Texas Water Technology
Roadmap Forum

A Water Technology Roadmap Forum Facilitated through
an Interdisciplinary and Multi-Stakeholder “Charrette”

Organized by:
The Meadows Center for Water and the Environment &
STAR Park at Texas State University
AccelerateH2O – Texas Water Technology Accelerator
The Water Institute of Texas
and
The National Science Foundation Research Coordination Network on Climate, Energy,
Environment and Engagement in Semiarid Regions

Underwriting Sponsor
The Wells Fargo Foundation

Co-Sponsors
The Meadows Foundation
The Texas Research and Technology Foundation

Location and Date:
The University of Texas at San Antonio (UTSA) – Downtown Campus
Durango Building, Southwest Room
501 West Cesar Chavez Blvd., San Antonio, TX 78207
Parking: Lot D3

Coffee - registration - networking: 8:00 AM to 8:45 AM
Forum: 9:00 AM to 4:00 PM

February 25, 2015
Input Sheets

Please take time before the Forum to answer the following questions and complete the input sheets

The following input sheets are for you to organize your thoughts prior to the forum. Each set of sheets corresponds to a charrette session listed on the agenda. Completing these input sheets ahead of time will allow you to participate most fully in the charrette. This input provides the basis of our discussions during the charrette and the successful completion of each session.

At the end of the forum we will collect the sheets to ensure your ideas are incorporated into the final forum product.

Please bring completed sheets with you to the Forum
CHARRETTE INPUT SHEET NO. 1:
Documenting Hats, Drivers, Expectations, and Initial Baselines

What “Hats” are you wearing today?
Please list all the different “hats” that you are wearing today for this forum. In other words, what roles will you play, what perspectives will you have, and/or what points of view will you represent, toward the topics that will be addressed at this forum?
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

What “Drivers” brought you here today?
Please list all the different “drivers” that brought you here today for this forum. In other words, what prompted or motivated you to attend this forum?
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

What “Expectations” do you have for this forum?
Please list all the different expectations you have for this forum. In other words, what specific outcomes or results do you want to accomplish that will make you satisfied or happy that you participated?
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
I Like, Like...
Please take a moment to tell us what do you like most about the potential development of a Texas Water Technologies Roadmap. What do you like about it from your individual personal point of view? What do you like about it from your professional point of view? What do you like about it from the point of view of the organization you represent?

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

“Genie Wishes” (Aspirations)
If you had a “Genie in a Bottle,” what wishes at broad or specific levels would you make, if you could, to ensure the full development of a Texas Water Technologies Roadmap? What would you wish from your individual personal point of view? What would you wish from your professional point of view? What would you wish from the point of view of the organization you represent?

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

“Magic Wand” (Changes)
If you had “Harry Potter’s Magic Wand,” what changes at broad or specific levels would you make, if you could, to ensure the full development of a Texas Water Technologies Roadmap? What would you change from your professional point of view? What would you wish from the point of view of the organization you represent?

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
Breakout Group Discussion Topic (Please check one)

☐ Sources of Water
☐ Transportation/Delivery of Water
☐ Use of Water (Agriculture, Industrial, and Other)
☐ Enabling Technologies

EXISTING TECHNOLOGIES
Please list as many ideas, suggestions, and recommendations as you can for the types of existing technologies related to this Breakout Group Discussion Topic that should be included within the development of a potential Texas Water Technologies Roadmap (TWTR).

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

EMERGING TECHNOLOGIES
Please list as many ideas, suggestions, and recommendations as you can for the types of emerging technologies related to this Breakout Group Discussion Topic that should be included within the development of a potential TWTR.

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________

BREAKTHROUGH, REVOLUTIONARY, AND DISRUPTIVE TECHNOLOGIES
Please list as many ideas, suggestions, and recommendations as you can for the types of breakthrough, revolutionary, and disruptive technologies related to this Breakout Group Discussion Topic that should be included within the development of a potential TWTR.

__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
__________________________________________________________________________________
QUESTIONS that a possible Texas Water Technologies Roadmap (TWTR) might ANSWER
Please list as many ideas, suggestions, and recommendations as you can for the types of questions that you would like to see addressed by the roadmap.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

PROBLEMS that a possible TWTR might attempt to SOLVE
Please list as many ideas, suggestions, and recommendations as you can for the types of problems that you would like to see addressed by the roadmap.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

NEEDS that a possible TWTR might attempt to SATISFY
Please list as many ideas, suggestions, and recommendations as you can for the types of needs that you would like to see addressed by the roadmap.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
**OPPORTUNITIES** that a possible TWTR might attempt to **REALIZE**?
Please list as many ideas, suggestions, and recommendations as you can for the types of **opportunities** that you would like to see addressed by the roadmap.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**ASPIRATIONS** that a possible TWTR might attempt to **FULFILL**?
Please list as many ideas, suggestions, and recommendations as you can for the types of **aspirations** that you would like to see addressed by the roadmap.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**OTHER ISSUES**
Please list as many ideas, suggestions, and recommendations as you can for any **other issues** that you would like to see addressed by the roadmap.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
CHARRETTE INPUT SHEET NO. 3:
Input Sheet for Breakout Group Discussions Round 2

Breakout Group Discussion Topic (Please check one)

☐ Sources of Water
☐ Transportation/Delivery of Water
☐ Use of Water (Agriculture, Industrial, and Other)
☐ Enabling Technologies

EXISTING TECHNOLOGIES
Please list as many ideas, suggestions, and recommendations as you can for the types of existing
technologies related to this Breakout Group Discussion Topic that should be included within the
development of a potential Texas Water Technologies Roadmap (TWTR).

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

EMERGING TECHNOLOGIES
Please list as many ideas, suggestions, and recommendations as you can for the types of emerging
technologies related to this Breakout Group Discussion Topic that should be included within the
development of a potential TWTR.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

BREAKTHROUGH, REVOLUTIONARY, AND DISRUPTIVE TECHNOLOGIES
Please list as many ideas, suggestions, and recommendations as you can for the types of breakthrough, revolutionary, and disruptive technologies related to this Breakout Group Discussion Topic that should be included within the development of a potential TWTR.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
QUESTIONS that a possible Texas Water Technologies Roadmap (TWTR) might ANSWER
Please list as many ideas, suggestions, and recommendations as you can for the types of *questions* that you would like to see addressed by the roadmap.
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

PROBLEMS that a possible TWTR might attempt to SOLVE
Please list as many ideas, suggestions, and recommendations as you can for the types of *problems* that you would like to see addressed by the roadmap.
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

NEEDS that a possible TWTR might attempt to SATISFY
Please list as many ideas, suggestions, and recommendations as you can for the types of *needs* that you would like to see addressed by the roadmap.
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
OPPORTUNITIES that a possible TWTR might attempt to REALIZE?
Please list as many ideas, suggestions, and recommendations as you can for the types of 
opportunities that you would like to see addressed by the roadmap.
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

ASPIRATIONS that a possible TWTR might attempt to FULFILL?
Please list as many ideas, suggestions, and recommendations as you can for the types of aspirations 
that you would like to see addressed by the roadmap.
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

OTHER ISSUES
Please list as many ideas, suggestions, and recommendations as you can for any other issues 
that you would like to see addressed by the roadmap.
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
CHARRETTE INPUT SHEET NO. 4:
Developing a Plan of Action

A. Elevator Pitch
Based on the discussions today, how could/would you describe succinctly the value/benefit of developing a TWTR, and what could/would be its strategic importance for the State of Texas?
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

B. Strategic Goal (i.e., What to do…)
Please establish a set of general strategic goals, which will enable the development of a potential TWTR. Each goal established should define the tactical objectives and a preliminary operational plan of action:

Brief description of a strategic goal
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

C. Associated Tactical Objectives and Preliminary Operational Plans of Action (i.e., *How to do it and with what…*)

For each general strategic goal defined in B, above, please list the principal *specific tactical objectives* required to achieve it. Each tactical objective established should define the following elements:

Brief description of a **tactical objective**

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**What** needs to be done to achieve the objective (i.e., specific *tasks*)?

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**Why** (i.e., *justification* of these tasks)?

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**How** (i.e., *procedures/methods* to be followed)?

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**Who** (i.e., *responsibility* for execution of the tasks)?

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

**With What** (i.e., *resources* required to complete the tasks)?

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
When (i.e., target *date for completion* of the tasks)?

Where (i.e., *location* for the execution of the tasks)?

Metrics (i.e., how will *progress* be measured)?

Assumptions and Expectations
Please list any *assumptions*, and any *expectations* associated with the strategic goal and this tactical objective.
Assumptions: __________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________

Expectations: __________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________

Wants, Needs, Do’s, and Don’ts
Please list any *wants* and *needs*, and any *do’s* and *don’ts* associated with the strategic goal and this tactical objective.
Wants: __________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________

Needs: __________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________

Do’s: __________________________________________
D. Commitments

To ensure achieving the plan of action for the development of a potential TWTR, define the commitments that need to be made.

**Personal Commitments**

Please list at least one specific *individual commitment* to the development of a potential TWTR, which you are willing to make from a personal point of view.

**Institutional Commitment**

Please list at least one specific *institutional commitment* to the development of a potential TWTR, which you are willing to make from an institutional point of view (i.e., the organization you represent).

**Commitment from Others**

Please list at least one *specific commitment* to the development of a potential TWTR, which you would like to see from other individuals or organizations. Please name the individual or the organization, if any, that you would like to see make the commitment.
CHARRETTE INPUT SHEET NO. 5:  
Reflections on, and Assessment of, the Forum

“Bugs”
Please list anything presented and/or discussed at this forum that may still bothers and/or annoys you.
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________

“Rants”
Please list anything presented and/or discussed at this forum that you hate (i.e., really do not like at all).
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________

“Raves”
Please list anything presented and/or discussed at this forum that you love (i.e., really like a lot).
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________  
___________________________________________________________________________________________

“HUH...?’s”
Please list any muddy points (i.e., anything that may not be clear) and/or specific questions that might
have been generated by the topics presented and discussed at this forum for which you would like to find an answer.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

“AHA…!’s”
Please list any specific insights, revelations, or lessons learned that might have been generated by the topics presented and discussed at this forum, which you will take away with you.

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________

Grade
On a scale of 1 to 10, with 1 being the worst and 10 being the best, what grade would you give to this forum?

<table>
<thead>
<tr>
<th>Worst</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Perfection
If the grade you gave is not 10, what could/should/might/must be done to make it a 10?

___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________