
Preliminary Agenda and Overview

2016 Texas Water Roadmap Forum

A Facilitated Interdisciplinary and Multi-Stakeholder “Charrette”

Organized by:

The Texas Water Development Board



and

**The National Science Foundation (NSF)
Research Coordination Network (RCN) on
Climate, Energy, Environment and Engagement in Semiarid Regions
(CE3SAR)**



Host, Location and Date:

The Vista Room

Institute for Water Resources Science and Technology

Texas A&M University - San Antonio

One University Way, San Antonio, TX 78224

**Coffee, pastry and registration
8:15 a.m. to 8:55 a.m.**

**Forum
9:00 a.m. to 4:00 p.m.**

November 29, 2016

The Forum Agenda & Charrette Activities
A&M-SA – Vista Room, 4th Floor, Central Academic Building Bldg.
8:15 a.m. – 4:00 p.m. • November 29, 2016

Registration and Breakfast

8:15 a.m. – 8:55 a.m.

Plenary Session 1: “Establishing the Point of Departure for the Forum & Charrette Process”

9:00 a.m. – 10:00 a.m. (60 minutes)

Welcome, Introduction to charrette objectives and logistics, and TWDB opportunities

- o Introduction of sponsors and background, examples, and significance of preceeding water forums - Rudy Rosen [5 minutes]
- o Presentation of the charrette process, scope, pre-charrette survey results, and "Rules of Engagement" - Jorge Venegas [10 minutes]
- o Facilitated plenary discussion on, and formal documentation of, roles, drivers, and expectations of the charrette participants - Jorge Venegas [10 minutes]
- o Welcome to A&M-SA and Introduction by Dr. Cynthia Matson, A&M-SA President, and sponsors [5 minutes]
- o SWIFT Funding and other opportunities – Kathleen Jackson (TWDB) [25 minutes: approx 15 min. presentation and 10 min. Q&A]

<i>Breakout Groups Assemble 10:00 a.m. (groups may take short breaks as needed)</i>
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Breakout Session 1: “Breakout Group Discussions Round 1”

10:00 a.m. – 12:00 a.m. (120 minutes)

Facilitated Breakout Group Discussions. Participants select their first choice of discussion topics.

- o Breakout Group No. 1a: **Data, Information, Communication, Sharing, Expertise**
This breakout group will focus on a discussion overcome impediments to communicating, transmitting, and accessing data, research needs, expertise, and other information about Texas water science, policy, and research to increase and improve its use by decision makers, agencies, and others. How can information be shared most effectively and efficiently? Ideally, who should lead efforts to develop information sharing resources?
- o Breakout Group No. 1b: **Workforce, Education Needs**
This breakout group will focus on a discussion of the need for more highly educated, skilled, and degreed workers for the future. What are current and future water workforce needs? How do we address these needs to the benefit of Texas' water industries, groundwater conservation districts, utilities and others?
- o Breakout Group No. 1c: **Research Needs I**
This breakout group will focus on a discussion of the most pressing current and future research needs in the areas of **water sources and transport**, including but not limited to the following: conventional sources, reservoirs, brackwater, aquifer storage and recovery, gray water, reuse, pipelines, monitoring, rainwater harvesting, energy usage, aging infrastructure, and loss/leakage.
- o Breakout Group No. 1d: **Research NeedsII**
This breakout group will focus on a discussion of the most pressing current and future research needs in the areas of **water use and enabling technologies**, including but not limited to the

following: agriculture, municipal, industrial, new technologies, membranes, user behavior and perceptions, valuation, infrastructure and aging, regulatory environment, artificial wetlands, education, “big” data, information management, and smart systems

[Note: Depending on the number of charrette participants and their interest in specific topics, additional breakout groups may be formed, as needed]

Lunch Break, Networking and Plenary Session 2 12:00 p.m. – 1:00 p.m. (60 minutes)

Plenary Session 2: “Setting the Stage for Action”

12:00 p.m. – 1:00 p.m.

- o The National Science Foundation RCN-CE3SAR – Luis Cifuentes [5 minutes]
- o Partnerships for action – Andrew Sansom (Meadows Center for Water and Environment) [25 minutes: approx 15 min. presentation and 10 min. Q&A]
- o Texas Water Development Board expectations for the afternoon charrette – Robert Mace [5 minutes]
- o Presentation of the charrette process, scope, and “Rules of Engagement” - Jorge Venegas [10 minutes]

Breakout Groups Assemble 1:00 p.m. (groups may take short breaks as needed)

Session 3: “Breakout Group Discussions Round 2”

1:00 p.m. – 2:30 p.m. (90 minutes)

Facilitated Breakout Group Discussions. Participants select their choice of discussion session.

- o Breakout Group No. 2a: **Funding Opportunities**
This breakout group will focus on a discussion of funding opportunities that are available to address identified needs. Are there partnerships that can be created to access these opportunities, either now or in the future? In particular, how does SWIFT funding factor into addressing the needs identified in earlier breakout sessions.
- o Breakout Group No. 2b: **Partnership Opportunities**
This breakout group will focus on a discussion of partnership opportunities that are available to address identified needs. Are there funding opportunities that can be sought using these partnerships? In particular, how does SWIFT funding factor into addressing the needs identified in earlier breakout sessions.

[Note: Depending on the number of charrette participants and their interest in specific topics, additional breakout groups may be formed, as needed.]

Plenary Session 3 2:45 p.m. – 3:45 p.m. (45 minutes)

Plenary Session 3a: “Plenary Presentations - Breakout Group Discussions Round 1”

2:45 p.m. – 3:15 p.m. (30 minutes)

Each Breakout Group will present the highlights of their discussions in Round 1 to all participants in the charrette [7 minutes + 2 minutes Q&A each, strictly timed; length will be adjusted if there are more than four breakout groups]

Plenary Session 3b: “Plenary Presentations - Breakout Group Discussions Round 2”

3:15 p.m. – 3:45 p.m. (30 minutes)

Each Breakout Group will present the highlights of their discussions in Round 2 to all participants in the charrette [7 minutes + 2 minutes Q&A each, strictly timed; length will be adjusted if there are more than four breakout groups]

Plenary Session 4 3:45 p.m. – 4:00 p.m. (15 minutes)

Plenary Session 4: “*The Path Ahead*”

3:45 p.m. – 4:00 p.m. (15 minutes)

Facilitated plenary discussion on, and formal documentation of, a preliminary consensus among charrette participants on the content of the presentations done in Plenary Sessions 3a and 3b.

Adjourn for the Day at 4:00 p.m.

Overview of the 2016 Texas Water Roadmap Forum

Sponsors

This one day forum – a facilitated charrette - is organized and sponsored by the Texas Water Development Board and National Science Foundation Research Coordination Network on Climate, Energy, Environment and Engagement in Semiarid Regions (RCN-CE3SAR). The RCN-CE3SAR is the forum facilitator. The forum is hosted by Texas A&M University–San Antonio (A&M-SA) with arrangements coordinated by the Institute for Water Resources Science and Technology at A&M-SA.

Goals and Objectives

The forum will bring together Texans from diverse technical, academic, research, management, and business backgrounds in water to participate in the third in a series of water roadmaps facilitated by RCN-CE3SAR.

Envision a future Texas where water security is assured for people, industry, food production, and nature. The main goal of the Forum is to prioritize and frame key milestones with the overall objective of securing that future. To achieve this goal, the Forum will bring together individuals from diverse backgrounds in water. These will be individuals who are interested in securing Texas' water future, while accelerating growth of Texas' water infrastructure, technologies, industries, and sustainable water use. They will represent Texas' leading water sectors, including water associations and other non-governmental organizations, research institutes and universities, public agencies, industry, and water utilities, districts, and authorities.

The Forum is designed to bring forth partnerships to complement, supplement, strengthen, enhance, and extend the work, efforts, and accomplishments of Texas' key water stakeholders. We hope to establish collaborative models and solutions. New funding sources, such as through the SWIFT program, are now available for financing rural and urban water infrastructure. We don't expect to solve all challenges at once, so the Forum will focus on areas identified in previous forums as critical or emerging and in need of actions that can be accomplished. Areas identified include:

- Access to, sharing, and use of information, data, communication, expertise, science, and policy that cross disciplines, campuses, networks, and resources;
- Employment, workforce training, and security; and
- Research, current and planned.

Roadmaps

Roadmaps are much like strategic plans. At the outset, roadmaps require clear vision of the goal and objectives obtained through stakeholder agreement.

The roadmap displays a continuum of steps to take to achieve stated outcomes. It outlines links among tasks and priorities for actions to be taken immediately and in the future. Stakeholders can help create a consensus around performance targets, pathways, assets, priorities, needs, obstacles, and time frames for research, development, demonstration, and deployment of solutions.

Roadmaps are often used as a means to help display and simplify understanding of complex systems. The process itself engages and aligns stakeholders in a common course of action.

Building a roadmap is a dynamic process. Over time, the roadmap must evolve and be adapted, accommodating the successes and failures of implementing roadmap-guided actions, with stakeholders remaining engaged.

Framework

The Forum builds upon past results of water roadmap forums and the large body of work commonly known by and available to workers in water industries. The first forum focused on water technology and commercialization (http://texaswatertech.org/wp-content/uploads/2015/03/Texas_Water_Tech_Forum_Rept.pdf). The second had participants looking at the “nexus” (water-food-energy), where they defined the most critical problems facing the nexus and technology from the perspective of human, education, policy, and law dimensions (http://assets.system.tamus.edu/files/research-compliance/doc/Nexus_Water_Forum_11.17-18.15.pdf).

This previous work identified critical needs for water sustainability in Texas, including finding significant opportunities for information sharing, improved workforce education, commercialization, and innovation in areas such as desalination, reuse, conservation, and ‘smart-water’ technologies.

The third Forum will

1. further focus/refine needs and targets,
2. define the current scientific and technical capacity of Texas’ centers of research and the public sector to address these needs,
3. dive more deeply into workforce issues,
4. provide added basis for building a water roadmap in key areas for Texas, and
5. emphasize funding, partnerships, research, and innovation-driven outcomes.

Combining results of all forums will help show the many connections and specific routes to sustainable water use, innovation, information sharing, and accelerated technology development and application.

The topic of “water” has many dimensions, as is displayed in Figure 1. Therefore the overall discussion is framed within a broad context that reflects the world we live in today, as influenced by key factors such as “Volatility, Uncertainty, Complexity, and Ambiguity.” Water challenge dimensions, such as economics, politics, social factors, protecting the environment, technologies, laws, policies and regulations are all interconnected, interrelated, and interdependent. Add multiple stakeholders with multidisciplinary backgrounds as well as multi-institutional and even multinational audiences, and water soon becomes a very complex topic.

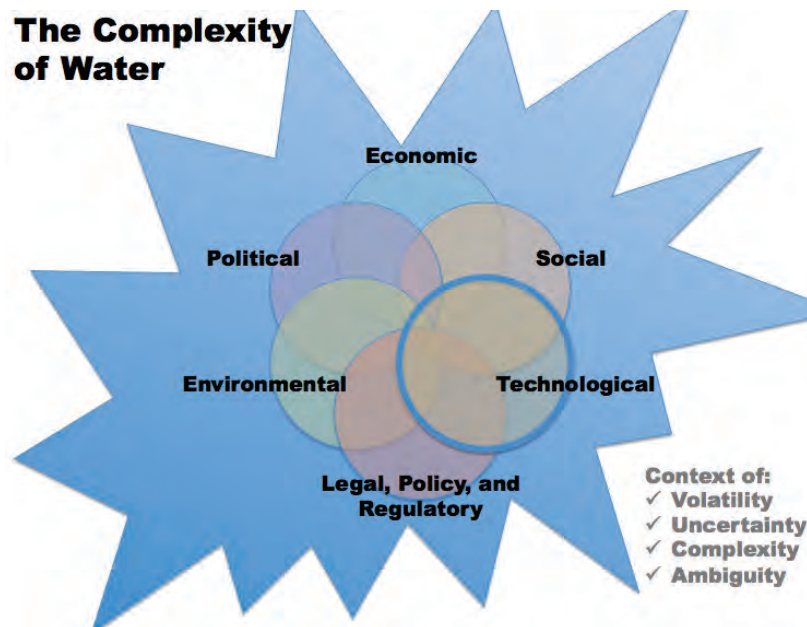


Figure 1. The General Context for the Charrette

Discussions will encompass the identification, organization, and documentation of data, information, knowledge (as expressed by best practices), experience (as expressed by lessons learned), and wisdom:

- 1a. How can we overcome impediments to communicating, transmitting, and accessing data, research needs, expertise, and other information about Texas water science, policy, and research to increase and improve its use by decision makers, agencies, and others? How can information be shared most effectively and efficiently? Ideally, who should lead efforts to develop information sharing resources?
- 1b. In light of the greying of the current workforce and the need for more highly educated, skilled, and degreed workers for the future, what are current and future water workforce needs? How do we address these needs to the benefit of Texas' water industries, groundwater conservation districts, utilities and others?
- 1c. What are the most pressing current and future research needs (from the agency and stakeholder perspectives) as compared to research that is currently underway in Texas' university and independent research institutions (from the researcher prospective)?
- 2a. What funding opportunities are available to address identified needs? Are there partnerships that can be created to access these opportunities, either now or in the future? In particular, how does SWIFT funding factor into addressing current and future needs?
- 2b. What partnership opportunities are available to address identified needs? Are there funding opportunities that can be sought using these partnerships? In particular, how does SWIFT funding factor into addressing current and future needs?

Process

The Forum will be facilitated using a **charrette** process. This will be an intensive workshop involving people working together under compressed deadlines. Charrettes are commonly used in urban planning and architecture. They provide for an interactive pace in which a diverse group of stakeholders, representing pluridisciplinary perspectives (i.e., multi-, inter-, cross-, and trans-disciplinary) on a given topic, come together and follow a rigorous, facilitated vision-driven process to achieve outcome-oriented results. Charrettes are especially suited to encouraging discussions that encourage participants to go beyond conventional thinking. They also are an effective means to initiate collaboration among a diverse group of parties with common interests.

The Dean of the College of Architecture at Texas A&M University, Dr. Jorge Vanegas, will lead the charrette. Dr. Vanegas is well-known for his facilitation skills and is providing support to the Forum through, RCN-CE3SAR, where he is a member of the Steering Committee.

Post-Forum Activities

Following the forum, facilitators and any volunteers from among the participants will assist in developing a report of findings and recommendations. This will be provided to all participants and will be presented at the conference, "Water for Texas" to be held in Austin on January 23-25, 2017. The report will contain the following:

- An initial **plan of action** for Texas, based on the results of the Forum and subsequent discussions;
- A collective **consensus** of (1) baseline information; (2) vision and desired outcomes; (3) pathways to desired outcomes; (4) indicators, metrics, benchmarks, and; (5) challenges.
- A compilation or "**final roadmap report**" of the results of the three water roadmap forums.
- A **directory of participants**.

December 19, 2016 is the target date to have a completed report to participants, although this will be an ongoing and iterative process, where updates and new priorities will emerge over time.