

TWDB Desalination Work Plan FY 2006-2007 Biennium



Texas Water Development Board
Work Session - July 18, 2005

Presentation topics

1. Legislative Actions
2. Seawater Desalination
3. Brackish Groundwater Desalination
4. Outreach Activities

78th Texas Legislature

1. Considered TWDB 2002 Desalination Report
 - Identified sites with greater potential for seawater_desalination demonstration projects
 - Recommended feasibility studies selected sites
2. Adopted HB 1370 (Luna)
 - Amended Texas Water Code §16.060 directing TWDB to support developing seawater desalination supplies
3. Directed TWDB to fund up-to \$1.5 million for seawater feasibility studies

79th Texas Legislature

1. Considered TWDB 2004 Desalination Report
 - Recommended continuing desalination program
2. Granted a TWDB exceptional Legislative Appropriation Request for FY 2006-07 to:
 - Invest in pilot plants for seawater desalination
 - Develop brackish groundwater desalination demonstration projects
 - Fund 2 FTE for outreach and program support activities

See Board Memo - Att. A. Rider #26

Seawater Desalination

2010-2012
New drought-proof
water supply

Design, construction,
commissioning

EIR, Discharge Permits
& Others

Pilot Plant Studies

79th Session

Dec 2004
Completed feasibility Studies

78th Session

Dec 2002
Statement of Interest
Selected Sites

Seawater Desalination Pilot Plant Studies

What is a pilot plant study?

Risk & Procurement Strategies

Lessons from other projects

Deliverables

Who owns the projects?

How does the fact that these are demonstration projects factor in?

Cost of a pilot plant study

Role of the Design Engineer

TWDB's Role?

Time Line
FY 2006-2007

Role of equipment manufacturers

Ad-hoc expertise

Seawater Desalination Pilot Plant Studies

What is a pilot plant study?

Seawater desalination plants consist of **multiple unit processes** connected together to form a treatment process train.

These unit processes typically include one or more pretreatment processes, the primary desalination process, and a polishing desalination process.

Pilot studies are configured to simulate the complete proposed treatment process train.

Testing is conducted using the source water under consideration.

Reiss, Robert-The importance of pilot studies in the development of large-scale seawater desalination plants-The Future of Desalination in Texas, Volume 2, 2004

Seawater Desalination Pilot Plant Studies

Deliverables

- ➡ Address 30 Texas Administrative Code §290
- ➡ Test/fine-tune recommended treatment strategy
 - Assess source water at recommended site
 - Test recommended pretreatment system
 - Test recommended desalination treatment
 - Assess water blending issues
 - Coordinate with equipment manufacturers
- ➡ Provide data for discharge permitting
- ➡ Develop more accurate project costs
- ➡ Provide a tangible demonstration of the technology for the public and government officials

Pilot plant consultant

- Hands-on experience on pilot plants for large-scale seawater desalination projects
- Procured on the basis of qualifications
- Tasks:
 - Advise TWDB staff in developing terms of reference for financial assistance applications from project developers
 - Participate in the reviewing of scopes of work and contracting negotiations
 - Monitor pilot plant phase and participate in all project review instances
- RFQ: If appropriate, in August 2005 staff will solicit Board authorization to issue an RFQ for consulting services

Professional Engineering Services

Engineering support services

- Soundness of any engineering decision is dependent upon the accuracy and suitability of data obtained in laboratory investigations, these supporting services must be under the guidance of the consulting engineer whose decisions will be based on that data.



Seawater Desalination Pilot Plant Studies

➡ Continue to *"to undertake or participate in research, feasibility and facility planning studies, investigations, and surveys as it considers necessary to further the development of cost-effective water supplies from seawater desalination in the state."*

- ➡ Effective use of allocated funding
- ➡ Efficient pursuit of goal of developing drought-proof supplies by means of seawater desalination
- ➡ Use or create opportunities to transfer desalination related technology to a wider sector of the water planning community

TWDB's Role?

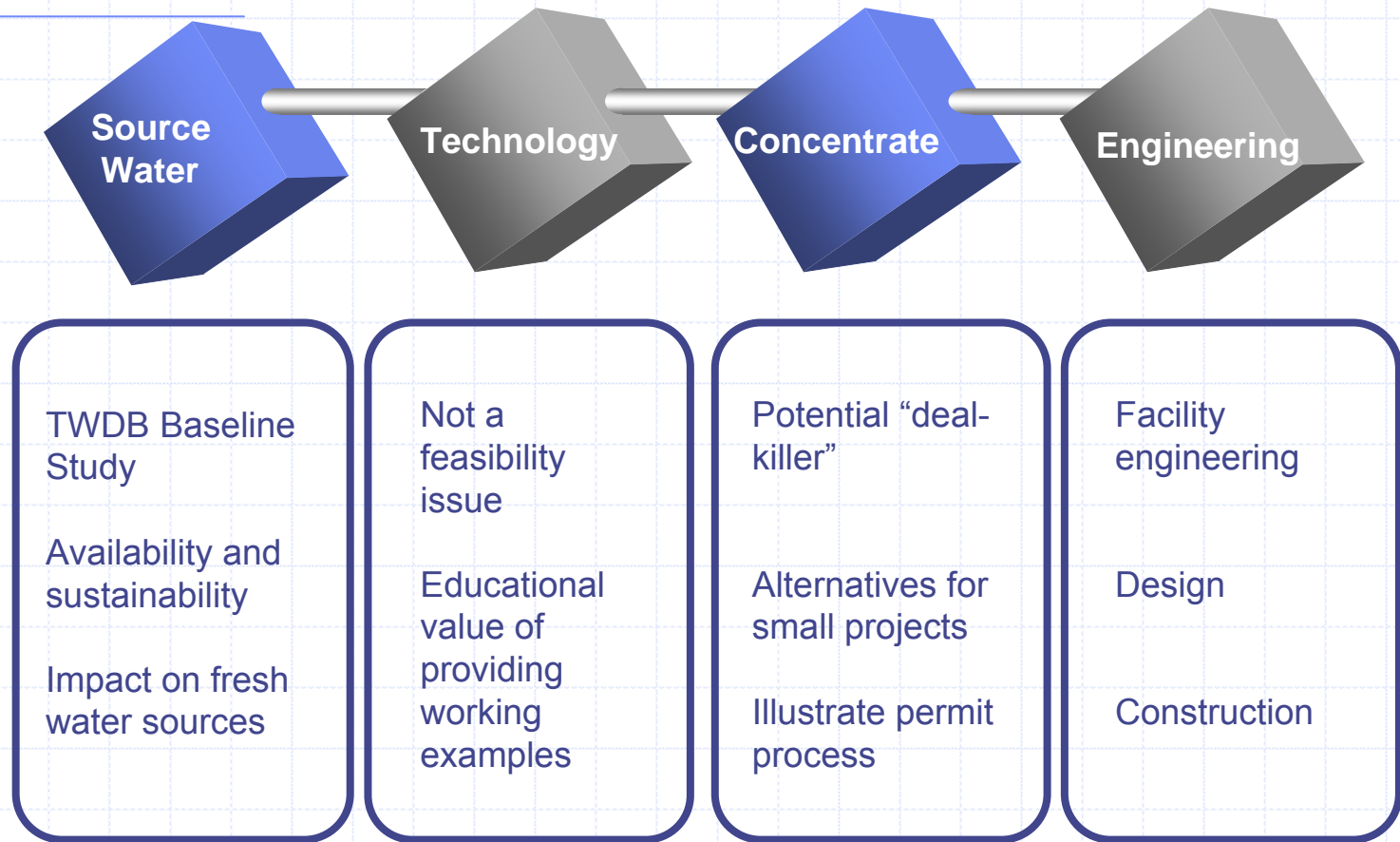
Seawater Desalination: Key Activities – FY 2006-2007

SEAWATER DESALINATION PROJECTS Pilot Plants Phase	2005					2006					2007																				
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Procure seawater desalination pilot plant consultant		◆				◆																									
Hold pre-application workshop with project sponsors							◆																								
Process financial assistance applications for pilot plants-Seek TWDB authorization to contract								◆																							
Negotiate and sign contracts for implementing pilot plants																															
Implement pilot plants phase																															
Individual Pilot Plant Project Review Sessions														◆					◆			◆						◆			
Project developers submit project progress report for TWDB Biennial Report																															
Final Reports																												◆		◆	

Rider #26 – Brackish Groundwater Desalination

- **26. Appropriation: Desalination.** Included in amounts appropriated above out of the General Revenue Fund in Strategy A.2.2., Water Resources Planning, is \$3,200,000 in fiscal year 2006 and \$100,000 in fiscal year 2007 to be transferred to the Water Assistance Fund No. 480. Of the amounts, \$3,100,000 in fiscal year 2006 shall be used
 - **for grants for the development of up to three pilot seawater desalination projects** and
 - **for grants for the planning, permitting, design, and development of brackish groundwater desalination demonstration projects at sites to be determined,**
 - and \$100,000 in each year of the biennium shall be used for staff costs to oversee the projects, monitor the development of desalination technology, and provide educational outreach and technology transfer.
- Any unexpended balances remaining in this appropriation on August 31, 2006 are hereby appropriated for the fiscal year beginning September 1, 2006.

Developing a Roadmap for Brackish Groundwater Desalination



Rider #26

Brackish Groundwater Desalination: Questions, issues & next steps

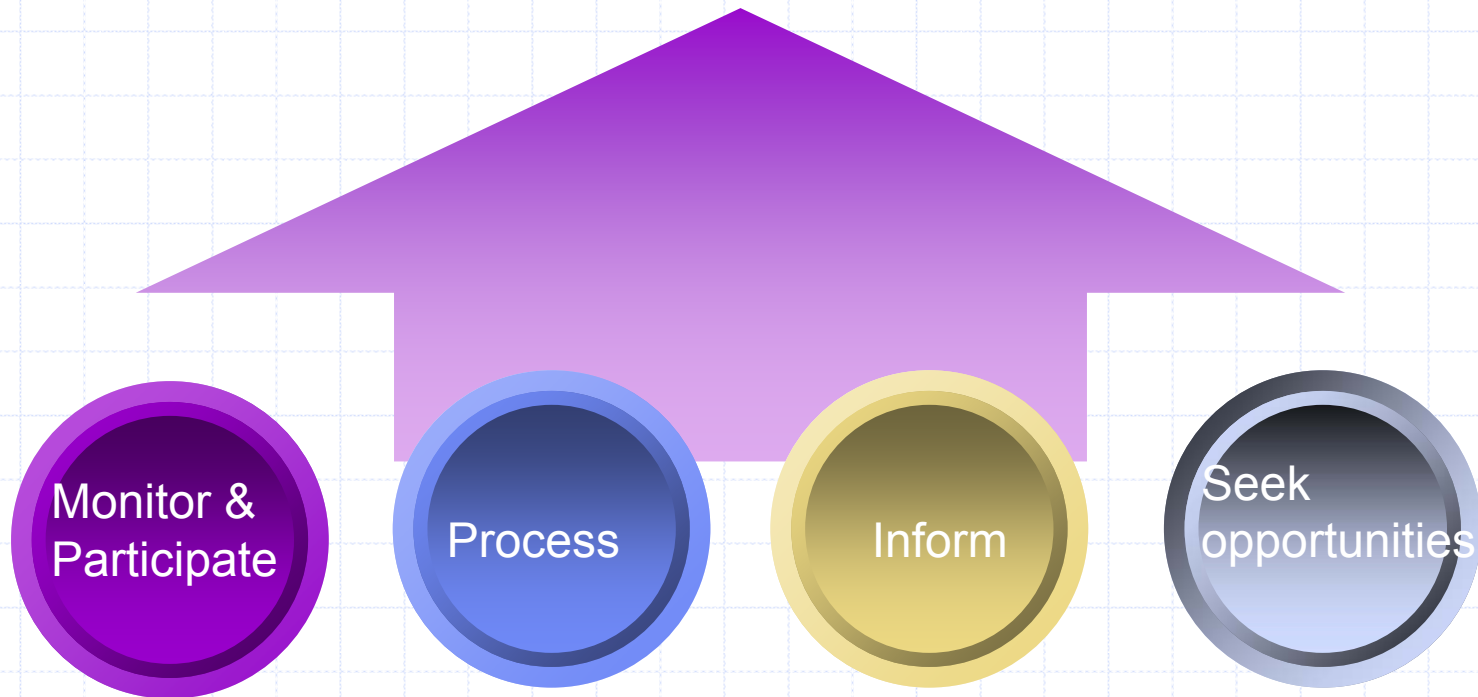
- Request Statements of Interest
- Possible Screening Criteria
 - Demonstration value
 - Need
 - Location
 - Likelihood that the project will be completed
 - Local/regional support
- Number of projects
- SOI: If appropriate, in August 2005 staff will solicit Board authorization to issue a request for statements of interest to identify potential project sites

Brackish Groundwater Desalination: Key Activities

BRACKISH GROUNDWATER DESALINATION	2005					2006					2007																				
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Issue Request for Statements of Interest for brackish groundwater desalination projects			◆																												
Select project sites- Seek TWDB approval and authorization to contract																															
Negotiate scopes of work & sign contracts																															
Perform Work																															
Project Review Sessions																															
Final Reports																															

Outreach and other activities

Technology Transfer



Outreach and other activities

OUTREACH & OTHER ACTIVITIES	2005					2006					2007																			
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
Monitor desalination research and technology demonstration initiatives																														
Plan and execute annual Technology Workshops									◆																					
Plan and execute 1-2 Regional Technology Workshops per year											◆				◆															
Redesign, deploy and maintain the TWDB Desalination Web Site																														
Monitor grant opportunities																														
Provide support to TWDB's Federal Liasion on efforts to inform Texas Congressional Delegation																														
Prepare 2006 TWDB Biennial Desalination Report																														