rosen and Susan Roberts, Director, Institute for Water Resources Science and Technology, Texas A&M University-San Antonio and Director, Water Systems Division, Texas Center for Applied Technology.

Breakout (Small Group) Work Sessions. (10:00 AM - 11:00 AM)

- **Big Picture:** Identify, describe, and list 1) who needs, 2) what data, 3) in what form, 4) to inform what decisions about water in Texas, including water supply, water quality, and environmental resources.
- **Data Gaps and Access:** Define the desired future water data management and access in Texas, by listing key attributes of a comprehensive open access water data information system capable of informing comprehensive water management decisions.

Plenary Synthesis Session and Group Discussion. (11:15 AM – 11:45 AM)

- Reporting of breakout session results. Facilitators.
- Synthesis and perspectives on morning sessions. Martin Doyle.

Keynote Address and Data Collaboration Networking Lunch. (11:45 PM – 1:00 PM)

- Keynote address. Kathleen Jackson, Board Member, Texas Water Development Board.
- Data Collaboration Networking lunch.

Breakout (Small Group) Work Sessions. (1:00 PM - 2:45 PM)

- **Texas Use Cases:** To initiate development of use cases for Texas water by identifying critical needs of Texas data providers and consumers. Following a template, facilitators will lead workshop participants in developing draft use cases across water topics and objectives.
- **Springboard to the Future:** Speed- list ideas on next steps to further define, design, and build a water data system for Texas.

Plenary Synthesis Session and Group Discussion. (3:00 PM – 4:00 PM)

- Reporting of breakout session results. Facilitators.
- Synthesis and perspectives on sessions. Martin Doyle.
- Open discussion: consensus building ideas and “next steps.” Rudy Rosen.
- Summary and closing statements: Sam Hermitte.

OPTIONAL: Guided Tour of the Texas Advanced Computing Center (4:10 PM)

Connecting Texas Water Data Workshop

Texas' public and private companies, organizations, and agencies have collected water data for different purposes and at different scales for many years. These data are scattered across multiple platforms with different standards, often making important data sets inaccessible or incompatible. This leaves Texas' decision makers, industries, landowners, and communities with significant amounts of data of limited use to support real-time decision making, development of opportunities for water security, or for modeling an accurate picture of Texas' water future. To be useful in decision-making, water data must not only be open and transparent, but presented in a way that is relevant to the needs of decision makers.

A water data system for Texas that supports access to an accurate accounting of supply, quality, and use of water will better support decision makers in their efforts to enhance sustainable water use. Improved access to and standardization and integration of data, will provide water managers and decision makers a better basis for data-driven decision making enabling them to more confidently meet urban, agricultural, ecological and industrial needs for water.

Our goal is to engage workshop participants – all leading Texas water stakeholders – in the identification of critical data needs and in the design of a data system that facilitates access to and use of water data in Texas.

Objectives for the workshop include the following:

1. **Big Picture:** To identify, describe, and list 1) who needs, 2) what data, 3) in what form, 4) to inform what decisions about water in Texas, including water supply, water quality, and environmental resources.
2. **Data Gaps and Access:** To define the desired future water data management and access in Texas, by listing key attributes of a comprehensive open access water data information system capable of informing comprehensive water management decisions.
3. **Texas Use Cases:** To initiate development of use cases for Texas water by identifying critical needs of Texas data providers and consumers. Following a template, facilitators will lead workshop participants in developing draft use cases across water topics and objectives.
4. **Springboard to the Future:** Speed-list ideas on next steps to further define, design, and build a water data system for Texas.

BIG PICTURE

Participant Name					
Who Needs	What Data	In What Form	For What Decision		

DATA GAPS & ACCESS

Participant Name _____

Your experience with situations in Texas water that arise from lack of data, or lack of accessible data?

Your vision for desired future of water data management in Texas:

Your list: key attribute of an open access data / information system:

Use Case Template

To help organize and make a clear case for improved access and use of data to manage water supplies in the future, efforts of the Aspen Institute and others have developed a “use case” model that serves as a useful tool for organizing and assessing stakeholder data needs and communicating those needs to decision makers.

To begin working in this direction, participants in the Connecting Texas Water Data Workshop will begin the process of building use cases by helping identify the top ten or twenty possible examples of gaps in data availability, access, and integration that impede decision-making. To achieve this, workshop participants should have a good conceptual understanding of use cases designed to inform decision making. Participants will be supplied with a model template to build a well-organized use case and will have opportunity to look through samples of use cases already developed for application elsewhere.

Definition, Model, Examples, and Template

A use case is a short summary organized in a fashion that helps list in a concise and consistent format the data gaps, needs, and uses for a particular objective. It communicates a set of answers to the question of, who needs what type of data in what form to make what decision(s)? They also provide a way to identify critical data sources or sets where interoperability is important. We envision that use cases will be responsive to stakeholder data needs, as well as useful for technical developers seeking to better understand the data needs of system users. While there can be numerous ways to display a use case, we will follow the model below and provide a blank use case template for use by participants at the workshop.

Examples

<https://www.law.berkeley.edu/wp-content/uploads/2018/01/DFWD-Use-Cases.pdf>)

Model use Case Template and Explanation (see following pages)

Objective	The objective is the decision, goal, or desired action to be achieved. The objective describes what is to be accomplished.			
Description	The description is any defining information about context and background that might help a reader understand the objective or added details of the topic in general.			
Participants	The participants section provides a list of the main decision-maker (s) and other key parties involved or affected. Attributes or contact information for participants may be listed here, if desired.			
Regulatory Context	The regulatory context lists any laws, statutes, rules, regulations, reporting requirements, legal operational constraints, and governmental agency programs either existing or under development. This category may also include boundaries, for example geographic borders, time-based reporting requirements, and financial limits.			
Workflow	Workflow describes the steps, listed as specific actions and in order of occurrence if possible, to be taken by the participants in order to accomplish the objective.			
Data Sources	Data sources are the repositories, locations and holders of recorded measurements or properties collected and assembled about water. Data sources may be well defined and assembled or largely unconsolidated. Data gaps desired to be filled may be listed here as well as existing data. The sources should be listed in sufficient detail to be identified and located. Here is a table format that can be used for this purpose and nested here or added as a separate table.			
	Data Category	Description	Data source	Access Method
	Water	Water availability	USGS web site for gage data	https://wdr.water.usgs.gov/
	Agriculture	Evapotranspiration	Texas Water Development Board Precipitation and Lake Evaporation Data	http://www.twdb.texas.gov/surface water/conditions/evaporation/
	Infrastructure and utilities	Records of electricity used for pumping	Data collected by permittee	Not available at aggregate level—data collected for each individual case
	Land use	Aerial photos	Satellite imagery - Google Earth	https://www.google.com/earth/
Data Characteristics	Data characteristics includes notes about the type, form, and format of data that would be most useful for making decisions, including anything out of the ordinary about the data.			

Workshop Participant Name				
Objective				
Description				
Participants				
Regulatory Context				
Workflow				
Data Sources	Data Category	Description	Data source	Access
Data Characteristics				

SPRINGBOARD TO THE FUTURE

Participant Name _____

In your view, what are the next steps for water data management in Texas?

GLOSSARY

Data-driven decision making - The practice of making choices based on analysis of data rather than on experience or intuition.

Data hub - An independent location or system where data is stored that connects to data from multiple sources, while maintaining the autonomy of the independent location or system.

Data gap - Where information critical to decision making is either not available at all, or where information exists or is available but is not in a suitable format or accessible for decision making processes or other uses.

Data system - Software or hardware that is used to collect, organize, archive, distribute, or integrate data.

Decision support system - A modelling or analytic tool used to help guide decisions by processing and synthesizing data into information.

Information - Data that have been processed, analyzed, or synthesized so they can be used to answer questions.

Information system - Software or hardware that is used in the processing, analysis, or synthesis of data so they can be used to answer questions.

Interoperability, interoperable - The ability of multiple computing or other information management systems to operate on the same data and produce the same analysis or results.

Metadata - Data that describe and give information about other data.

Open - The ability to have access to data using open-source and open-architecture protocols and methods.

Stakeholder - Anyone with an interest in the outcomes of Texas' progress on water data, including data users and data producers from relevant sectors of government, industry and civil society.

Water security - The ability to access water at sufficient quantity and quality to sustainably meet agricultural, ecological, industrial, military, public health, sanitary, and urban needs.

Water data - Quantitative or qualitative representations or measurements of properties of water or water related measurements.

Use case - A short summary organized in a fashion that helps list in a concise and consistent format the data gaps, needs, and uses for a particular objective. The objective is what decision, action, or other thing needs to be accomplished. For the workshop this can be a need of data managers, providers and/or data consumers. A use case communicates a set of answers to the question of, *who* needs *what type* of data in *what form* to make *what decision(s)*. Use cases will support display of a water decision making process and the data needs associated with that process.