August 6, 2020 Meeting Materials for the Planning Water Resources for the State as a Whole Committee of the Interregional Planning Council

1. Agenda
2. Meeting presentation
3. Draft July 28, 2020 meeting minutes
4. Committee report to IPC August 12, 2020 meeting
5. Interbasin transfers excluding the Rio Grande Basin
6. 2002 State Water Plan Chapter 5 excerpt on interbasin transfers
7. RFI responses on interregional water supply projects

1. Agenda

Planning Water Resources for the State as a Whole Committee of the Interregional Planning Council

AUGUST 6, 2020, 10:00AM

Meeting will be conducted via GoToWebinar and can be accessed with the link below.
https://attendee.gotowebinar.com/register/2139865540228208912
Webinar ID: 823-540-883

PLEASE SEE: http://www.twdb.texas.gov/waterplanning/rwp/ipc/committees.asp

**The Chairman of this Committee may choose to address the items identified in this agenda in an order outside of the pre-arranged numbering.*

1. Call to order and welcome
2. Public comment
3. Discussion and Action, as appropriate – Approval of the minutes of the July 28, 2020 meeting
4. Review of Problem Statement and Goal Statement
5. Discussion and Action, as appropriate – Planning Water Resources for the State as a Whole
6. Discussion and Action, as appropriate – August 6, 2020 interim report
7. Discussion of agenda for future meetings
8. Public comment
9. Announcements
10. Adjourn

Persons with disabilities who plan to attend this meeting and who may need auxiliary aids or services such as interpreters for persons who are deaf or hearing impaired, readers, large print or Braille, are requested to contact Melinda Smith at melinda.smith@twdb.texas.gov or at (512) 463-6478 two (2) work days prior to the meeting so that appropriate arrangements can be made.

Direct links to this information can be found on our website at
http://www.twdb.texas.gov/waterplanning/rwp/ipc/committees.asp

To view/listen to the Planning Water Resources for the State as a Whole Committee Meeting on Thursday, August 6, 2020, please use GoToWebinar. If you are a visitor for this meeting and wish to address the Committee, you will have an opportunity to do so under agenda items number 2 and 8 through the GoToWebinar application.

Additional Information may be obtained from: Kevin Smith, Regional Water Planner, Texas Water Development Board, 512/475-1561 kevin.smith@twdb.texas.gov

Emergency Mtg: No

2. Meeting presentation

Interregional Planning Council

Planning Water Resources for the State as a Whole Committee

August 6, 2020

1. CALL TO ORDER

- Call to order and welcome

2. PUBLIC COMMENT

- Those on video Go To Webinar – Click "raise hand" on your screen.
- Those with telephone access – The organizer will unmute phone attendees to provide public comment.
- Limit comments to 3 minutes each.

3. DISCUSSION AND ACTION APPROVAL OF MINUTES

- Minutes of the July 28, 2020 committee meeting

4. REVIEW OF PROBLEM AND GOAL STATEMENT

Council Problem Statement:

Planning Water Resources for Texas as a whole is hindered by the varied and unique characteristics of different regions of the state, land use patterns and trends, the costs of such planning, the protective nature of regions and states over their natural resources, the ownership of water supplies and the impacts of water development, constraints of existing laws and rules, and the many competing needs for the water.

Council Goal Statement:

Texas' water needs will best be addressed through cooperative development of innovative and multi-benefit projects that benefit the state as a whole, while meeting the mandated requirements of the regional water planning process, including protecting the agricultural and natural resources of the state.

5. DISCUSSION OF PLANNING WATER RESOURCES

- Discussion of committee report to IPC at August 12th meeting
- Discussion of draft recommendations

6. INTERIM REPORT

- Discussion of August 6, 2020 interim report

7. AGENDA FOR FUTURE MEETINGS

- Public comment
- Approval of the minutes of the August 6, 2020 meeting
- Discussion and action, as appropriate of Planning Water Resources for the State as a Whole
- Discussion and action, as appropriate of committee report to the Council

8. PUBLIC COMMENT

- Those on video Go To Webinar – Click "raise hand" on your screen.
- Those with telephone access – The organizer will unmute phone attendees to provide public comment.
- Limit comments to 3 minutes each.

9. ANNOUNCEMENTS

- Planning Water Resources committee meeting dates
- Interregional Planning Council meeting dates

ADJOURN

3. Draft July 28, 2020 meeting minutes

Planning Water Resources for the State as a Whole Committee Meeting Minutes

July 28, 2020, 1:30 p.m. to 3:30 p.m.
held via GoToWebinar Videoconference
Committee decisions bolded and italicized in document

Participation: Number of Planning Water Resources Commmittee Members present 5 of 5:

H	Mark Evans	C	Kevin Ward	K	David Wheelock
N	Carl Crull	O	Melanie Barnes		

Senators/Representatives/Other VIPs in Attendance: Deb Mamula, Heather Harward

TWDB Board Members and Staff: Temple McKinnon, Claire Boyer

MEETING GENERAL

Chair Mark Evans (Region H) called the meeting to order and determined that a quorum was present and called the meeting to order.

AGENDA ITEMS

1. Public Comment

No public comments were offered.

2. Approval of the Minutes of the July 15, 2020 Meeting

There were no revisions suggested by the committee members. Mr. Evans asked for motion to approve minutes. Mr. Carl Crull (Region N) motioned to approve, Mr. Kevin Ward (Region C) seconded. ***Minutes of the July 15, 2020 meeting were approved unanimously by the committee.***

3. Review of Problem Statement and Goal Statement

Mr. Evans presented Problem Statement and Goal Statement.

4. Discussion of Planning Water Resources for the State as a Whole

Mr. Matt Nelson discussed the current role of the State in supply planning and implementation of the State Water Plan (SWP). He explained that the legislature appropriates funds for development of the SWP including state agency staff to support SWP development, and summarized financing programs (State Revolving Fund, SWIFT) that fund SWP projects. He described the state and board participation programs whereby the state may take an ownership interest of up to 80% of the capacity of large

regional projects in growing areas and described other indirect agency activities such as groundwater modeling and regional MAGs that support water planning.

Mr. Evans moved the discussion to what are the specific hindrances that prevent regions from adequately and cooperatively developing innovative and multi-benefit (multi-region) projects for the state as a whole.

Mr. Ward asked if the committee report to the Interregional Planning Council would include existing background information and suggested the report should so legislature is aware of all programs and funding. Mr. Kevin Smith stated that under the current IPC report outline, there is a section for summary of existing practices and conditions including relevant background. Mr. Nelson indicated that another background item might be that the state has included in the state water plans projects recommended by the planning groups and the state has not modified or added to those projects.

Mr. Nelson indicated that the lack of a specific scope task or chapter in regional water plans to look at multi-regional projects is one example of what has been heard that might represent an obstacle. Mr. Evans stated that the IPC will want a good idea where the committee report is headed by the August 12th meeting, since timeline to complete the committee report has been compressed.

Mr. Nelson introduced the topic of obstacles to consideration of multi-regional projects that are associated with regional water planning process. Mr. Ward responded that reluctance to bring water inland that returns to coast for reuse doesn't occur and that the process is driven by least cost alternative and not planning from the state perspective, that is the issue. Mr. Ward suggested a regional water planning task to consider projects if cost was not a factor and there were different incentives. Currently project cost and sole ownership of projects is overemphasized.

Mr. Crull stated that regional water plan projects must have sponsor and be responsible to customers, so don't consider projects with other regions. Mr. Evans pointed out that sometimes there can be a lack of public support for these types of projects. Ms. Melanie Barnes (Region O) suggested there needs to be more education on regional coordination issues.

Mr. Ward stated an issue is the current use of drought of record as standard for regional planning and stated if, instead, a megadrought was instead used, would have to look at other supplies more like desalination and create larger projects instead of individual smaller ones. Mr. Ward stated example USACOE reservoir permitting requirement to justify a narrow need that doesn't look at longer timeframes and optimal projects sizes for ultimate buildout and worse droughts or involve state incentives.

Mr. Evans asked if there should be a regional water planning task to address long range, visionary planning to look at larger solutions than currently in the plans. Mr. Ward responded yes. Mr. Evans asked if this should be a recommendation from the committee. Mr. Crull and Ms. Barnes both affirmed.

Mr. Crull stated that planning cannot just look 20 to 50 years out. He stated that since 40% of water need is from industry, it is difficult for the City of Corpus Christi to anticipate need since industries can create need at any time versus steady population growth; Region N has cushion in RWP to address this.

Ms. Barnes stated need to consider which regions are downstream of other states, need to consider interstate issues at the state level.

Mr. Nelson pointed out that the current regional water planning process allows for planning beyond drought of record. Mr. Ward confirmed and indicated that that existing planning now doesn't extend to the degree that we are talking about for larger regional projects and more supplies. He also stated that he wouldn't want to rely on getting water back from industries. Mr. Crull agreed and stated this is why industries in Region N want seawater desalination, industries generally can't reduce use in drought and if industry shutdown may not return. Mr. Crull stated there was discussion of a regional project with San Antonio paying for seawater then tapping into Choke Canyon reservoir, but not feasible since would need new surface water treatment plant at the lake.

Mr. Evans introduced the topic of obstacles associated with existing laws and rules. Mr. Ward stated interbasin transfer (IBT) rules was an obstacle. Mr. Nelson presented the potential 2017 SWP interbasin transfer map and map table that had already been shared with members. Mr. Nelson stated that can provide interregional water shifts at a later date. Mr. Nelson stated that approximately 20 percent of strategy water supplies involve moving water between planning regions. Mr. David Wheelock (Region K) asked if volumes in table has been added up. Mr. Nelson replied that it is significant to see amount of water and total is not trivial by any means. Mr. Crull asked if volumes are in ac/ft/yr, GBRA project value appears to be low. Mr. Nelson clarified volumes may reflect those assigned to water user groups and not the full potential volume.

Mr. Wheelock inquired what is the relationship between IBTs and interregional transfers; could refine table so shows greater amount of planned water. Mr. Nelson explained that map represents number of times someone would need to get a new IBT permit at TCEQ. He stated that TWDB can provide interregional transfer volumes later on when we have staff time. Mr. Wheelock inquired about list of existing IBTs. Mr. Nelson replied that TCEQ would have this information. Mr. Wheelock stated he has seen map in 2002 State Water Plan.

Mr. Wheelock stated his agreement for need for visionary planning of larger regional projects. He stated individual regions creates a state water plan, but its not the same as planning for state as a whole; an updated IBT map would show that there needs to be something bigger and bolder. Mr. Crull responded that may be project from 2017 IBT map no longer pursued; for example the GBRA lower basin off-channel reservoir project was removed from 2021 Region N IPP. Mr. Evans suggested this may be a recommendation to make to future IPCs. Mr. Wheelock stated he is aware of a project not on the map (Williamson County).

Mr. Ward mentioned land condemnation being difficult for large scale projects. There is no joint planning between transportation and water agencies. Mr. Crull responded that TxDOT right-of-way is an issue since you may have to move water line if road is expanded.

Ms. Barnes asked if groundwater was tracked when as part of IBTs? Mr. Nelson replied that TWDB has dataset for groundwater information and that groundwater transfers don't necessarily involve river basins.

Ms. Barnes stated that the City of Lubbock puts groundwater into surface water supply and is permitted to use all of its groundwater (no environmental flow requirements) and that what it puts into the stream it may take out. Mr. Wheelock stated the City should have full use of groundwater in this case due to developed water concept principal. He stated that stormwater as well would be available for full use with no legal obstacles.

Mr. Ward addressed obstacles associated with ownership of water supplies. Mr. Ward stated that reservoir owners with storage are not inclined to let groundwater be put into their reservoir storage. Mr. Ward stated that TCEQ discourages groundwater supply stored in surface water. Mr. Crull replied that groundwater transmitted straight to a water treatment plan rather than impoundment avoids evaporative loss.

Mr. Crull stated that ASR projects have issues regarding water supply ownership. Ms. Barnes asked who besides the City of El Paso is doing ASR. Mr. Ward responded that the City of San Antonio uses ASR. Mr. Crull replied the City of Corpus Christi is considering ASR. Mr. Nelson commented that recent legislation lowering restrictions on ASR project injection water quality. Mr. Crull noted right-of-capture issues with regard to access to/protect of the injected water bubble. Mr. Ward stated that if no groundwater conservation district, could be restricted on what can be pumped out of ASR.

Mr. Ward indicated that some of these types of issues/projects being discussed might be good issues to just indicate observations about these issues.

Mr. Ward introduced the topic of obstacles associated with many competing needs for water. Mr. Ward stated that environmental laws are an obstacle; when these laws were created, environmental abuse was more significant than is currently and that there needs to be better granularity. Mr. Ward suggested that for impacts to threatened/endangered species, increasing funding for impact studies.

Mr. Crull stated in Region N freshwater inflow requirements exist for fishing and shrimping industry; Choke Canyon reservoir has permitted requirements for environmental flows. Mr. Crull questioned how to balance quantity of environmental flows and suggested that environmental flow must be in proper location for species habitat, not just flow volume. Mr. Ward commented that WAM run used for regional water planning assumes no return flow and suggested that these discharges and other flows be integrated into the planning process.[1] Ms. Barnes asked if there is enough information and science to quantify competing needs. Mr. Crull stated the science may not ever have enough data and a cutoff should occur at some point. Mr. Ward stated that there is a difference between water resource planning and water supply planning. Mr. Ward stated that because of environmental flow requirements, the Trinity River has greater flow than it would naturally.

Mr. Evans introduced the topic of obstacles associated with sponsorship of potential projects. Mr. Crull commented that the obstacle to sponsorship is finding an entity that can afford project; generally these will have to be large water providers. Mr. Evans commented that large providers also have the water rights. Mr. Ward stated that if a large provider did an interregional project, there is no incentive for the sponsor to provide connections to other smaller entities along the way. Mr. Ward stated that there previously existed a funding program for the state to provide these connections, and suggested that for large projects there be a requirement to evaluate state water need. Mr. Ward stated that state participation is only used by sponsors to gain future water reserves for only themselves while deferring costs; state participation is not used to include smaller entities into large projects. Mr. Ward gave the example of Toledo Bend reservoir as a state participation project with future water reserves. Mr. Ward stated that instead of the state sponsoring and holding water supplies, smaller entities are now pay-as-

[1] Agency note: The current regional water planning requirements allow for consideration of return flows in the planning process and these are included in numerous regions.

you-go since entities do not risk future water reserves and asked where is the state's role since the state is no longer a sponsor. Mr. Crull agreed that to invest in a supply for someone who may or may not take the water in the future is a hard sell and that, instead, the lowest cost to current customers is priority for water providers. He provided an example of the City of Corpus Christi not being able to buy unused water rights from another water provider because it would have raised customer rates. Mr. Ward replied that unused water rights can be cancelled.

Ms. Barnes asked how flood control projects related to water supply. Mr. Ward responded that water supply would be considered in new regional flood planning program. He indicated that it is land-intensive to store off-channel and that flooding in cities goes downstream, but not in middle basin areas. Mr. Ward suggested that for the Trinity river flood water could be stored in an off-channel reservoir and pumped back into the ground, but the state would need to assist due to high cost.

Mr. Evans introduced the topic of the types of innovative projects that are hindered, and why. Mr. Ward and Mr. Crull indicated that high cost and public perception/acceptance of reuse water are hinderances to innovative projects. Mr. Ward also commented that more can go wrong with sophisticated projects.

The committee discussed how to coordinate comments from members for the draft committee report within Open Meeting Act requirements.

Mr. Crull commented that related to competing needs, the regional water planning groups have different urban and rural needs. Mr. Evans responded that any region with a major city will have this issue. Mr. Crull responded that the RWPG prioritizes urban need. Mr. Ward suggested that major water providers meet to discuss planning and find possible cooperative efforts. Mr. Ward discussed the concept of state "water grid" with shared costs and shared resources for the state.

5. Discussion of Agenda for Future Meetings

Mr. Smith reviewed the committee report outline as shown in IPC report outline. Mr. Evans clarified that agenda for next 8/6 meeting includes action item for approving draft committee report.

6. Public Comment

No public comments were offered.

7. Announcements

Mr. Evans discussed dates for future committee and IPC meetings.

8. Adjourn

Mr. Evans asked for motion to adjourn. Mr. Crull motioned, Mr. Wheelock seconded motion. The meeting adjourned at approximately 3:28 pm.

4. Committee report to IPC August 12, 2020 meeting

Planning Water Resources for the State as a Whole Committee Report to the Interregional Planning Council – August 12, 2020

1. **Proposed Changes to Committee Problem and Goal Statement:** No changes proposed at this time.
2. **Draft Recommendation Summaries**

   Recommendation 1: Long range and visionary planning

   a. **Brief Observation**: The current regional water planning process does not sufficiently facilitate or encourage identification and inclusion of multi-regional projects, and is further hindered by the regional water process' limited emphasis on a 50-year planning horizon, drought of record, lowest project cost, and focus on sponsorship of projects.
   b. **Succinct Recommendations**:
      i. The Legislature should: Consider support for multi-regional projects developed from long-range planning:
         1. Provide financial incentives and state participation; and
         2. Provide additional funding for the regional water planning process to accommodate tasks associated with long range planning.
      ii. The TWDB should: Revise Texas Administrative Code Chapters 358 and 357 as appropriate, and include a new, specific task in the regional water planning group's contracted scope of work to require:
         1. Long-range, visionary planning effort, beyond current 50-year planning horizon, to identify statewide water needs and multi-regional projects to address these needs;
         2. Long range planning, visionary planning to consider longer-term droughts greater than recorded drought of record (e.g., mega-droughts); and
         3. Evaluation of identified potential projects without consideration to costs.
      iii. The RWPGs should: Find new ways to meet and collaborate with other RWPGs early in the planning process to identify and develop opportunities for multi-regional projects within the current regional planning framework and requirements. This could be established in the form of a new scope of work planning task and chapter.
      iv. Future Interregional Planning Councils should: [FILL IN BLANK]
   c. **Brief Benefit**: Collaborative multi-regional and visionary planning beyond region-centric and a 50-year horizon and recorded drought of record would aggregate and identify larger water needs not addressed currently by regional water planning groups. More large-scale projects to address long-term water needs would be considered; it is anticipated these projects would be multi-regional.

Coordination for such multi-regional projects would be strengthened during meeting amongst RWPGs. Evaluation of projects without cost consideration may encourage development of more visionary large-scale and innovative projects

Recommendation 2: Planning for state water needs as a whole

a. **Brief Observation**: The "bottom-up" regional water planning process does not reflect planning to address the state's water needs as a whole.
b. **Succinct Recommendations**:
    i. The Legislature should: Consider support for projects developed from long range planning:
        1. Utilize state agencies to develop a state level vision of planning resources for the state as a whole;
        2. Establish a process for coordination amongst state agencies related to installation of infrastructure during planning and construction of large-scale projects;
        3. Provide financial incentives for projects which address state water needs; and
        4. Have state committees develop state water resources.
    ii. The TWDB should:
        1. Allow for state sponsorship for large-scale projects which address state water needs; and
        2. Sanction large-scale projects that individual regions cannot, to be considered by the legislature.
    iii. The RWPGs should:
        1. Consider multi-regional projects during RWPG chairs conference calls.
    iv. Future Interregional Planning Councils should: [FILL IN BLANK]
c. **Brief Benefit**: Legislative recommendations would establish a state perspective for planning resources in conjunction with long range planning done at the regional level. It is anticipated that large-scale projects would require multiple sponsors and/or state sponsorships. Such projects may be considered feasible with in the presence of greater state financial incentives such as subsidies or state participation or ownership of projects.

3. **Draft Recommendations Under Further Consideration (yet to be fully developed):** None

5. Interbasin transfers excluding the Rio Grande Basin

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
3782	Canadian River Municipal Water Authority	Canadian	Lake Meredith	Red, Brazos, Colorado	151,200	1956	No	No
3985	City of Lubbock	Canadian	Lake Meredith	Brazos	22,910	1983	No	No
4301	Greater Texoma Utility Authority	Red	Lake Texoma	Trinity, Sabine	25,000	1957	Yes	Yes
				Trinity	56,500	2009	Yes	Yes[2]
				Trinity	1,515	2011	Yes	No[2]
4881	City of Gainesville	Red	Fish Creek	Trinity	4,500	1962	No[3]	No
					3,240	2006	Yes	No (E)[2]
4898	Red River Authority of Texas	Red	Lake Texoma	Trinity	2,000	1974	No	No
4899	Red River Authority of Texas	Red	Lake Texoma	Trinity	250	1967	No	No
4940	City of Paris	Red	Pat Mayse Lake	Sulphur	21,115	1964	Yes	No (E)
4943	City of Paris	Red	Lake Crook	Sulphur	12,000	1922	No	No
4961	City of Texarkana	Red	Bringle Lake	Sulphur	2,220	1928	No	No
5003	North Texas Municipal Water District	Red	Lake Texoma	Sabine, Trinity	84,000	1985	No	No
					113,000	2006	Yes	No[2]
5144	City of Wichita Falls	Red	Lake Kickapoo	Brazos	1,120	1984	No	No
5145	City of Megargel	Red	Megargel Creek Lake	Brazos	70	1962	No	No
5146	City of Olney	Red	Olney Lake, Lake Cooper	Brazos	450	1935	No	No
					810	1953	No	No
					35	1980	No	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
5211	MacKenzie Municipal Water Authority	Red	Lake MacKenzie	Brazos	2,600	1967	No	Yes/1982
12151	North Texas Municipal Water District	Red	Lower Bois D'Arc Creek Reservoir	Trinity, Sulphur	175,000	2007	Yes	No (2)
4797	Sulphur River Municipal Water District (Upper Trinity Regional Water District)	Sulphur	Lake Chapman	Trinity	16,106	1965	No	No
	North Texas Municipal Water District			Sabine, Trinity	3,214	1965	No	No
4798	North Texas Municipal Water District	Sulphur	Lake Chapman	Sabine, Trinity	54,000	1965	No	No
4799	City of Irving	Sulphur	Lake Chapman	Trinity	54,000	1965	No	No
4811	City of Sulphur Springs	Sulphur	Lake Sulphur Springs	Sabine	2,000	1951	No	No
					7,800	1968	No	No
4836	City of Texarkana	Sulphur	Lake Wright Patman	Cypress	9,000	1951, 1957, 1967	No	Yes/1981
				Red	11,500		No	Yes/1981
5821	Upper Trinity Regional Water District	Sulphur	North Sulphur River	Trinity River Basin	45,000	2004	Yes	No (2)
4560	Franklin County Water District	Cypress	Lake Cypress Springs	Sulphur, Sabine	4,000	1970	No	No
					173	1970	No	No
					2,012	1970	No	Yes/1980
					2,200	1970	Yes	No[3]

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
					1,000	1966	No	No (E)
4590	Northeast Texas Municipal Water District	Cypress	Lake O' the Pines	Sabine	20,000	1957	No[3]	No
					9,000			No (E)
4614	City of Marshall	Cypress	Cypress Creek	Sabine	16,000	1947	Yes	No (E)
4658	Sabine River Authority of Texas	Sabine	Sabine River	Neches	80,000	1958	No	No
4662	Sabine River Authority of Texas	Sabine	Sabine River	Neches	30,000	1946	No	No
4669	Sabine River Authority of Texas	Sabine	Lake Fork	Trinity	120,000	1974	No	Yes/1983
					5,048	1974	No	Yes/1992
					56,800		Yes	No (E)
4670	Sabine River Authority of Texas	Sabine	Lake Tawakoni	Trinity	207,765	1955	No	No
				Sulphur	8,396	1955	No	Yes/1986
				Trinity	20,000	1955	No	Yes/1986
					47,620		Yes	No (E)
4693	ETX Paragon, Ltd	Sabine	Van Lake	Neches	150	1949	No	No
					250	1976	No	No
4724	Hide-Away-Lake Club	Sabine		Neches	180	1970	Yes	No (E)
					179.42	1994	Yes	No (E)
3254		Neches	Lake Palestine	Sabine, Trinity	114,337	1956	No[3]	Yes/1972 (E)[3]

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
	Upper Neches River Municipal Water Authority				18,000	1956	No[3]	Yes/1983 (E)[3]
3256	Athens Municipal Water Authority	Neches	Lake Athens	Trinity	8,500	1955	No[3]	No
3879	Texaco	Neches	Neches River	Neches-Trinity	12,900	1982	No	No
4228	Angelina and Neches River Authority	Neches	Lake Columbia	Sabine	2,200	1985	No	No
4411	Lower Neches Valley Authority	Neches	Sam Rayburn Reservoir, Neches River and Pine Island Bayou	Neches-Trinity	219,252	1913	No	No
					107,108		No	No
					820,000	1963	Yes	No (E)
4415	City of Beaumont	Neches	Neches River	Neches-Trinity	6,570	1915	No	No
					49,897	1925	No	No
4853	City of Tyler	Neches	Lake Tyler	Sabine	40,325	1947	No	No
2319	City of Saint Jo	Trinity	Elm Fork Trinity River	Red	330	1957	No	No
2410	North Texas Municipal Water District	Trinity	Lake Lavon	Red, Sulphur, Sabine	498,024	multiple	Yes	No(E) [2, 3]
3356	City of Weatherford	Trinity	Lake Weatherford	Brazos	5,220	1954	No	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
4248	Trinity River Authority	Trinity	Lake Livingston	Neches, Neches-Trinity	351,600	1959	No[3]	No
				San Jacinto	51,600		No[3]	No
4261	City of Houston	Trinity	Trinity River, Lake Livingston	Trinity-San Jacinto	31,600	1913	No	No
				San Jacinto	13,400		No	No
				Neches-Trinity	28,000	1959	No	No
				Trinity-San Jacinto, San Jacinto, San Jacinto-Brazos	444,000		No	No
					458,800		No	No
					10,000		No	No
4277	City of Houston	Trinity	Trinity River	San Jacinto, Trinity-San Jacinto, San Jacinto-Brazos	33,000	1913	No	No
					5,000	1969	No	No
4279	Chambers-Liberty Counties Navigation District	Trinity	Trinity River, Lake Anahuac	Neches-Trinity, Trinity-San Jacinto	36,667	1906	No[3]	No
					43,333	1914		
	San Jacinto River Authority			Trinity-San Jacinto	30,000	1914	No[3]	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
5271	San Jacinto River Authority	Trinity	Trinity River	Neches-Trinity	7,500	1917	No	No
				Trinity- San Jacinto	20,000	1926	No	No
				San Jacinto	17,500	1929	No	No
					11,000	1936	No	No
	Lower Neches Valley Authority			Neches-Trinity	2,500	1929	No	No
13037	North Texas Municipal Water District	Trinity	Lake Lavon	Sabine, Red, Sulphur		multiple	Yes	No (E)
5807	San Jacinto River Authority	San Jacinto	Lake Houston	Trinity-San Jacinto, Trinity, San Jacinto-Brazos	14,100	2003	Yes	No(E)[2]
	City of Houston				14,100			
5808	San Jacinto River Authority	San Jacinto	Lake Houston	Trinity-San Jacinto, Trinity, San Jacinto-Brazos	40,000	2003	Yes	No (E)[2]
	City of Houston				40,000			
5809	San Jacinto River Authority	San Jacinto	San Jacinto River	Trinity-San Jacinto	14,944	2004	Yes	No (E)
5826	City of Houston	San Jacinto	San Jacinto River	San Jacinto-Brazos, Trinity-San Jacinto	130,000	2004	Yes	No(E)[2]
5827	City of Houston	San Jacinto	Brays, Hunting, Green, and Whiteoak Bayous and Lake Houston	Trinity, San Jacinto-Brazos, Trinity-San Jacinto	580,923	2004	Yes	No(E)[2]
13183	San Jacinto River Authority	San Jacinto	West Fork San Jacinto River	Trinity-San Jacinto	11,200	2016	Yes	No (E)[2]
5169	Gulf Coast Water Authority	San Jacinto - Brazos	Oyster and Jones Creek	San Jacinto, Brazos	12,000	1948	No	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
5170	City of Sugarland	San Jacinto - Brazos	Oyster and Jones Creek	San Jacinto, Brazos	18,000	1948	Yes	No(E)
5338	Texas Department of Corrections	San Jacinto - Brazos	Oyster Creek	Brazos	300	1985	No	No
2925	TWDB, City of Houston, Brazos River Authority	Brazos	Allen's Creek Reservoir	San Jacinto, San Jacinto-Brazos	99,650	1999	Yes	No (E)
2971	City of Lampasas	Brazos	Sulphur Creek	Colorado	180	1986	No	No
4151	City of Clyde	Brazos	Elm Creek	Colorado	2,500	1928	Yes	No(E)
4161	City of Abilene	Brazos	Elm Creek	Colorado	3,000	1937	No[3]	No (E)
5155	Brazos River Authority	Brazos	Possum Kingdom Reservoir	Trinity	5,240	1986	No	No
5156	Brazos River Authority	Brazos	Lake Granbury	Trinity	2,600	1964	No[3]	Yes/1986
					17,400		No[3]	Yes/1986
5167	Brazos River Authority	Brazos	Brazos River	San Jacinto-Brazos	200,000	Non-priority	No	No
5168	Gulf Coast Water Authority	Brazos	Brazos River	San Jacinto-Brazos	99,932	1926	No	No
5171	Gulf Coast Water Authority	Brazos	Brazos River	San Jacinto-Brazos	75,000	1939	No	No
					50,000	1950	No	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
5287	Bi-Stone Municipal Water Supply District	Brazos	Lake Mexia	Trinity	2,952	1957	No	No
5291	City of Teague	Brazos	Teague City Lake	San Jacinto-Brazos	605	1952	No	No
5322	Gulf Coast Water Authority	Brazos	Brazos River	San Jacinto, San Jacinto-Brazos	40,000	1929	No[3]	No
					40,000	1955	No[3]	No
					75,000	1983	No[3]	No
5328	Dow Chemical Company	Brazos	Brazos River	San Jacinto-Brazos	20,000	1929	No	No
					150,000	1942	No	No
					110,000	1960	No	No
					3,136	1976	No	No
5366	Brazosport Water Authority	Brazos	Brazos River	San Jacinto-Brazos, Brazos-Colorado	45,000	1960	No	No
5851	Brazos River Authority	Brazos	Brazos River	San Jacinto-Brazos, Brazos-Colorado, Trinity, Red, Colorado, Guadalupe, Lavaca, San Jacinto	516,945	2016	Yes	No (E)
1002	Colorado River Municipal Water District	Colorado	Lake J.B. Thomas	Brazos	30,000	1946	No	No
1031	City of Sweetwater	Colorado	Oak Creek Reservoir	Brazos	9,328	1949	No	No
1660	City of Clyde	Colorado	Lake Clyde	Brazos	200	1965	No	Yes/1985

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
1891	Corix Utilities (Texas) Inc. and Joe R. Miller	Colorado	Lometa Reservoir	Brazos	117.5	1921	Yes	No (E)
1903	City of San Saba	Colorado	Mill Creek	Brazos	245	1914	Yes	No (E)
1913	Corix Utilities (Texas) Inc., John Pat Grumbles and Emmet Lee Grumbles	Colorado	Lometa Reservoir	Brazos	270	1932	Yes	No (E)
3676	Colorado River Municipal Water District	Colorado	O.H. Ivie Reservoir	Brazos	15,000	1978	Yes	No (E)
4007	City of Cedar Park	Colorado	Lake Travis	Brazos	18,000	1938	Yes	No (E)
5434	Lower Colorado River Authority	Colorado	Colorado River	Brazos-Colorado, Colorado-Lavaca, Lavaca	133,000	1900	No	No
	City of Corpus Christi			Colorado-Lavaca, Lavaca, San Antonio, Nueces, Lavaca-Guadalupe, San Antonio-Nueces, Nueces-Rio Grande	35,000		No	Yes[5]

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
5437	Lower Colorado River Authority and STP Nuclear Operating Company	Colorado	Colorado River	Colorado-Lavaca	102,000	1974	No	No
5471	City of Austin	Colorado	Lake Austin	Brazos, Guadalupe	249,000	1913	No	No
			Town Lake		22,403	1914	No	No
5475	Lower Colorado River Authority	Colorado	Eagle Lake	Brazos-Colorado, Colorado-Lavaca	52,500	1901	No	No
					78,750	1987	No	No
5476	Lower Colorado River Authority	Colorado	Colorado River	Brazos-Colorado, Colorado-Lavaca	228,570	1900	No	No
					33,930	1987	No	No
5477	Lower Colorado River Authority	Colorado	Colorado River	Brazos-Colorado, Colorado-Lavaca	110,000	1907	No[3]	No
5677	Lower Colorado River Authority	Colorado	Lake Travis	Brazos	24,000	1938	Yes	No (E)
5715	Lower Colorado River Authority	Colorado	Colorado River (Lometa Reservoir)	Brazos	476	1938	Yes	No (E)
5730	Brazos River Authority	Colorado	Colorado River and Lake Travis	Brazos	25,000	1938	Yes	No (E)
5731	Lower Colorado River Authority	Colorado	Colorado River	Brazos, Brazos-Colorado, Colorado-Lavaca, Lavaca	327,591	2001	Yes	No(E)[2]

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
2095	Lavaca Navidad River Authority	Lavaca	Lake Texana	San Antonio, Nueces, San Antonio-Nueces, Nueces-Rio Grande	46,518	1972	No	No
					7,500	2003	Yes	No[2]
3978	2001 Cavalcade, Inc., Javelin Holding Limited Liability Company, Owen Enterprises, LLC.	Lavaca	Lavaca River	Lavaca-Guadalupe	1,800	1983	No	No
5584	Jackson County	Lavaca and Lavaca-Guadalupe	Lavaca River, Garcitas Creek, Venado Creek, Dry Creek	Lavaca, Lavaca-Guadalupe	2	1997	No	No
2074	Guadalupe-Blanco River Authority	Guadalupe	Canyon Lake	Colorado, Colorado-Lavaca, Lavaca, Lavaca-Guadalupe, San Antonio, San Antonio-Nueces	62,900	1956	No[3]	No
					57,100	1999	Yes	No(E)[2]
3600	Guadalupe- Blanco River Authority	Guadalupe	San Marcos River	San Antonio, Colorado, Lavaca	600	1981	Yes	No (E)
3606	City of Victoria	Guadalupe	Guadalupe River	Lavaca-Guadalupe	4,676	1978	No	No
3606	Victoria County Navigation District	Guadalupe	Guadalupe River	Lavaca-Guadalupe	5,000	1978	No	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
3844	City of Victoria	Guadalupe	Guadalupe River	Lavaca-Guadalupe	608	1918	Yes	No (E)
3858	City of Victoria	Guadalupe	Guadalupe River	Lavaca-Guadalupe	1,000	1951	Yes	No (E)
3860	City of Victoria	Guadalupe	Guadalupe River	Lavaca-Guadalupe	260	1951	No	No
3861	E.I. Du Pont de Nemours and Company	Guadalupe	Guadalupe River	Lavaca-Guadalupe	5,000	1948	No	No
	Invista				55,000			
3862	City of Victoria	Guadalupe	Guadalupe River	Lavaca-Guadalupe	262.7	1951	Yes	No (E)
3863	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca, Lavaca-Guadalupe, San Antonio, San Antonio-Nueces	3,000	1951	No[3]	No
3895	Jefferson Bank, Custodian of the Edmund McLeod Longscope IRA	Guadalupe	San Marcos River	Lavaca, Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado, Colorado-Lavaca	580	1977	No[3]	No (E)

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
4276	Del Williams	Guadalupe	Guadalupe River	Lavaca-Guadalupe	272	1985	No	No
5012	Robert Joseph Hawes	Guadalupe	Elm Bayou	San Antonio	140	1985	No	No
5173	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado, Colorado-Lavaca, Lavaca	2,500	1941	No[3]	No
5174	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado, Colorado-Lavaca, Lavaca	1,870	1944	No[3]	No
5175	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado,	940	1951	No[3]	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
				Colorado-Lavaca, Lavaca				
5176	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado, Colorado-Lavaca, Lavaca	9,944	1951	No[3]	No
5177	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado, Colorado-Lavaca, Lavaca	42,615	1944	No[3]	No
					8,632	1948	No[3]	No
5178	Guadalupe-Blanco River Authority	Guadalupe	Guadalupe River	Lavaca-Guadalupe, San Antonio, San Antonio-Nueces, Colorado, Colorado-Lavaca, Lavaca	106,000	1952	No[3]	No
5234	Guadalupe-Blanco River Authority	Guadalupe	San Marcos River	San Antonio, Colorado, Lavaca	1,022	1989	Yes	No (E)
5466	City of Victoria	Guadalupe	Guadalupe River	Lavaca-Guadalupe	20,000	1993	No	No

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
1160	DDR Rock Ranch Partners, Ltd.	San Antonio	Cibolo Creek, San Antonio River	Nueces, Guadalupe, San Antonio-Nueces	140	1966	Yes	No (E)
2130	BMA WCID	San Antonio	Medina Lake	Nueces	65,830	1910	No	No
2131	BMA WCID	San Antonio	Medina Lake	Nueces	2,000	1912	No	No
2178	Zachary Xavier Yanta and Linda A. Yanta	San Antonio	San Antonio River	Nueces	63	1917	Yes	No (E)[3]
					180	1926		
					500	1989		
2193	Riverdale Land and Cattle Company, Ltd.	San Antonio	San Antonio River	Guadalupe and Nueces River Basins and the San Antonio-Nueces Coastal Basin	284	1963	Yes	No (E)
2197	Riverdale Land and Cattle Company, Ltd.	San Antonio	San Antonio River	Guadalupe and Nueces River Basins and the San Antonio-Nueces Coastal Basin	86	1967	Yes	No (E)
2198	San Antonio River Authority	San Antonio	San Antonio River	Guadalupe and Nueces River Basins and the San Antonio-Nueces Coastal Basin	333	1950	Yes	No (E)

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
3517	Ridley Family Ranches	San Antonio	San Antonio River	Guadalupe, Nueces and Lavaca River Basins and the Lavaca-Guadalupe and San Antonio-Nueces	80	1977	Yes	No (E)
					80	1984	Yes	No (E)
4161	Joyce Ann Anderson	San Antonio	San Antonio River	Guadalupe and Nueces River Basins and the San Antonio-Nueces Coastal Basin	90	1984	Yes	No (E)
4175	Ridley Family Ranches	San Antonio	San Antonio River	Guadalupe, Nueces, and Lavaca River Basins & San Antonio-Nueces and Lavaca-Guadalupe Coastal Basins	160	1984	Yes	No (E)
4240	Rio Grande Resources Corporation	San Antonio	Cibolo Creek	Guadalupe, Nueces, San Antonio-Nueces	525	1985	Yes	No(E)
5044	Ridley Family Ranches, Ltd.	San Antonio	San Antonio River	Lavaca, Lavaca-Guadalupe, Guadalupe, San Antonio-Nueces, Nueces	150	1986	Yes	No(E)

Interbasin Transfers
Excluding the Rio Grande Basin

WR	Owner	Basin From	Source	Basin To	Amount	Original Priority Date	Subject to SB1	Junior Date?/New Priority Date
5489	Womack Land and Cattle Company, Ltd.	San Antonio	Elm Bayou	Guadalupe	750	1994	No[3]	No
5283	RK Agustaya TIC LLC	San Antonio-Nueces	Poesta Creek	Guadalupe, Nueces, San Antonio	150	1990	Yes	No (E)
2466	Nueces County WCID #3	Nueces	Nueces River	Nueces-Rio Grande	8,606	1909	No	No
					2,940	1921	No	No
2464	City of Corpus Christi	Nueces	Lake Corpus Christi	Nueces-Rio Grande	675	1913	No	No
					4,054	1914	No	No
					300,026	1925	No	No
4092	City of Taft	Nueces	Taft Drainage Ditch	San Antonio-Nueces	600	1983	No	No
5736	City of Corpus Christi	Nueces	Nueces River	San Antonio-Nueces	8,000	2001	No	No
12986	M&G Resins USA, LLC	Nueces-Rio Grande	Corpus Christi Inner Harbor	Nueces	25,806	2014	Yes	No (E)

Interbasin Transfers
Excluding the Rio Grande Basin

1. It should be noted that many water rights include authorization for interbasin transfer where the amount to be transferred is not specified. If the amount was not specified in the water right, it was assumed that the entire amount would be transferred.
2. Some water rights did not receive a new priority date for the interbasin transfer because the water right was a new appropriation of water and was junior anyway.
3. These water rights were subsequently amended after SB1 for additional exempt authorizations.
4. (E) represents water rights that applied for and were granted exempt interbasin transfers
5. The portion of the water right granted to Corpus Christi was made one day junior to LCRA's rights pursuant to an agreement between the parties.

6. 2002 State Water Plan Chapter 5 excerpt on interbasin transfers

Table 5-6. *continued*

River Basin	Surface water supplies from existing sources (AFY) 2000	2010	2020	2030	2040	2050	%
Nueces-Rio Grande	18,341	18,341	18,341	18,341	18,341	18,341	- 0
Red	409,195	404,253	399,455	394,459	369,217	367,154	↓ 10
Rio Grande	1,238,743	1,221,873	1,169,666	1,079,380	1,013,848	932,510	↓ 25
Sabine	583,897	546,866	535,439	526,626	513,049	513,896	↓ 12
San Antonio	77,501	77,501	77,501	77,501	77,501	77,501	- 0
San Antonio-Nueces	1,478	1,478	1,478	1,478	1,478	1,478	- 0
San Jacinto	112,662	110,337	64,317	12,199	11,294	11,282	↓ 90
San Jacinto-Brazos	47,692	47,786	47,802	47,617	47,618	47,797	- 0
Sulphur	217,275	215,885	214,064	212,595	211,980	211,180	↓ 3
Trinity	1,912,777	1,929,214	1,970,309	1,652,144	1,668,423	1,709,838	↓ 11
Trinity-San Jacinto	30,109	30,111	30,124	30,123	30,122	30,120	- 0
Total	**8,590,838**	**8,027,774**	**7,894,826**	**7,320,682**	**7,088,539**	**7,015,066**	↓ **18**

% represents the percent change from 2000 through 2050. The preceding symbol indicates whether supplies from the river basin are expected to decline (↓), increase (↑), or remain the same (-) from 2000 through 2050. Supplies that do not change by more than 0.5 percent are shown as remaining the same.

Table 5-7. Existing interbasin transfers*.

ID	Source	Destination
1	Lake Meredith	City of Amarillo
2	Lake Meredith	City of Lubbock
3	Lake Meredith	Cities of Lamesa, O'Donnel and Brownfield
4	Mackenzie Reservoir	Cities of Floydada and Lockney
5	Megargel Creek Lake	City of Megargel and service area
6	Lake Kickapoo	City of Olney
7	Lakes Cooper and Olney	City of Olney
8	Moss Reservoir	City of Gainesville
9	Lake Texoma	Lake Lavon
10	Pat Mayse Reservoir	Service area
11	Lake Crook	City of Paris
12	Bringle Lake	City of Texarkana
13	Cooper Lake	Lake Lavon, service area
14	Cooper Lake	Lake Lavon
15	Cooper Lake	Lake Lavon, City of Irving and its service areas
16	Lake Sulphur Springs	City of Sulphur Springs
17	Lake Wright Patman	City of Texarkana and customers
18	Lake Wright Patman	City of Atlanta
19	Lake Cypress Springs	City of Winnsboro
20	Lake Cypress Springs	Mount Vernon WTP
21	Lake O' the Pines	City of Longview
22	Big Cypress Bayou	City of Marshall
23	Lake Tawakoni	Commerce WTP
24	Lake Tawakoni	Dallas WTP or Lake Ray Hubbard
25	Lake Fork Reservoir	Dallas via Lake Tawakoni
26	Lake Tawakoni	Lake Terrell

Table 5-7. *continued*

ID	Source	Destination
27	Lake Tawakoni	Wills Point
28	Lake Fork Reservoir	Service area
29	Village Creek	City of Van
30	Toledo Bend Reservoir	Service area
31	Lake Palestine	City of Dallas
32	Lake Athens	Athens WTP
33	Lake Palestine	Part Palestine
34	Lake Palestine	City of Tyler
35	Lake Tyler	City of Tyler
36	Lake Pinkston	Center WTP
37	Neches River and Pine Island Bayou (releases from Sam Rayburn and Steinhagen)	LNVA service area within Chambers, Liberty, and Jefferson Counties
38	Neches River	Implied service area
39	Neches River	Implied service area
40	Neches River	Alligator Bayou
41	Neches River	Beaumont service area
42	SCS Reservoir on Elm Fork Trinity River	City of Saint Jo
43	Lake Weatherford	City of Weatherford
44	Lake Lavon	Royse City and others
45	Houston County Lake	Highlands Reservoir, industries and irrigation
46	Lakes Livingston and Wallisville and Lake Houston (10-4965)	City of Houston service area
47	Lakes Livingston and Wallisville	City of Houston service area
48	Trinity River	San Jacinto River Authority
49	Lakes Livingston and Wallisville	Service area
50	Trinity River	Devers Rice Growers
51	Lakes Livingston and Wallisville and Lake Houston (10-4965)	City of Houston service area
52	Lakes Livingston and Wallisville and Lake Houston (10-4965)	City of Houston service area
53	Lake Anahuac, Trinity River, and Trinity Bay	Chambers-Liberty Co. ND
54	Lake Houston	City of Houston service area (San Jacinto-Brazos)
54	Lake Houston	City of Houston service area (Trinity-San Jacinto)
55	Oyster Creek	Within property boundaries
56	Jones Creek and Oyster Creek	Service area
56	Jones Creek and Oyster Creek	Service area
56	Jones Creek and Oyster Creek	Service area
57	Freeport Harbor Channel	Brazos River
58	Lake Granbury	Service area
59	Sulphur Creek	Service area
60	Lake Mexia	City of Mexia and Mexia State School
61	Teague City Lake	City of Teague
62	Brazos River (COAs 5155-5165)	BRA service area

Table 5-7. *continued*

ID	Source	Destination
63	Brazos River	BRA service area
64	Brazos River	Service area
65	Brazos River	Brazoria County (?Fort Bend, Harris, and Galveston)
66	Brazos River	City of Freeport
67	Lake J.B. Thomas	Part of Fisher County
68	Oak Creek Reservoir	Lake Trammell and Sweetwater
69	O H Ivie Reservoir	City of Abilene and its customers
70	Lake Clyde	City of Clyde
71	Lake Travis	City of Leander
72	Lake Travis	City of Cedar Park
73	Lake Austin and Town Lake	Williamson County and possibly others
74	Colorado River and Eagle Lake	Lakeside Irrigation
75	Colorado River	Garwood rights to various recipients
75	Colorado River	Garwood rights to various recipients
76	Colorado River	Garwood rights to various recipients
76	Colorado River	Garwood rights to various recipients
77	Colorado River	Corpus Christi and its service areas
77	Colorado River	Corpus Christi and its service areas
78	Colorado River	South Texas Reservoir
79	Colorado River	Gulf Coast Water Division service area
80	Lavaca River	Within property boundaries
81	Lake Texana, Lavaca River	LNRA service area, including City of Corpus Christi and its service areas
82	Lavaca River, Dry Creek,	Within county boundaries
83	Garcitas Creek, Venado Creek Canyon Lake	Service area
84	Guadalupe River	Victoria and its service area
85	Guadalupe River	Plant (located out of basin)
86	Guadalupe River	Schwings Bayou (discharge point)
87	Elm Bayou	Irrigation
88	Guadalupe River	Calhoun County
89	Lake Medina and Lake Diversion	BMA Canals
90	San Antonio River	Elm Creek
91	Lake Corpus Christi	Beeville
92	City of Taft	Taft Drainage Canal
93	Lake Corpus Christi	Alice Terminal Reservoir
94	Calallen Reservoir	San Patricio MWD and Nueces County WCID #4
95	Nueces River	Rincon Bayou
96	Calallen Reservoir	South Texas Water Authority
97	Calallen Reservoir	Nueces County WCID #3 (Robstown and surrounding area)
98	Calallen Reservoir	Corpus Christi industries
99	Falcon and Amistad Reservoirs	Nueces-Rio Grande

* Based on water rights information provided primarily by TNRCC.

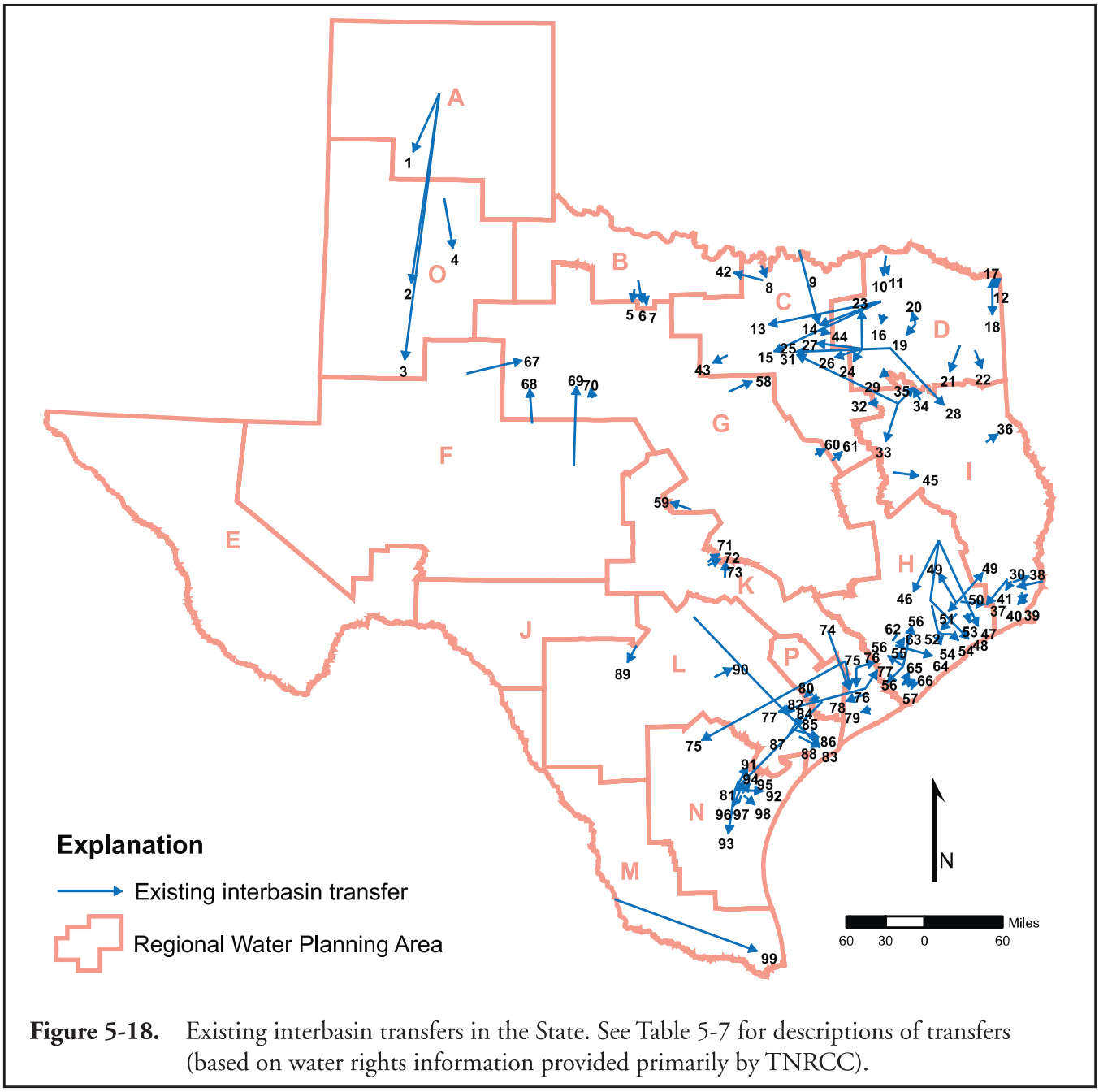

Figure 5-18. Existing interbasin transfers in the State. See Table 5-7 for descriptions of transfers (based on water rights information provided primarily by TNRCC).

5.3.3 Wastewater Reuse

Key Finding **Water supplies from current wastewater reuse are projected to decrease 18 percent, from approximately 340,000 AFY in 2000 to 280,000 AFY in 2050.**

Wastewater reuse can be categorized as municipal, industrial, agricultural, or a combination of approaches. In municipal and industrial applications, the term "reuse" generally refers to the process of using treated wastewater (reclaimed water) for a beneficial purpose. The degree of treatment depends on the proposed use for the reclaimed water. Examples of water reuse include municipal reclaimed water for golf course irrigation

7. RFI responses on interregional water supply projects

Interregional Water Supply Projects

Compiled responses to TWDB's Request for Information

The TWDB issued this request for information (RFI) to seek information and comments regarding water supply projects that would benefit multiple water planning regions. The TWDB collected this information as directed in HB 1052 that passed during the 86th Legislative Session. The purpose of this RFI was to provide a means for stakeholders to share ideas regarding the types of interregional projects that could be considered for funding at a later date.

Responses were accepted from April 1, 2020 to July 1, 2020.

Texas Water Development Board

APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name America First Committee PAC/ James Lee Murphy, General Counsel	
Address 265 E. Oakview Place, Alamo Heights, Texas 78209	**Phone Number** (210) 859-2189
Name and Title of Authorized Representative Submitting the Response James Lee Murphy, General Counsel, America First Committee PAC	
Contact Person Name James Lee Murphy, Esq.	**Contact Person Phone Number** (210) 859-2189
Contact Person Email Address jamesleemurphyesq@att.net	
Regions Affected (as shown on Regional Water Planning Areas map) Primary Regions of Impact: C, H, K & L Secondary Regions of Impact: I, P & N	
Proposed Source for the Water Supply: (1) Toledo Bend Reservoir; (2) the Simsboro Aquifer portion of the Carrizo-Wilcox Formation; and (3) the Gulf of Mexico	

Response

Chairman Lake, Directors Jackson and Paup, on behalf of myself, James Lee Murphy and the America First Committee PAC, I thank you for the opportunity to comment. The current regional planning process dates back to the passage of Senate Bill 1 during the 1997 Session of the Texas Legislature. A lot has changed since that time and we believe HB 1052 provides an opportunity for taking a second look at a regional planning process begun over two decades ago.

Over the past 27 years I have been directly involved representing the interests of river authorities in the planning regions that affect the Dallas Metroplex, Houston, Austin, and San Antonio. Thanks to funding made available by the TWDB, I've supervised the development of large-scale regional projects and have presented testimony before the Texas Legislature, TWDB and numerous professional associations regarding strengths and weaknesses of the current regional planning process. I am therefore qualified to offer a careful examination of elements essential to the development of projects "*that would benefit multiple water planning regions*" and to do so in manner that will "*encourage optimum development of interregional water supply projects selected under Texas Water Code Section 16.145.*"

The projects that I reference in the "Proposed Source for the Water Supply" section above adhere strictly to the criteria established by TWDB for this RFI: (1) maximizing the use of private financial resources, (2) combining the financial resources of multiple water planning regions, and (3) having a substantial economic benefit to the regions served by: (a) affecting a large population, (b) creating jobs in the regions served, and (c) meeting a high percentage of the water supply needs of the water users served by the project. I will briefly describe the projects however a detailed description is unnecessary as TWDB has either funded or otherwise obtained information regarding the sources. I will conclude with an overview of the impediments to promote and fund "*water supply projects that benefit multiple water planning regions.*"

Toledo Bend Reservoir

Toledo Bend reservoir has a conservation surface area of 181,600 acres and a shared storage capacity of 4,477,000 acre-feet at the conservation pool elevation of 172 feet above mean sea level. Designed total storage capacity is 4,661,000 acre feet at top of emergency spillway gates, elevation of 173 feet above mean sea level. Toledo Bend Reservoir is the largest man-made body of water in the South by surface area and fifth largest in surface acres in the United States. It is the third largest reservoir in or shared with Texas by total storage capacity. Toledo Bend could supply much, possibly all, of the demand projected in the State Water Plan for Regions C & K, however three factors combine to stymie the effective usage of this unmatched resource: (1) legislation; (2) transportation; and (3) commodity cost. Scholarly papers describe the problem in detail, however it is important to note that unlike most projects listed in the State Water Plan, the source of supply is secure, well-identified and readily available, while the impediments are largely "paper problems" that can be remedied by legislation, which I address below. The chief engineering challenge is in the field of transportation, as infrastructure is necessary to link the resource to the Greater Houston metropolitan area, as well as the DFW area's Integrated Water Project pipeline. It should be noted in terms of water availability that Louisiana has little projected need for its share of the Toledo Bend.

Groundwater - The Simsboro Aquifer

As an Executive Manager at the Guadalupe-Blanco River Authority (GBRA), I have as strong a claim as any to the potential development of the Carrizo-Wilcox aquifer as a source of supply consistent with the guidelines of this RFI. GBRA developed a project to utilize this resource in combination with storage and under-utilized surface water rights held by GBRA.

Company/Entity Name - America First Committee PAC/ James Lee Murphy, General Counsel

Response (continued)

As a predominantly rural authority, GBRA recognized that the highest and best use of the state's groundwater resource should be reserved for the following uses, in descending order of importance: (1) agriculture, (2) industry; and (3) smaller communities with stagnant or declining population growth. We were concerned moreover that promotion of groundwater was, and is, driven by consultants and private investors for whom profit precedes the public interest. Our approach therefore was to focus on the Simsboro, based on information obtained from TWDB, as the most reliable source of groundwater for municipal supply, supplemented by surface water and storage, the latter to balance the differing drought curves that affect surface and groundwater. We determined that no more than 100,000 acre-feet of groundwater could be relied upon for municipal water supply, and we predicated our project on providing 50,000 acre-feet to the San Antonio area, 35,000 acre-feet for the Austin area, with remainder for the I-35 corridor between Austin and San Antonio. GBRA abandoned this project due to political pressure, possibly illicit, applied by private investors and/or their lobbyists and attorneys, however it remains viable if the Vista Ridge pipeline, currently operated by Epcor, a private entity, were converted to a regional utility rather than a personal vehicle for the personal benefit of the beneficiaries of the San Antonio Water System.

The Gulf of Mexico

More than two-thirds of Texas residents live within 150 miles of the Gulf of Mexico. It should be glaringly obvious that marine seawater represents the best long-term source of uninterruptable source of water supply for our state. All sources of supply are subject to interruption, however unlike all other options, the Gulf will never runout of water. GBRA developed a scalable Integrated Water Power Project to provide from at least one treatment facility, up to 250,000 acre-feet of supply, in increments of 25,000 acre-feet along the Texas Coast. This project was funded in part by TWDB, the GLO, and the Bureau of Reclamation. I worked closely with Rep. Eddie Lucio III and Senator Juan "Chuy" Hinojosa to secure legislation recognizing marine seawater as resource for the state and in the process worked closely with TPWD and environmental stakeholders to address positively their concerns. This project remains in the State Plan and in terms of supply, remains the obvious choice in terms of prioritizing funding from the TWDB's Participation Account.

Maximizing the Use of Private Financial Resources

I have adequately outlined, within the limits of this RFI, projects that will would of necessity meet needs that: *"(a) affecting a large population, (b) creating jobs in the regions served, and (c) meeting a high percentage of the water supply needs of the water users served by the project."* The projects I describe would create jobs both in the design and construction phase and, more important, proved water supply for economic growth, particularly for sectors of the economy that are large scale water users. Based on personal experience, the foregoing projects are, each in their own way, tailored to take advantage of private finance to maximize state and local investment in water supply. "*Private Financial Resources*" covers a wide swath, however the terms of the RFI narrow the investor community to multinational corporations the operate in the global water sector and pension and other funds seeking long-term, secure, relatively low rates of return to balance shorter term, higher risk investments. Having worked personally with a significant number of such investors, I can testify to their appetite for investment. Those seeking short term, higher returns on investment have little appetite for investing in water supply projects absent a guaranteed payout in 5-7 years at the outside. I can also testify that Texas has driven off AAA+ investors because of the impediments noted above. Removal of these impediments will open Texas to private funding that will supplement and extend not only the State Participation Account, it will extend the ability of TWDB by reallocating state funds to other, more immediate, needs.

Impediments to Developing and Funding Interregional Water Supply Projects

I mentioned legislation, transportation and commodity cost as proximate obstacles to "*developing and funding interregional water supply projects.*" These impediments have clear solutions that cannot be adequate addressed under the state's currently regulatory framework. The Chairman of the House Natural Resource Committee has often remarked on the" balkanization" of state water planning, and his remarks are if anything, understated. Adding up the projected water demands through the life of the state water plan and balancing those demands against the number of projects in the plan to meet those demands comes up with an average of 1500 acre-feet per project. Our state water plan is more accurately described as a wish list of often duplicative projects that are eligible for state funding. The same can be said for the state agencies that currently have jurisdiction over the state's interest in water supply.

TWDB is not in a position to develop and enforce a state water plan as it is a fiduciary. TWDB has, by default become the state's database for all things water because it is a funding source, but as lending institution it must maintain a safe distance from directing or regulating the institutions to which it extends loans or credit. In a similar way, TCEQ is a regulatory agency, and throughout my career water rights has been the poorly funded step-child of an agency that must focus on compliance with state and federal environmental regulations.

Removing Impediments to Interregional Water Supply Projects

Article XVI, §59 (a) of the Texas Constitution provides that "*The conservation and development of all of the natural resources of this State... and the preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto.*" As is said, a journey begins with the first step. In this instance, "*developing and funding interregional water supply projects*" begins with an agency charged with the mission of maximizing the development of the state's water supply. There are many ways to accomplish this task, however the State needs an equivalent of the General Land Office to promote and protect the state's interest in water and in the process end what is a *de facto* privatization of the state's interest in water. Texas recognized that by the 1890's it was a bad idea to give away land rights for no value. As a result, we have the General Land Office and the Permanent University Fund. As a member of the profession I can't advocate the solution recommended by " *Dick The Butcher* " in *Henry VI, Part 2, Act IV, Scene 2*, however it can't be denied that a handful of Austin based lawyers and lobbyists have effectively privatized the state role in water planning and as such they are the principal impediment to "*developing and funding interregional water supply projects.*" TWDB is leading the way by issuing this RFI and the good news is that the vast majority of the needs reflected in the state water plan are for domestic and municipal supply. As a practical matter projects and funding related thereto will go to political subdivision of the state. They are therefore subject in all things to the Texas Legislature and the "rules of the game" the state chooses to impose. In closing, I thank you for the opportunity to respond to this RFI and I look forward to working with you in the future to make your goals a reality. I am, as always, available to respond to queries or questions.

APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name Brazos River Authority	
Address 4600 Cobbs Drive Waco, TX 76710	**Phone Number** 254-761-3100
Name and Title of Authorized Representative Submitting the Response David Collinsworth, General Manager/CEO, Brazos River Authority	
Contact Person Name Aaron Abel	**Contact Person Phone Number** 254-761-3175
Contact Person Email Address aaron.abel@brazos.org	
Regions Affected (as shown on Regional Water Planning Areas map) Brazos G and Region H	
Proposed Source for the Water Supply Allens Creek Reservoir	

The Brazos River Authority is pursuing the Allens Creek Reservoir project in order to develop water to meet needs in the lower Brazos and San Jacinto River Basins as well as adjoining coastal basins. Allens Creek Reservoir has been a recommended water management strategy in all Region H Regional Water Plans and State Water Plans since the first cycle of the water planning process in the early 2000's. Additionally, the Allens Creek Reservoir site has been continually identified as a Unique Reservoir Site within the Region H regional water planning process. It is currently estimated that the project will provide approximately 100,000 acre-feet/year of firm supply. The reservoir's primary benefit to the citizens of Texas is to provide water for municipalities, industry, agricultural producers, and electric energy generators in the Region H area. The reservoir will also help satisfy regulatory requirements to reduce groundwater pumping, which contributes to subsidence in the area.

A Texas Commission on Environmental Quality (TCEQ) water right has been granted for Allens Creek Reservoir through permit 2925 (original right granted February 6, 1974 and amended by 2925A granted January 16, 2002 and 2925B granted August 31, 2011). This permit provided for the ownership of the reservoir among City of Houston, Brazos River Authority, and the Texas Water Development Board who provided funding for the original purchase of the site.

In addition to the Region H planning area, Allens Creek Reservoir will also benefit the Brazos G planning area, located primarily in the central portion of the Brazos River basin. Currently, BRA system reservoirs upstream serve the demands in Lower Brazos River basin by providing downstream water supply releases to satisfy the Lower Brazos River basin demands. Once Allens Creek Reservoir is operational and supplying demands in the Lower Brazos River basin, upstream reservoirs within the BRA water supply system will not be required to make downstream water supply releases as frequently, thus creating the potential for additional supply for other users further upstream within the Brazos G planning area.

The proposed reservoir site is located in Austin County, one mile north of the City of Wallis, on Allens Creek, a tributary to the Brazos River. This site exists within the Brazos River Basin within Region H. Approximately 9,500 acres of land at the reservoir site has been purchased. This project is configured as a scalping reservoir that would divert stormwater flows from the Brazos River and impound these flows in the reservoir to create storage yield. During periods of lower streamflow, diversions are limited by instream flow thresholds established to protect the environment and downstream senior water rights. The conservation storage quantity is approximately 145,500 acre-feet at an elevation of 121 feet above mean sea level. The total project capital cost is estimated at $365,446,301, according to the 2021 Region H Initially Prepared Plan.

The required permitting through the U.S. Army Corps of Engineers (USACE) and engineering design of the project is anticipated to take approximately 10 years to complete with another 2.5 to 3.5 years expected for construction at the end of an overall 15-year development period.

Currently, BRA's water supply system (System) is composed of eleven reservoirs and associated permitted water rights that allow BRA to contract water on a wholesale raw water basis to over 160 customers. As new projects are evaluated, designed, and constructed costs are spread across the entire BRA customer base. It is anticipated that financing new water supply projects will require a combination of BRA funds, TWDB funds either through the State Participation program or other TWDB programs, and additional outside funding sources.

Additional information related to Allens Creek Reservoir can be found in the 2021 Region H Initially Prepared Plan (http://www.regionhwater.com/downloads/planningdocs.html), dated March 2020 (Appendix 5-B-SWDV-001 – Allens Creek Reservoir).

Company/Entity Name
Brazos River Authority

APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
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Company/Entity Name Brazos River Authority	
Address 4600 Cobbs Dr. Waco, TX 76710	**Phone Number** 254-761-3100
Name and Title of Authorized Representative Submitting the Response David Collinsworth, General Manager/CEO, Brazos River Authority	
Contact Person Name Aaron Abel	**Contact Person Phone Number** 254-761-3175
Contact Person Email Address aaron.abel@brazos.org	
Regions Affected (as shown on Regional Water Planning Areas map) Region G and Region H	
Proposed Source for the Water Supply Lake Whitney Reallocation Project	

Lake Whitney is a major impoundment located on the Brazos River approximately 30 miles north of the City of Waco in Hill and Bosque Counties. Lake Whitney was completed in 1951 by the U.S. Army Corps of Engineers for the primary purposes of flood control, water supply, and production of hydroelectric power. The total storage in Lake Whitney is approximately 2.09 million acre-feet (acft), making it the largest reservoir in the Brazos River Basin. The vast majority of storage in Lake Whitney is for flood control, comprising approximately 1,473,000 acft (approximately 70 percent of the total reservoir storage). The conservation storage capacity at Lake Whitney is represented by the storage between elevations 520 and 533 ft-msl and represents approximately 260,000 acft according to a 2019 volumetric survey. The capacity below elevation 520 ft-msl is reserved for power head and sediment storage, and has a capacity of approximately 357,000 acft according to the 2019 survey. In 1972, the top of the power pool was raised from 520 ft-msl to 533ft-msl, and the top of power head reserve (i.e. the bottom of the power pool) was raised from 510 ft-msl to 520 ft-msl, making about 250,000 acft of storage available to hydropower. In 1982, approximately 20 percent of the hydropower storage (50,000 acft) was reallocated to water conservation storage (water supply). A water right was issued to the Brazos River Authority (BRA) that authorizes the BRA to divert and use up to 50,000 acft/yr from the water conservation storage. According to the 2019 survey, the amount stored between elevations 520 ft-msl and 533 ft-msl, which includes both the hydropower pool and BRA's storage, was approximately 260,000 acft. Hydroelectric power generation from Lake Whitney is administered through the Southwestern Power Administration (SWPA), a federal agency. The Whitney Dam powerhouse uses two generators that originally had a capacity of 30 megawatts (MW) but were upgraded in 2014 and now have a capacity of 43 MW.

The potential for reallocation of the hydropower storage and inactive storage at Lake Whitney to water conservation storage has been studied in various forms in the past and is an option for developing additional water supply in the Brazos River Basin. The conversion of storage to water supply purposes at Lake Whitney can produce a significant supply of water that could be utilized by a number of entities throughout the Brazos River Basin. Potential users include entities within the Brazos G region, as well as entities downstream in Region H.

Lake Whitney is unique due to its use for hydropower generation and the fact that no State water right permit exists for most of its storage. Due to its large size and location on the main stem of the Brazos River, it has the potential to provide greater water supply benefits than currently authorized if some form of reallocation can be implemented under which various portions or pools of the reservoir might be redefined or used differently than they are today.

The increase in water supply as a result of reallocation at Lake Whitney has been evaluated in each of the last three regional water planning cycles, dating back to the 2011 Brazos G Regional Water Plan. Evaluations of the firm supply in the most recent 2021 Brazos G Initially Prepared Regional Water Plan does not consider converting flood storage to water supply storage at Lake Whitney, but rather evaluates the reallocation of hydropower storage and a portion of the inactive storage in Lake Whitney to water supply storage. This reallocation could produce a considerable firm yield. Since most of the supply from this strategy would be used as part of the BRA system, this analysis determines the increase in BRA system yield made available from the additional storage. The increase in system yield for reallocation of the hydropower storage in Lake Whitney was found to be 38,480 acft/yr for 2070 conditions assuming use of the total storage between elevations 520 feet and 533 feet. If ten feet of previously inactive storage were reallocated to water supply, the increase in yield would be 77,600 acft/yr for 2070 conditions assuming use of the total storage between elevations 510 feet and 533 feet.

Development of the increase in system yield from reallocation of storage in Lake Whitney will not require major facilities for implementation. However, implementation of this alternative requires a detailed evaluation of various issues that will require mitigation of adverse impacts. In addition to these costs, a detailed U.S. Army Corps of Engineers (Corps) reallocation study is required. The final cost for implementation of this alternative will be dependent on the results of that study. The estimated cost for water supply storage in Lake Whitney is the maximum of two numbers: 1) the updated investment cost of the reallocated hydropower storage as a proportion of the reallocated storage to total useable storage, or 2) the amount of money needed to compensate for lost hydropower revenue. The updated total investment cost for Lake Whitney was estimated to be $244,974,000 in the most recent 2021 Brazos G Initially Prepared Regional Water Plan. The increase in cost for water supply storage was estimated to be $24,258,000. This corresponds to the first number referred to above. The impact to hydroelectric power generation will vary from year to year depending on hydrologic conditions. Based on the water availability simulations and releases from the reservoir to increase the system yield, the impact to hydroelectric power generation could be around 12 percent of the annual power generation amount. The mitigation cost for the reduction in hydroelectric power generation was based on a replacement cost of $0.08 per kWh, which results in an annual cost of about $700,000. This amount was converted from an annual value to a present value of about $22,000,000 by assuming a 50-year planning horizon and an inflation rate of 2%. This corresponds to the second number referred to above. Because $24.3 million is larger than $22.1 million, the cost for the increase in storage, rather than hydropower compensation, was taken as the cost for reallocated storage. The total annual cost for this reallocation strategy is estimated to be $2,679,000. Based on the increase in firm yield of 38,480 acft/yr in 2070, this results in a unit cost of raw water of $70 per acft ($0.21 per 1,000 gallons).

An initial appraisal report on Lake Whitney Reallocation was completed in December 2014 which recommended initiating a detailed feasibility study subsequent to development of a project management plan and feasibility cost share agreement. Currently, the BRA is pursuing the initiation of the detailed feasibility study of reallocation with the Corps on Lake Whitney using contributed funds provided by BRA. Based on current Corps policy, once initiated, the feasibility study would be completed within three years and at a cost of $3 million or less. It is anticipated that implementation of reallocation would proceed after the detailed feasibility report and take 5 to 10 years, creating a new water supply for demands in both the Brazos G and Region H regional water planning areas.

Currently, BRA's water supply system (System) is composed of eleven reservoirs and associated permitted water rights that allow BRA to contract water on a wholesale raw water basis to over 160 customers. As new projects are evaluated, designed, and constructed costs are spread across the entire BRA customer base. It is anticipated that financing new water supply projects will require a combination of BRA funds, TWDB funds either through the State Participation program or other TWDB programs, and additional outside funding sources.

Additional information related to the Lake Whitney Reallocation Project is included within the Initially Prepared 2021 Brazos G Regional Water Plan, Volume II, Section 10.3.

Company/Entity Name

Brazos River Authority

APPENDIX B
Response Form

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Company/Entity Name Brazos River Authority	
Address 4600 Cobbs Dr. Waco, TX 76710	**Phone Number** 254-761-3100
Name and Title of Authorized Representative Submitting the Response David Collinsworth, General Manager/CEO, Brazos River Authority	
Contact Person Name Aaron Abel	**Contact Person Phone Number** 254-761-3175
Contact Person Email Address aaron.abel@brazos.org	
Regions Affected (as shown on Regional Water Planning Areas map) Brazos G and Region H	
Proposed Source for the Water Supply Freeport Seawater Desalination	

This Project has been included in the 2006, 2011, and 2016 Region H Regional Water Plans and is included within the 2021 Region H Initially Prepared Plan. The Brazos River Authority (BRA) participated in a study to determine the feasibility of a seawater desalination project in the lower Brazos River basin in the early 2000's. This study was concluded in 2004 as part of the Texas Water Development Board (TWDB) initiative for desalination research. Over the last 15+ years, the status of the project has changed from an active pursuit to an inactive concept. Despite this status, the project remains a viable alternative for water supply and may be enhanced in the future through additional technological development in a way which may make the project more cost-effective.

A desalination facility located in the Freeport area would allow desalinated water to be supplied to wholesale water providers (WWPs) in the vicinity of the project. These WWPs would then be able to replace or augment their supplies with a reliable, high-quality water supply from an alternative source that would reduce water-quality issues that have been encountered in the past. Additionally, the treated water from a seawater desalination facility could offset current supplies, including diversion rights from the Brazos River; in turn freeing up existing supplies.

In addition to the Region H planning area, the Freeport Seawater Desalination project will also benefit the Brazos G planning area, located primarily in the central portion of the Brazos River basin. Currently, BRA system reservoirs upstream serve demands in Lower Brazos River basin by providing downstream water supply releases. Once a seawater desalination project is operational and supplying demands in the Lower Brazos River basin, upstream reservoirs within the BRA water supply system will not be required to make downstream water supply releases as frequently, thus creating the potential for additional supply for other users further upstream within the Brazos G planning area. Additionally, a secondary benefit is the elimination of losses that occur when water is released from upstream reservoirs due to evaporation and natural losses to the streambank as the released water travels along the bed and banks of the Brazos River and its tributaries. Reducing the demands for water stored in the upstream BRA water supply system allows for greater efficiency for surface water supplies across both the Brazos G and Region H Planning Regions.

Currently, BRA's water supply system (System) is composed of eleven reservoirs and associated permitted water rights that allow BRA to contract water on a wholesale raw water basis to over 160 customers. As new projects are evaluated, designed, and constructed costs are spread across the entire BRA customer base. It is anticipated that financing new water supply projects will require a combination of BRA funds, TWDB funds either through the State Participation program or other TWDB programs, and additional outside funding sources. Additional information of the Freeport Seawater Desalination Project can be found within the 2021 Region H Initially Prepared Plan (http://www.regionhwater.com/downloads/planningdocs.html). Freeport Seawater Desalination Project, 2021 Region H Initially Prepared Plan - Appendix 5-B- SWDV-004
Company/Entity Name Brazos River Authority

APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name City of Mission	
Address 1201 E 8th St. Mission, Texas 78572	**Phone Number** (956)580-8780
Name and Title of Authorized Representative Submitting the Response Roberto Salinas- Public Works Director	
Contact Person Name Roberto Salinas	**Contact Person Phone Number** (956)580-8780
Contact Person Email Address rsalinas@missiontexas.us	
Regions Affected (as shown on Regional Water Planning Areas map) Rio Grande (M)	
Proposed Source for the Water Supply Regional Water Reservoir	

Response:

The intention of this submission is to respond to the Texas Water Development Board's Request for Information. Based on the regional water planning area shown in Appendix A, the Rio Grande area is made up of seven (7) counties: Cameron, Willacy, Hidalgo, Starr, Jim Hogg, Webb, & Maverick. During times of crisis such as droughts the City of Mission have had to utilize water supply lines to purchase water from neighboring cities, such as McAllen, Texas. Although it is not often that the City has had to resort to this interregional support, it is the beginning of possible improvements for our region.

A proposal for possible water supply projects that provide substantial benefit to multiple regions could include regional water reservoirs and interconnected water supply lines that could feed the seven counties that make up the Rio Grande Area. Through proper studying, this water supply project could bring substantial benefit to the region because it would bring a main source of water supply to the communities in times of crisis without the burden of increasing taxes to make up for government shortfalls. Additionally, this type of project will create employment opportunities as reservoirs will need maintenance and research. This would require a regional effort to determine the proper placement of reservoirs and possible fund sharing from counties to make this type of project work. If the Texas Water Development Board could provide funding opportunities for the proposed project that allowed eligible expenses for construction, the municipalities could provide their share costs for design, research, and maintenance. Allowing each municipality to apply for a grant with the ceiling of one million dollars could potentially bring opportunity as proposed.

APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name **Dimmit Utility Water Supply Corporation**	
Address **P.O. Box 279** **Carrizo Springs, TX 78834**	**Phone Number** **830-876-9554**
Name and Title of Authorized Representative Submitting the Response **Ruben Saenz, Dimmit Utility Manager**	
Contact Person Name **Ruben Saenz**	**Contact Person Phone Number** **361-947-8060**
Contact Person Email Address **Captainsaenz28@gmail.com**	
Regions Affected (as shown on Regional Water Planning Areas map) **Region M. N, and P**	
Proposed Source for the Water Supply **42,000 acres of private land with pre-1965 water rights over Carrizo-Wilcox Aquifer**	

Response **Recommendation for a South Texas Water Sharing Pipeline**

Dimmit Utility WSC recommends to the Texas Water Development Board the construction of a South Texas Water Sharing Pipeline that will benefit South Texas, specifically Regions M, N, and P. Dimmit Utility's corporate partner South Texas Water Sharing Pipeline Project is ready and able to begin construction of a 60-inch diameter pipeline (see Appendix B). The pipeline will connect various reservoirs and lakes for optimum use of their existing secondary water which originates in the Carrizo-Wilcox Aquifer from 42,000 acres of private land with pre-1965 inalienable water rights (see Appendix C). Private financing from JP Morgan Chase is secured pending contractual agreement with a municipality with minimum use of 10 million gallons of water per day. The pipeline building materials and routes have been planned and are ready for development and construction in four phases (see Appendix H). Dimmit Utility presented materials to the TWDB (June 24, 2019) with its Water Sharing Pipeline Project and challenges and opportunities it has encountered in the process (see Appendix A). Recently, Dimmit Utility wrote to Chairman Lyle Larson and Representative Eddie Lucio III regarding their concerns of the water needs of the North Alamo Water Supply Corporation (see Appendix G).

How the use of private financial resources would be maximized

Private funding for Dimmit Utility's Water Sharing Pipeline Project is secured up to a billion dollars of private funding from JP Morgan Chase. Scientific Hydrology Model Studies show excellent water sustainability with up to 50% safety factor on groundwater resources and has created confidence in securing private funding without need of state funds (see Appendix I). These private funds will be maximized by building a 60-inch diameter pipeline with reversible water pumps (see Appendix D). This pipeline project will connect most of the South Texas area and will be built during a two- to three-year period. The most probable pipeline route consists of four Phases and impacts three TWDB Regions: M, N, and P. The pipeline's four phases include: Phase I from Big Wells, Texas (the main distribution point) to Laredo, Phase II Laredo to Robstown/Corpus Christi, Phase III Robstown/Corpus Christi to Edinburg and possibly Phase IV Edinburg to Brownsville, Texas (see Appendix H). The municipality(ies)/ governmental entity that signs to implement the project will not incur any debts until that municipality(ies) allows the Dimmit Utility water supply to enter their water system. It's only after the pipeline is complete that the municipality(ies) will begin paying the municipal tax free bonds incurred by JP Morgan Chase used to build the pipeline. Dimmit Utility's maximization of private funds allows smaller cities and even colonias along the pipeline route to connect to the already existing pipeline water source by 2023.

This South Texas Water Sharing Pipeline Project greatly lessens the amount of funds needed by these outlying cities and colonias to connect to a potable water source. Depending on a rural city's specific needs Dimmit Utility may be able to fund the infrastructure connectivity. In addition, Dimmit Utility maintains sand pit recharge capability eight miles south of Carrizo Springs—the second best place in Texas for aquifer recharge. This would increase the water shed and available water reclamation permit volume into Lake Corpus Christi in Region N. As an outcome, Dimmit Utility estimates a $25 to $80 million savings annually to the municipality on water reclamation alone and depending on the city's specific use.

How the financial resources of multiple water planning regions would be combined; and

Because of Dimmit Utility's secured private financing, the only required resources from Region N, M and P will be their municipality(ies) agreement to connect to the South Texas Water Sharing Pipeline. This "one stop shop" will necessitate less geopolitical involvement. For example, San Diego, Texas—a small rural town—provides water to a state penitentiary and negotiates between this entity and the Jim Wells County Court. The pipeline would eliminate extended costs and time and effort for all constituencies.

How the project would substantially benefit the regions served by:

1) Affecting a large population
   Dimmit Utility WSC can provide a potential 100 million gallons of potable drinking water per day for a large South Texas population living within three Regions: Regions M (Rio Grande), N (Coastal Bend), and P (Lavaca). Hydrologist and scientifically proven reserves of 50 million gallons of potable water per day and certified "drought proof" is available to approximately three million users. Dimmit Utility will deliver this potable drinking water through corporate partner South Texas Community Water Sharing Pipeline Project, LLC. This pipeline connects four surface water sources: Falcon Reservoir (Region M), Amistad Reservoir (Region M), Choke Canyon Lake and Lake Corpus Christi (Region N), and Texana Lake (Region P). A review of the 2021 Drafts of the Regional Planning Groups' Region M, N and P (TWDB website) indicates that the pipeline project meets the estimated population and water usage projection for 2070 and beyond.

2) Creating jobs in the regions served, and
   Dimmit Utility's South Texas Water Sharing Pipeline would be an economic boost to South Texas especially needed now during the COVID-19 economic recovery. A potential of adding millions of dollars to the local economy as each phase of the pipeline is built. Building a pipeline of more than 400 miles will necessitate at the minimum 50 to 100 welders for several expert welding processes: heated tool butt welding, hot gas exclusion welding and hot gas welding. A combination of construction welders in addition to construction workers and truck drivers will be needed to build the planned KRAH technology pipeline for the long-term, 100-year durability (see Appendix E). On-site construction workers supporting each of the four planned phases requires a minimum of 25 to 50 employees. In addition, 100 or more 18-wheeler trucks will be needed to transport the pipeline materials as needed to each of the municipalities in both urban and rural locations. Dimmit Utility plans to have each municipality(ies) to select and/or recommend companies and potential workforce employees in building and/or connecting the pipeline to their municipal water systems.

3) Meeting a percentage of the water supply needs of the water users served by the project.
   Although Dimmit Utility proposes its more than 50 million gallons of water a day to the municipality (ies) as a secondary water source, its drinkable, potable water can also serve as a 50% water source for that city and several other cities depending on its daily use. Expert hydrologists have certified its "drought proof" water and its long-term availability up to 100 years. For example, a Dimmit Utility Reclamation Study of the city of Laredo's Rio Grande water pumping permit projected a value of over $67 million dollars from taking just 40 million gallons of ground water a day from Dimmit Utility (see Appendix F).

Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name **Evangeline/Laguna, LP**	
Address **5111 Broadway** **San Antonio, TX 78209**	**Phone Number** **210-794-9036**
Name and Title of Authorized Representative Submitting the Response **Hamlet Newsom, Principal, Evangeline/Laguna, LP**	
Contact Person Name **Hamlet Newsom**	**Contact Person Phone Number** **210-240-8891**
Contact Person Email Address **Hamlet@evangelinewater.com**	
Regions Affected (as shown on Regional Water Planning Areas map) **Regions: K, L, N, & P**	
Proposed Source for the Water Supply **Evangeline/Laguna, LP Groundwater Supply Project in San Patricio County, TX**	

Response

Evangeline/Laguna, LP ("Evangeline") is a partnership between a group of landowners in San Patricio County and an investor/development team with over 20 years of experience in putting together successful groundwater supply and delivery projects in Central – South Central Texas. The project development team also includes experts in regional/inter-regional water management, and the hydrogeology of the Gulf Coast Aquifer.

On April 18, 2019, the San Patricio County Groundwater Conservation District granted Evangeline a production permit for 28,486 acre-feet of groundwater per year from a 22,789-acre tract of land in north-central San Patricio County. Representatives of Evangeline have been meeting with water providers/users in the Coastal Bend region to inform them of the project and the availability of the Evangeline groundwater as a source of municipal/industrial water supply.

One of the advantages of the groundwater is the project's location immediately adjacent to the City of Corpus Christi's Mary Rhodes Pipeline ("MRP") which now transports surface water available under from the City's "Garwood" water rights in the Colorado River, and a contract with the Lavaca-Navidad River Authority for water from Lake Texana. The Evangeline project's proximity to the MRP provides an opportunity to either integrate the Evangeline groundwater into the City of Corpus Christi's regional water supply system via the MRP (or via a pipeline direct to another regional purchaser) or, conceptually, to utilize the MRP as a means of "wheeling" the Evangeline groundwater to potential users in other Regional Water Planning Areas located between the MRP's origin in the Lower Colorado River Basin at Bay City and its terminus in the Nueces River Basin at the City of Corpus Christi's O.N. Stevens surface water treatment plant.

Such "wheeling" would involve developing contractual agreements between Evangeline, the City of Corpus Christi ("City of CC") and other participating entities, and securing any necessary state water rights permits or permit amendments which would allow surface water supplies which the City of CC currently diverts from the Colorado River (via its "Garwood" water rights permit) and from Lake Texana water (via the Lavaca-Navidad River Authority purchase agreement), and transports through the MRP, to be made available for use by other water providers in Regions K, L, N and P. It would also facilitate interregional water banking opportunities, using Aquifer Storage and Recovery (ASR) facilities which could be developed on the Evangeline project properties, to take surface water from potential sources[(1)] along the length of the MRP, store it in the underlying Gulf Coast Aquifer, and then later withdraw/recover it to make it available to users in the Coastal Bend area while allowing the "depositors" to access water which would otherwise be delivered to the City of CC via the MRP.

Company/Entity Name
Evangeline/Laguna, LP

Response (continued)

An example of these kinds of water wheeling projects would be an arrangement between the Lower Colorado River Authority (LCRA) and the City of CC which would allow LCRA, during drought/low flow periods, to divert and use additional Colorado River water available under the City's Garwood Water Rights Permit, and then pay Evangeline to produce and deliver to the City of CC, in exchange, a comparable, or greater, amount of groundwater from the Gulf Coast Aquifer, available under Evangeline's groundwater production permit.

Similarly, LCRA might, during high flow periods, arrange to divert water from the Colorado River under its various water rights, deliver it via the MRP to Evangeline for storage in an ASR facility, and later, during drought conditions in the Colorado River basin, allow the City of CC to withdraw water from LCRA's "ASR storage account" in exchange for LCRA accessing Colorado River water under the City of CC's Garwood water right.

These ideas draw on a prior TWDB interregional water supply study[(2)] which explored options for "Interregional Cooperation" among water suppliers in the South/South-Central Texas area, as well as evaluations of various Water Management Strategies in Region N Water Plans for 2001 thru 2017, and the draft Region N 2021 Regional Water Plan. Such interregional projects could generate new water supplies to benefit the rapidly growing populations and expanding economies within the large area of Texas included in Regional Water Planning Areas K, L, N and P.

The Evangeline management team has experience in interregional water projects as the owner of the water rights in the interregional Vista Ridge water supply project delivering water from Region G, through Region K to Region L. Furthermore, Evangeline management can capitalize on Evangeline's unique location and provide private financing for not only all the costs of production of this groundwater as a new supply source, but also for all the costs of well field infrastructure, storage, any desired treatment and pipelines for delivery for these types of interregional projects based around its project site and water rights. Evangeline management could work with local/regional/state water management agencies to jointly finance and develop groundwater sources and water storage (including ASR) and conveyance facilities to meet long-term water demands and support job creation in the South-Central Texas area. Accessing TWDB's State Participation Program would help assure these new water supplies would also be affordable.

Evangeline is prepared to work with TWDB in further identifying opportunities to utilize the groundwater resources it is permitted to produce from the Gulf Coast Aquifer in San Patricio County, and its ability to develop ASR facilities, in order to develop and implement large-scale, interregional water supply projects serving the needs of water suppliers in Regional Water Planning Areas K, L, N and P.

Footnotes:

(1) Potential Sources of Water Along the MRP Could Include, If Available: LCRA and other Colorado River water rights (WR's); Lake Texana water; other Navidad and Lavaca River WR's; Guadalupe River WR's; San Antonio River WR's, and other groundwater sources. In addition, ASR facilities could be developed at locations along the MRP and used to "firm-up" surface water rights in basins along the MRP route.

(2) "Management Strategies for Potential Inter-Regional Cooperation," HDR Engineering, Inc., May 2002; http://www.twdb.texas.gov/publications/reports/contracted_reports/doc/2002483432.pdf

See Maps on next two pages for more information.

APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name **Gulf Coast Authority**	
Address **910 Bay Area Boulevard** **Houston, TX 77058**	**Phone Number** **281-226-1110**
Name and Title of Authorized Representative Submitting the Response **Elizabeth Fazio Hale, Assistant General Manager**	
Contact Person Name **Leonard Levine**	**Contact Person Phone Number** **281-226-1124**
Contact Person Email Address **LLevine@gcatx.org**	
Regions Affected (as shown on Regional Water Planning Areas map) **Regions A, E, F, G, I, J, K, L, M, O**	
Proposed Source for the Water Supply **Produced water**	

Response

Across many Texas water planning regions, there are vast resources of crude oil. With unconventional drilling, large volumes of water are produced from oil wells, typically known as "produced water." Based on recent years' data, Texas produces 3 to 5 million barrels of oil per day. This results in 18 to 30 million barrels of water per day, based on 6 barrels of water for every barrel of oil produced. Put in more common measurements for water, this is 756 million gallons per day (mgd) (2,320 acre-feet per day [ac-ft/day]) to 1,260 mgd (3,870 ac-ft/day). Of that volume, approximately 25% is used for additional oil wells. A majority of the remaining 1,740 ac-ft/day is currently injected into Class II disposal wells.

If as little as 25% of the disposed water was recovered for alternate uses, this would result in in approximately 190 mgd (580 ac-ft/day) of water which could be used as a source of water for activities such as agriculture or industry, thus reducing pressure on existing sources. On an annual basis, this is almost 70 billion gallons (211,700 ac-ft) of available water for use/reuse.

These freed-up water sources would then be available for other uses without increasing stress on our groundwater aquifers or other fresh water sources. This allows for population and economic growth in water scarce regions.

The current challenge is the lack of cost-effective treatment technologies for treating produced water to the quality needed for use outside the oil field. Produced water can be difficult to treat due to the fact it typically has high concentrations of TDS (10,000 to 250,000 milligrams per liter [mg/L]) and naturally occurring organic and inorganic contaminates, which limit the use of these waters outside of the oil field.

Response (continued)

GCA proposes identifying one or two of the most promising technologies currently being evaluated under the EPA Water Reuse Action Plan or the Department of Energy National Alliance for Water Innovation Energy-Water Desalination Hub. These technologies would then be tested on a pilot plant scale in an actual oil field application.

The purpose of the pilot testing is to be a proof of concept that the chosen technology can cost-effectively treat water to a sufficient quality for use outside the oil field, such as agriculture or industrial uses. If successful, this technology could then be used as the basis for a regional, full-scale treatment plant.

As previously mentioned, if as little as 25% of the disposed water was recovered for alternate uses statewide, this could provide up to 190 mgd (580 ac-ft/day) of treated water which can be used for agricultural or industrial use. This is nearly double the municipal water demand for Region F (based on the demand in draft 2021 Region F Water Plan) which includes a large portion of the Permian Basin. In addition, the almost 70 billion gallons (211,700 ac-ft) of water available on an annual basis would satisfy the entire projected 2020 annual shortage for Region L, which includes San Antonio (based on shortage listed in TWDB draft 2021 State Water Plan.) These are just two regional examples and further comparative numbers can be established on a region-by-region basis.

The treated water could also potentially provide:

- Aquifer relief, as it allows treated produced water to replace water being used from aquifers for agriculture and industry. Water from aquifers can then be used for purposes such as potable water supply;
- Economic growth, as a previously untapped water source would be available for agricultural and industrial needs, furthering facility growth; and/or
- Sustained oil production, as it reduces the possibility of decreased production due to produced water disposal restraints (deep well injection.)

Treated produced water could also be sold, which would offset the disposal costs for the untreatable produced water streams.

Funding could potentially come from several sources including:

- Upstream oil drillers who have produced water needing disposal;
- Grants to research institutions or local universities such as the Texas A&M, University of Texas, and Texas Tech systems or other research universities;
- TWDB, other state agencies, or state appropriations;
- Bureau of Reclamation (potentially eligible for application now, based on a previous GCA study partially funded by the bureau); and/or
- Other federal or state programs.

GCA expects this technology to be transferrable to any oil-producing region in the state. The initial pilot would likely be done in the Permian Basin (which largely impacts Regions E, F, J, and O), as a majority of the state's produced water originates there. The Permian Basin is also a water scarce area.

This could be expanded to the water planning regions which include the Eagle Ford, Anadarko, and Haynesville basins, as well as any other region which has oil and gas production. This would result in Regions A, I, K, L, and M, amongst others, to benefit from the pilot results.

As oil fields span water planning regions, so does the opportunity for the treatment of produced water. The treated water could be used across many water planning regions, allowing for a true interregional supply system which provides water supply relief to areas suffering from water scarcity.

Company/Entity Name
Gulf Coast Authority

Received by
TWDB

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APPENDIX B
Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name Hidalgo County Irrigation District No. 6	
Address 3735 N FM 492 (Goodwin Road)	**Phone Number** (956)585-8389
Name and Title of Authorized Representative Submitting the Response Dr. Antonio Uresti - General Manager	
Contact Person Name Dr. Antonio Uresti	**Contact Person Phone Number** (956)585-8389
Contact Person Email Address antonio.uresti@hcid6.com	
Regions Affected (as shown on Regional Water Planning Areas map) Region M	
Proposed Source for the Water Supply Rio Grande River	
Response Please see attached..... 2 pages	

RESPONSE:

Project Name: Hidalgo County Irrigation District #6 Expansion Project 2022

Introduction: Affordable and sustainable water supplies are fundamental need for Hidalgo County Irrigation District #6. The dual challenge of our susceptibility to drought and our rapid growth intensifies the need for long term comprehensive planning that addresses our water needs and ensures the continued economic viability of our community especially in the west of Hidalgo County.

Project Description: The Hidalgo County Irrigation District #6 intent is to move raw water north in an expansion project approach. The Hidalgo County Irrigation District #6 will acquire minimum of 30' right-a-way and use a minimum of a 36" water main or as needed up to 108 "as used in the Dallas-Fort Worth area Integrated Pipeline Project (Challenge Potential 12' tunnels) or more as designed by an engineer as an extension transmission canal in an underground line setting. Feasibility study, land acquisition, right-a-way, pilot testing, design, construction that will move raw water from the Rio Grande River thru Hidalgo County Irrigation District #6 for distribution throughout the new extension water system. A future phase will include an additional miles of capacity as the cities develop if forecasted. The project will begin from 8 mile line western thru Abram road north until determined by the board its size and expansion miles. Feasibility study will begin FY2017 followed by land acquisition, right-a-way acquisition, pilot testing, preliminary planning design, final planning design and construction and associated water conveyance infrastructure delivery system. The project is scheduled to be completed over a five year period with the new and full capacity available by 2022.

Project Justification: The Hidalgo County Irrigation District #6 has no water beyond 12-mile line or lines of distribution system. This project will provide raw water capacity and meet the demand as the cities, school districts and Agua SUD continue to grow. The 2012 Water Model Update based on growth projections established that the demand for a water system for this area would need to be met by 2022. The resulting Integrated Pipeline Project of the Dallas-Fort Worth area will connect four reservoirs and deliver 350 million gallons a day of water to the Metropolis area. The 2004 recommendation of a statewide water use of 140 gallons per day is projected impressively under the 2007 state water plan by the state's Water Conservation Implementation Task Force.

Estimated Cost of Project will be provided by Engineer Julio Cerda.

It is time to make futuristic decisions.

The Hidalgo County Irrigation District #6 desires an expansion project to deliver raw water beyond 12-mile line is a decision made.

On June 27, 2020 Hidalgo County Irrigation District # 6 made a yes commitment to future planning to start today Monday June 29, 2020 to meet for planning, grants and budget.

Funding Sources:

To optimize water supplies at cost-effective rates through grants, low-interest loans, extended repayment terms, deferral of loan repayment and incremental repurchase terms for projects with state ownership aspects decisions to use the funding programs as deem necessary.

Service Demands:

1. Irrigation
2. Citrus Industry
3. Livestock
4. Rural Water Services
5. Municipalities
6. Manufacturing
7. Industrial
8. Others: Steam/electrical, mining, etc....

Budget 5 Year Impact:

Sequence of Events	Fiscal Year
Feasibility Study	2020
Land Acquisition, Water Rights and Service Area	2021
Preliminary Engineering Design Report	2021
Right-of-Way Acquisition	2021
Final Design	2021
Survey	Late 2021
Construction	2021, 2022, 2023,2024
Equipment	2021,2022, 2023, 2024
Plant Final Finish	2025
Associated water conveyance infrastructure System	2021,2022, 2023
Contingency	2020,2021,2022, 2023, 2024, 2025

REQUEST FOR INFORMATION

FOR

ESTELLINE PROJECT TEXAS

SALT WATER AQUIFIER TREATMENT TO
PRODUCE POTOBLE WATER SUPPLIES

TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231 AUSTIN, TEXAS 78711

HYDRONICS, INC.

8101 Boat Club Road, Suite 240, #263
Fort Worth, Texas 76179

Table of Contents

Project Scope

The scope of this Request for Information is to provide an overview of the Hydronics, Inc. plan for utilizing new sources of water supply which would benefit various water regions within the State of Texas identified as the Estelline Project. This Request for Information will evaluate the feasibility and benefit of treatment for the various untapped Texas Salt Water Aquifers which could be used to supplement the current water supplies in the arid West Texas region. The following is a discussion concerning the project need, the project planning area, private financial resources, financial benefit for multiple water regions, project benefit, financial status and the associated cost estimates and conclusions.

Project Planning Area

The project planning area for this Request for Information focuses on the West Texas areas of Region "A", Region "B" and Region "O" as defined by the Texas Water Development Board. These three regions, cover parts of West Texas, where ongoing drought conditions and limited water supplies, create restrictions on the current needs of these areas and limits growth. This project will be comprised of a regional water supply area for the Towns of Childress, Clarendon, Estelline, Hedley, Matador, Memphis, Paducah, Quanah, Quitague, Turkey and Wellington. These communities are located in Briscoe, Childess, Collingsworth, Cottle, Donley, Hall, Hardeman and Motley Counties respectively with an estimated total population of 18,373 people based on the 2010 U.S. Census.

Private Financial Resources

Private financial resources will be provided for this project and will consist of funding for the water treatment portion of the project. This private financing will provide a total of 25% of the project cost while public funding will comprise 75% of the project cost which will be utilized to provide distribution lines for the treated water. This will supply fresh water to communities within an estimated forty five mile radius of the proposed plant facilities located in the Town of Estelline, Texas. This proposed water treatment and distribution system will provide a much needed increase in water supply across the three water regions mentioned above and will have a significant economic and environmental impact on the communities of West Texas.

Financial Benefit for Multiple Water Regions

The financial benefits of this project will have a sustaining impact on the water needs for West Texas. This project will provide treatment and supply from an untapped water source and will not have any impact on the current water supplies for these water regions. Utilization of underlying saltwater aquifers in these regions is part of the Texas Water Development Board Water Plan to find and develop new water supply sources. This project will allow approximately twenty small towns in Regions "A", "B" and "O" to

receive a new source of water supply for future growth without the cost associated with the improvements. The increase of available water to these areas will sustain and promote future growth in these areas creating jobs and opportunities.

Project Benefit and Job Opportunities

The project benefits are substantial, by utilizing a water source from an untapped water supply such as the underlying saltwater aquifers. This project has the potential to provide water to approximately 18,373 people in these three water regions. This project can potentially provide the approximately 2 million gallons per day of fresh water used by this population. Current water supplies would be conserved promoting protection of the long term supply for current and future water needs in these areas.

Job benefits for this project will be two fold. The initial jobs generated will include the construction phase. This will provide over one hundred new jobs to the area hiring many workers from the local areas to build the treatment facility and the distribution line system. These jobs although not permanent could last up to five years in duration due to the size and scope of this project. The second job creation with be permanent jobs for operation and maintenance of the plant facility and distribution line system. These jobs will be long term jobs and approach another one hundred permanent positions. These jobs will be technical high paying jobs to run and maintain the plant facility, distribution lines and service the communities. These jobs will be prioritized for hiring within the communities served by this project.

Proposed Project Financial Status and Cost Estimates

The cost of this project is approximately $160,000,000 and is currently unfunded. The proposed private funding sources would provide approximately 25% of the project cost for treatment and supply while the public sector would provide approximately 75% of the project cost for distribution and use.

Conclusion

This project has a significant impact on Regions "A", "B" and "O" in West

Texas by providing an alternative water supply from an untapped source to supplement and sustain current and future growth in these areas. This project also implements a part of the Texas Water Development Boards Water Plan for utilizing saltwater aquifers to supplement water sources within the State of Texas. This water system approach is unique and gives the State of Texas the opportunity to utilize a part of the current Texas water plan currently not being implemented.

Exhibit "A" Texas Water Board Regional Water Maps

Texhoma

Booker Darrouzett

Timbercreek

Canyon

Palisades **Lake Tanglewood Follett** **Texline**

Perryton Stratford **Dallam** **Sherman Hansford Ochiltree**

Lipscomb

APPENDIX B

Response Form

TWDB REQUEST FOR INFORMATION 580-20-RFI-0009
DUE NO LATER THAN 2:00 PM (CDT) on JULY 1, 2020

Company/Entity Name SEVEN SEAS WATER CORPORATION	
Address 14400 CARLSON CIRCLE TAMPA FL 33626	**Phone Number** 813.818.4041
Name and Title of Authorized Representative Submitting the Response RICHARD WHITING VP BUSINESS DEVELOPMENT	
Contact Person Name RICHARD WHITING	**Contact Person Phone Number** 813.992.5627 CELL 813.818.4041 DIRECT
Contact Person Email Address RWHITING@7SEASWATER.COM	
Regions Affected (as shown on Regional Water Planning Areas map) TBA	
Proposed Source for the Water Supply SURFARCE WATER, BRACKISH GROUNDWATER, OR SEAWATER	

Response

The TWDB is looking for a general description of what kind of private financial resources might be deployed by a respondent to develop potential interregional water supply projects.

The Public-Private Partnership (P3) approach to developing and delivering public sector infrastructure projects is a well established form of contract. The P3 form of contract differs from the more traditional forms of contract involving private sector finance, e.g.: Build-Own-Operate (BOO), Build-Own-Operate-Transfer (BOOT), Design-Build_Finance_Operate-Maintain (DBFOM) etc.in that it (a) allows for the optimum transfer of risk between the two parties (private and public), and (b) it allows for the public sector client to be involved in the project financing. With the TWDB's access to the State Participation Account it provides the perfect opportunity to combine private sector equity with public sector low-cost debt to deliver the critical water supply projects TWDB is looking to develop.

The question does arise "why use private sector equity at all and not 100% of available public sector low-cost debt?". The answer is two-fold: (a) by demanding the specialist private sector company invests its own equity, the private sector company then has financial risk involved in the project, increasing accountability and creating more pressure on it to complete the project on-time and on-budget, thus eliminating the typical project cost and program overruns associated with public sector projects and (b) the perceived premium to be paid for the inclusion of private sector equity is off-set by the private sector entity assuming all design, process, and construction risk, and subsequent to commissioning the long-term operations and maintenance risk, which is critical for advanced water treatment processes.

An example of the benefits of such an approach, i.e. to have the same company develop, invest equity, design and construct, and then operate and maintain an advanced water treatment process is to consider seawater desalination plants, which are an advanced water treatment process via the of use of membrane technology. By designing such a plant for the long-term, we incorporate higher specification components in the plant's construction because we know it leads to a lower life-cycle cost (we have an aggregate of over 150 years operations and maintenance experience of such plants); coupled with our experience in the operations and maintenance, it leads to an industry-leading 97% on-line availability for our plants (equivalent to 102% of

Company/Entity Name	SEVEN SEAS WATER CORPORATION

Response (continued)

contracted production) versus an industry standard of 85% and a typical municipal stand-alone plant of 70%. The delta in percentage water production and availability reduces the unit cost of water to the end-user and ensures maximum benefit of the project and its associated financing.
It is important to note that by using P3 to develop and deliver the projects, the TWDB would lend to the Project Company, not the water planning regions. The Project Company would be created as a Special Purpose Company (SPC) by the private sector entity, and it would be the SPC that would invest the equity against the TWDB-supplied project loan. Please note the TWDB would have the opportunity to participate in the SPC.
Therefore it would be the responsibility of the SPC to re-pay the loan to the TWDB. The w responsibility to pay the SPC for the water delivered. As the debt lender to the project, the TWDB would be involved in discussions regarding the contractual obligations of the off-takers and their financial capability to meet such payment obligations.

A coastal seawater desalination plant is an ideal candidate for a regional or multiregional P3 project. Leveraging the expertise of a company with experience in owning, operating and maintaining such plants with low cost finance participation by the state will benefit the state as a whole, not just the coastal regions. Coastal regions with heavy industrial users of water can guarantee a drought proof water supply to those customers. In return, the coastal regions will reduce their reliance on current groundwater sources thus reducing subsidence and decrease their reliance on surface water. By reducing its reliance on surface water, more water can be available for upstream users or environmental flows. Coastal regions with these surface water rights can lease or sell them upstream to offset the costs of desalinated sea water.