Region L
South Central Texas Regional Water Planning Group

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DATE: October 31, 2014

TO: Members of the South Central Texas Regional Water Planning Group

FROM: Steven J. Raabe, P.E.

The schedule and location of the meeting of the South Central Texas Regional Water Planning Group is as follows:

TIME AND LOCATION

Thursday, November 6, 2014
9:30 a.m.
San Antonio Water System
Customer Service Building
Room CR C145
2800 US Highway 281 North
San Antonio, Bexar County, Texas 78212

Enclosed is a copy of the posted public meeting notice.

Gary Middleton

GMM/cr

Enclosure

NOTICE OF OPEN MEETING OF THE SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP

TAKE NOTICE that a meeting of the South Central Texas Regional Water Planning Group as established by the Texas Water Development Board will be held on Thursday, November 6th, 2014 at 9:30 a.m. at San Antonio Water System (SAWS), Customer Service Building, Room CR 145, 2800 US Highway 281 North, San Antonio, Bexar County, Texas. The following subjects will be considered for discussion and/or action at said meeting.

1. Public Comment

2. Approval of Minutes

3. Status of Edwards Aquifer Habitat Conservation Plan (HCP)) – Nathan Pence, Executive Director EAHCP

4. Status of Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Stakeholder Committee (BBASC) and Expert Science Team (BBEST)

5. Chair's Report

6. Review/Approve Administrator's Budget for Calendar Year 2015

7. Texas Water Development Board (TWDB) Communications

8. Set Dates and Times of Regional Water Planning Group Meetings for 2015

9. Discussion and Appropriate Action Regarding Consultants Work and Schedule

10. Discussion and Appropriate Action Regarding a Recommendation for Legislative Designation of Stream Segments of Unique Ecological Value (Task 8)

11. Discussion and Appropriate Action Regarding Evaluation and Recommendation of Water Management Strategies for Inclusion in the 2016 Initially Prepared Plan

12. Discussion and Appropriate Action Regarding Development of 2016 Initially Prepared Plan

13. The Regular Meeting of November 6, 2014, of the South Central Texas Regional Water Planning Group Will Recess to Hold Two Public Meetings to consider the following:

    a) The Guadalupe-Blanco River Authority's (GBRA) Proposed Substitution of the Lower Basin Storage 500 Acre Site Project for the Lower Basin Storage 100 Acre Site Project in the 2011 Regional Water Plan
    b) The Guadalupe-Blanco River Authority's (GBRA) Proposed Minor Amendment of the Integrated Water Power Project to the 2011 Regional Water Plan

14. Reconvene the Regular Meeting of November 6, 2014, of the South Central Texas Regional Water Planning Group.

15. Appropriate Action Regarding the Adoption of Guadalupe-Blanco River Authority's (GBRA) Proposed Substitution of the Lower Basin Storage 500 Acre Site Project for the Lower Basin Storage 100 Acre Site Project in the 2011 Regional Water Plan and Request the Texas Water Development Board (TWDB) to Amend the 2012 State Water Plan

16. Appropriate Action Regarding Adoption of Guadalupe-Blanco River Authority's (GBRA) Proposed Minor Amendment of the Integrated Water Power Project to the 2011 Regional Water Plan and Request the Texas Water Development Board (TWDB) to Amend the 2012 State Water Plan

17. Possible Agenda Items for the Next South Central Texas Regional Water Planning Group Meeting

18. Public Comment

19. Adjourn

NOTICE OF OPEN MEETING OF THE SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP REGARDING THE ADOPTION OF A SUBSTITUTION TO THE 2011 REGIONAL WATER PLAN

TAKE NOTICE that a meeting of the South Central Texas Regional Water Planning Group as established by the Texas Water Development Board will be held on Thursday, November 6th, 2014 at 9:30 a.m. at San Antonio Water System (SAWS), Customer Service Building, Room CR 145, 2800 US Highway 281 North, San Antonio, Bexar County, Texas. The following subjects will be considered for discussion and/or action at said meeting. During that meeting, following Agenda Item No. 14, the Planning Group will recess and convene a meeting to address the following agenda item:

1. Discussion and Appropriate Action Regarding the Guadalupe-Blanco River Authority's (GBRA) Proposed Substitution of the Lower Basin Storage 500 Acre Site Project for the Lower Basin Storage 100 Acre Site Project in the 2011 Regional Water Plan

    a) Please contact Cole Ruiz, San Antonio River Authority, if you have any requests for additional information, any questions, or if you would like to submit public comments. Information regarding the Substitution may be obtained by contacting Cole Ruiz or by visiting the Region L website:

    Mail:
    Attn: Cole Ruiz
    South Central Texas Regional Water Planning Group
    C/O San Antonio River Authority
    P.O. Box 839980
    San Antonio, TX 78283-9980
    Email: feedback@RegionLTexas.org
    Website: www.regionltexas.org

    b) The Planning Group will accept written and oral comments at the meetings and up to Friday, November 21, 2014.

2. Adjourn and Proceed to Public Meeting to Consider Adoption of GBRA's Integrated Water Power Project Minor Amendment

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NOTICE OF OPEN MEETING OF THE SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP REGARDING THE ADOPTION OF A MINOR AMENDMENT TO THE 2011 REGIONAL WATER PLAN

TAKE NOTICE that a meeting of the South Central Texas Regional Water Planning Group as established by the Texas Water Development Board will be held on Thursday, November 6th, 2014 at 9:30 a.m. at San Antonio Water System (SAWS), Customer Service Building, Room CR 145, 2800 US Highway 281 North, San Antonio, Bexar County, Texas. The following subjects will be considered for discussion and/or action at said meeting. During that meeting, following Agenda Item No. 14, the Planning Group will recess and convene a meeting to address the following agenda item:

1. Discussion and Appropriate Action Regarding the Guadalupe-Blanco River Authority's (GBRA) Proposed Minor Amendment of the Integrated Water Power Project to the 2011 Regional Water Plan

a) Please contact Cole Ruiz, San Antonio River Authority, if you have any requests for additional information, any questions, or if you would like to submit public comments. Information regarding the Minor Amendment may be obtained by contacting Cole Ruiz or by visiting the Region L website::

Mail:
Attn: Cole Ruiz
South Central Texas Regional Water Planning Group
C/O San Antonio River Authority
P.O. Box 839980
San Antonio, TX 78283-9980
Email: feedback@RegionLTexas.org
Website: www.regionltexas.org

b) The Planning Group will accept written and oral comments at the meetings and up to Friday, November 21, 2014.

2. Adjourn and Proceed to Agenda Item 15 of the Regular Meeting

AGENDA ITEM 1

Public Comment

AGENDA ITEM 2

Approval of Minutes

Minutes of the
South Central Texas Regional Water Planning Group
August 7, 2014

Chairman Con Mims called the meeting to order at 9:30 a.m. in the San Antonio Water System's (SAWS) Customer Service Building, Room CR 145, 2800 US Highway 281 North, San Antonio, Bexar County, Texas.

29 of the 30 voting members, or their alternates, were present.

Voting Members Present:

Tim Andruss
David Langford for Donna Balin
Gene Camargo
Rey Chavez
Alan Cockrell
Will Conley
Don Dietzmann
Art Dohmann
Blair Fitzsimmons
Vic Hilderbran
Kevin Janak
Russell Labus
Gena Leathers
Doug McGooky
Dan Meyer
Gary Middleton
Con Mims
Robert Puente
Tyson Broad for Iliana Pena
Steve Ramsey
David Roberts
Roland Ruiz
Dianne Savage
Suzanne Scott
Greg Sengelmann
Rader Gilliland for Milton Stolte
Thomas Taggart
Dianne Wassenich
Jim Murphy for Bill West

Voting Members Absent:

John Kight

Non-Voting Members Present:

Norman Boyd, Texas Department of Parks and Wildlife
Ronald Fieseler, Region K Liaison
Steve Ramos, TCEQ – South Texas Watermaster Specialists
Don McGhee, Region M Liaison
David Meesey, Texas Water Development Board (TWDB)
Charles Wiedenfeld, Region J Liaison
Ken Weidenfeller, Texas Department of Agriculture

AGENDA ITEM NO. 1: PUBLIC COMMENT

Mr. Mims asked for any public comment. No comments were made.

AGENDA ITEM NO. 2: APPROVAL OF MINUTES

Mr. Mims asked if there were any additions or corrections to the May 1, 2014 meeting minutes. No corrections or revisions were requested. Gary Middleton made a motion to approve the minutes as presented. Tim Andruss seconded the motion. The motion carried by consensus.

AGENDA ITEM NO. 3: STATUS OF GUADALUPE, SAN ANTONIO, MISSION, AND ARANSAS RIVERS AND MISSION, COPANO, ARANSAS, AND SAN ANTONIO BAYS BASIN AND BAY STAKEHOLDER COMMITTEE (BBASC) AND EXPERT SCIENCE TEAM (BBEST)

Suzanne Scott gave an update on the BBASC and BBEST study grants. The approved studies that went through the contract process with the Texas Water Development Board (TWDB) were listed in the August 7, 2014 South Central Texas Regional Water Planning Group (Region L) agenda packet. Dianne Wassenich chaired the committee for the review and selection of the various studies that were ultimately selected for funding. The contracts are executed, and work is underway.

AGENDA ITEM NO. 4: Chair's Report

Mr. Mims gave an update to the group on the status of the Technical Memorandum, which was submitted to TWDB before the deadline of August 1, 2014. The planning group had authorized Mr. Mims to submit the final Technical Memorandum at the May 1, 2014 Region L meeting.

AGENDA ITEM NO. 5: DISCUSSION AND APPROPRIATE ACTION REGARDING AUTHORIZING ADMINISTRATOR TO SUBMIT FINAL PROJECT PRIORITIZATION TO THE TEXAS WATER DEVELOPMENT BOARD

Brian Perkins, HDR Engineering, Inc., delivered a brief status update on the final project prioritization of water management strategies included in the 2011 Region L Regional Water Plan (Plan). After the planning group submitted the prioritization in June to TWDB, the planning group received some general comments back from TWDB, including some tailored specifically to Region L. The document also directed clarification on common issues to all regions. Shortly thereafter, the chairs held a conference call to discuss the feedback and recommendations from TWDB, at which time the chairs decided that they would not fully support those comments across all regions, but would leave it upon the individual regions to implement the guidance from TWDB.

Mr. Perkins presented the final prioritization package to the planning group, noting the few changes that had been made to the draft prioritization package. Referring to Attachment D, where the planning group outlined its assumptions, Mr. Perkins noted that under 1-A, what the planning group said their assumption was did not reflect the planning group's actual assumptions. TWDB misconstrued the wording. However Mr. Perkins confirmed that the intent of the planning group was on par with TWDB's actual intent. The technical consultants adjusted the wording to more clearly show the planning group's assumption.

Roland Ruiz posed the question, "There's a couple of items later on our agenda today that seek to make some amendments to the 2011 plan, would that affect the prioritization?"

Mr. Perkins explained that when a planning group chooses to amend a previous plan, a fully evaluated amendment package must be assembled and submitted to TWDB. The amendment package will also indicate where in the plan tables and text will change. The proposed project will be scored. Depending on how the projects score compared to other projects in the plan, they will fall in order of the ranking.

Blair Fitzsimons asked about what exactly triggered TWDB's response (to the draft prioritization of projects), noting that the assumption was specific to conservation.

Mr. Perkins answered, restating the specific question used for scoring a project, "Is this the only water management strategy except conservation for this water user group?" He then explained that the way the planning group interpreted it was whether the conservation strategy was the only water management

strategy for a water user group. If so, the planning group gave it a "yes." The board specifically said "except conservation." Conservation should never get a vote of "yes." It should always get vote of "no." So all the conservation strategies, whether they were part of a larger suite of projects for a water user group, or whether they were single projects, they were all scored zero for that particular question. Conservation projects qualify for the 20 percent of the fund that has been set aside specifically for conservation, or conservation projects could qualify for the general fund. They actually have a better chance of receiving funding than non-conservation projects. Whichever fund the project applies for depends on the developer of the project and the availability of funds at that time.

Mr. Mims asked for a motion to authorize the administrator to submit the final project prioritization to the TWDB on or before September 1, 2014. Kevin Janak made the motion, which was seconded by Gary Middleton.

Robert Puente requested that a footnote be added to that motion that would state "The prioritization of projects that rely on return flows are interruptible in the absence of a contract with the discharger, and for HDR to identify those projects." He added that, some of these projects are relying on effluent return flows for supply. Mr. Puente advised that the planning group should know which projects are relying on return flows, noting that at any point, the discharger could chose to capture that effluent and use it for themselves on a direct recycle system.

Mr. Mims suggested making two motions. The first motion would be to authorize the administrator to submit the final project prioritization to TWDB on or before September 1, 2014. Then we can discuss your motion asking the technical consultants to identify those projects which rely on return flows for our planning purposes. Mr. Puente agreed to Mr. Mims' terms.

Mr. Mims confirmed that the initial motion to authorize the administrator to submit the final prioritization of project in the 2011 Plan already had a motion and a second. Mr. Mims asked for any discussion or objections. There were none. The motion carried by consensus.

Mr. Puente made a motion (restating his previous motion) that the planning group identify projects that rely on return flows as interruptible in the absence of a contract with whoever discharges the flows, and that HDR identify those projects.

Mr. Mims asked for a second. Art Dohmann seconded the motion. Mr. Mims asked for questions or discussion.

James Murphy objected, "We just want to get on the record that we don't agree necessarily under the current state of the law that all water is interruptible and subject to reuse as coming out of a wastewater treatment plant…We don't want to imply that there is some preapproval or there is no objection to the concept."

Mr. Mims suggested that the group considered Mr. Puente's motion with the addition that, "this in no way establishes a position of the planning group with regard to the use or ownership of treated effluent return flows." Mr. Puente indicated that he agreed with the addition. Mr. Murphy said he agreed, adding that "GBRA's position is that we will not be purchasing reuse water return flows to firm up preexisting water rights. That's why we want to clarify that the courts may change that, the legislature may change that, but right now that's our position."

Mr. Mims brought Mr. Puente's motion forward, asking for a second. Mrs. Suzanne Scott seconded the motion.

Mr. Mims asked for further discussion. Mr. Ruiz suggested that the planning group, at some point, engage in a discussion about the role of the regional planning process and what ultimately ends up in the plan. Mr. Ruiz suggested that the planning group discusses what standing the plan has, and what it means in real terms for communities planning their water supplies. Mr. Mims advised that the group addresses the planning group's purpose as an item for future consideration.

Mr. Mims re-stated that there was a motion and a second, which was amended. He asked again for discussion or objections. The motion carried by consensus.

AGENDA ITEM NO. 6: TEXAS WATER DEVELOPMENT BOARD COMMUNICATION

David Meesey, TWDB representative, gave a brief summary of the current events and ongoing processes at TWDB. TWDB published new proposed rules on their website on July 11th. Mr. Meesey noted that those rules were currently for public comment (at the time this meeting took place). Mr. Meesey gave a brief update on the new proposed SWIFT rules, 31 TAC subchapter M, and other information regarding SWIFT/ SWIRFT funding.

Mr. Meesey reminded the planning group that the final prioritization is due September 1, 2014 for the 2011 Plan. By December, the Board has to send a SWIFT implementation report to the legislature and the governor's office.

Mr. Meesey also mentioned that projects that need immediate funding should not wait for the SWIFT funding to become available. TWDB has other programs that can help fund projects.

AGENDA ITEM NO. 7: DISCUSSION AND APPROPRIATE ACTION REGARDING CONSULTANT'S WORK AND SCHEDULE

Mr. Perkins, HDR Engineering, presented an update on the schedule for plan development highlighting upcoming planning group deadlines. May 1, 2015, is the deadline for the submission of the initially prepared 2016 Plan. He suggested that the group consider moving the meeting tentatively scheduled for the first Thursday of May, 2015, to April in order to allow two planning group meetings before the initially prepared plan is submitted to TWDB.

Mr. Perkins also provided an update on the potential issues to the planning process that HDR and the Administrator are tracking, as well as an update to the budget. Mr. Perkins gave an update regarding the whooping crane litigation and addressed meeting the steam-electric needs in Victoria County with project that was to be discussed under Agenda Item No 8.

Will Conley posed a question dealing with HDR's document that lists potential issues for the 2016 Region L Planning Group. Mr. Conley asked why number two on the list (Importing Groundwater from Other Regions) and other interrelated issues identified by HDR, has been identified, and inquired as to what action the planning group needs to take regarding these issues.

Mr. Perkins pointed to two water management strategies, each which have completed technical analyses, which reach into other regions outside Region L for water supply. These projects are the Hays County – Forestar Project and the SAWS Vista Ridge Project. Both are seeking groundwater from Region G. Because TWDB rules stipulate that supply may not exceed modeled available groundwater (MAG), adjacent regional water planning groups must be cognizant of such projects to avoid exceeding capped MAG limits within a particular county. Mr. Perkins suggested that Region L and Region G initiate conversation to resolve this issue.

Mr. Conley asked about what would happen at the state level if multiple recommended water management strategies in different regions exceed the MAG limits for a particular supply. Mr. Perkins answered that the water management strategies across the state need to add up to a number no more than the MAG limit. The database used for regional and state water planning will not allow an excess of the MAG. This issue is identified because it needs to be resolved. Mr. Perkins indicated that HDR would rather resolve this issue sooner than later, noting the timeline that lies ahead.

Mrs. Scott asked Mr. Perkins to remind her why the planning group did not identify the changing of the models used between the 2011 planning process and the 2016 planning process as a potential issue with regard to the inclusion or exclusion of effluent. Mrs. Scott suggested that though change in the models was not identified as a potential issue at the beginning of the 2016 planning process, the change in the planning group's assumptions with regard to reuse has been applied and has given rise to potential issues. Mr. Perkins said that legal efforts by planning group members to define what water is firm and available, has made the change in models a potential issue. He explained that the fact that the model dropped the use of effluent from availability for water management strategies did not necessarily create a potential issue. With the 2016 model, there are also new needs. Though water availability, firm yield supply, and project supply might have changed, so did the needs.

AGENDA ITEM NO. 8: DISCUSSION AND APPROPRIATE ACTION REGARDING EVALUATION OF POTENTIALLY FEASIBLE WATER MANAGEMENT STRATEGIES (TASK 4B), DRAFT SCOPES OF WORK AND BUDGETS FOR SUBMITTAL TO TEXAS WATER DEVELOPMENT BOARD AND INCLUSION INTO PLANNING CONTRACT, TEXAS WATER DEVELOPMENT BOARD CONTRACT NO. 1148301323

At the May 1, 2014 Planning Group Meeting, HDR Engineering received authorization to begin drafting scopes of work and budgets for two additional water management strategies: 1) SAWS Seawater Desalination, and, 2) Victoria County Steam-Electric.

Mr. Perkins presented the results to the planning group, reviewing each water management strategy and budget for evaluation.

Mr. Puente made a motion to approve the authorizations for both projects, under the condition that HDR develops the technical evaluation for Victoria County Steam Electric with the requirement of determining project yield with and without return flows, and to cost those under two scenarios: 1) whether GBRA owns the water, and 2) whoever discharged the reuse owns the water.

Mr. Murphy noted that he would not support Mr. Puente's motion. To determine costs for this project would be too speculative.

Steve Raabe, San Antonio River Authority, clarified that any existing water rights were evaluated assuming the existence of return flows in the two-river system. So if a water management strategy only used existing water rights, then implicitly return flows are included. However, if there is a new appropriation (meaning there is no existing water right), it would be evaluated without the return flows. This project, as it is currently laid out, relies on only existing water rights, and thus relies on the use of return flows.

Mr. Mims agreed that reflecting the firm yield with and without return flows would be beneficial to the planning group, but differed on whether or not HDR should be tasked with figuring costs of the projects.

Mr. Puente ultimately conceded to the issue specific to the costs of the projects, but held that the planning group has significant interest in seeing the project's firm yield with and without effluent included.

Mr. Vaugh, said that HDR would be able to evaluate it both ways, but some changes would need to be made to the budget because they initially budgeted to evaluate the project only one way. Mr. Vaugh suggested they could complete both evaluation under $14,000.00.

Mr. Mims asked for any objections to adding the provision that HDR evaluate the project with and without return flows.

Mr. Murphy objected, stating that GBRA's position is that one can exercise direct re-use as long as it was not historically relied upon at the time the permits were issued. By requiring the projects to be evaluated with and without discharged effluent, the planning group is presupposing that there is a legal right to evaluate those two alternatives. Today, anyone who has a water right can use those rights within the firm limits of the permit.

Mr. Puente restated his motion, requiring the technical evaluation to determine project yield with and without return flows. Mr. Mims suggested that the planning group also consider a statement that this evaluation is not a challenge by the planning group of the existing water right. Mr. Puente agreed. Gary Middleton suggested the addition of the budget amount indicated by Mr. Vaugh, not to exceed $14,000.00. Mr. Mims and Mr. Puente agreed.

Mr. Raabe interjected to clarify that because the planning group is needing to meet a need that is in a plan for steam-electric, the difference in the yield is not what will change. Rather, with return flows, facilities of this size to meet the need are necessary. Without return flows, facilities of a different size to meet the same need are necessary.

Mr. Mims confirmed the earlier motion from Robert Puente that the planning group authorizes HDR to perform technical evaluations for both the SAWS Seawater Desalination, and the Victoria County Steam-Electric water management strategies. With regard to the Victoria County Steam-Electric, the planning group is authorizing HDR to evaluate the project with and without return-flows from discharged effluent, within a budget not to exceed $14,000.00, and with a statement that the authorized technical evaluation is not a challenge by the planning group of the existing water right. Kevin Janak seconded. Mr. Mims asked for any objections. Mr. Murphy objected again. There was one other unidentified objection. Motion carried.

AGENDA ITEM NO. 9: DISCUSSION AND APPROPRIATE ACTION REGARDING AUTHORIZING THE ADMINISTRATOR TO SUBMIT REQUEST FOR NOTICE-TO-PROCEED FOR EVALUATION OF WATER MANAGEMENT STRATEGIES AND AUTHORIZE ADMINISTRATOR TO EXECUTE CONTRACT AMENDMENT WITH TEXAS WATER DEVELOPMENT BOARD

Mr. Middleton made a motion to authorize the San Antonio River Authority, as Administrator, to submit a request for Notice-to-Proceed #7 for the evaluation of two WMSs presented by HDR Engineering, and execute a contract amendment with TWDB under the conditions set forth under Agenda Item No. 8: that the technical consultants conduct evaluations to determine necessary facilities to meet project yield with and without return flows; that a statement is included stating the evaluation is not a challenge by the planning group of the existing water right; and that the evaluations for the Victoria County Steam-Electric are completed within a budget not to exceed $14,000.00. Kevin Janak seconded the motion. The motion carried by consensus.

AGENDA ITEM NO. 10: DISCUSSION AND APPROPRIATE ACTION REGARDING IDENTIFICATION OF POTENTIALLY FEASIBLE WATER MANAGEMENT STRATEGIES (WMSs) (TASK 4B), DRAFT SCOPES OF WORK AND BUDGETS FOR CONSIDERATION AT THE NEXT SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP MEETING

Mr. Mims asked HDR if there were any new potentially feasible water management strategies that had been identified. Mr. Perkins said that there were not any new strategies.

AGENDA ITEM NO. 11: DISCUSSION AND APPROPRIATE ACTION REGARDING EVALUATION AND RECOMMENDATION OF WATER MANAGEMENT STRATEGIES (TASK 4D)

Mr. Perkins noted that the planning group should select projects to be included in the 2016 Plan by February 2015. Discussions concerning which projects to move forward with should start at the November meeting.

Mr. Perkins presented six of seven technical evaluations to the Planning Group including the Uvalde Aquifer Storage Recovery (ASR), Expanded Carrizo for Schertz Seguin Local Government Corporation (SSLGC), Brackish Wilcox for SSLGC (sharing facilities with Expanded Carrizo for SSLGV and Cibolo Valley Local Government Corporation projects), Texas Water Alliance (TWA) Carrizo Well Field, Hays-Caldwell Public Utility Agency (HCPUA) Carrizo Project, and the TWA & HCPUA Joint Project.

Mr. Vaugh presented the Guadalupe-Blanco River Authority (GBRA) Lower Basin Storage Off-Channel Reservoir project.

AGENDA ITEM NO. 12: DISCUSSION AND APPROPRIATE ACTION REGARDING SOLICATIATION OF WRITTEN APPROVAL OF THE GUADALUPE-BLANCO RIVER AUTHORITY'S (GBRA) LOWER BASIN STORAGE PROJECT PROPOSED SUBSTITUTION BY THE TEXAS WATER DEVELOPMENT BOARD EXECUTIVE ADMINISTRATOR

Mr. Vaugh presented the proposed amendment to the 2011 Plan, specifying a larger off-channel reservoir of 500 acre-feet (similar to the GBRA Lower Basin Storage Project for 2016 Plan addressed in Agenda Item No. 11). Mr. Vaugh stated that, since this is an amendment to the 2011 Plan, the proposed amendment uses the hydrologic assumptions for the 2011 Plan (as opposed to the hydrologic assumptions for the 2016 Plan).

Mrs. Scott inquired as to why an amendment to the 2011 Plan is necessary considering that a similar project has been evaluated for the 2016 Plan based on new hydrologic assumptions (those being without effluent flows and with consideration for the HCP project), and that the 2011 assumptions differ significantly from the 2016 planning cycle assumptions. The alternative, she suggested, would be to wait for the 2016 Plan to be approved. Mr. Vaugh responded, explaining that by having the project in the 2011 Plan, the project will be eligible for TWDB funding sooner.

Will Conley made a motion to approve the GBRA's request to the planning group, to move forward with asking the Executive Administrator of TWDB to determine whether the proposed amendment is a substitution under TWDB rules. David Roberts seconded the motion.

Mr. Mims opened the motion up for discussion.

There was some discourse and confusion over what the planning group was taking action on. Steve Raabe, San Antonio River Authority, clarified that before the planning group took action on whether or not to amend the plan, action needed to be taken to request a determination from TWDB on whether the type of amendment being proposed is in fact a "substitution" as defined by TWDB. Mr. Raabe stated that action (to request TWDB determination) has to happen before the group can consider taking action to request an amendment to the 2011 plan. Mr. Vaugh confirmed and briefly detailed the process prescribed by TWDB rules.

Mr. Mims clarified the motion previously made by Mr. Conley, and ensured the planning group that they were not making a decision on whether to submit the substitution to TWDB, effectively adopting an amendment to the 2011 Plan. Rather, the planning group was making a decision on whether to request pre-adoption determination of what type of amendment the proposed amendment should be classified as, in accordance with the amendment process procedures laid out by the TWDB rules.

Mr. Mims then suggested the creating a workgroup consisting of the following members: Charles Ahrens, James Murphy, Suzanne Scott, Tom Taggart, and David Roberts. Mr. Mims agreed to chair the committee. The workgroup will be tasked with framing and agreeing on the exact questions posed by the planning group regarding the GBRA Lower Basin Project amendment to the 2011 plan. Those questions will be sent to HDR, who will answer those questions only to the extent they have information readily and conveniently available. The workgroup can meet as often they want between now and the November meeting, but HDR will not be part of those meetings.

Mrs. Scott asked for clarification on what exactly will be submitted to TWDB as a result of this action.

David Meesey and Steve Raabe collectively answered the question posed by Mrs. Scott, that the planning group will submit a letter requesting the Executive Administrator to review the proposed amendment to the 2011 Plan and to determine whether the type of amendment requested by GBRA is a "substitution," rather than a "major amendment," or a "minor amendment."

Mr. Mims made clear that while the planning group awaits a determination from the Executive Administrator, the workgroup will work to identify questions that the planning group might have regarding the amendment. At the November meeting, when the amendment re-surfaces for actual planning group approval, the answers to those questions will be presented to the planning group to aid in making a judgment.

Charles Ahrens requested that the planning group vote on the action by roll call. Mr. Mims agreed. The planning group voted 25 – 3 (2 absent) in favor of moving forward with requesting pre-adoption determination from the Executive Administrator of TWDB, on whether the proposed amendment classifies as a substitution, a minor amendment, or a major amendment.

Mr. Perkins and Mr. Mims briefly discussed the role HDR has in the proposed workgroup, which ended in a clarification that HDR is to respond to the workgroup's questions within the framework of the 2011 Plan to the extent that information is available from the 2011 Plan and the 2016 Plan to date.

Mr. Mims further clarified that the workgroup will have the duty to agree upon and frame the questions that the workgroup wants to present to HDR. HDR will report back with whether they can answer those questions with readily available information. The questions that they cannot answer under these conditions will be thrown out. The workgroup will wait for HDR's response to the questions that they can answer. The workgroup will then hold a second meeting to discuss the answers provided by HDR, and to agree upon a recommendation for the full planning group to determine whether or not to request this amendment.

AGENDA ITEM NO. 13: DISCUSSION AND APPROPRIATE ACTION REGARDING SOLICITATION OF THE DETERMINATION OF THE GUADALUPE-BLANCO RIVER AUTHORITY'S (GBRA) INTEGRATED WATER POWER PROJECT PROPOSED MINOR AMENDMENT BY THE TEXAS WATER DEVELOPMENT BOARD EXECUTIVE ADMINISTRATOR

Mr. Perkins presented the GBRA Integrated Water Power Project (IWPP) to the planning group, which was being proposed as a minor amendment to the 2011 Plan. Mr. Perkins clarified what a minor amendment is, and the process by which the TWDB decides whether a proposed amendment qualifies as a minor amendment.

David Roberts made a motion that the planning group request a determination from the Executive Administrator of TWDB on whether the proposed amendment is a minor amendment under TWDB rules. Greg Sengelmann seconded the motion.
The motion carried, sustaining two objections, one from Mr. Taggart, and one from Tyson Broad.

AGENDA ITEM NO. 14: POSSIBLE AGENDA ITEMS FOR THE NEXT SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP MEETING

Mr. Mims instructed the planning group to notify either him or Cole Ruiz, San Antonio River Authority, of any agenda items they would like to have addressed at the next planning group meeting.

AGENDA ITEM NO. 15: PUBLIC COMMENT

There were no comments

Meeting Adjourned.

Recommended for approval.

_____
GARY MIDDLETON, SECRETARY

Approved by the South Central Texas Regional Water Planning Group at a meeting held on November 6, 2014.

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CON MIMS, CHAIR

AGENDA ITEM 3

Status of Edwards Aquifer Habitat Conservation Plan (HCP) – Nathan Pence, Executive Director EAHCP

AGENDA ITEM 4

Status of Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays Basin and Bay Stakeholder Committee (BBASC) and Expert Science Team (BBEST)

Basin	Contractor	Title	Amount	TWDB Contract Manager	Execution Date	Contract End Date	Status	Contract Number	Funding Sources	TWDB-CAD Point of Contact	Progress Reporting	Description
Guadalupe	SARA	Texas Instream Flow Program Studies	$230,000	Raphelt	6/24/2014	8/31/15	In Progress	1400011709	SB3 (GR); SARA	Phyllis Thomas	Monthly	Linkages between biological resources (instream and riparian) and flow at selected sites in the Guadalupe-San Antonio and Mission-Aransas Basins will be developed and tested in this study. Expert panel workshops, field data collection, and data analysis will guide the validation and refinement of established environmental flow standards at the selected sites.
Guadalupe	UT-CRWR	Guadalupe-San Antonio River Delta Measurement and Modeling of Flows	$200,000	McEwen	8/21/2014	8/31/15	In Progress	1400011710	SB3 (GR)	Phyllis Thomas	Quarterly	This study will develop and validate a 3-D hydrodynamic model to assess water connectivity and flow paths over the landscape and through the bayous of the Upper Guadalupe Delta under a variety of inflow conditions. The study will incorporate LiDAR data and field measurements of bathymetry and water level.
Guadalupe	SARA	*Rangia* Clam Investigation in the Upper	$170,000	Guthrie	6/26/2014	8/31/15	In Progress	1400011711	SB3 (GR); SARA	Al Dillard	Quarterly	The G-SA BBEST utilized published scientific literature about the reproductive
Guadalupe	UTMSI	Assessing the effects of freshwater inflows and other key drivers on the population dynamics of blue crab and white shrimp using a multivariate time-series modeling framework	$150,000	Schoenbaechler	7/1/2014	8/31/15	In Progress	1400011712	SB3 (GR)	Phyllis	Quarterly	Through a literature review and multivariate autoregressive modeling techniques of TPWD Coastal Fisheries monitoring data and other datasets, this study will provide insights into how physical and biological drivers interact to affect the abundance of blue crabs and white shrimp in the Guadalupe and Mission-Aransas Estuaries. The project will assess the interaction of different factors over different temporal scales.
Guadalupe	San Antonio Bay Partnership	Strategy Options for Meeting Attainment Frequencies for the Estuaries	$50,000	Raphelt	6/17/2014	8/31/15	In Progress	1400011713	SB3 (GR)	Vicki Karaffa	Quarterly	This study will quantify the amount of potential water available, location, seasonal availability and cost of strategies to better achieve the estuarine attainment frequencies of the environmental flow standards for the San Antonio Bay System. Strategies based on the donation, purchase, or lease of existing water permits and the use of Aquifer Storage and Recovery (ASR) to increase storage of water for releases of environmental flows will be considered.

AGENDA ITEM 5

Chair's Report

AGENDA ITEM 6

Review/Approve Administrator's Budget for Calendar Year 2015

South Central Texas Regional Water Planning Group
Statement of Administrative Costs for 2015

ADMINISTRATIVE	2012 BUDGET	2013 BUDGET	2014 BUDGET	2014 Actual Expenses as of 09/1/2014	PROPOSED 2015 BUDGET
Supplies	$1,950.00	$1,950.00	$1,950.00	$832.31	$1,950.00
Professional Services	$1,250.00	$1,250.00	$4,550.00	$0.00	$4,550.00
Communications	$2,000.00	$2,000.00	$2,000.00	$1,194.36	$2,000.00
Travel	$500.00	$500.00	$500.00	$0.00	$500.00
Advertising	$4,000.00	$4,000.00	$4,000.00	$952.46	$4,000.00
Labor Costs	$48,300.00	$48,300.00	$45,000.00	$28,029.65	$45,000.00
TOTAL	$58,000.00	$58,000.00	$58,000.00	$31,008.78	$58,000.00

Supplies – items that are consumed or deteriorated through use; computer paper, checks, office supplies, and miscellaneous supplies (lunches).

Professional Services – legal fees, etc.

Communications – telephone and postage.

Travel – reimbursement of SCTRWPG member travel and other expenses.

Advertising – publishing notices in newspapers of general circulation within the planning area.

Labor Costs – SARA staff time associated with administration.

AGENDA ITEM 7

Texas Water Development Board (TWDB) Communications

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

October 9, 2014

Mr. Con Mims
Chairman
South Central Regional Water Planning Group
C/O San Antonio River Authority
P.O. Box 839980
San Antonio, Texas 78283-9980

Dear Chairman Mims:

This follow-up letter provides supplemental information to our September 23rd response, in which we answered your questions related to the Guadalupe-Blanco River Authority storage project.

Our staff has further reviewed these questions and elaborated on our original responses. Our original responses have not changed, instead the revised responses, which are enclosed, provide additional detail and cite specific sections in the Texas Administrative Code. This information is intended to further assist you and the South Central Texas Regional Water Planning Group (Region L) in making any necessary regional water planning decisions.

Thank you for your letter and your continued support of the regional water planning process. If you have any questions or wish to discuss any of these issues further, please contact David Meesey, Region L project manager at (512) 936-0852 or david.meesey@twdb.texas.gov.

Sincerely,

Kevin Patteson
Executive Administrator

Enclosures

Cc: David Meesey, TWDB

Texas Water Development Board Rules and Requirements

Below are responses from the Texas Water Development Board (TWDB) regarding questions from the Region L Reuse Workgroup regarding the TWDB's water planning rules and requirements.

1. In the case where multiple water management strategies are available to meet a single water user group's need, and each of the strategies can, individually, meet the water user's need, may the planning group designate multiple strategies as recommended strategies for that user group? In other words, may the planning group designate multiple recommended strategies for a user group, the total supply of which exceeds the user group's needs?

   TWDB response: There is nothing in statute or rule that precludes that option. Note that the 2011 Region L Regional Water Plan included a greater recommended strategy water supply volume than was required to meet identified water needs in the plan as illustrated by Figure ES-8 in the 2011 Region L Regional Water Plan.

2. Was the distinction of alternate vs. recommended water supply strategies created to prevent double or triple serving the same unmet need?

   TWDB response: 31 TAC § 357 does not include a reason for having the distinction between alternative and recommended strategies. An "unmet need" is an unidentified water need that would remain unmet even after the implementation of all recommended water strategies per 31 TAC § 357.40(c). Staff understands that the purpose of having alternative strategies was to expedite the regional water plan amendment process in certain instances. Per the previous response, there is nothing in statute or rule that precludes recommending water supply volumes from water management strategies that exceed the associated needs.

3. If the end water user group is a water utility holding a CCN and it selects the project(s) to serve it, can other entities list that utility as the end water users of other proposed projects to serve their needs without their consent?

   TWDB response: The regional water planning groups make the decision regarding which entities are associated with which strategy in their regional water plans per 31 TAC § 357.35 taking into consideration local and regional water plans, for example, per 31 TAC § 357.22(a) and 31 TAC § 358.3. Rules do not require "consent" from a political subdivision to associate a recommended strategy with that political subdivision, however 31 TAC § 357.35(e) addresses objections by political subdivision to being associated with recommended strategies as follows:

   > *"Specific recommendations of water management strategies to meet an identified need will not be shown as meeting a need for a political subdivision if the political subdivision in question objects to inclusion of the strategy for the political subdivision and specifies its reasons for such objection. This does not prevent the inclusion of the strategy to meet other needs."*

3a. Who makes the determination in the regional water plan of which projects will serve a given need (CCN holders, WUGs, or the Planning Group)?

TWDB response: The regional water planning group in accordance with all local regional water planning rules.

4. To what point in the delivery system to a water user group does a water management strategy have to reflect project costs? This is particularly pertinent to meeting future needs of water user groups within a county or region where exact locations of those needs are not known.

TWDB response: The regional water planning group and its consultants shall use the best information available as to where recommended water management strategy supplies will be conveyed to each water user group per 31 TAC § 357.34(d)(3)(A). For example, a recommended water management strategy that is to supply water to a specific municipal water user group of greater than 500 population shall include the costs of conveying that water at least to within the vicinity of that specific municipal water group's future distribution system (e.g., to the main water treatment plant) whether it would rely on existing infrastructure or require new proposed infrastructure. Sometimes the regional water planning group and their consultants must rely on best professional judgment to select a best planning location.

Guadalupe-Blanco River Authority Storage Project

Below are responses from the Texas Water Development Board (TWDB) regarding questions from the Region L Reuse Workgroup regarding the Guadalupe-Blanco River Authority (GBRA) Storage Project.

1. If the GBRA Lower Basin Storage Project in the 2011 configuration relies on the flow from SAWS' effluent for yield and, hypothetically, if the San Antonio Water Supply (SAWS) was able to request an amendment to the 2011 plan for a project using that effluent to meet a water need, how would that be handled, given in the planning process two water projects cannot rely on the same water?

   TWDB response: The decision to amend the 2011 Region L Regional Water Plan is a decision that must be made by the Region L Regional Water Planning Group. In making this decision, the group might have to reconcile the two projects to ensure that the water source is not over-allocated per TWC 16.051(a) and 31 TAC § 357.10(16).

2. How would the planning process deal with who has claim to the (SAWS effluent) water?

   TWDB response: For planning purposes, the determination of which water management strategies are included in a regional water plan is at the discretion of the regional water planning group, as long as the water source is not over-allocated per TWC 16.051(a) and 31 TAC § 357.10(16). The Texas Commission on Environmental Quality is the agency that administers surface water rights and permits for surface water diversions.

3. If SAWS was to submit (in the future) an effluent-based project as an amendment to the 2016 plan and the GBRA (lower basin) storage project is in the 2016 plan, the restriction of two projects relying on the same water supply would not apply for the 2016 plan (for these two projects) because the effluent is not considered a water source for the GBRA project (effluent may not be used in calculating a project yield) in the 2016 plan, is that correct?

   TWDB response: Regional water planning groups cannot recommend water management strategies that would over-allocate a water source per TWC 16.051(a) and TAC 31 § 357.10(15, 16). The regional water planning group must decide how to allocate water availability in its plan.

4. How would the 2011 regional plan (which allows use of effluent in project yield calculations) reflect that a source of water relied upon for a project (such as effluent) is not guaranteed to be available for a project (because it can be reused)? Is that reflected in the reliability of the firm yield of the project?

   TWDB response: Firm yields of the 2011 Regional L Regional Water Plan projects are based on the modeling assumptions that were requested by the Region L Regional Water Planning Group and approved by TWDB in July 2009 per 31 TAC § 357.32(c).

5. Based on the current TWDB rules for submission of plan amendments, is it a requirement to include the new information known about the project given the change in the 2016 planning parameters?

   TWDB response: Generally speaking, use of the most current information in developing regional water plans is recommended. However, hydrologic assumptions requested by the Region L Regional Water Planning Group and approved by TWDB in July 2009 per 31 TAC § 357.32(c) for use in developing the 2011 regional water plan would also be applied to any amendment to that same 2011Region L Regional Water Plan for which those hydrologic assumptions were approved.

6. Is amending the 2011 plan, now, instead of waiting for the 2016 plan a way to circumvent the 2016 planning parameters?

   TWDB: A regional water planning group may choose to amend its regional water plan at any time per TWC § 16.053(h) and 31 TAC § 357.51. As long as a planning group adheres to the statute and rules for making regional water plan amendments, we do not consider the regional water planning process to be circumvented.

7. How does TWDB account for changes in projects from plan year to plan year as planning parameters change?

   TWDB response: The regional water planning groups make the decision regarding how projects change from one regional water plan to another and which projects to include in each regional water plan per 31 TAC § 357.34-35. A regional water plan must be developed in accordance with the statute and rules that are in place for that planning cycle in order for the TWDB to approve the regional water plan.

8. Can an amended water plan or a TWDB loan be used in any way to indicate State support for the project? Or a guarantee that the project is in some way endorsed by the State for the purposes of permitting, legal action or waiver of compliance with other legislative laws, administrative practices-can the project be seen as grandfathered in any way and not subject to challenge through other actions?

   TWDB response: Funding from TWDB is provided to sponsors for projects that qualify to receive loans under the associated agency funding programs. TWDB funding is not in any way an endorsement of any particular project for the purposes of permitting and does not create a basis for avoiding compliance with regulations or laws, or a basis for potential legal causes of action,

AGENDA ITEM 8

Set Dates and Times of Regional Water Planning Group Meetings for 2015

AGENDA ITEM 9

Discussion and Appropriate Action Regarding Consultants Work and Schedule

Potential Issues For The 2016 SCTRWP

November 6, 2014

1) Carrizo Aquifer Workgroup (Status: Recommendation Approved)
   a) Multiple Potentially Feasible Projects Exceed MAG
   b) TWDB will not allow for over-allocation in the 2016 RWP

2) Importing Groundwater from Other Regions (Status: Technical Consultants have initiated discussions regarding Hays County-Forestar Project)

3) Meeting Needs of Formosa (Status: Con Mims has discussed with LNRA)
   a) Coordination with Regions P and N; Technical Evaluation

4) Implementation of TCEQ Estuary Environmental Flow Standards (Status: No documentation from TCEQ; Proceed based on comments with TCEQ)

5) Population and/or Water Demand Projections Revisions (Status: Finished)

6) Eagle-Ford Shale Demands – Direct, Indirect, and Induced (Status: Finished)

7) Whooping Crane Litigation (Status: District Court Decision Reversed by 5th Circuit Court of Appeals on 6/30/14; On 7/28/14, TAP appealed to 5th Circuit seeking remand to District Court)

8) Meeting Steam-Electric Needs in Victoria County (Status: GBRA to meet the Need; WMS for your consideration)

9) Inter-Regional Coordination (e.g. SAWS Vista Ridge & Hays County Forestar) (Status: Preliminary Discussions)

10) Legislation (Status: Legislative Session Ended; Responding to legislation adopted in 2013; New Session begins January 2015)

2016 South Central Texas Regional Water Plan

Proposed Workplan for Development

Complete

Tasks	Description	2014 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2015 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Task 1	**Planning Area Description**																								
Task 2a	**Non-Pop. Based Demand Projections**																								
Task 2b	**Population & Demand Projections**																								
Task 3	**Water Supply Analyses**																								
EAHCP	**Implementation**																								
TAP	**Whooping Crane Lawsuit**																								
Task 4	**Water Management Strategies**																								
Task 4a	Needs Assessment																								
Task 4b	ID Potentially Feasible WMSs																								
Task 4b.1	WMS Verification																								
Task 4c	Technical Memorandum																								
Task 4d	WMS Technical Evaluations		★			★			★																
Task 5	**Conservation Recommendations**																								
Task 6	**Long-term Resource Protection**																								
Task 6.1	Cumulative Effects of RWP																								
Task 7	**Drought Response Information**																								
Task 8	**Policies & Recmdtns / Unique Sites**																								
Task 9	**Infrastructure Funding**																								
Task 10	**Plan Adoption**														★						★				
Task 11	**Implement. & Compare to Prv RWPs**																								
Task 12a	**Prioritization of 2011 WMSs**					★																			
Task 12b	**Prioritization of 2016 WMSs**																						★		

Technical Memorandum: ***August 1, 2014***

IPP Deadline: May 1, 2015

RWP Deadline: November 2, 2015

Legend:

- ★ *SCTRWPG Action*
- ★ *TWDB Action*
- *Scheduled SCTRWPG Meeting*
- *Probable SCTRWPG Meeting*

AGENDA ITEM 10

Discussion and Appropriate Action Regarding a Recommendation for Legislative Designation of Stream Segments of Unique Ecological Value (Task 8)

Ladies and Gentlemen:

In 2013, the planning group authorized me to secure conditional legislative designation of the headwaters of the Nueces, Frio and Sabinal rivers in Uvalde County and the Comal and San Marcos rivers in Comal and Hays counties as unique stream segments. My enclosed testimony to the Senate Natural Resources Committee explains the purpose of our request for these designations and the conditions that we wanted to have included in the legislation. A copy of SB 589 by Hegar is enclosed to show the wording of the actual legislation. That bill passed the Senate with no opposition that I was aware of. A companion bill, sponsored by Rep. Doug Miller, died in House Natural Resources Committee as time ran out for the Session. I was not aware of any opposition to the House bill.

I will ask the planning group, on November 6, for authorization to take all steps necessary to seek identical legislation in the upcoming Session.

Con Mims, Chair

March 5, 2013

SENATE NATURAL RESOURCES COMMITTEE

Honorable Troy Fraser, Chair
Honorable Craig Estes
Honorable Bob Deuell
Honorable Robert Duncan
Honorable Rodney Ellis
Honorable Kevin Eltife
Honorable Glenn Hegar
Honorable Juan Hinojosa
Honorable Robert Nichols
Honorable Kel Seliger
Honorable Carlos Uresti

SENATE BILL 589 BY HEGAR

RECOMMENDATION OF STREAM SEGMENTS HAVING UNIQUE ECOLOGICAL VALUE IN REGION L FOR LEGISLATIVE DESIGNATION

TESTIMONY BY CON MIMS, CHAIR
SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP (REGION L)

Chairman Fraser and Senators:

My name is Con Mims. I am Chair of the South Central Texas Regional Water Planning Group (Region L). The planning area for Region L covers 21 ½ counties from Uvalde, Zavala and Dimmit counties to the west, Kendall, Hays, and Caldwell counties to the north, and down the San Antonio and Guadalupe rivers to Refugio and Calhoun counties at San Antonio Bay. The planning group has 29 members from throughout the region.

Senate Bill 589 enacts a recommendation by Region L intended to help preserve the unique ecological condition of the headwaters of the Nueces, Frio and Sabinal rivers in Uvalde County and the Comal and San Marcos rivers in Comal and Hays counties. These are some of the last nearly pristine waters in the state. They are widely recognized natural treasures that identify the regions in which they are located.

In your information packet you will find a map of Region L showing the locations of the river segments being recommended for recognition and, for each segment, a closer view marked on a U.S. Geological Survey map, followed by a representative photo.

The Nueces, Frio and Sabinal river segments extend from the northern Uvalde County line, which is the boundary of Region L, downstream to approximately the recharge zone of the Edwards Aquifer. The Comal and San Marcos river segments are within the immediate influence of the Comal and San Marcos springs. The Nueces segment is about 19 miles long, the

Frio is about 15 miles, the Sabinal is about 12 miles, the Comal is about three miles, and the San Marcos is about two miles in length.

State law allows for designation by the Texas Legislature of streams having unique ecological value. A stream may be considered for unique designation if it meets one or more of the following criteria: significant biological function, valuable hydrologic function, riparian conservation areas, high water quality/exceptional or high aquatic life use/high aesthetic value, threatened or endangered species/unique communities. All of these criteria are met by each of these stream segments.

The Nueces, Frio, and Sabinal stream segments are listed in the Nationwide Rivers Inventory (NRI) prepared by the National Park Service (NPS). NRI listed rivers possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance.

The San Marcos River segment is fed by the second largest spring system in Texas. It is the number one recreational river in the state and number two scenic river (NPS 1995).

The Comal River segment is fed by the largest spring in Texas. It supports a regional recreation and tourist industry and provides critical habitat for four federally listed endangered species.

Passage of this legislation will only mean that a state agency or political subdivision of the state may not finance the actual construction of a reservoir within the designated segment. There are no reservoirs currently planned for any of these segments.

Region L's support of this bill is contingent on the following conditions remaining in the bill.

The designation of a river or stream segment as being of unique ecological value

(1) does not affect the ability of a state agency or political subdivision of the state to construct, operate, maintain, or replace a weir, a water diversion, flood control, drainage, or water supply system, or a recreational facility in the designated segment. (These conditions are requested by the cities of New Braunfels and San Marcos. They want to preserve the right to conduct drainage and flood control work and operation of the parks that both have within their segments);
(2) does not prohibit the permitting, financing, construction, operation, maintenance, or replacement of any water management strategy to meet projected water supply needs recommended in, or designated as an alternative in, the 2011 Regional Water Plan for Region L; and
(3) does not alter any existing property right of an affected landowner.

Region L believes that the Texas Legislature's recognition of these streams as being unique will elevate their importance and value, instill additional pride in them by adjacent landowners and nearby communities, and encourage their continued, voluntary, preservation.

Contact: cmims@nueces-ra.org

83R5007 JAM-D

By: Hegar S.B. No. 589

A BILL TO BE ENTITLED

AN ACT

relating to the designation of certain river or stream segments as being of unique ecological value.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. DEFINITION. In this Act, "Region L" means Regional Water Planning Area L designated in accordance with Section 16.053, Water Code, as the area's boundaries existed on September 1, 2013.

SECTION 2. DESIGNATION OF RIVER OR STREAM SEGMENTS OF UNIQUE ECOLOGICAL VALUE. The legislature, as authorized by Section 16.051(f), Water Code, designates as being of unique ecological value the following river or stream segments:

(1) the Nueces River from the northern boundary of

Region L to United States Geological Survey gauge number 08190000;

(2) the Frio River from the northern boundary of Region L to United States Geological Survey gauge number 08195000;

(3) the Sabinal River from the northern boundary of Region L to its intersection with State Highway 187;

(4) the San Marcos River from a point 0.4 miles upstream from its intersection with State Highway Loop 82 to its intersection with Interstate Highway 35; and

(5) the Comal River from its intersection with East Klingemann Street in New Braunfels to its confluence with the Guadalupe River.

SECTION 3. EFFECT OF DESIGNATION. The designation of a river or stream segment as being of unique ecological value under Section 2 of this Act:

(1) means only that a state agency or political subdivision of the state may not finance the actual construction of a reservoir in the designated segment;

(2) does not affect the ability of a state agency or political subdivision of the state to construct, operate, maintain, or replace a weir, a water diversion, flood control, drainage, or water supply system, or a recreational facility in the designated segment;

(3) does not prohibit the permitting, financing, construction, operation, maintenance, or replacement of any water management strategy to meet projected water supply needs recommended in, or designated as an alternative in, the 2011 Regional Water Plan for Region L; and

(4) does not alter any existing property right of an affected landowner.

SECTION 4. EFFECTIVE DATE. This Act takes effect September 1, 2013.

2016 South Central Texas Regional Water Plan

Proposed Process for Development of Chapter 8 Regarding Policy Recommendations & Unique Sites

Policy Recommendations

1) RWPG members consider attached "tracked changes" version of Chapter 8 from the 2011 Plan. These "tracked changes" reflect only matters of fact or policy decisions already made by the RWPG (e.g., recommendations of the Carrizo and EAHCP Workgroups) for the 2016 Plan.
2) During the November 2014 RWPG meeting, consider establishing a small Policy Workgroup charged with receiving potential policy recommendations from the RWPG membership and developing an updated draft of Chapter 8 for RWPG discussion and appropriate action during the February 2015 meeting. The Administrator (SARA) and Technical Consultant (HDR) will be available to support the Policy Workgroup.

Ecologically Unique Stream Segments and Unique Reservoir Sites

1) RWPG members consider the recommendation in Chapter 8 (pp. 9-11) and Appendix I (Vol. I) of the 2011 Plan of five (5) stream segments for Legislative designation as having unique ecological value. No recommendation regarding unique reservoir sites was included in the 2011 Plan.
2) During the November 2014 RWPG meeting, discuss and take appropriate action regarding renewed recommendation (in the 2016 Plan) of these five stream segments for Legislative designation. If the RWPG chooses to renew its recommendation, the RWPG shall forward the recommendation package to TPWD and allow TPWD 30 days for its written evaluation of the recommendation. The RWPG may reference documentation of the five segments in the 2011 Plan, rather than re-create this documentation for the 2016 Plan.

Chapter~~Section~~ 8
Policy~~ies and~~ Recommendations & Unique Sites
[31 TAC §357.4~~37~~(a)(10); ~~31 TAC §357.8; and 31 TAC §357.9~~]

8.1 Agricultural Water

Feasibility of Meeting Irrigation Water Needs: The SCTRWPG finds that, under current conditions, it is not economically feasible for agricultural producers to pay for additional water supplies to meet all of the projected irrigation water shortages. See Chapter 6 for a summary of the unmet needs and a quantitative description of the socioeconomic impacts of not meeting these needs~~Section 4C.1.2 for an analysis of economic feasibility underlying this finding of the Regional Water Planning Group~~.

The SCTRWPG recommends that the TWDB undertake economic studies of water management strategies that may meet irrigation needs in Texas.

Agricultural Water Conservation Programs: The SCTRWPG recommends restoring funding to the Agricultural Water Conservation programs provided by the TWDB.

Water Use Information: The SCTRWPG recommends that TWDB improve the water use information for irrigation and livestock watering categories.

8.2 Rural Water

Given the increasing number of proposals to export large amounts of water, the legislature should review Section 36.122 of the Texas Water Code. Any necessary changes should allow for sufficient revenue to support high quality technical studies and should be made to ensure that districts are fully equipped to analyze and respond to such proposals, to fully consider their effect on local communities, the rural environment and economy.

8.3 Groundwater

Groundwater Management: The SCTRWPG respects the rules and regulations of groundwater districts, just as it does those of all other state subdivisions and agencies. The SCTRWPG believes that all rules should be adopted pursuant to accepted administrative procedures based on the standards of rationality, equity, and scientific evidence. Furthermore, the SCTRWPG supports the determinations of Modeled~~Managed~~ Available Groundwater

(MAG) based on Desired Future Conditions (DFC) established by Groundwater Management Area (GMA) pursuant to House Bill 1763 of the 79th Texas Legislature.

Recognizing the management challenges facing groundwater conservation districts with multiple recommended water management strategies potentially seeking permits to withdraw groundwater supplies in excess of amounts determined to be available, the SCTRWPG approved the following series of recommendations applicablenote to be included at appropriate locations in the 20161 Regional Water Plan.

Recommendation #1: When allocated groundwater exceeds the MAG in any decade, the Workgroup recommends that exempt use be maintained at the full estimated amount, while the permitted and grandfathered use amounts are reduced proportionately for planning purposes so that the total firm supply equals the MAG.

Recommendation #2: Where potentially feasible WMSs are contemplated that require new permits and allocated groundwater exceeds the MAG, show a firm supply of zero in the plan for the WMSs for planning purposes, but explain that groundwater for the WMSs may be obtained under existing permits through the Carrizo/Wilcox Transfers WMS or under new permits issued in accordance with GCD rules.

Recommendation #3: Where potentially feasible WMSs are contemplated that require new permits and allocated groundwater is less than the MAG, but allocated groundwater plus WMSs exceeds the MAG, show firm supplies of no more than the difference between allocated groundwater and the MAG in the plan for planning purposes, but explain that supplemental groundwater for the WMSs may be obtained under existing permits through the Carrizo/Wilcox Transfers WMS or under new permits issued in accordance with GCD rules.

Recommendation #4: For potentially feasible WMSs with firm supplies proportionately reduced or shown as zero for MAG compliance, evaluate facilities and costs for WMSs at both the reduced firm supply value associated with MAG compliance without transfers and at the supply amount that the sponsor seeks to develop.

Recommendation #5: For existing groundwater supplies that are fully permitted, or grandfathered, by a GCD and are proportionately reduced in quantity for planning purposes in this Plan for MAG compliance, include the following explanatory note in the regional water plan document and database at appropriate locations:

"For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to supply amounts in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs' discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount."

Recommendation #6: For potentially feasible WMSs that have GCD permits for a portion of the needed supply and the remainder is not yet permitted, include the following explanatory note in the regional water plan document and database at appropriate locations:

"For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount."

~~*Part or all of the water needed by this Water Management Strategy (WMS) is anticipated to be supplied from locations within the jurisdiction of a groundwater conservation district (District) and may exceed the amount of available water identified in the District's approved management plan, or may for other reasons not be permitted by the District. The amount of water needed by this WMS that exceeds the available water in the District's management plan, or for other reasons is not permitted by the District, cannot be implemented as part of this WMS unless and until all necessary permits are received from the District. The amount of water needed by this WMS that exceeds the available water in the District's management plan, or for other reasons is not permitted*~~

~~by the District, introduces an added element of uncertainty to reliance upon this WMS and, therefore, additional management supplies may be needed for this WMS.[1]~~

Groundwater Sustainability: The SCTRWPG has adopted the goal of groundwater sustainability and recommends management strategies needed to accomplish this goal. This recommendation is intended to help protect all users of those aquifers that are subject to increased withdrawals, to help preserve the long-term integrity of those aquifers, and to build awareness of the effects of pumping on those aquifers and of their recovery capabilities. The SCTRWPG recommends that any person implementing any groundwater option or strategy identified as part of this Regional Plan consider and incorporate groundwater monitoring of both quantity and quality, recharge protection and enhancement, conservation methods and related practices, as determined to be appropriate by local groundwater districts. Where no district exists, the developer should monitor impacts and, when appropriate, take corrective action consistent with the goal of groundwater sustainability.

Shared Groundwater Resources among Planning Regions: In the event a Water User Group relies on a groundwater management strategy to meet the Water User Group's demand during the planning period and the strategy would have a significant impact on a groundwater resource shared among planning region(s), notice should be provided to the region(s) of the proposed date of implementation and anticipated acre-feet per year demand on the shared groundwater resource. The SCTRWPG provided such notice to the Lower Colorado (K) and Brazos G planning regions with regard to the Hays County – Forestar~~GBRA Simsboro~~ Project and the Vista Ridge Project (SAWS) recommended to meet projected needs in the 2016~~1~~ South Central Texas Regional Water Plan.

Equity in Groundwater and Surface Water Law: The SCTRWPG recognizes a need for equity in groundwater and surface water law to facilitate the proper balance of the use of those resources. The SCTRWPG recommends that the state provide incentives to develop conjunctive use projects that more efficiently utilize groundwater and surface water.

Land Stewardship: The SCTRWPG encourages State support of implementing or enhancing land stewardship management practices that are shown to augment the quality and quantity of the state's surface water and groundwater resources.

[1] ~~Relevant policy regarding management supplies is found in Section 8.10.~~

Development and Use of Groundwater: The SCTRWPG encourages legislation that promotes public or private entities planning to develop groundwater projects to provide an economic analysis of the impact to communities, instream flows, and bay and estuary systems incurred by movement of the groundwater.

Funding of Groundwater Conservation Districts: Given the increasing number of proposals to export large amounts of water, the Legislature should review Section 36.122 of the Texas Water Code. Any necessary changes should allow for sufficient revenue to support high quality technical studies and should be made to ensure that Groundwater Conservation Districts are fully equipped to analyze and respond to such proposals, and to fully consider their effect on local communities, the rural environment and the economy.

Region L's Matrix Approach: The SCTRWPG encourages the Texas Water Development Board to fund development, in general accordance with the SCTRWPG proposal to TWDB submitted in June 2004, of a generic "Analytical Tool" that will provide a standard method for regional water planning groups, groundwater conservation districts, groundwater developers, and others to use to evaluate local hydrologic, environmental, social, and economic impacts on specific groundwater exportation/marketing proposals.

8.4 Surface Water

Surface Water Rights Monitoring and Administration: The TCEQ should be adequately staffed and funded to ensure the legal and appropriate use of permitted surface water rights through comprehensive monitoring and administrative programs, such as the Watermaster program.

Equity in Groundwater and Surface Water Law: The SCTRWPG recognizes a need for equity in groundwater and surface water law to facilitate the proper balance of the use of those resources. The SCTRWPG recommends that the state provide incentives to develop conjunctive use projects that more efficiently utilize groundwater and surface water.

Surface Water Rights and Interbasin Transfer: The SCTRWPG considered the positive and negative impacts of certain provisions added to Chapter 11.085 of the Texas Water Code regarding Interbasin Transfers pursuant to Senate Bill 1 of the 75th Legislature. Among the negative impacts cited by some members are these:

- It imposes limitations on surface water rights permits that have previously been issued, possibly diminishing the value of some permits to the owners.

- It forces greater use of groundwater supplies, and potentially, encourages the mining of aquifers.
- It can result in construction of new reservoirs that would not be needed if seniority of rights and existing environmental flow requirements were preserved in interbasin transfers because of the need to provide reliable water supplies in the plans.

Other members of the SCTRWPG cite the following positive effects of these provisions added by Senate Bill 1.

- The junior water rights provision protects municipalities and other water users, especially in cases where the interbasin transfer of senior water rights would put junior rights at risk.
- Bays and estuaries and instream flows have added protection from the impact of water exportation.
- Establishing the seniority of basin-of-origin water rights over those used for export preserves the economic value of the resource for the future development of the basin-of-origin.

The SCTRWPG makes no specific recommendation at this time for legislative changes to Chapter 11.085 of the Texas Water Code.

8.5 Conservation

Conservation Planning Guidelines: Because of the central role of conservation in achieving the water supply objectives of the South Central Texas Regional Water Plan, the SCTRWPG has previously adopted the Water Conservation Implementation Task Force recommendations to establish GPCD Targets and Goals related to average annual reductions in residential indoor use. The SCTRWPG recognizes that the creation of conservation programs and the selection of specific conservation technologies is a matter of local choice and recommends that the water user groups reference the Water Conservation Best Management Practices Guide, TWDB Report 362, as an educational tool that can facilitate understanding of the importance of conservation efforts and the wide range of methods available for use.

Region L has addressed, defined, and adopted the most reasonably practical level of conservation to be:

(1) For Water Use Groups (WUGS) with per capita water use of 140 gpcd and greater in year 2000, reduce gpcd by 1 percent per year until reaching 140 gpcd, and reduce gpcd by 0.25 percent per year thereafter.
(2) For WUGS with per capita water use less than 140 gpcd in year 2000, reduce gpcd by 0.25 percent per year.

Implementation of Water Conservation Advisory Committee Recommendations: SCTRWPG recognizes and supports recent legislative focus on successfully passing legislation which promotes implementation of broad-based conservation measures throughout the state. The SCTRWPG supports legislation and funding to implement the HB 4 (2007) Water Conservation Advisory Committee's recommendations, particularly the statewide public education programs such as Water IQ, further definition of gpcd definitions, and the development of regional conservation data that can be used by the SCTRWPG members to optimize future conservation efforts. The SCTRWPG also supports further efforts by the Legislature and state agencies that aggressively promote practical and successful water conservation measures as an important component to future water plans.

Irrigation Technology Center: The State should provide additional funding for the Irrigation Technology Center, as instituted by the Texas A&M University System, in order to provide hands-on access to state-of-the-art water conservation technologies tailored to the specific urban and agricultural conservation needs of this region.

8.6 Innovative Strategies

Assistance for Alternative Water Supply Strategies: The State should increase funding to assist water planning regions and local water entities in developing demonstration projects for alternative water supply strategies and technologies, such as, but not limited to, desalination. With this assistance, water planning regions could avoid short-term projects that may be less costly, but also less desirable, because of environmental and socio-economic impacts. By funding demonstration projects for alternative technologies that may not yet be cost-effective, the State can help local water management entities avoid adverse impacts to the environment, to property rights, and to local socio-economic conditions. In this way, the State can play a crucial role in guiding regions to water supply solutions that meet needs while also resolving conflict. Funding to demonstrate the value of innovative long-term strategies thus can help achieve cost-saving, efficient regional water management solutions.

Desalination: The SCTRWPG supports the funding of ~~a~~ state and/or federal programs for research and potential incentives to make desalination more affordable. This includes both brackish groundwater and seawater desalination. Should such incentives, technical advances, and/or other factors make a seawater desalination strategy similar to that described in Chapter 5~~Section 4C.31~~ sufficiently attractive to a water user group or WWP that implementation prior to

year specified herein2060 is desired, it is explicitly recognized by the SCTRWPG that such rescheduled implementation is consistent with the 20161 South Central Texas Regional Water Plan.

Rangeland Management (Brush Management): The SCTRWPG encourages the Legislature to increase funding to the Texas State Soil and Water Conservation Board for the purpose of increasing brush control programs integrated with proven rangeland management practices.

Rainwater Harvesting and Other Systems: The SCTRWPG encourages the use of rainwater harvesting systems in both commercial and residential new development. The SCTRWPG recommends the TWDB develop programs to educate the public and building industry on the benefits of rainwater harvesting, water re-use and gray water systems. The educational programs should include distribution of materials to the building industry to encourage use of these systems.

Weather Modification: The SCTRWPG urges the state to continue to support the existing Weather Modification Program.

Drought Management: The SCTRWPG has applied the TWDB's Costing Tool for Regional Water Planning including thedeveloped a general methodology for estimating the economic impacts associated with implementation of drought management as a water management strategy.[2] Application of this methodology for regional water planning purposes has facilitated comparison of drought management to other potentially feasible water management strategies on a unit cost basis (Section 4C.2). The SCTRWPG has found, and the San Antonio Water System (SAWS) has demonstrated, that water user groups having sufficient flexibility to focus on discretionary outdoor water use first and avoid water use reductions in the commercial and manufacturing use sectors may find some degrees of drought management to be economically viable and cost-competitive with other water management strategies. Recognizing that implementation of appropriate water management strategies is a matter of local choice, the SCTRWPG recommends due consideration of economically viable drought management as an interim strategy to meet near-term needs through demand reduction until such time as economically viable long-term water supplies can be developed.

[2] SCTRWPG, "2011 Regional Water Plan, Study 3, Enhanced Water Conservation, Drought Management, and Land Stewardship," Texas Water Development Board, San Antonio River Authority, HDR Engineering, Inc., April 2009.

8.7 Environmental

Protection of Edwards Aquifer Springflow and Downstream Water Rights: ~~While the plan assumes annual withdrawals of 320,000 acft from the Edwards Aquifer under drought of record conditions pursuant to Senate Bill 3 (SB3) of the 80th Texas Legislature, it is projected that this level of pumpage will not protect springflows in all drought conditions unless additional measures are in place and operational. A Recovery Implementation Program created by SB3 is presently underway with a goal of producing a~~ The SCTRWPG supports full implementation of the Edwards Aquifer Habitat Conservation Plan developed through a Recovery Implementation Program created by Senate Bill 3 (SB3) of the 80th Texas Legislature and approved~~for approval~~ by the United States Fish and Wildlife Service (USFWS). Furthermore, the SCTRWPG approved the following recommendations during its meeting of March 14, 2013:

> *"The Edwards Aquifer Habitat Conservation Plan (EAHCP) Workgroup recommends that the South Central Texas Regional Water Planning Group include the EAHCP as a recommended Water Management Strategy in the 2016 South Central Texas Regional Water Plan and use the spring flows associated with EAHCP implementation as an hydrologic modeling assumption for computation of existing surface water supplies and technical evaluation of water management strategies. The EAHCP Workgroup further recommends that existing water supplies from the Edwards Aquifer in the 2016 South Central Texas Regional Water Plan be those associated with EAHCP implementation and in specific amounts to be determined in consultation with the Edwards Aquifer Authority."* ~~If the USFWS or other government authorities mandate reductions in pumpage from the Edwards Aquifer below 320,000 acre-feet, annually, or other strategies to provide further protection for the associated endangered species, water options and management strategies in addition to those identified in this plan will be needed to meet the projected demands of Water User Groups~~.

Ecosystem Health, Quality of Life, and Growth Management for Texas: The rapid growth occurring in South Central Texas has the potential to negatively impact quality of life. Human demands for water and infrastructure development may outstrip the ability of all of the region's resources to respond and to be sustainable. Texas should focus on these issues and evaluate land use and the health of its ecosystem in order to prepare for the future and support a sustainable quality of life for all Texans.

Ecologically Unique Stream Segments and Unique Reservoir Sites: The Legislature has clarified that the designation of a stream segment as having unique ecological value "solely means that a state agency or political subdivision of the state may not finance the actual construction of a reservoir in a specific river or stream segment designated by the legislature." The SCTRWPG conditionally recommends to the Texas Legislature that, in accordance with

Subsection 16.051 of the Texas Water Code, it designate the following five stream segments in Region L as having unique ecological value:

- The Nueces River from the northern boundary of Region L downstream to United States Geological Survey (USGS) gauge # 08190000 at Laguna;
- The Frio River from the northern boundary of Region L downstream to USGS gauge #08195000 at Concan;
- The Sabinal River from the northern boundary of Region L downstream to the State Highway 187 crossing located approximately 2.7 miles upstream of USGS gauge #08198000 near Sabinal;
- The San Marcos River extending from IH 35 up to a point 0.4 miles upstream of Loop 82 in San Marcos; and
- The Comal River extending from the confluence with the Guadalupe River upstream to Klingemann Street in New Braunfels.

The South Central Texas Regional Water Planning Group further notes that the recommendation of these stream segments for designation as having unique ecological value is not intended to affect the repair, rehabilitation, or replacement of existing dams and reservoirs. Because the consequences of such designations by the Legislature are not well understood, these recommendations are conditioned upon legislation providing for these designations containing the following clarifying provisions or substantially similar provisions approved by Region L:

1. A provision affirming that the only constraint that may result from these ecologically unique stream segment designations is that constraint described in Subsection 16.051(f) Water Code which prohibits a state agency or political subdivision of the state from financing the construction of a reservoir in a designated stream segment.
2. A provision stating that the constraint described in Subsection 16.051(f) Water Code does not apply to the construction, operation, maintenance, or replacement of any new or existing weir, diversion, flood control, drainage, water supply, or recreation facility located within the city limits of San Marcos or New Braunfels.
3. A provision stating that the constraint described in Subsection 16.051(f) Water Code does not apply to a weir, diversion, flood control, drainage, water supply, or recreation facility currently owned by a political subdivision.
4. A provision stating that these designations will not constrain the permitting, financing, construction, operation, maintenance, or replacement of any water management strategy recommended, or designated as an alternative, to meet projected needs for additional water supply in the 2016 Regional Water Plan for Region L.

5. A provision affirming that these designations are not related to the "wild and scenic" federal program or to any similar initiative that could result in "buffer zones," inadvertent takings, or overreaching regulation.

6. A provision stating that all affected landowners shall retain all existing legal private property rights.

7. A provision recognizing that the unique ecological value of the designated segments is due, in part, to the conscientious, voluntary stewardship of many landowners on the adjoining properties.

The SCTRWPG Recommendation of Stream Segments Having Unique Ecological Value for Legislative Designation is included as Appendix I, along with a letter from Texas Parks & Wildlife Department summarizing their review of the recommendation package.

Instream Flows and Bays and Estuaries: The SCTRWPG is appreciative of legislative action in the form of Senate Bill 3 (SB3, 80th Texas Legislature) that established and funded an environmental flows process integrating best-available science and diverse regional stakeholder input into the process for selection of appropriate instream flow and freshwater inflow goals on a stream-by-stream and estuary-by-estuary basis. The appropriate balance of environmental and human needs during severe drought has very significant effects on the firm yield and associated cost of potential water supply projects.

The SCTRWPG encourages completion of the Texas Instream Flow Studies Program and improvement of the State's bays and estuaries freshwater inflow studies, with special attention paid to the report of the Science Advisory Committee of the Study Commission on Water for Environmental Flows.

Pursuant to discussions during three meetings of a Guadalupe Basin Water Needs Workgroup, November 5, 2009 action of the SCTRWPG, and agreement of the Guadalupe-Blanco River Authority, two recommended water management strategies identified as GBRA New Appropriation (Lower Basin) and GBRA Mid-Basin Project (Surface Water) are subject to senior water rights, full application of environmental flow standards adopted pursuant to Section 11.1471 of the Texas Water Code, and the Texas Commission on Environmental Quality permitting process.

Environmental Studies: The SCTRWPG recognizes that significant needs exist in Bexar and the surrounding counties and that new supplies need to be developed in the Guadalupe River and San Antonio River watersheds. There are issues related to environmental impacts that need further study to determine feasibility of a range of recommended surface water, groundwater, reuse, and conjunctive use water management strategies. Therefore, the

SCTRWPG recommends that additional environmental studies be undertaken to be able to evaluate the effects of such projects on the ecosystems that rely on inflow to San Antonio Bay and flows of the Guadalupe River and San Antonio River watersheds.

8.8 Providing and Financing Water and Wastewater Systems

Plan Implementation: Given the unprecedented level of time and money expended in the development of Regional Water Plans across the state, the SCTRWPG urges the Legislature to act promptly to help ensure full implementation of these plans.

Funding: The SCTRWPG believes that State funding should be provided as a key incentive for partnership in funding from local, regional and federal governmental agencies.

The SCTRWPG encourages a more active State support in solicitation of Federal funding for development of new water supply sources, especially when the need for which is based in part upon Federal requirements, such as the Endangered Species Act.

State Water Plan Implementation: State support is fundamental for the successful implementation of the water resources projects in the State Water Plan resulting from the SB1 Regional Planning Process. Specifically, new legislation to create State support for implementation of the State Plan should include the following:

- A statewide funding mechanism for projects included in the State Water Plan.
- Sufficient funding for TWDB and TCEQ to administer their programs and activities associated with planning, financing, and permitting of the projects in the State Plan.

Continuation of Regional Water Planning: The SB1 Planning Process is an important program, and funding should be continued to sustain the work of the Regional Water Planning Groups.

State Position in Federal Permitting: In the context of the federal permitting processes pertaining to water resources, all state agencies should present a single position consistent with the State's position as articulated in the State Water Plan.

The SCTRWPG supports the concept that a state agency (TWDB) be responsible for implementation of and advocacy for projects in the State Water Plan with regard to funding and permitting at the state and federal levels.

8.9 Data

Water Data Collection: The Legislature should fully fund the cooperative, federal-state-local program of basic water data collection, including: (a) Stream gages-quantity and quality; (b) Groundwater monitoring-water levels and quality; (c) Hydrographic surveys and sediment accumulation in reservoirs; (d) Water surface evaporation rates; (e) Water use data for all water user groups; and (f) Population projections.

Access to State Water Data: There should be adequate funding for the critical roles of TWDB and TCEQ in facilitating access to water data essential for local and regional planning and plan implementation purposes.

Population and Water Demand Projections: The SCTRWPG recognizes that the TWDB bases its water demand projections on patterns of population and economic growth while also permitting revisions of state data to incorporate additional information developed by the planning regions. Nevertheless, some groups believe that the methodology puts an unfair limitation on access to water for future growth, particularly in areas that may experience more rapid change than they have in the past. The Legislature should modify the Regional Water Planning process to allow for greater flexibility and for earlier and more active involvement of the Regional Water Planning Groups in developing growth and water demand projection methodologies consistent with water availability strategies. Water demand projections used in developing the Regional Water Plan should be consensus figures arrived at by using TWDB data along with local input from the cities, counties, and groundwater districts.

~~**Coastal Basins**: Coastal basins adjacent to major river basins are considered part of the major basins. The SCTRWPG recommends eliminating the requirement to tabulate data for these areas by county and basin boundary since the result is a set of essentially empty tables.~~

8.10 Other Issues

Planning for System Management Water Supplies: System management water supplies, i.e. supplies over and above those apparently needed to meet projected demands, may be included in the plan for the following reasons: 1) to recognize both the long lead times and the uncertainty associated with risk factors that may prevent implementation of water management strategies and necessitate replacement strategies; 2) to preserve flexibility for water user groups or wholesale water suppliers to select the most feasible projects among several consistent with

the Regional Plan and therefore potentially eligible for permitting and funding; 3) to serve as additional supplies in the event rules, regulations, or other restrictions limit use of any planned strategies; and 4) to ensure adequate supplies in the event of a drought more severe than that which occurred historically. The plan should specify those factors affecting reliability of the recommended options and strategies and indicate what alternatives are available as possible replacements.

The amount of the management supply should be limited by consideration of the following factors: 1) potential disruptive impacts of planning for projects that have low probability of implementation; and 2) citing of specific reasons for management supplies that exceed the projected needs of the region.

Public Education on Water: The State should fund a state-wide program to educate the general public about water in coordination with the Agricultural Extension Service offices. The program should produce water-related materials with special components adapted for each water planning region and should also include a component comparable to the "Major Rivers" program that would be available to the public schools through the Regional Education Service Centers and by other means.

SCTRWPG supports legislation for funding to implement the Water Conservation Task Force recommendations, particularly the statewide public education programs, such as Water IQ.

County Authority: Counties should have additional authority for land use planning and for regulating development based on availability and protection of water resources.

Planning Requirements: There should be no changes in the planning process or additional planning requirements except through the formal rule-making procedure. Contract requirements should be established and in place prior to submission of grant proposals.

Regional Boundaries Should Foster Collaboration: The SCTRWPG recommends that the Legislature make it very clear to all Texans that the boundaries of the regional water planning regions were drawn only to define water planning regions and that the boundaries are not intended to be barriers to prevent water transport from one region to another – nor to pit one region against another for any reason.

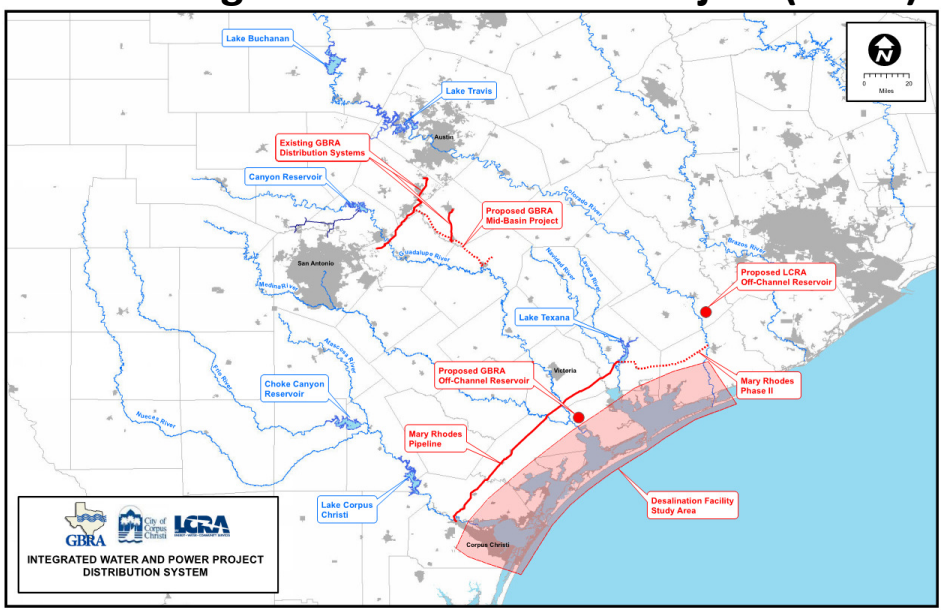
Condemnation and Eminent Domain: The SCTRWPG is of the opinion that it is not appropriate for a regional water planning group to tell a governmental entity to abandon its eminent domain powers if it wants its project to be approved as a recommended water management strategy. The SCTRWPG is further of the opinion that it is not within the planning

group's jurisdiction to judge the merits of eminent domain. It is, however, the understanding of the SCTRWPG that all land needed for implementation of water management strategies will be obtained using a process of willing seller and willing buyer and that limited condemnation will be used as a last resort.

AGENDA ITEM 11

Discussion and Appropriate Action Regarding Evaluation and Recommendation of Water Management Strategies for Inclusion in the 2016 Initially Prepared Plan

GBRA Integrated Water Power Project (IWPP)



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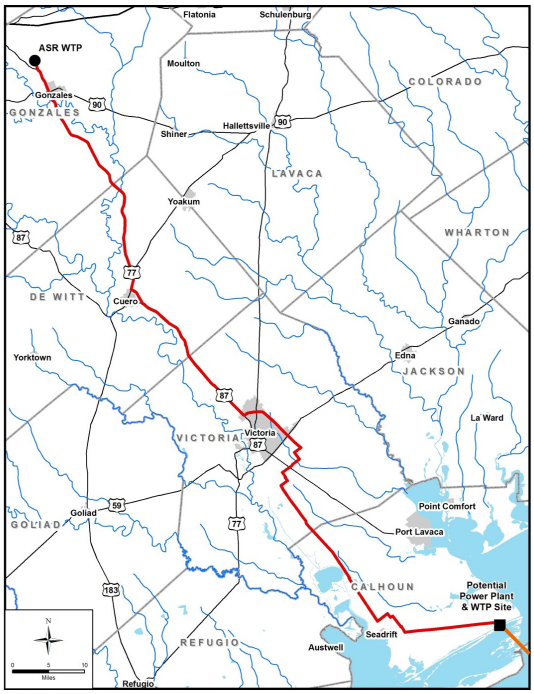
GBRA IWPP



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GBRA IWPP

- GBRA has an on-going study with MWH
- Source and Supply:
  - Seawater from the Gulf of Mexico
  - Total Envisioned Project Size= 100,000 acft/yr
    - 50,000 acft/yr available in Calhoun County
    - 50,000 acft/yr delivered to Gonzales County
  - Delivery point: Mid-Basin WSP ASR WTP
- Facilities:
  - Peaking Factor = 1.0
  - Off-Shore Intake and 78-inch, 10-mile Pipeline to WTP near Port O'Connor
  - 89.3 MGD Reverse Osmosis WTP
  - 54-inch, 141-mile Transmission Pipeline
  - Pump station/Booster Stations
  - 60-inch, 10 mile Concentrate Pipeline with Multiport Diffuser Off-Shore

3

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GBRA IWPP

	GBRA IWPP
Capital Costs	$1,075,934,000
Project Costs	$1,600,885,000
Annual Costs*	$239,272,000
Project Yield (acft/yr)	100,000 (50,000 in Calhoun; 50,000 delivered to Gonzales)
Unit Costs ($/acft/yr)*	$2,393

* Annual and unit costs include power purchase cost of $0.09/kwh. These costs could be reduced with co-location of power generation facilities.

4

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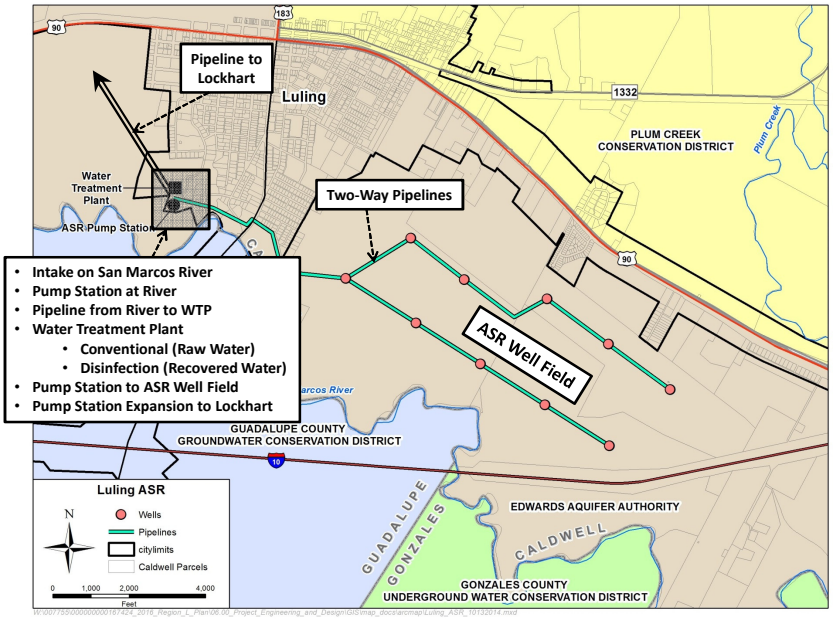
Luling ASR Project



- Intake on San Marcos River
- Pump Station at River
- Pipeline from River to WTP
- Water Treatment Plant
  - Conventional (Raw Water)
  - Disinfection (Recovered Water)
- Pump Station to ASR Well Field
- Pump Station Expansion to Lockhart

DRAFT (10-23-2014)

1

Luling ASR Project

- **Purposes and Objectives**
  - Provide firm water supply from GBRA's San Marcos River Water Rights
  - Luling:
    - Meet all base-load and peak demands during extended drought
  - Lockhart:
    - Meet future needs at base load capacities
    - Peaking to be provided by existing Carrizo wellfield
- **Water Source:**
  - GBRA's San Marcos River water rights (4,422 acft/yr)
- **Water Storage:**
  - Wilcox Aquifer near City of Luling

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2

Luling ASR Facilities

- **Facilities**
  - Intake and parallel pipeline from San Marcos River to Expanded Water Treatment Plant
    - Capacity: 5.49 MGD
    - Length: 1,000 ft
    - Diameter: 18 in
  - Water Treatment Plant
    - Raw Water: 5.49 MGD
    - Recovered Water: 5.49 MGD
  - ASR Well Field
    - 8 active and 2 contingency wells (500 gpm, 500 ft deep)
    - Spacing: 2,000 ft
    - Injection Capacity: 3.2 MGD
    - Recovery Capacity: 5.49 MGD
    - Pump Station at WTP: 151 HP
    - Capacity: 10,000 acft
    - Loss: 0.1% per month from storage
  - Lockhart:
    - Expanded Pump Station: 199 HP
    - Assumes Existing Pipeline from Luling to Lockhart is Adequate

DRAFT (10-23-2014)

3

Current ASR Legal and Regulatory Issues

- **TCEQ:**
  - Underground Injection Control (UIC), Class V Injection Well Permit
  - Amendment to surface water rights to add aquifer storage as a type of use
  - Public water system reviews and approvals
- **Groundwater Districts:**
  - None
    - Outside of current district boundaries
    - EAA does not have jurisdiction over non-Edwards aquifers

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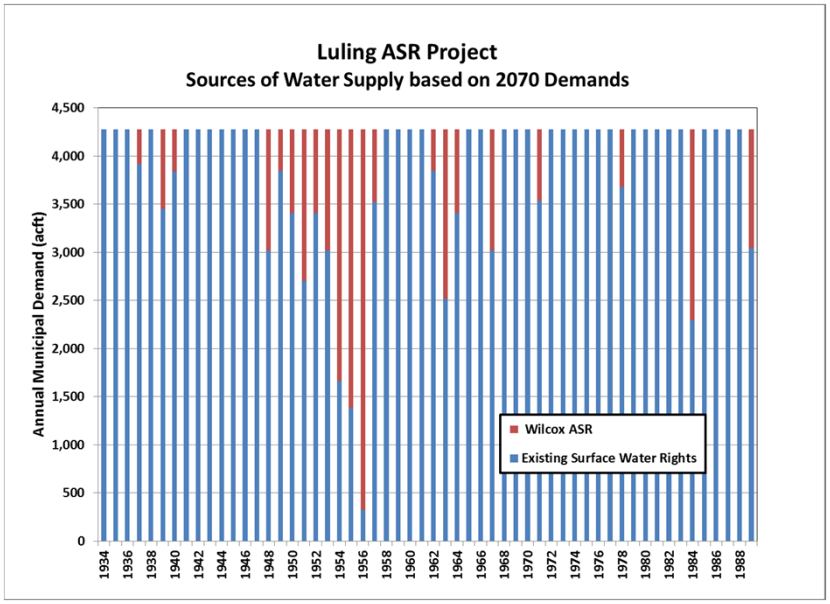
4

Luling ASR Water Supplies



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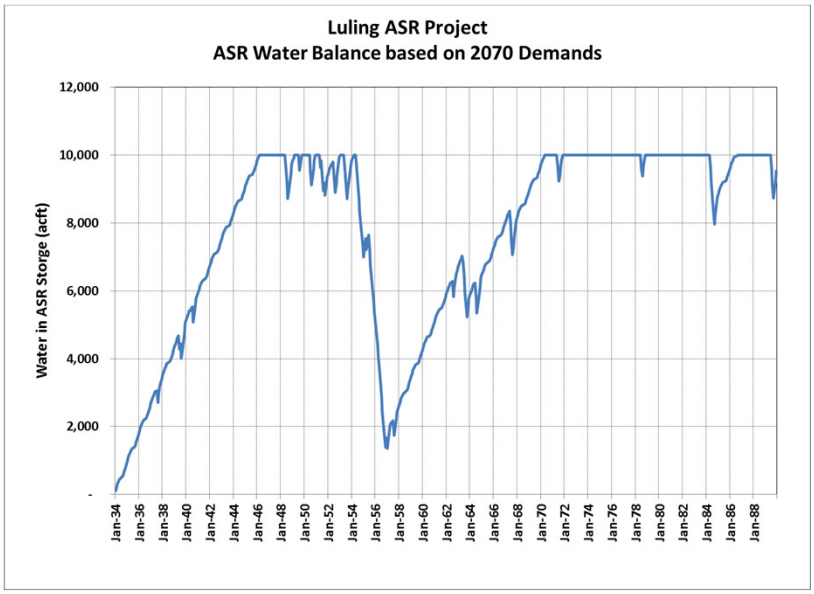
Luling ASR Storage Balance



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Luling ASR Project Cost

Type	Results
Capital Costs	$23,179,000
Project Costs	$33,308,000
Annual Costs	$4,646,000
Project Yield (acft/yr)	4,277
Unit Costs ($/acft/yr)	$1,086
Unit Costs ($/Kgal)	$3.33

7

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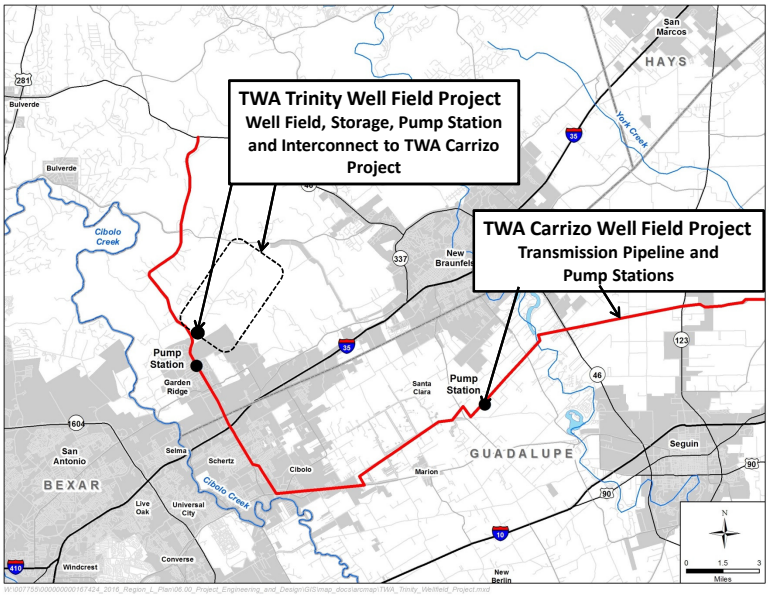
TWA Trinity Well Field Project



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1

TWA Trinity Well Field Project

- Source and Supply:
  - 5,000 acft/yr from the Trinity Aquifer in Comal County
  - Facilities Are to be Integrated into the TWA Carrizo Project
- Groundwater Availability:
  - Trinity Aquifer Modeled Available Groundwater (MAG) in Comal County: 39,498 acft/yr
  - Estimated Demands (2070): 23,586 acft/yr
  - Balance of about 15,912 acft/yr
- Potential Issues:
  - Development of a Groundwater Conservation District
  - Local opposition
  - Acquisition of property

DRAFT (10-21-2014)

2

TWA Trinity Well Field Project

- Facilities:
  - Uniform Delivery (Peaking Factor = 1.0)
  - 8 Active and 2 Contingency Trinity wells (Depth: 1,200 ft; Capaicty: 400 gpm)
  - Well Field Collection System
  - Water treatment plant
  - Transmission System
  - Interconnect and Upsize of the TWA Carrizo Project Pipeline

DRAFT (10-21-2014)

3

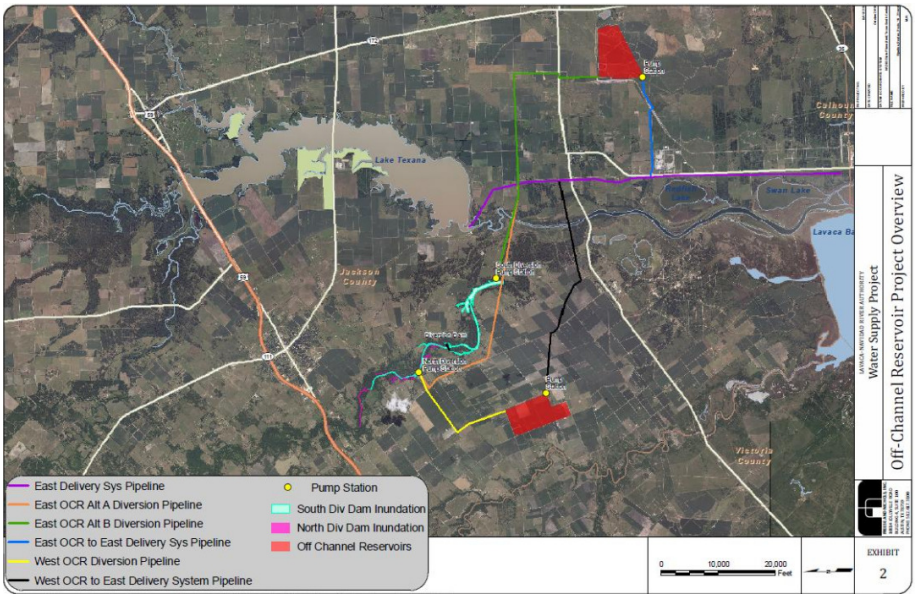
TWA Trinity Well Field Project

Item	Cost Summary
Capital Costs	$18,142,000
Project Costs	$26,087,000
Annual Costs	$3,065,000
Project Yield (acft/yr)	5,000
Unit Costs ($/acft/yr)	$613

DRAFT (10-21-2014)

4

Lavaca Off-Channel Reservoir



1

DRAFT (11/03/2014)

Lavaca Off-Channel Reservoir

- Source and Supply:
  - Lavaca River Diversions Firmed up by 1 of 2 Potential Off-Channel Reservoir Sites
  - River Diversions Subject to TCEQ Environmental Flow Standards
  - Firm Yield = 16,963 acft/yr
- Facilities:
  - Diversion Dam and Intake on Lavaca River
  - 200 MGD Pump Station and Transmission System
  - 25,000 acft/yr Off-Channel Reservoir
  - 10 MGD Pump Station and Transmission System

2

DRAFT (11/03/2014)

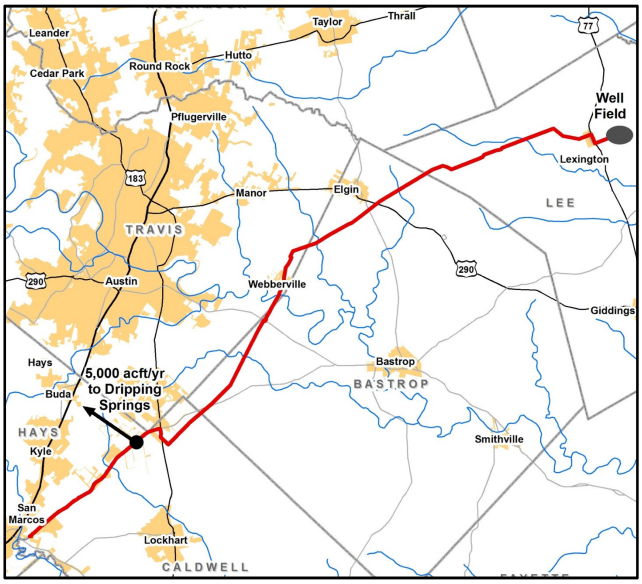
Lavaca Off-Channel Reservoir

	Lavaca OCR
Capital Costs	$123,213,000
Project Costs	$177,485,000
Annual Costs	$14,704,000
Project Yield (acft/yr)	16,963
Unit Costs ($/acft/yr)	$867

3

DRAFT (11/03/2014)

Hays County – Forestar Project



DRAFT (10/30/2014)

1

Hays County – Forestar Project

- Source and Supply:
  - Permits for 12,000 acft/yr from Lost Pines GCD; Seeking an Additional 33,000 acft/yr in Permits
  - Envisioned: 45,000 acft/yr of Carrizo Aquifer in Lee County
- Facilities:
  - Peaking factor = 1.0
  - 12 Carrizo Wells (2800 gpm)
  - Well Field Collection System
  - 40.1 MGD WTP
  - 48" – 75 Mile Transmission System

DRAFT (10/30/2014)

2

Hays County – Forestar Project

- Source and Supply:
  - Permits for 12,000 acft/yr from Lost Pines GCD; Seeking an Additional 33,000 acft/yr in Permits
  - MAG Limited: 12,356 acft/yr of Carrizo Aquifer in Lee County
- Facilities:
  - Peaking factor = 1.0
  - 4 Carrizo Wells (2800 gpm)
  - Well Field Collection System
  - 11.0 MGD WTP
  - 30" – 75 Mile Transmission System

DRAFT (10/30/2014)

3

Hays County – Forestar Project

- **Groundwater Availability:**
  - For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

DRAFT (10/30/2014)

4

Hays County – Forestar Project

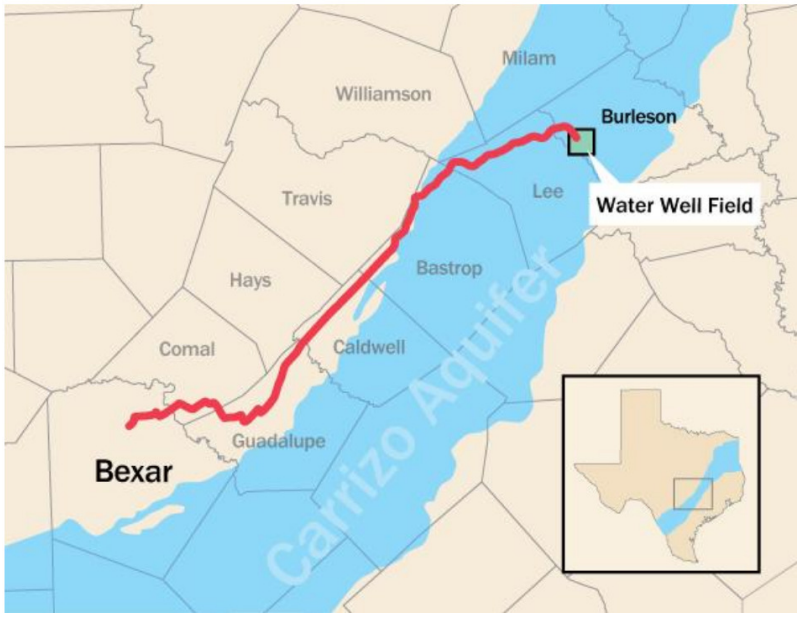
	Envisioned Project	MAG Limited Project
Capital Costs	$266,199,000	$120,157,000
Project Costs	$384,581,000	$176,870,000
Annual Costs	$59,903,000	$23,728,000
Project Yield (acft/yr)	45,000	12,356
Unit Costs ($/acft/yr)	$1,331	$1,920

Pending decisions in Region K, a supplemental Facilities Expansion may be necessary to serve the portion of western Hays County in Region K.

5

DRAFT (10/30/2014)

SAWS Vista Ridge Project



1

DRAFT (10/24/2014)

SAWS Vista Ridge Project (Envisioned)

- Source and Supply:
  - Permits for 70,000 acft/yr from Post Oak Savannah GCD
  - Envisioned: 50,000 acft/yr of Simsboro & Carrizo Aquifers in Burleson Co.
- Facilities:
  - Peaking factor = 1.0
  - 9 Simsboro Wells (3000 gpm) & 9 Carrizo Wells (1200 gpm)
  - Well Field Collection System
  - 44.7 MGD of Treatment Facilities
  - 54" – 39 Mile and 60" – 104 Mile Transmission System

2

DRAFT (10/24/2014)

SAWS Vista Ridge Project (MAG Limited)

- Source and Supply:
  - Permits for 70,000 acft/yr from Post Oak Savannah GCD
  - MAG Limited: 34,894 acft/yr of Simsboro Aquifer in Burleson Co.

- Facilities:
  - Peaking factor = 1.0
  - 9 Simsboro Wells (3000 gpm)
  - Well Field Collection System
  - 32.8 MGD of Treatment Facilities
  - 48" – 143 Mile Transmission System

DRAFT (10/24/2014)

3

SAWS Vista Ridge Project

- **Groundwater Availability:**
  - For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

DRAFT (10/24/2014)

4

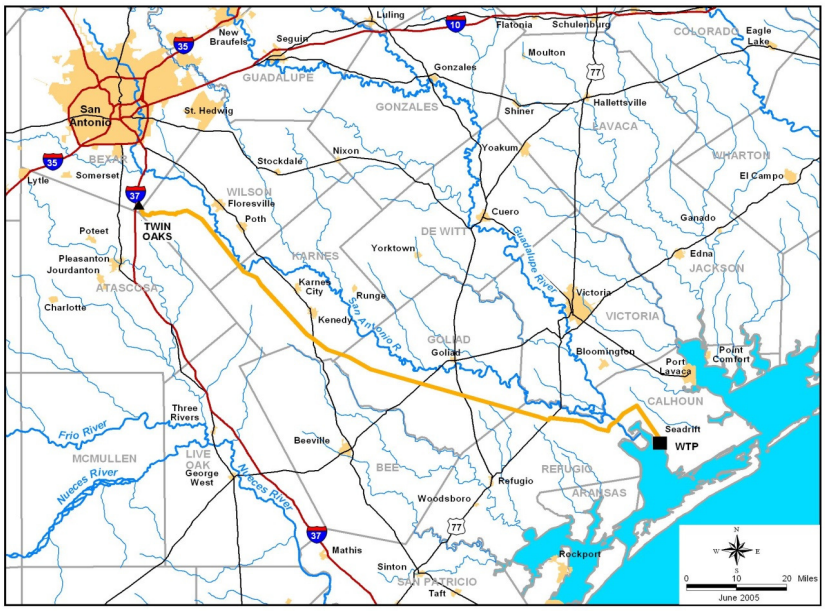
SAWS Vista Ridge Project

	Envisioned Project	MAG Limited Project
Capital Costs	$493,837,000	$389,563,000
Project Costs	$722,097,000	$571,958,000
Annual Costs	$98,798,000	$75,967,000
Project Yield (acft/yr)	50,000	34,894
Unit Costs ($/acft/yr)	$1,976	$2,177

DRAFT (10/24/2014)

5

Seawater Desalination for SAWS

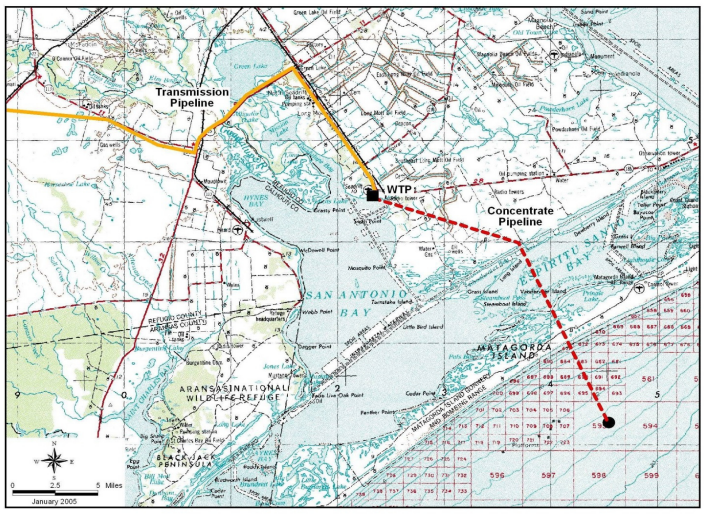


1

DRAFT (10/29/2014)

Seawater Desalination for SAWS

Concentrate Disposal



2

DRAFT (10/29/2014)

Seawater Desalination for SAWS

- Source and Supply:
  - Desalinated Seawater from San Antonio Bay
    - 140,000 acft/yr withdrawn from San Antonio Bay
    - 84,012 acft/yr (75 MGD) supplied to SAWS
- Facilities:
  - Peaking factor = 1.0
  - Bay Intake (125 MGD)
  - Desalination Treatment Plant (75 MGD)
  - 66" – 149 Mile Transmission System
  - 54" – 23 Mile Concentrate Disposal System

DRAFT (10/29/2014)

3

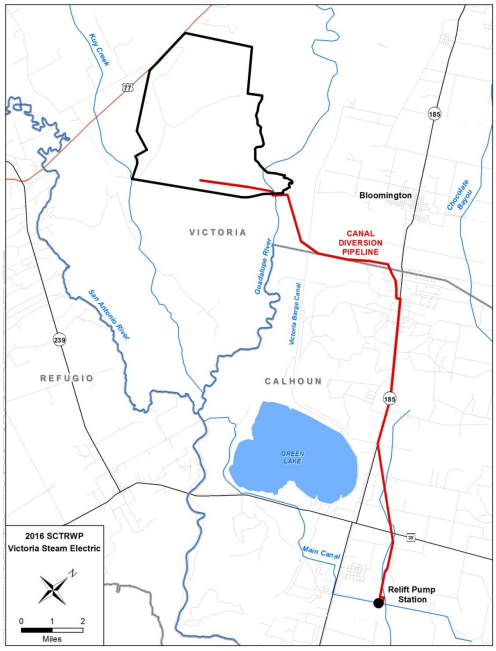
Seawater Desalination for SAWS

	Envisioned Project
Capital Costs	$1,069,764,000
Project Costs	$1,590,590,000
Annual Costs	$227,949,000
Project Yield (acft/yr)	84,012
Unit Costs ($/acft/yr)	$2,713

DRAFT (10/29/2014)

4

Victoria County: Steam-Electric



DRAFT (10/24/2014)

1

Victoria County: Steam-Electric (2011 Effluent)

- Source and Supply:
  - GBRA Existing Water Rights – Guadalupe River
  - Diverted from GBRA Calhoun Canal System
  - Firm Yield = 20,148 acft/yr
- Facilities:
  - Peaking factor = 1.8
  - Canal Upgrades
  - Intake and Pump stations (120.5 MGD)
  - 90” Diameter 19 Mile transmission Pipeline
  - 101,300 acft Cooling Reservoir

2

DRAFT (10/24/2014)

Victoria County: Steam-Electric (No Effluent)

- Source and Supply:
  - GBRA Existing Water Rights – Guadalupe River
  - Diverted from GBRA Calhoun Canal System
  - Firm Yield = 29,100 acft/yr
- Facilities:
  - Peaking factor = 1.8
  - Canal Upgrades
  - Intake and Pump stations (120.5 MGD)
  - 90” Diameter 19 Mile transmission Pipeline
  - 101,300 acft Cooling Reservoir

DRAFT (10/24/2014)

3

Victoria County: Steam-Electric

	Firm Yield - 2011 Effluent (acft/yr)	Water Rights Diversions - 2011 Effluent (acft/yr)	Firm Yield - No Effluent (acft/yr)	Water Rights Diversions - No Effluent (acft/yr)
GBRA Lower Basin Water Rights	---	175,501	---	175,501
Daily Firm Yield	42,544	42,544	15,044	15,044
GBRA Lower Basin Storage	75,457	82,624	51,762	59,093
Total After GBRA Lower Basin Storage	118,001	125,168	66,806	74,137
Water Rights Remaining for Victoria County S-E	---	50,333	---	101,364
Victoria County S-E Daily Firm Yield	20,148*	50,333	29,100**	62,895
GBRA Lower Basin Water Rights Totals	138,149	175,501	98,906	137,032

* *Limited by Existing Water Rights*
** *Limited by Cooling Reservoir Drawdown*

DRAFT (10/24/2014)

4

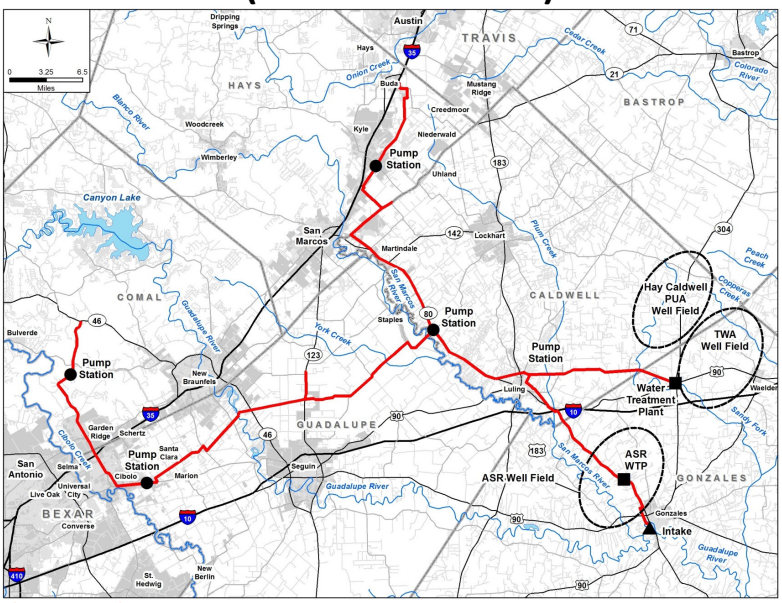
Victoria County: Steam-Electric

	2011 Effluent	No Effluent
Capital Costs	$228,604,000	$228,604,000
Project Costs	$359,338,000	$359,338,000
Annual Costs	$34,253,000	$35,640,000
Project Yield (acft/yr)	20,148	29,100
Unit Costs ($/acft/yr)	$1,700	$1,225

DRAFT (10/24/2014)

5

HCPUA + TWA + MBWSP Joint Project (Shared Facilities)



DRAFT (10-30-2014)

1

HCPUA + TWA + MBWSP Joint Project (Shared Facilities) – MAG Limited

- Sources and Firm Supply (86,513 acft/yr):
  - 50,000 acft/yr firm supply from Guadalupe River and ASR in GCUWCD
    - Surface Water = 31,100 acft/yr (Average)
    - ASR = 18,900 acft/yr (Average)
  - 21,833 acft/yr firm supply from HCPUA Wellfield, Carrizo Aquifer in GCUWCD and Plum Creek
  - 14,680 acft/yr firm supply from TWA Wellfield, Carrizo Aquifer in GCUWCD

- Operations:
  - Treated groundwater and surface water delivered to participants and ASR storage with stored surface water as back-up supply

- Facilities (1.5 peaking factor):
  - 27 production wells (1073 gpm – 2910 gpm)
  - 28 dual purpose wells (1,533 gpm peak/ 418 gpm average)
  - 140 cfs river intake
  - Groundwater Treatment Plant (48.9 MGD) & Surface WTP (67 MGD)
  - 6 mile 60-IN diameter raw water pipeline
  - 129 miles, 8-IN to 78-IN diameter finished water pipelines

2

DRAFT (10-30-2014)

HCPUA + TWA + MBWSP Joint Project
Four County Area Water Supply Needs

County	Projected 2070 Needs (acft/yr)
Caldwell	3,800
Comal	21,400
Guadalupe	22,100
Hays	32,700
Total	80,000

DRAFT (10-30-2014)

3

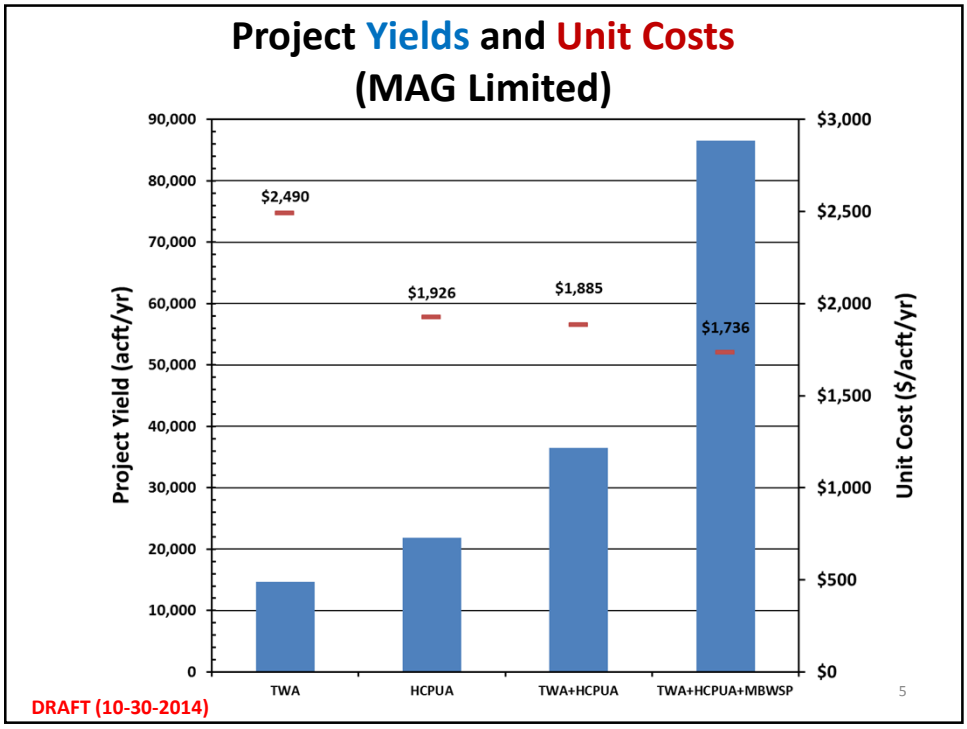
HCPUA + TWA + MBWSP Joint Project

	Estimated Costs
Capital Costs	$725,465,000
Project Costs	$1,123,541,000
Annual Costs	$150,227,000
Yield (acft/yr)	86,513
Unit Costs ($/acft)	$1,736

Note: Project analyzed using MAG Limited groundwater only

DRAFT (10-30-2014)

4


Project Yields and Unit Costs
(MAG Limited)
Project Yield (acft/yr)
Unit Cost ($/acft/yr)
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
$2,490
$1,926
$1,885
$1,736
TWA
HCPUA
TWA+HCPUA
TWA+HCPUA+MBWSP
DRAFT (10-30-2014)
5

Local Carrizo Aquifer Permitted Use Conversions

Concept:

- Strategy based conceptually on the conversion of existing groundwater production permits for irrigation uses, either completely or partially, to municipal or mining uses to supply water to local un-met needs
- Necessary to meet Municipal and Mining Needs (Local Groundwater) in Counties where Permits/Allocations Exceed the MAG
- Availability Determined by MAG Limited Permits/Allocations Less TWDB Irrigation Demand Projections

DRAFT (11/04/2014)

Local Carrizo Aquifer Permitted Use Conversions (Evergreen UWCD)

	Irrigation Permit Availability - MAG Limited (acft/yr)						
County	2020	2030	2040	2050	2060	2070	Irrigation Permits (acft/yr)
Atascosa	62,980	64,581	66,135	67,909	69,832	69,832	151,172
Frio	79,338	76,882	74,498	72,210	69,970	69,970	259,435
Karnes	93	98	102	104	106	106	11,646
Wilson	33,922	35,271	36,664	38,307	40,145	40,145	76,671

	TWDB Carrizo Irrigation Demand (acft/yr)					
County	2020	2030	2040	2050	2060	2070
Atascosa	23,000	22,157	21,339	20,543	19,765	19,040
Frio	68,922	66,442	64,071	61,803	59,611	57,600
Karnes	42	42	42	42	42	42
Wilson	13,300	11,800	10,300	8,900	7,500	6,300

	Potential for Transfer (acft/yr)							
County	2020	2030	2040	2050	2060	2070	Municipal Needs (acft/yr)	Mining Needs (acft/yr)
Atascosa	39,980	42,424	44,796	47,366	50,067	50,792	80	-
Frio	10,416	10,440	10,427	10,407	10,359	12,370	20	-
Karnes	51	56	60	62	64	64	340	-
Wilson	20,622	23,471	26,364	29,407	32,645	33,845	1,570	-

DRAFT (11/04/2014)

Local Carrizo Aquifer Permitted Use Conversions (Caldwell County)

** Plum Creek CD & Gonzales County UWCD*

	Irrigation Permit Availability - MAG Limited (acft/yr)						
County	2020	2030	2040	2050	2060	2070	Irrigation Permits (acft/yr)
Caldwell	5,836	5,836	5,836	5,836	5,836	5,836	5,836

	TWDB Carrizo Irrigation Demand (acft/yr)					
County	2020	2030	2040	2050	2060	2070
Caldwell	575	575	575	575	575	575

	Potential for Transfer (acft/yr)							
County	2020	2030	2040	2050	2060	2070	Municipal Needs (acft/yr)	Mining Needs (acft/yr)
Caldwell	5,261	5,261	5,261	5,261	5,261	5,261	450	-

DRAFT (11/04/2014)

Local Carrizo Aquifer Permitted Use Conversions (Wintergarden GCD)

	Irrigation Permit Availability - MAG Limited (acft/yr)						
County	2020	2030	2040	2050	2060	2070	Irrigation Permits (acft/yr)
Dimmit	142	142	142	142	142	142	N/A
LaSalle	3,018	3,161	3,300	3,434	3,564	3,683	N/A

	TWDB Carrizo Irrigation Demand (acft/yr)					
County	2020	2030	2040	2050	2060	2070
Dimmit	142	142	142	142	142	142
LaSalle	3,018	3,018	3,018	3,018	3,018	3,018

	Potential for Transfer (acft/yr)							
County	2020	2030	2040	2050	2060	2070	Municipal Needs (acft/yr)	Mining Needs (acft/yr)
Dimmit	0	0	0	0	0	0	1,042	4,908
LaSalle	0	143	282	416	546	665	458	4,243

DRAFT (11/04/2014)

Local Carrizo Aquifer Permitted Use Conversions

Considerations:

- The Ability for Transfers to Occur May Be Limited by GCD Rules
  - GCDs May Protect Historical Use Permits
  - Historical Use Permits May Lose Status with a Change in Use
  - Use Conversion May Require Hearings & Consideration by District
- The amount of water authorized under the permit may be subject to change due to the change in use from Irrigation to Municipal and/or Mining

DRAFT (11/04/2014)

AGENDA ITEM 12

Discussion and Appropriate Action Regarding Development of 2016 Initially Prepared Plan

Table 1 – General Document Cross-Reference

Regional Water Planning Contract Document References			2017 Regional Water Plan Chapter, Associated TAC Sections, and Content		
TWDB Contract Reimbursement Accounting Number ('TXWise')	Exhibit A - Contract SOW Task	Exhibit C - General Guidelines for Regional Water Plan Development	**Regional Water Plan Chapter Number**	Primary TAC Section	General Content
9	1	1	**1**	§357.30	Description of the Regional Water Planning Area
1	2A	2	**2**	§357.31	Projected Non-Municipal Water Demands
2	2B			§357.31	Projected Population and Municipal Water Demands
3	3	3	**3**	§357.32	Water Supply Analysis
4	4A	4	**4**	§357.33	Identification of Water Needs
5	4B	5	**5**	§357.34	Identification of Potentially Feasible Water Management Strategies (WMSs)
7	4D			§357.34; §357.35	Evaluations of Potentially Feasible WMSs and Recommended WMSs and Alternative WMSs
10	5			§357.34	Conservation Recommendations *[as subchapter]*
11	6	6	**6**	§357.40	Impacts of Regional Water Plan
				§357.41	Consistency with Protection of Water Resources, Agricultural Resources, and Natural Resources
12	7	7	**7**	§357.42	Drought Response Information, Activities, and Recommendations
13	8	8	**8**	§357.43	Policy Recommendations & Unique Sites
14	9	9	**9**	§357.44	Infrastructure Financing Analysis
15	11	11	**11**	§357.45	Implementation and Comparison to the Previous Regional Water Plan
8	10	10	**10**	§357.21; §357.50	Public Participation and Plan Adoption
6	4C	12	na	contract	Technical Memorandum

Table 1

San Antonio Water System (SAWS) - Planned

SAWS Projected Demands (acft/yr):

	Year (acft)					
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Balcones Heights	518	566	612	662	711	758
Castle Hills	395	375	359	351	350	349
China Grove	316	350	381	413	445	474
Elmendorf	311	397	478	556	629	696
Helotes	1,613	1,989	2,340	2,681	2,996	3,286
Hill Country Village	234	230	226	224	224	224
Hollywood Park	949	953	959	969	983	997
Leon Valley	558	579	600	624	652	678
Live Oak	1,803	1,806	1,794	1,787	1,786	1,786
Olmos Park	564	623	678	736	791	843
San Antonio	235,329	258,657	280,788	303,809	326,645	347,873
SAWS (outside of San Antonio)	30,536	34,094	37,530	41,060	44,554	47,826
Somerset	221	240	259	279	300	319
Terrell Hills	1,299	1,276	1,257	1,247	1,245	1,245
East Central WSC	3,640	3,640	3,640	3,640	3,640	3,640
Atascosa Rural WSC	120	120	120	120	120	120
Industrial (Bexar County)	15,076	15,076	15,076	15,076	15,076	15,076
Total Demand	**293,482**	**320,971**	**347,097**	**374,234**	**401,147**	**426,190**

SAWS Supply:

	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Edwards Aquifer with EAHCP[1]	172,640	172,640	172,640	172,640	172,640	172,640
Carrizo Aquifer (Bexar County)	9,900	9,900	9,900	9,900	9,900	9,900
Carrizo Aquifer (Gonzales County)	11,688	11,688	11,688	11,688	11,688	11,688
Carrizo Aquifer (Gonzales County) - SSLGC Excess	4,475	3,024	3,742	3,815	3,810	3,810
Gonzales Co WSC	1,000	1,000	1,000	1,000	1,000	1,000
Trinity Aquifer[2]	2,000	2,000	2,000	2,000	2,000	2,000
Direct Reuse[3]	25,000	25,000	25,000	25,000	25,000	25,000
Run-of-River (San Antonio)	5,313	5,313	5,313	5,313	5,313	5,313
CRWA	9,654	9,654	9,654	9,654	9,654	9,654
GBRA (Canyon Reservoir)	4,000	4,000	0	0	0	0
Total Supply	**245,670**	**244,219**	**240,937**	**241,010**	**241,005**	**241,005**

SAWS Projected Needs:

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Total System Management Supplies/(Needs)	**(47,812)**	**(76,752)**	**(106,160)**	**(133,224)**	**(160,142)**	**(185,185)**

SAWS Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Recommended WMS						
Conservation - Based on SAWS system-wide gpcd[4]	15,974	10,704	6,901	7,284	8,004	2,792
EAHCP[5]	0	0	0	0	0	0
Brackish Wilcox Groundwater for SAWS	13,440	33,600	33,600	33,600	33,600	33,600
Expanded Local Carrizo	11,152	30,000	30,000	30,000	30,000	30,000
RCSP - Vista Ridge Consortium	50,000	50,000	50,000	50,000	50,000	50,000
Expanded Brackish Project	0	50,000	50,000	50,000	50,000	50,000
Direct Reuse Expansion	0	15,000	15,000	15,000	15,000	15,000
Water Resources Integration Pipeline[6]	0	0	0	0	0	0
Drought Management	14,674	38,517	55,536	59,877	64,184	68,190
Advanced Meter Infrastructure	0	0	0	0	0	0
Total Recommended WMS	**105,240**	**227,821**	**241,037**	**245,761**	**250,788**	**249,582**
Management Supplies with Recommended WMS[7]	**57,428**	**151,069**	**134,877**	**112,537**	**90,646**	**64,398**
Alternative WMS[7]						

[1] Includes SAWS permits as presented in EAA's permit files, with full implementation of the EAHCP.

[2] Total permitted volume is 22,660; however, SAWS only considers 2,000 acft/yr to be a firm supply.

[3] Amount excludes commitments to streams and lakes.

[4] Municipal Conservation estimated using SAWS system-wide goal of 135 gpcd.

[5] Includes all elements of the HCP (VISPO, conservation, SAWS ASR & Irrigation Transfers, and Critical Period Stage V).

[6] Systems and pipelines have no associated firm yield, but are necessary to deliver new sources of supply to SAWS customers.

[7] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

Table 2

San Antonio Water System (SAWS) - With MAG Limitations

SAWS Projected Demands (acft/yr):

	Year (acft)					
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Balcones Heights	518	566	612	662	711	758
Castle Hills	395	375	359	351	350	349
China Grove	316	350	381	413	445	474
Elmendorf	311	397	478	556	629	696
Helotes	1,613	1,989	2,340	2,681	2,996	3,286
Hill Country Village	234	230	226	224	224	224
Hollywood Park	949	953	959	969	983	997
Leon Valley	558	579	600	624	652	678
Live Oak	1,803	1,806	1,794	1,787	1,786	1,786
Olmos Park	564	623	678	736	791	843
San Antonio	235,329	258,657	280,788	303,809	326,645	347,873
SAWS (outside of San Antonio)	30,536	34,094	37,530	41,060	44,554	47,826
Somerset	221	240	259	279	300	319
Terrell Hills	1,299	1,276	1,257	1,247	1,245	1,245
East Central WSC	3,640	3,640	3,640	3,640	3,640	3,640
Atascosa Rural WSC	120	120	120	120	120	120
Industrial (Bexar County)	15,076	15,076	15,076	15,076	15,076	15,076
Total Demand	**293,482**	**320,971**	**347,097**	**374,234**	**401,147**	**426,190**

SAWS Supply:

	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Edwards Aquifer with EAHCP[1]	172,640	172,640	172,640	172,640	172,640	172,640
Carrizo Aquifer (Bexar County)	9,900	9,900	9,900	9,900	9,900	9,900
Carrizo Aquifer (Gonzales County)	11,688	11,418	11,688	11,688	11,688	11,688
Carrizo Aquifer (Gonzales County) - SSLGC Excess	4,475	3,024	3,742	3,815	3,810	3,810
Gonzales Co WSC	1,000	1,000	1,000	1,000	1,000	1,000
Trinity Aquifer[2]	2,000	2,000	2,000	2,000	2,000	2,000
Direct Reuse[3]	25,000	25,000	25,000	25,000	25,000	25,000
Run-of-River (San Antonio)	5,313	5,313	5,313	5,313	5,313	5,313
CRWA	9,654	9,654	9,654	9,654	9,654	9,654
GBRA (Canyon Reservoir)	4,000	4,000	0	0	0	0
Total Supply	**245,670**	**243,949**	**240,937**	**241,010**	**241,005**	**241,005**

SAWS Projected Needs:

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Total System Management Supplies/(Needs)	**(47,812)**	**(77,022)**	**(106,160)**	**(133,224)**	**(160,142)**	**(185,185)**

SAWS Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Recommended WMS						
Conservation - Based on SAWS system-wide gpcd[4]	15,974	10,704	6,901	7,284	8,004	2,792
EAHCP[5]	0	0	0	0	0	0
Brackish Wilcox Groundwater for SAWS[8]	5,622	5,622	5,622	5,622	5,622	5,622
Expanded Local Carrizo[8]	5,500	5,500	5,500	5,500	5,419	5,419
RCSP - Vista Ridge Consortium[8]	19,442	24,240	28,711	32,685	34,894	34,894
Expanded Brackish Project[8]	0	0	0	0	0	0
Direct Reuse Expansion	0	15,000	15,000	15,000	15,000	15,000
Water Resources Integration Pipeline[6]	0	0	0	0	0	0
Drought Management	14,674	38,517	55,536	59,877	64,184	68,190
Advanced Meter Infrastructure	0	0	0	0	0	0
Seawater Desalination (75 MGD)				84,023	84,023	84,023
Total Recommended WMS	**61,211**	**99,582**	**117,269**	**209,990**	**217,145**	**215,940**
Management Supplies with Recommended WMS[7]	**13,399**	**22,561**	**11,109**	**76,766**	**57,004**	**30,755**
Alternative WMS[7]						
Brackish Wilcox Groundwater for SAWS	13,440	33,600	33,600	33,600	33,600	33,600
Expanded Local Carrizo	11,152	30,000	30,000	30,000	30,000	30,000
RCSP - Vista Ridge Consortium	50,000	50,000	50,000	50,000	50,000	50,000
Expanded Brackish Project	0	50,000	50,000	50,000	50,000	50,000

[1] Includes SAWS permits as presented in EAA's permit files, with full implementation of the EAHCP.

[2] Total permitted volume is 22,660; however, SAWS only considers 2,000 acft/yr to be a firm supply.

[3] Amount excludes commitments to streams and lakes.

[4] Municipal Conservation estimated using SAWS system-wide goal of 135 gpcd.

[5] Includes all elements of the HCP (VISPO, conservation, SAWS ASR & Irrigation Transfers, and Critical Period Stage V).

[6] Systems and pipelines have no associated firm yield, but are necessary to deliver new sources of supply to SAWS customers.

[7] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

Canyon Regional Water Authority (CRWA)

CRWA Projected Demands (acft/yr):

Lake Dunlap/Wells Ranch Group Current Demand	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
San Antonio Water System	6,800	6,800	6,800	6,800	6,800	6,800
City of Cibolo	2,550	2,550	2,550	2,550	2,550	2,550
East Central WSC	1,900	1,900	1,900	1,900	1,900	1,900
Green Valley SUD	2,500	2,500	2,500	2,500	2,500	2,500
City of La Vernia	400	400	400	400	400	400
City of Marion	200	200	200	200	200	200
Springs Hills WSC	2,025	2,025	2,025	2,025	2,025	2,025
Crystal Clear WSC	800	1,540	1,540	1,540	1,540	1,540
Total Current Demand	**17,175**	**17,915**	**17,915**	**17,915**	**17,915**	**17,915**

Lake Dunlap/Wells Ranch Group Potential Future Demand	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
San Antonio Water System (Wells Ranch - Phase 2)	2,854	2,854	2,854	2,854	2,854	2,854
City of Cibolo	0	0	0	0	0	0
East Central WSC		500	500	500	500	500
Green Valley SUD	3,490	4,490	4,490	8,490	8,490	13,490
City of La Vernia	0	25	81	133	184	229
City of Marion	0	0	0	0	0	0
Crystal Clear WSC	800	1,540	1,540	1,540	1,540	1,540
Total Future Demand	**7,144**	**9,409**	**9,465**	**13,517**	**13,568**	**18,613**

Lake Dunlap/Wells Ranch Group Total Demand	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
San Antonio Water System	9,654	9,654	9,654	9,654	9,654	9,654
City of Cibolo	2,550	2,550	2,550	2,550	2,550	2,550
East Central WSC	1,900	2,400	2,400	2,400	2,400	2,400
Green Valley SUD	5,990	6,990	6,990	10,990	10,990	15,990
City of La Vernia	400	425	481	533	584	629
City of Marion	200	200	200	200	200	200
Springs Hills WSC	2,025	2,025	2,025	2,025	2,025	2,025
Crystal Clear WSC	1,600	3,080	3,080	3,080	3,080	3,080
Total Demand	**24,319**	**27,324**	**27,380**	**31,432**	**31,483**	**36,528**

CRWA Supply:

Source	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
GBRA - Lake Dunlap	10,575	10,575	10,575	10,575	10,575	10,575
Wells Ranch Phase I	5,200	5,200	5,200	5,200	5,200	5,200
Purchase from Springs Hill						
Run-of-River Water Rights	490	490	490	490	490	490
Total Supply	**16,265**	**16,265**	**16,265**	**16,265**	**16,265**	**16,265**

CRWA Projected Needs:

	Year (acft)					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
Total System Management Supplies/(Needs)	**(8,054)**	**(11,059)**	**(11,115)**	**(15,167)**	**(15,218)**	**(20,263)**

CRWA Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
Recommended WMS						
Conservation[1]						
CRWA Wells Ranch - Phase 2[3]	7,829	7,658	7,829	7,829	7,829	7,829
Hays/Caldwell PUA[3]	2,182	2,634	1,634	3,744	3,744	3,744
Brackish Wilcox Groundwater for CRWA[3]		636	1,596	1,901	2,196	2,196
CRWA Siesta Project		5,042	5,042	5,042	5,042	5,042
Total Recommended WMS	**10,011**	**15,970**	**16,101**	**18,516**	**18,811**	**18,811**
Management Supplies with Recommended WMS[2]	**1,957**	**4,911**	**4,986**	**3,349**	**3,593**	**-1,452**
***Alternative WMS*[2]**						
CRWA Wells Ranch - Phase 2[3]	7,829	7,829	7,829	7,829	7,829	7,829
Hays/Caldwell PUA[3]	8,025	8,025	8,025	8,025	8,025	8,025
Brackish Wilcox Groundwater for CRWA[3]		14,700	14,700	14,700	14,700	14,700
HCPUA/TWA Joint	9,569	9,569	9,569	9,569	9,569	9,569

CRWA Projected Demands (acft/yr):

Hays Caldwell Area Current Demand	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*

County Line SUD	1,308	1,308	1,308	1,308	1,308	1,308
Crystal Clear WSC	500	500	500	500	500	500
Martindale	190	190	190	190	190	190
Maxwell WSC	900	900	900	900	900	900
Total Current Demand	**2,898**	**2,898**	**2,898**	**2,898**	**2,898**	**2,898**

Hays Caldwell Area Future Demand	***Year (acft)***					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
County Line SUD	0	0	0	0	180	392
Crystal Clear WSC	0	0	0	0	0	0
Martindale	0	31	66	102	140	177
Maxwell WSC	0	0	0	0	0	0
Total Future Demand	**0**	**31**	**66**	**102**	**320**	**569**

Hays Caldwell Area Total Demand	***Year (acft)***					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
County Line SUD	1,308	1,308	1,308	1,308	1,488	1,700
Crystal Clear WSC	500	500	500	500	500	500
Martindale	190	221	256	292	330	367
Maxwell WSC	900	900	900	900	900	900
Total Demand	**2,898**	**2,929**	**2,964**	**3,000**	**3,218**	**3,467**

CRWA Supply:

	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
GBRA - Hays/Caldwell	2,038	2,038	2,038	2,038	2,038	2,038
Water Right Leases	540	540	540	540	540	540
Total Supply	**2,578**	**2,578**	**2,578**	**2,578**	**2,578**	**2,578**

CRWA Projected Needs:

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Total System Management Supplies/(Needs)	**(320)**	**(351)**	**(386)**	**(422)**	**(640)**	**(889)**

CRWA Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Recommended WMS						
Conservation[1]						
Hays/Caldwell PUA[3]	1,000	2,000	3,000	3,000	3,000	3,000
Total Recommended WMS	**1,000**	**2,000**	**3,000**	**3,000**	**3,000**	**3,000**
Management Supplies with Recommended WMS[2]	**680**	**1,649**	**2,614**	**2,578**	**2,360**	**2,111**
Alternative WMS[2]						
HCPUA/TWA Joint	1,000	2,000	3,000	3,000	3,000	3,000
TOTAL HC PUA Supply	**3,182**	**4,634**	**4,634**	**6,744**	**6,744**	**6,744**

[1] Assigned by Water User Group (WUG) based on Municipal Conservation WMS recommended by SCTRWPG.

[2] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

[3]For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

Hays-Caldwell Public Utility Agency (HCPUA)

HCPUA Projected Demands (acft/yr):

	Year (acft)					
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
CRWA (Lake Dunlap System)	2,182	2,634	1,634	3,744	3,744	3,744
CRWA (Hays Caldwell System)	1,000	2,000	3,000	3,000	3,000	3,000
Buda	0	667	1,690	2,974	4,429	6,088
Kyle	0	1,348	2,801	3,500	4,000	4,854
San Marcos	0	0	0	1,965	4,576	7,891
Total Demand	**1,000**	**4,015**	**7,491**	**11,439**	**16,005**	**21,833**

HCPUA Supply:

	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Total Supply	**0**	**0**	**0**	**0**	**0**	**0**

HCPUA Projected Needs:

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Total System Management Supplies/(Needs)	**(1,000)**	**(4,015)**	**(7,491)**	**(11,439)**	**(16,005)**	**(21,833)**

HCPUA Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Recommended WMS						
Conservation[2]						
Phase 1[1]	10,300	15,000	15,000	15,000	15,000	15,000
Phase 2 - Carrizo/Wilcox[3]				6,831	6,833	6,833
Total Recommended WMS	**10,300**	**15,000**	**15,000**	**21,831**	**21,833**	**21,833**
Management Supplies with Recommended WMS[4]	**9,300**	**10,985**	**7,509**	**10,392**	**5,828**	**0**
Alternative WMS[4]						
Phase 2 - Carrizo/Wilcox				20,690	20,690	20,690
HCPUA/TWA Joint	15,300	15,300	30,000	40,690	40,690	40,690
HCPUA/TWA/GBRA Shared Facilities Project		86,513	86,513	86,513	86,513	86,513

[1] Permitted production is 10,300 acft/yr as of March 2013 from Gonzales Co UWCD (Carrizo)

[2] Assigned by Water User Group (WUG) based on Municipal Conservation WMS recommended by SCTRWPG.

[3] For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount

[4] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

Texas Water Alliance (TWA)

TWA Projected Demands (acft/yr):

Water Purchaser	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
Canyon Lake WSC / SJWTX	0	521	2,210	3,926	5,640	7,291
Comal County Rural Areas	0	0	0	0	0	0
Kendall Co Rural Areas	0	0	0	0	0	0
Wimberley	0	0	410	1,020	1,712	2,502
Woodcreek	0	0	0	0	0	0
Hays County Rural Areas	0	0	0	585	3,357	6,436
Blanco County Rural Areas	241	278	298	308	316	322
Total Demand	**241**	**799**	**2,918**	**5,839**	**11,025**	**16,551**

TWA Supply (acft/yr):

Source	*Year (acft)*					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
TWA-Carrizo (GMA 13)						
TWA-Trinity (GMA 10)						
TWA-Trinity (GMA 9)						
Total Supply	**0**	**0**	**0**	**0**	**0**	**0**

TWA Projected Needs (acft/yr):

	Year (acft)					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
Total System Management Supplies/(Needs)	**(241)**	**(799)**	**(2,918)**	**(5,839)**	**(11,025)**	**(16,551)**

TWA Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	*2030*	*2040*	*2050*	*2060*	*2070*
Recommended WMS						
Conservation[2]						
TWA-Carrizo Well Field[1,3]	5,000	14,680	15,000	15,000	15,000	15,000
TWA-Trinity Well Field		500	500	500	5,000	5,000
Total Recommended WMS	**5,000**	**15,180**	**15,500**	**15,500**	**20,000**	**20,000**
Management Supplies with Recommended WMS[4]	**4,759**	**14,381**	**12,582**	**9,661**	**8,975**	**3,449**
Alternative WMS[4]						
TWA-Carrizo Well Field	5,000	15,000	15,000	15,000	15,000	15,000
HCPUA-TWA Joint Project	5,000	10,000	10,000	10,000	10,000	10,000
HCPUA/TWA/GBRA Shared Facilities Project		86,513	86,513	86,513	86,513	86,513

[1] Permitted production as of March 2013.

[2] Assigned by Water User Group (WUG) based on Municipal Conservation WMS recommended by SCTRWPG.

[3] For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

[4] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

Schertz-Seguin Local Government Corporation (SSLGC)

SSLGC Projected Demands (acft/yr):

	Year (acft)					
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Schertz	7,000	7,000	7,000	7,000	7,000	7,000
Seguin	7,000	7,000	7,000	7,000	7,000	7,000
Selma	1,050	1,050	1,050	1,050	1,050	1,050
Springs Hill WSC	840	840	840	840	840	840
Converse	500	500	500	500	500	500
Universal City	800	800	800	800	800	800
Cibolo	1,000	2,000	3,000	3,000	3,000	3,000
Garden Ridge	150	150	150	150	150	150
SAWS - Excess Contract	4,475	3,024	3,742	3,815	3,810	3,810
Total Demand	**22,815**	**22,364**	**24,082**	**24,155**	**24,150**	**24,150**

SSLGC Supply:

	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Carrizo Aquifer (Gonzales County)[1]	17,039	16,644	17,039	17,039	17,039	17,039
Total Supply	**17,039**	**16,644**	**17,039**	**17,039**	**17,039**	**17,039**

SSLGC Projected Needs:

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Total System Management Supplies/(Needs)	**(5,776)**	**(5,720)**	**(7,043)**	**(7,116)**	**(7,112)**	**(7,112)**

SSLGC Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Recommended WMS						
Conservation[2]	0	0	0	0	0	0
Expansion Carrizo Aquifer (Guadalupe County)[1]	5,720	5,720	5,720	5,720	5,720	5,720
Brackish Wilcox (Gonz Co)	56	0	1,323	1,396	1,392	1,392
Total Recommended WMS	**5,776**	**5,720**	**7,043**	**7,116**	**7,112**	**7,112**
Management Supplies with Recommended WMS[4]	**0**	**0**	**0**	**0**	**0**	**0**
Alternative WMS[4]						
Brackish Wilcox (Gonz Co)	5,000	5,000	5,000	5,000	5,000	5,000

[1] Permitted production as of September 2013, less 12% loss rate.

[2] Assigned by Water User Group (WUG) based on Municipal Conservation WMS recommended by SCTRWPG.

[3] For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

[4] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

Cibolo Valley Local Government Corporation (CVLGC)

CVLGC Projected Demands (acft/yr):

	Year (acft)						
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***	
Cibolo	0	1,814	3,139	4,438	5,764	7,066	Schertz?
Schertz	0	1,183	2,868	4,583	6,414	8,218	
Total Demand	**0**	**2,997**	**6,007**	**9,021**	**12,178**	**15,284**	

CVLGC Supply:

	Year (acft)						
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***	
Total Supply	**0**	**0**	**0**	**0**	**0**	**0**	

CVLGC Projected Needs:

	Year (acft)						
	2020	***2030***	***2040***	***2050***	***2060***	***2070***	
Total System Management Supplies/(Needs)	**0**	**(2,997)**	**(6,007)**	**(9,021)**	**(12,178)**	**(15,284)**	

CVLGC Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):

	Year (acft)						
	2020	***2030***	***2040***	***2050***	***2060***	***2070***	
Recommended WMS							
Conservation[2]							
Carrizo Aquifer (Wilson Co)	0	0	0	0	0	0	
w/ Transfers	8,800	8,800	8,800	8,800	8,800	8,800	
Total Recommended WMS	**8,800**	**8,800**	**8,800**	**8,800**	**8,800**	**8,800**	
Management Supplies with Recommended WMS[4]	**8,800**	**5,803**	**2,793**	**-221**	**-3,378**	**-6,484**	
Alternative WMS[4]							

[1] Permitted production as of September 2013, less 12% loss rate.

[2] Assigned by Water User Group (WUG) based on Municipal Conservation WMS recommended by SCTRWPG.

[3] For each aquifer in the region, the GCDs have adopted desired future conditions (DFCs). In some GCDs, full use of all groundwater supplies (permitted, grandfathered and exempt) may result in non-achievement of the DFCs for an aquifer. To ensure consistency with the DFCs, TWDB currently requires that groundwater availability for each aquifer be limited for planning purposes to the modeled available groundwater (MAG) for the aquifer. This has resulted, for planning purposes only, in adjustments to permit amounts, and a lack of firm water available for future permits in this plan for some areas for certain time periods. This should not be construed as recommending or requiring that GCDs make these adjustments, or deny future permit applications. SCTRWPG recognizes and supports the ability of permit holders to exercise their rights to groundwater use in accordance with their permits and it recognizes and supports the GCDs discretion to issue permits and grandfather historical users for amounts in excess of the MAG. SCTRWPG may not modify groundwater permits that GCDs have already issued or limit future permits that GCDs may issue. If the MAG is increased during or after this planning cycle, SCTRWPG may amend this Plan to adjust groundwater supply numbers that are affected by the new MAG amount.

[4] Management Supplies and Alternative WMS are included in the event that Recommended WMS are not fully developed.

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Springs Hill Water Supply Corporation (SHWSC)						
SHWSC Projected Demands (acft/yr):						
	Year (acft)					
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Springs Hill WSC	1,417	1,621	1,845	2,080	2,337	2,594
City of Seguin (served by SH WSC)	*481*	*512*	*599*	*788*	*988*	*1,190*
Guad Co-Other (served by SH WSC)	*489*	*520*	*609*	*801*	*1,004*	*1,209*
Crystal Clear WSC	50	50	50	50	50	50
Total Demand	**2,437**	**2,703**	**3,102**	**3,719**	**4,379**	**5,043**
SHWSC Supply:						
	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
CRWA (Canyon Reservoir)	1,925	1,925	1,925	1,925	1,925	1,925
CRWA (Wells Ranch Groundwater)	100	100	100	100	100	100
GBRA (Canyon Reservoir)	2,850	2,850	2,850	2,850	2,850	2,850
Carrizo Aquifer (Guadalupe County)	1,107	1,107	1,107	1,107	1,107	1,107
Carrizo Aquifer (Gonzales County) (SSLGC)	722	722	722	722	722	722
Total Supply	**6,704**	**6,704**	**6,704**	**6,704**	**6,704**	**6,704**
SHWSC Projected Needs:						
	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Total System Management Supplies/(Needs)	**4,267**	**4,001**	**3,602**	**2,985**	**2,325**	**1,661**
SHWSC Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):						
	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
WMSs						
Conservation						
Total Recommended WMS	**0**	**0**	**0**	**0**	**0**	**0**
Management Supplies with Recommended WMS	**4,267**	**4,001**	**3,602**	**2,985**	**2,325**	**1,661**
Alternative WMS						

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Guadalupe-Blanco River Authority (GBRA)						
GBRA Projected Demands (acft/yr):						
	Year (acft)					
Water Purchaser	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Municipal (Canyon Reservoir)						
Upper Basin - At or Above Canyon Reservoir						
Canyon Lake WSC	6,000	6,000	6,000	6,000	6,000	6,000
City of Blanco (through Canyon Lake WSC)	600	600	600	600	600	600
HH Ranch Properties	250	250	250	250	250	250
Domestic Contracts	10	10	10	10	10	10
Canyon Lake WSC (formerly Rebecca Creek MUD)	130	130	130	130	130	130
Kendall County Rural	0	0	0	0	0	0
Kerr County MOU		2,000	2,000	2,000	2,000	2,000
Upstream Diversion Contracts	155	155	155	155	155	155
WW Sports	1	1	1	1	1	1
Yacht Club	10	10	10	10	10	10
SJWTX - Bulverde (Western Canyon)	400	400	400	400	400	400
SJWTX - Park Village (Western Canyon)	322	322	322	322	322	322
City of Boerne (Western Canyon)	3,611	3,611	3,948	4,906	5,895	6,869
City of Fair Oaks Ranch (Western Canyon)	1,850	1,850	1,850	1,850	1,850	1,850
Cordillera Ranch (Western Canyon)	1,000	1,000	1,000	1,000	1,000	1,000
DH Invest.-Johnson Ranch (Western Canyon)	400	400	400	400	400	400
Lerin Hills (Western Canyon)	750	750	750	750	750	750
Kendall & Tapatio (Western Canyon)	750	750	750	750	750	750
Comal Trace (Western Canyon)	100	100	100	100	100	100
SAWS (Western Canyon)	2,017	2,017				
Western Canyon Sub-Total	*11,200*	*11,200*	*9,520*	*10,478*	*11,467*	*12,441*
Total Upper Basin Municipal (Canyon Reservoir)	**18,356**	**20,356**	**18,676**	**19,634**	**20,623**	**21,597**
Mid Basin - Below Canyon Dam to Above Victoria						
CRWA - Guadalupe River Basin Customers	4,000	4,000	4,000	4,000	4,000	4,000
CRWA - Cibolo	1,350	1,350	1,350	1,350	1,350	1,350
CRWA - East Central SUD	1,400	1,400	1,400	1,400	1,400	1,400
CRWA - Green Valley SUD	1,800	1,800	1,800	1,800	1,800	1,800
CRWA - Marion	100	100	100	100	100	100
CRWA - Springs Hill WSC	1,925	1,925	1,925	1,925	1,925	1,925
CRWA Dunlap Current Contract Subtotal	10,575	10,575	10,575	10,575	10,575	10,575
CRWA Dunlap Future Contract	0	0	0	0	0	0
Comal County Rural	0	0	0	0	0	0
New Braunfels Utilities	9,720	10,072	10,921	11,789	12,668	13,519
Crystal Clear WSC	800	800	800	800	800	800
City of Seguin	1,000	1,000	1,000	1,000	1,000	1,000
Dittmar, Gary	5	5	5	5	5	5
Dittmar, Ray	5	5	5	5	5	5
Gonzales County WSC	700	700	700	700	700	700
Green Valley SUD	1,000	1,000	1,000	1,000	1,000	1,000
Springs Hill WSC	2,500	2,500	2,500	2,500	2,500	2,500
Canyon Regional Water Authority (H/C WTP)	2,038	2,038	2,038	2,038	2,038	2,038
Wimberley & Wimberley WSC	0	0	410	1,020	1,712	2,502
Hays County Rural				1,169	6,714	12,872
City of Buda (San Marcos WTP)	1,680	1,680	1,680	1,680	1,680	1,680
City of Kyle (San Marcos WTP)	5,443	5,443	5,443	5,443	5,443	5,443
Sunfield MUD (San Marcos WTP)	3,136	3,136	3,136	3,136	3,136	3,136
Plum Creek WC/Monarch (San Marcos WTP)	560	560	560	560	560	560
City of San Marcos (San Marcos WTP)	10,000	10,000	10,000	10,000	10,000	10,000
Goforth WSC (San Marcos WTP)	1,050	1,050	1,050	1,050	1,050	1,050
San Marcos WTP Sub-Total	*21,869*	*21,869*	*21,869*	*21,869*	*21,869*	*21,869*
Total Mid Basin Municipal (Canyon Reservoir)	**50,212**	**50,564**	**51,823**	**54,470**	**61,586**	**69,385**

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Lower Basin - At or Below Victoria						
City of Victoria (pursuant to Canyon Amendment)	1,240	1,240	1,240	1,240	1,240	1,240
Total Lower Basin Municipal (Canyon Reservoir)	**1,240**	**1,240**	**1,240**	**1,240**	**1,240**	**1,240**
Industrial/Steam-Electric (Canyon Reservoir)						
Mid Basin - Below Canyon Dam to Above Victoria						
Acme Brick	25	25	25	25	25	25
CMC Steel	700	700	700	700	700	700
Guadalupe County	2	2	2	2	2	2
Temple Inland (St. Gyp)	258	258	258	258	258	258
Guadalupe County Manufacturing	0	0	0	163	494	854
Comal Fair	1	1	1	1	1	1
Comal Road Department	3	3	3	3	3	3
Comal County Manufacturing	4,130	4,881	5,612	6,239	7,120	8,074
GPP (Panda Energy)	6,840	6,840	6,840	6,840	6,840	6,840
Hays Energy LP	2,464	2,464	2,464	2,464	2,464	2,464
Total Mid Basin Industrial/SE (Canyon Reservoir)	**14,423**	**15,174**	**15,905**	**16,695**	**17,907**	**19,221**
Lower Basin - At or Below Victoria						
Coleto Creek	6,000	6,000	6,000	6,000	6,000	6,000
Dow/UCC	100	100	100	100	100	100
Total Lower Basin Industrial/SE (Canyon Reservoir)	**6,100**	**6,100**	**6,100**	**6,100**	**6,100**	**6,100**
Irrigation (Canyon Reservoir)						
Irrigation Contracts (Upper Basin)	**250**	**250**	**250**	**250**	**250**	**250**
Irrigation Contracts (Mid-Basin)	**342**	**342**	**342**	**342**	**342**	**342**
Canyon Reservoir Total	**90,923**	**94,026**	**94,336**	**98,731**	**108,048**	**118,135**
Mid-Basin Municipal (San Marcos Run-of-River)						
Lockhart	1,120	1,120	1,120	1,484	1,947	2,402
Luling	1,680	1,680	1,680	1,680	1,684	1,875
Mid-Basin Municipal (San Marcos Run-of-River) Total	**2,800**	**2,800**	**2,800**	**3,164**	**3,631**	**4,277**
Lower Basin Municipal (Run-of-River, Firm)						
Calhoun County Rural WSC	1,500	1,500	1,500	1,500	1,500	1,500
Port Lavaca	4,480	4,480	4,480	4,480	4,480	4,480
Port O'Conner MUD	1,120	1,120	1,120	1,120	1,120	1,120
Victoria County Rural	0	0	0	0	0	0
Total Lower Basin Municipal (Run-of-River, Firm)	**7,100**	**7,100**	**7,100**	**7,100**	**7,100**	**7,100**
Lower Basin Industrial/SE (Run-of-River, Firm)						
INEOS	3,300	3,300	3,300	3,300	3,300	3,300
Seadrift Coke	1,000	1,000	1,000	1,000	1,000	1,000
Dow/UCC	20,000	20,000	20,000	20,000	20,000	20,000
Calhoun County Industry (Lavaca-Guadalupe)	0	0	0	2,456	7,288	11,469
Calhoun County Industry (Colorado-Lavaca)	10,000	10,000	10,000	10,000	10,000	10,000
Victoria County Industry	3,215	6,053	8,878	11,403	14,243	17,289
Victoria County Steam-Electric	4,506	29,778	37,178	53,599	70,696	70,696
Total Lower Basin Industrial/SE (Run-of-River, Firm)	**42,021**	**70,131**	**80,356**	**101,758**	**126,527**	**133,754**
Lower Basin Industrial/SE (Run-of-River, Interruptible)						
Calhoun & Victoria Counties	0	0	0	0	0	0
Total Lower Basin Industrial/SE (Run-of-River, Interruptible)	**0**	**0**	**0**	**0**	**0**	**0**
Lower Basin Irrigation (Run-of-River, Interruptible)						
Irrigation Agreements	**13,472**	**11,935**	**10,894**	**10,148**	**9,453**	**8,726**
Lower Basin (Run-of-River, Firm) Total	**49,121**	**77,231**	**87,456**	**108,858**	**133,627**	**140,854**
Lower Basin (Run-of-River, Interruptible) Total	**13,472**	**11,935**	**10,894**	**10,148**	**9,453**	**8,726**
Total Demand	**156,316**	**185,992**	**195,486**	**220,901**	**254,759**	**271,992**
Total Upper Basin Demand	18,606	20,606	18,926	19,884	20,873	21,847
Total Mid-Basin Demand	67,777	68,880	70,870	74,671	83,466	93,225
Total Lower Basin Demand	69,933	96,506	105,690	126,346	150,420	156,920
Total Demand	**156,316**	**185,992**	**195,486**	**220,901**	**254,759**	**271,992**

GBRA Existing Supplies (acft/yr):						
	Year (acft)					
Source	***2020***	***2030***	***2040***	***2050***	***2060***	***2070***
Canyon Reservoir	89,100	88,960	88,820	88,680	88,540	88,400
Mid-Basin (San Marcos Run-of-River) Rights	0	0	0	0	0	0
Lower Basin Rights (Interruptible, Daily Basis)	131,288	131,288	131,288	131,288	131,288	131,288
Lower Basin Rights (Firm, Daily Basis)	44,213	44,213	44,213	44,213	44,213	44,213
Total Supply	**264,601**	**264,461**	**264,321**	**264,181**	**264,041**	**263,901**
GBRA Projected Management Supplies or Needs (acft/yr):						
	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Canyon Reservoir Mgmt. Supplies / (Needs)	(1,823)	(5,066)	(5,516)	(10,051)	(19,508)	(29,735)
Mid-Basin (San Marcos Run-of-River) Mgmt. Supplies / (Needs)	(2,800)	(2,800)	(2,800)	(3,164)	(3,631)	(4,277)
Lower Basin Run-of-River Firm Mgmt. Supplies / (Needs)	(4,908)	(33,018)	(43,243)	(64,645)	(89,414)	(96,641)
Total System Management Supplies / (Needs)	**(9,531)**	**(40,884)**	**(51,559)**	**(77,860)**	**(112,553)**	**(130,653)**
GBRA Water Management Strategies (WMS) with Estimated Firm Yield (acft/yr):						
	Year (acft)					
	2020	***2030***	***2040***	***2050***	***2060***	***2070***
Recommended WMS						
Conservation[1]						
MBWSP - Surface Water w/ ASR (Option 3C)	50,000	50,000	50,000	50,000	50,000	50,000
Wimberley/Woodcreek Project[2]						
Western Canyon WTP Expansion					5,600	5,600
Integrated Water-Power Project (Upper & Mid Basin)					50,000	50,000
GBRA Lower Basin Storage (500 acre Site)	51,800	51,800	51,800	51,800	51,800	51,800
GBRA New Appropriation (Lower Basin)				42,000	42,000	42,000
Victoria County Steam-Electric Project				29,100	29,100	29,100
Integrated Water-Power Project (Lower Basin)	50,000	50,000	50,000	50,000	50,000	50,000
Upper & Mid-Basin Management Supplies w/Recommended WMS	**45,377**	**42,134**	**41,684**	**36,785**	**32,461**	**21,588**
Lower Basin Firm Management Supplies w/Recommended WMS	**96,892**	**68,782**	**58,557**	**108,255**	**133,486**	**126,259**
Alternative WMS						
Luling ASR		4,277	4,277	4,277	4,277	4,277
MBWSP - Carrizo Groundwater (Option 0)		15,000	15,000	15,000	15,000	15,000
MBWSP - Surface Water w/ Off-Channel Reservoir (Option 2A)		25,000	25,000	25,000	25,000	25,000
MBWSP - Conjunctive Use w/ ASR (Option 3A)		42,000	42,000	42,000	42,000	42,000
HCPUA/TWA/GBRA Shared Facilities Project		86,513	86,513	86,513	86,513	86,513
Storage Above Canyon Reservoir (ASR)		TBD	TBD	TBD	TBD	TBD
WMS Needing Further Study Prior to Implementation						
Brush Management		TBD	TBD	TBD	TBD	TBD
[1] Assigned by Water User Group (WUG) based on Municipal Conservation WMS recommended by the SCTRWPG.						
[2] Project is a Facilities Expansion WMS including transmission facilities for treated water from the San Marcos area to Wimberley.						

Atascosa County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Benton City	0	0	0	0	0	25	Conservation, Local Carrizo Transfer
Charlotte	0	0	0	0	0	0	Conservation
Jourdanton	0	0	0	0	0	0	Conservation
Lytle	171	257	333	409	484	554	Conservation, Edwards Transfers, Drought Management
McCoy WSC	0	0	0	0	0	0	Conservation
Pleasanton	0	0	0	0	0	0	Conservation
Poteet	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**171**	**257**	**333**	**409**	**484**	**579**	

Bexar County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Alamo Heights	796	848	820	807	805	805	Conservation, Edwards Transfers, Drought Management, Purchase from SAWS?
Atascosa Rural WSC	1,167	1,446	1,708	1,970	2,218	2,448	Conservation, Edwards Transfers, Drought Management, Purchase from SAWS?
Balcones Heights	0	0	0	0	0	0	Conservation
Castle Hills	0	0	0	0	0	0	Conservation
China Grove	0	0	0	0	0	0	Conservation
Converse	903	1,111	1,297	1,272	1,265	1,264	Conservation, Edwards Transfers, Drought Management, Purchase from WWP?
East Central SUD	0	0	0	0	0	0	Conservation
Elmendorf	0	0	0	0	0	0	Conservation
Fair Oaks Ranch	0	0	0	0	0	0	Conservation
Helotes	0	0	0	0	0	0	Conservation
Hill Country Village	0	0	0	0	0	0	Conservation
Hollywood Park	0	0	0	0	0	0	Conservation
Kirby	137	207	181	172	169	169	Conservation, Edwards Transfers, Drought Management, Purchase from WWP?
Lackland AFB	0	0	0	0	0	0	Conservation
Leon Valley	97	147	196	254	317	377	Conservation, Purchase from SAWS, Edwards Transfers, Drought Management
Live Oak	0	0	0	0	0	0	Conservation
Olmos Park	0	0	0	0	0	0	Conservation
Randolph AFB	0	0	0	0	0	0	Conservation
San Antonio	60,972	82,339	109,029	132,636	156,055	177,826	See SAWS WWP Table
San Antonio Water System	2,418	5,976	9,412	12,942	16,436	19,708	See SAWS WWP Table
Selma	0	16	104	191	270	345	Conservation, Purchase from WWP?
Shavano Park	425	555	677	797	909	1,013	Conservation, Edwards Transfers, Drought Management
Somerset	0	0	0	0	0	0	Conservation
St. Hedwig	0	0	0	0	0	0	Conservation
Terrell Hills	0	0	0	0	0	0	Conservation
The Oaks WSC	0	0	1	60	114	165	Conservation, Local GW (Trinity), Purchase from SAWS?
Universal City	416	431	372	339	333	332	Conservation, Drought Management, Purchase from WWP?
Von Ormy	0	0	0	0	0	0	Conservation
Water Services Inc.	0	0	0	0	0	0	Conservation
Windcrest	326	343	361	388	420	451	Conservation, Drought Management, Edwards Transfers
County-Other	0	0	0	1,898	4,082	6,084	Conservation, Purchase from SAWS?
Manufacturing	0	0	0	0	1,058	3,680	Purchase from SAWS
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	5,191	4,700	4,229	3,778	3,346	2,966	Unmet
Livestock	0	0	0	0	0	0	
Total	**72,848**	**98,119**	**128,387**	**157,504**	**187,797**	**217,633**	

Caldwell County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Aqua WSC	0	0	0	0	0	0	Conservation
Creedmore-Maha WSC	0	0	0	0	0	0	Conservation
Lockhart	188	613	1,042	1,484	1,947	2,402	Conservation, Drought Management, Purchase from GBRA
Luling	0	41	218	402	596	787	Conservation, Purchase from GBRA
Martindale	0	31	66	102	140	177	Conservation, Purchase from CRWA
Maxwell WSC	0	0	0	0	0	0	Conservation
Mustang Ridge	0	0	0	0	0	0	Conservation
Polonia WSC	0	0	0	88	266	442	Conservation, Local Carrizo Transfers
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**188**	**685**	**1,326**	**2,076**	**2,949**	**3,808**	

Calhoun County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Calhoun County WS	0	0	0	0	0	0	Conservation
Point Comfort	0	0	0	0	0	0	Conservation
Port Lavaca	0	0	0	0	0	0	Conservation
Port O'Connor MUD	0	0	0	0	0	0	Conservation
Seadrift	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	2,113	6,945	11,126	Purchase from LNRA (Lavaca OCR)
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	12,273	10,736	9,695	8,949	8,254	7,527	Unmet
Livestock	0	0	0	0	0	0	
Total	**12,273**	**10,736**	**9,695**	**11,062**	**15,199**	**18,653**	

Comal County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Bulverde	0	0	0	0	0	0	Conservation
Canyon Lake WSC	0	521	2,210	3,926	5,640	7,291	Conservation, Purchase from TWA
Garden Ridge	1,023	1,599	2,188	2,786	3,383	3,957	Conservation, Drought Management, Local GW (Trinity)
New Braunfels	0	1,407	4,803	8,274	11,791	15,196	Conservation, Drought Management, New Braunfels ASR, New Braunfels Trinity, Reuse, Purchase from GBRA
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	4,130	4,881	5,612	6,239	7,120	8,074	Recyled Water, Purchase from GBRA
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**5,153**	**8,408**	**14,813**	**21,225**	**27,934**	**34,518**	

DeWitt County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Cuero	0	0	0	0	0	0	Conservation
Yoakum	0	0	0	0	0	0	Conservation
Yorktown	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	44	38	16	2	0	0	Local GW (Gulf Coast)
Steam-Electric	0	0	0	0	0	0	
Irrigation	74	68	39	6	0	0	Local GW (Gulf Coast)
Livestock	0	0	0	0	0	0	
Total	**118**	**106**	**55**	**8**	**0**	**0**	

Dimmit County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Asherton	28	46	61	77	0	0	Conservation, Carrizo Transfers (Frio)
Big Wells	0	0	0	0	0	0	Conservation
Carrizo Springs	267	399	476	578	0	0	Conservation, Carrizo Transfers (Frio)
County-Other	297	326	340	362	171	184	Conservation, Carrizo Transfers (Frio)
Manufacturing	0	0	0	0	0	0	
Mining	4,826	4,908	4,244	2,731	1,222	519	Carrizo Transfers (Frio)
Steam-Electric	0	0	0	0	0	0	
Irrigation	3,372	3,312	3,082	2,846	2,620	2,466	Unmet
Livestock	0	0	0	0	0	0	
Total	**8,790**	**8,991**	**8,203**	**6,594**	**4,013**	**3,169**	

Frio County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Dilley	0	0	0	0	0	0	Conservation
Pearsall	0	0	0	0	0	19	Conservation, Local Carrizo Transfer
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**0**	**0**	**0**	**0**	**0**	**19**	

Goliad County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Goliad	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**0**	**0**	**0**	**0**	**0**	**0**	

Gonzales County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Gonzales	0	0	0	174	92	310	Conservation, Local GW (Carrizo)
Gonzales County WSC	0	3	212	425	206	413	Conservation, Local GW (Carrizo)
Nixon	0	0	0	0	0	0	Conservation
Smiley	0	0	0	0	0	0	Conservation
Waelder	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**0**	**3**	**212**	**599**	**298**	**723**	

Guadalupe County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Cibolo	0	1,814	3,139	4,438	5,764	7,066	Conservation, Purchase from CVLGC/SSLGC
Crystal Clear WSC	0	50	482	959	1,481	2,023	Conservation, Purchase from CRWA, Local GW (Wilcox), Local GW (Trinity)
Green Valley SUD	1,082	1,297	1,533	1,796	2,095	2,391	Conservation, Drought Management, Purchase from CRWA
Marion	0	0	0	0	0	0	Conservation
New Berlin	0	0	0	0	0	0	Conservation
Santa Clara	0	0	0	0	0	0	Conservation
Schertz	0	1,183	2,868	4,583	6,414	8,218	Conservation, Purchase from SSLGC
Seguin	0	0	0	0	0	0	Conservation
Springs Hill WSC	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	163	494	854	Purchase from GBRA
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**1,082**	**4,344**	**8,022**	**11,939**	**16,248**	**20,552**	

WUG	2020	2030	2040	2050	2060	2070	WMS
Buda	0	0	0	0	0	0	Conservation
County Line SUD	0	0	0	0	180	392	Conservation, Purchase from CRWA, Local GW (BS Edwards - Brackish), Reuse
Goforth SUD	0	0	0	0	0	93	Conservation, Purchase from GBRA
Kyle	0	1,348	2,801	2,787	2,776	2,772	Conservation, Purchase from HCPUA, Reuse
Mountain City	11	17	25	35	47	60	Conservation, Drought Management, Local GW (Trinity)
Niederwald	62	81	105	134	166	203	Conservation, Drought Management, Purchase from GBRA
Plum Creek Water Company	0	0	0	0	0	0	Conservation
San Marcos	0	0	0	1,965	4,576	7,891	Conservation, Purchase from HCPUA, Reuse
Texas State University - San Marcos	1,561	2,153	2,881	3,721	4,831	5,967	
Uhland	0	0	0	0	0	0	Conservation
Wimberley	0	0	174	456	778	1,146	Conservation, Purchase from TWA/HCPUA/GBRA/SAWS, Hays Forestar Project
Wimberley WSC	0	0	236	564	934	1,356	Conservation, Purchase from TWA/HCPUA/GBRA/SAWS, Hays Forestar Project
Woodcreek	0	0	0	0	0	0	Conservation
County-Other	0	0	0	1,169	6,714	12,872	Conservation, Purchase from TWA/HCPUA/GBRA/SAWS, Hays Forestar Project
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**1,634**	**3,599**	**6,222**	**10,831**	**21,002**	**32,752**	

Karnes County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
El Oso WSC	0	0	0	0	0	0	Conservation
Falls City	0	0	0	0	0	0	Conservation
Karnes City	336	322	298	285	249	249	Conservation, Local Carrizo Transfers
Kenedy	161	189	179	178	151	151	Conservation, Local GW (Gulf Coast)
Runge	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	1,864	1,292	700	115	0	0	Conservation, Local Carrizo Transfers
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**2,361**	**1,803**	**1,177**	**578**	**400**	**400**	

Kendall County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Boerne	0	0	337	1,295	2,284	3,258	Conservation, Local GW (Trinity), Western Canyon Expansion
Kendall County WCID #1	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**0**	**0**	**337**	**1,295**	**2,284**	**3,258**	

La Salle County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Cotulla	0	16	155	323	0	0	Conservation, Carrizo Transfers (Frio)
Encinal	0	0	0	0	0	0	Conservation
County-Other	22	56	90	133	0	0	Conservation, Carrizo Transfers (Frio)
Manufacturing	0	0	0	0	0	0	
Mining	4,088	4,243	3,734	2,290	851	147	Conservation, Carrizo Transfers (Frio)
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**4,110**	**4,315**	**3,979**	**2,746**	**851**	**147**	

Medina County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Castroville	224	217	210	208	211	214	Conservation, Drought Management, Edwards Transfers, Local GW (Leona Gravel)
Devine	0	0	0	0	0	0	Conservation
East Medina SUD	0	0	0	0	11	70	Conservation, Edwards Transfers, Local GW (Leona Gravel)
Hondo	523	680	816	943	1,068	1,180	Conservation, Edwards Transfer
LaCoste	10	20	28	37	47	56	Conservation, Drought Management, Edwards Transfers, Local GW (Leona Gravel)
Natalia	101	129	153	176	199	220	Conservation, Drought Management, Edwards Transfers, Local GW (Leona Gravel)
Yancey WSC	28	95	154	208	261	309	Conservation, Drought Management, Edwards Transfers, Local GW (Leona Gravel)
County-Other	0	0	0	0	0	0	
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	31,529	29,144	26,850	24,653	22,547	20,689	Unmet
Livestock	0	0	0	0	0	0	
Total	**32,415**	**30,285**	**28,211**	**26,225**	**24,344**	**22,738**	

Refugio County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Refugio	0	0	0	0	0	0	Conservation
Woodsboro	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**0**	**0**	**0**	**0**	**0**	**0**	

Uvalde County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Sabinal	121	153	181	212	245	277	Conservation, Uvalde ASR, Edwards Transfers
Uvalde	943	1,233	1,484	1,772	2,072	2,365	Conservation, Uvalde ASR, Edwards Transfers
County-Other	0	0	0	0	0	0	
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	29,683	27,370	24,992	22,831	20,818	19,102	Unmet
Livestock	0	0	0	0	0	0	
Total	**30,747**	**28,756**	**26,657**	**24,815**	**23,135**	**21,744**	

Victoria County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Victoria	3,021	3,877	4,540	5,210	5,841	6,382	Conservation, Drought Management, Victoria ASR, Surface WRs, Off-Channel Storage, Local GW (Gulf Coast)
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	3,215	6,053	8,878	11,403	14,243	17,289	Purchase from GBRA
Mining	0	0	0	0	0	0	
Steam-Electric	4,506	29,778	37,178	53,599	70,696	70,696	Purchase from GBRA
Irrigation	5,002	5,002	5,002	5,002	5,002	5,002	Unmet
Livestock	0	0	0	0	0	0	
Total	**15,744**	**44,710**	**55,598**	**75,214**	**95,782**	**99,369**	

Wison County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Floresville	0	8	405	770	1,124	1,445	Conservation, Local Carrizo Transfer
La Vernia	0	0	0	0	0	0	Conservation
Oak Hills WSC	0	0	0	0	0	0	Conservation
Poth	0	0	0	0	0	0	Conservation
SS WSC	0	0	0	0	0	234	Conservation, Brackish Wilcox for SS WSC, Local Carrizo Transfer
Stockdale	0	0	0	0	0	0	Conservation
Sunko WSC	0	0	0	0	0	117	Conservation, Local Carrizo Transfer
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	0	0	0	0	0	0	
Livestock	0	0	0	0	0	0	
Total	**0**	**8**	**405**	**770**	**1,124**	**1,796**	

Zavala County Needs (Projected Demands less Existing Supplies) **DRAFT (11-4-2014)**

WUG	2020	2030	2040	2050	2060	2070	WMS
Crystal City	0	0	0	0	0	0	Conservation
Zavala County WCID #1	0	0	0	0	0	0	Conservation
County-Other	0	0	0	0	0	0	Conservation
Manufacturing	0	0	0	0	0	0	
Mining	0	0	0	0	0	0	
Steam-Electric	0	0	0	0	0	0	
Irrigation	18,487	16,805	14,980	13,049	11,193	9,443	Unmet
Livestock	0	0	0	0	0	0	
Total	**18,487**	**16,805**	**14,980**	**13,049**	**11,193**	**9,443**	

AGENDA ITEM 13

The Regular Meeting of November 6, 2014, of the South Central Texas Regional Water Planning Group Will Recess to Hold Two Public Meetings to consider the following:

a) The Guadalupe-Blanco River Authority's (GBRA) Proposed Substitution of the Lower Basin Storage 500 Acre Site Project for the Lower Basin Storage 100 Acre Site Project in the 2011 Regional Water Plan

b) The Guadalupe-Blanco River Authority's (GBRA) Proposed Minor Amendment of the Integrated Water Power Project to the 2011 Regional Water Plan

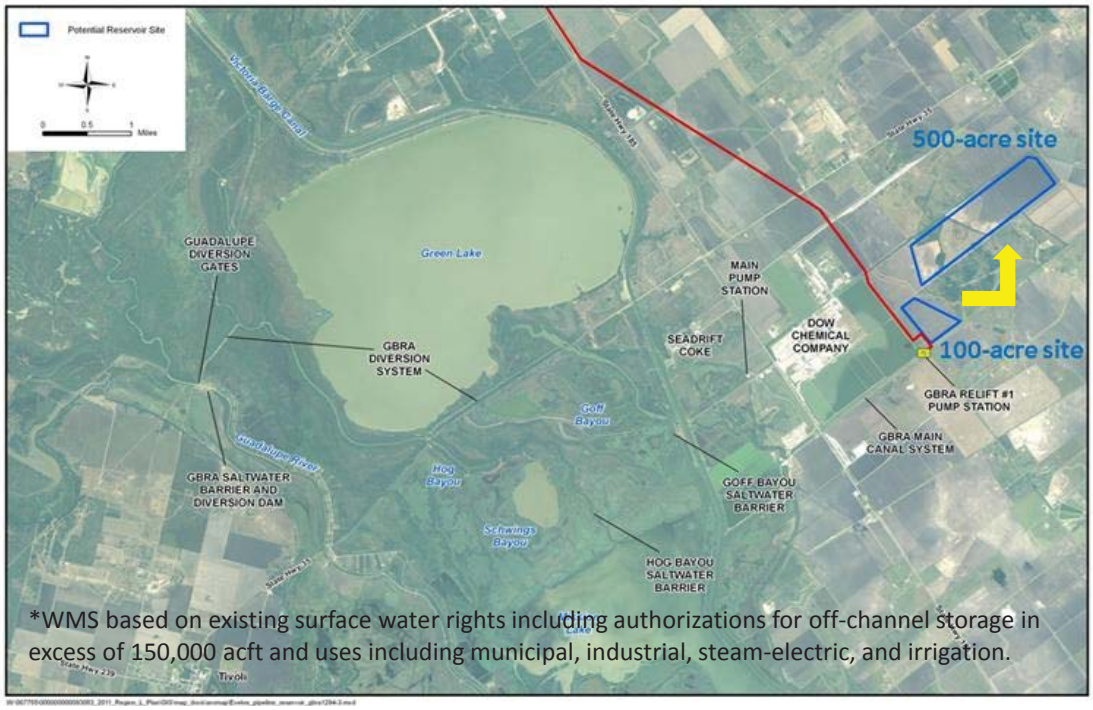
Public Meeting

Discussion and Appropriate Action Regarding the Guadalupe-Blanco River Authority's (GBRA) Proposed Substitution of the Lower Basin Storage 500 Acre Site Project for the Lower Basin Storage 100 Acre Site Project in the 2011 Regional Water Plan

GBRA Lower Basin Storage
Requested Amendment of the
2011 Region L Water Plan

- **2011 Region L Water Plan:**
  - Recommended WMS = “100-acre site” w/ capacity of 2,500 acft and yield of 28,369 acft/yr @ $104/acft/yr for raw water in the reservoir and/or GBRA Main Canal to meet municipal, industrial, steam-electric, and/or other needs
  - Alternative WMS = “500-acre site” w/ capacity of 12,500 acft and yield of 59,569 acft/yr @ $109/acft/yr for raw water in the reservoir and/or GBRA Main Canal to meet municipal, industrial, steam-electric, and/or other needs
- **Requested Amendment:**
  - **<u>Substitution</u>** of “500-acre site” as the Recommended WMS as it capable of meeting the same and additional water needs

GBRA Lower Basin Storage*



*WMS based on existing surface water rights including authorizations for off-channel storage in excess of 150,000 acft and uses including municipal, industrial, steam-electric, and irrigation.

GBRA Lower Basin Storage Requested Amendment of the 2011 Region L Water Plan

- **August 7, 2014 SCTRWPG Meeting:**
  - After presentation of the proposed amendment and extended discussion, the SCTRWPG voted 25 – 3 (2 absent) in favor of moving forward with requesting pre-adoption determination from the EA of the TWDB, on whether the proposed amendment classifies as a substitution, a minor amendment, or a major amendment.
- **November 6, 2014 SCTRWPG Meetings:**
  - Discussion and appropriate action regarding GBRA's proposed substitution of the Lower Basin Storage 500-acre site project for the Lower Basin Storage 100-acre site project.

Region L
South Central Texas Regional Water Planning Group

c/o San Antonio River Authority
P.O. Box 839980
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September 9, 2014
Sam Vaugh, P.E.
HDR Engineering, Inc.
4401 W Gate Blvd # 400
Austin, TX 78745

RE: Region L Reuse Workgroup Questions on GBRA Lower Basin Storage Project

Dear Sam:

As you are aware, at the August 7, 2015 meeting of the South Central Texas Regional Water Planning Group (Region L), Guadalupe-Blanco River Authority (GBRA) requested that Region L's 2011 Regional Water Plan (Plan) be amended to replace the recommended GBRA Lower Basin Storage Project 100 acre water management strategy (WMS) with the alternative 500 acre WMS.

In discussing this request, it became clear that the planning group would not be in a position to recommend this Plan amendment at its November 6, 2014 meeting without having answers to a number of questions. Consequently, I created what has become known as the Reuse Workgroup to develop a list of questions to submit to HDR Engineering, Inc., to obtain answers that the Workgroup believes are important in considering this Plan amendment request.

A preliminary list of questions was sent to you, recently, to determine, among other things, if they were being directed to the proper entity, being HDR. You responded, and the Workgroup agreed, that certain questions needed to be directed to TWDB or GBRA. Listed, below, are the questions the Workgroup is asking HDR to answer:

1. What would be the impact on the yield of the project presented for consideration as an amendment to the 2011 plan without effluent contributions from the Guadalupe and San Antonio Rivers? Please detail the volume of effluent used to determine yield coming from each river?

2. How many years in the modeling of the drought of record is the effluent from the San Antonio River and Guadalupe River relied upon to firm up the yield of the project?

3. Please confirm and/or correct the accuracy of the volumes of contribution in the slides that HDR previously prepared and provide data for these contributions based on flows in 2006? (See attached slides.)

4. What was the volume contribution of effluent in the rivers for the portion of the water right that would be used for this project at the time each of GBRA's existing water right permits were granted?

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5. Does GBRA's existing water right permit specifically mention a volume of effluent which was the basis of the granting of the permit?

6. If any utilities were to develop a project in the future, before the GBRA Lower Basin Project is operational, to increase the volume in their "purple pipe" system, or to store effluent for another water need and not discharged to the river, would the reliability of water from the Lower Basin storage project be impacted?

7. Which other firm yield surface water management strategies in the 2011 plan will be impacted in the 2016 plan by the change in WAM modeling with no effluent in the model; list the projects and the potential change in firm yield

8. Which groundwater water management projects in the 2011 plan will be impacted in the 2016 plan with the change in the rule that the existing MAG cannot be exceeded; list the projects and the potential change in the firm yield

9. What specific needs/WUGS in the 2011 Plan does the project serve? (Where does the project delivery stop?) What actual quantities serve the need? Are the needs served by other supply projects in the Plan? (This question, also, was sent to GBRA.)

10. Where is the associated delivery system for all customers? The submittal for the substituted reservoir does not show infrastructure to serve a WUG. What costs are added by the distribution system and how would it affect the unit cost? Does the project proposed for the amendment (the alternative 2011 GBRA Lower Basin Storage Project 500 acre size) meet TWDB criteria for describing the transmission component?

11. What change in needs between the time this was made an alternate in the 2011 plan and the current request necessitate this change? Does GBRA's request to amend the 2011 plan to substitute the 500 acre Lower Basin Storage Project request any amendment to the needs evaluation of the 2011 Plan?

12. The "water management strategy summary sheet" for the 500 acre GBRA Lower Basin Storage strategy in the 2011 Region L plan states that the quantity of water from this strategy is 59,569 acft/yr and that the reliability is "firm."

    a. Is this estimate based on modeling that assumes the availability of return flows? If so what specific return flow assumptions were used?
    b. Where is this modeling located in the Region L plan?
    c. Please define "firm" in this context.
    d. Please explain the analysis used to characterize the reliability of this strategy as "firm."
    e. What role does the assumption of return flows play in the analysis characterizing the reliability as "firm?"

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13. Does the 2011 Region L plan state the quantity of water available from the 500 acre GBRA Lower Basin Storage strategy if return flows are subject to interruption due to reuse or other lawful reasons? If so what is the firm yield using this assumption, where is this stated, and where in the plan is this modeling located?

14. Does the 2011 plan identify the reliability of the 500 acre GBRA Lower Basin Storage strategy if return flows are subject to interruption due to reuse or other lawful reasons? If so what is this reliability and where is this stated?

15. The "water management strategy summary sheet" for the 500 acre GBRA Lower Basin Storage Project in the 2011 Region L plan (See Attachment 1) states that the unit cost of the water is $109 /acft/yr. The "cost estimate summary" that estimates this unit cost assumes a project yield of 59,569 acft/yr and a total annual cost of $6,519,000. The cost estimate summary states that the cost for "purchase of water" for this strategy is $0.

    a. Please confirm that the unit cost of water is calculated by dividing the total annual cost by the available project yield.
    b. Is the "purchase of water" heading on the cost estimate summary the place in the plan where cost of contracting to ensure return flows would be identified? If not, where would this cost be identified?
    c. Does the 2011 Region L plan state the unit cost of water for this strategy if the project yield is determined assuming that the return flows are subject to interruption by reuse or other lawful reasons?
    d. Does the 2011 Region L plan state the unit cost of water for this strategy if it is necessary for GBRA to enter into contractual arrangements with dischargers to ensure the continued availability of the return flows assumed to achieve the project yield of 59, 569 acft/yr?

16. The 2011 Region L plan states at page 4c.13-1, §4C.13-1 that the GBRA Lower Basin Water Rights that will be used in the Lower Basin Storage Project strategy are "quite reliable, but not firm".

    a. Does the 2011 Region L plan quantify this reliability? If so where and what is it?
    b. Does this description of the reliability of those water rights assume the availability of return flows not subject to interruption?
    c. Does the 2011 Region L plan identify the reliability of these water rights if the return flows used in the modeling are subject to interruption due to reuse or other lawful reasons?

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17. Are there other strategies in the 2011 Region L plan that rely on return flows that include the potential source of those return flows or an estimate of the cost to contract for the use of those return flows? If so please identify those strategies and their location in the plan.

18. What specific water needs in the 2011 Region L plan is GBRA's Lower Basin Storage project intended to meet?

19. What request, correspondence, data or analysis was used to identify and quantify those needs? Where in the plan are these located?

20. What were the WAM model assumptions that went into the modeling of the lower basin storage project?

21. Do the firm yield assumptions include full implementation of the HCP components including spring flow implementation?

22. What is the earliest identified decade of need in the 2011 Region L plan for the Lower Basin Storage project?

23. When did HDR first become aware of GBRA's interest in substituting in the 2011 Region L plan the 500 acre site for the 100 acre site for the Lower Basin Storage Project?

    a. What role did HDR play in developing GBRA's request for this substitution and what specific actions did HDR take?

Please note that, from your Preliminary Draft Assessment of Questions, the Workgroup felt that HDR should answer Question 3 from Taggart and Question 7 from Seibert.

For questions that you showed in your Preliminary Draft Assessment of Questions as needing more information for response or complete response, please answer those questions as completely as you can and let me know, specifically, what other information is needed for a full answer.

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Once your answers are submitted, the Workgroup will only follow up for clarifications. Therefore, we would appreciate answers as expansive and comprehensive as possible, while respecting your limitations of using readily available information and not having to conduct research or conduct new calculations or perform additional evaluations.

I will be pleased to respond to any questions you may have.

Sincerely,

Con Mims, Chair
Region L

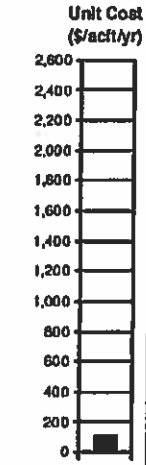
Enclosures (4)

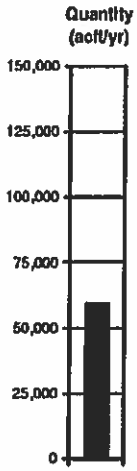
cc: David Meesey, Manager, Regional Water Planning (TWDB)
Steve Raabe, PE, Director, Technical Services (SARA)
Region L Reuse Workgroup

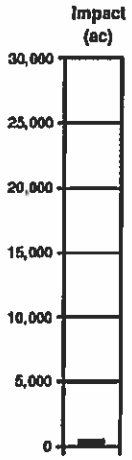
Cost Estimate Summary
Water Supply Project Option
Sept 2008 Prices
0

Item	*Estimated Costs for Facilities*
Capital Costs	
Dam and Reservoir (Conservation Pool acft, acres, ft. msl)	$34,230,000
Intake and Pump Station (MGD)	$7,897,000
Transmission Pipeline (42 in dia., 0 miles)	$10,100,000
Total Capital Cost	**$52,227,000**
Engineering, Legal Costs and Contingencies	$17,774,000
Environmental & Archaeology Studies and Mitigation	$1,473,000
Land Acquisition and Surveying (500 acres)	$1,520,000
Interest During Construction (2 years)	$4,882,000
Total Project Cost	**$77,876,000**
Annual Costs	
Debt Service (6 percent, 20 years)	$2,172,000
Reservoir Debt Service (6 percent, 40 years)	$3,520,000
Operation and Maintenance	
Intake, Pipeline, Pump Station	$298,000
Dam and Reservoir	$513,000
Water Treatment Plant	$0
Pumping Energy Costs (181399 kW-hr @ 0.09 $/kW-hr)	$16,000
Purchase of Water (acft/yr @ $/acft)	$0
Total Annual Cost	**$6,519,000**
Available Project Yield (acft/yr)	59,569
Annual Cost of Water ($ per acft)	$109
Annual Cost of Water ($ per 1,000 gallons)	$0.34

2011 South Central Texas Regional Water Plan
Water Management Strategy Summary Sheet







Name: GBRA Lower Basin Storage (500-acre Site)

Description: To firm up the existing interruptible GBRA/Dow Lower Basin Water Rights, a 500 acre, 12,500 acft off-channel reservoir (OCR) is considered for implementation. The potential OCR site would be located approximately 3 miles east of Green Lake near the Dow Chemical Company. The off-channel reservoir would have a maximum water depth of 25-ft and be capable of impounding 12,500 ac-ft. A 42-in diameter pipeline would transport water diverted from the GBRA Main Canal System to the OCR site, and a 72-in diameter outlet pipeline would discharge the water.

Decade Needed: 2030

Cost, Quantity of Water, and Land Impacted

Unit Cost of Water:	**$109**	**$/acft/yr**	**Raw Water Delivered**
Quantity of Water:	**59,569**	**acft/yr**	**Reliability = Firm**
Land Impacted:	**625**	**acres**	

Additional Considerations per Regional Water Planning Guidelines

Environmental Factors:

No specific sightings of any endangered or threatened species were documented within the proposed reservoir sites.

Impacts on Water Resources:

None anticipated.

Impacts on Agricultural & Natural Resources:

Conversion of existing land uses and habitats to open water.

Other Relevant Factors per SCTRWPG:

Project encourages beneficial use of available rights.

Comparison of Strategies to Meet Needs:

No conflicts with other recommended water management strategies.

Interbasin Transfer Issues:

Since this specific strategy is intended to serve water user groups within the GBRA district, no inter-basin transfer issues are anticipated.

Third-Party Impacts of Voluntary Transfers:

None anticipated.

Regional Efficiency:

Increases long-term firm water supplies for the GBRA statutory district, particularly in Calhoun, Refugio, and Victoria Counties.

Water Quality Considerations:

The off-channel reservoir will aid in suspending river diversions to avoid poor water quality during flood events and facilitate maintenance of diversion facilities without stopping reservoir deliveries.

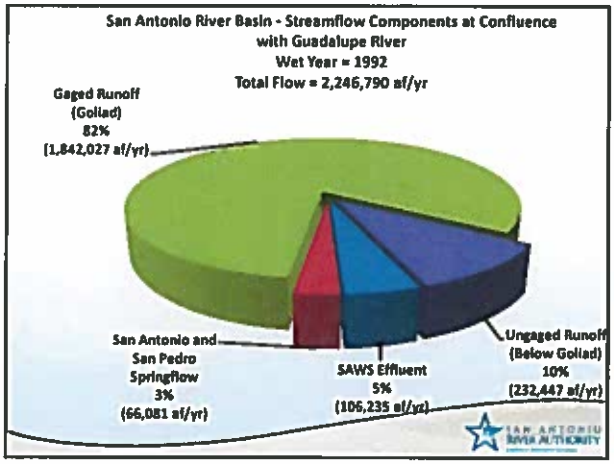
4C.13 GBRA Lower Basin Storage Project

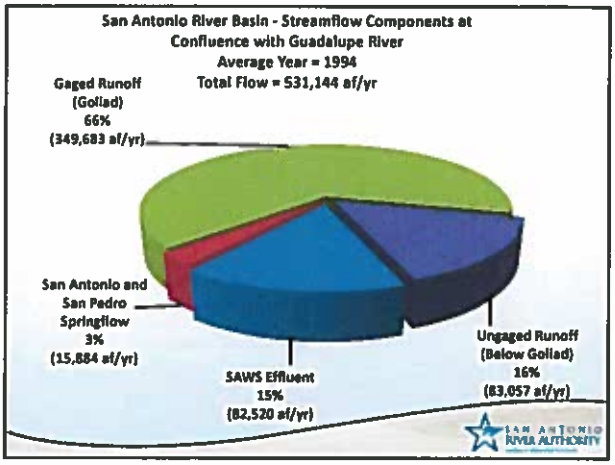
4C.13.1 Description of Water Management Strategy

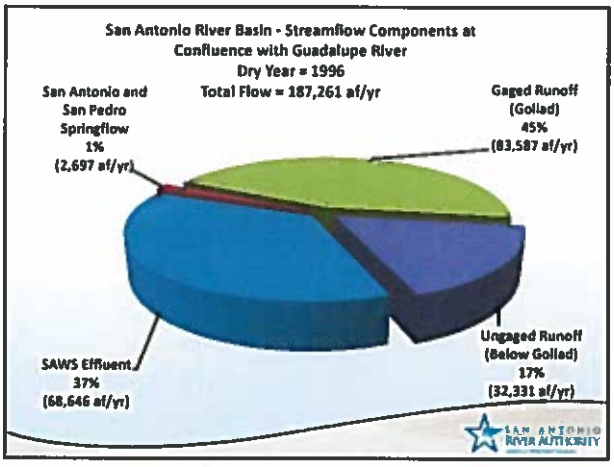
The Guadalupe-Blanco River Authority (GBRA) and Dow Chemical Company (Dow), individually and collectively, own surface water rights in the lower Guadalupe – San Antonio River Basin (the GBRA Lower Basin Water Rights) authorizing diversions totaling 175,501 acre-feet per year (acft/yr). Table 4C.13-1 lists the individual water rights owned by GBRA and Dow and provides their individual permit number, certificate of adjudication number, priority date, annual diversion, authorized uses, and ownership. Water available for diversion under these rights is governed by the complex interactions of natural, anthropogenic, and legal factors including rainfall, runoff, springflow, evaporation, aquifer recharge, diversions by other water right owners, reservoir operations, off-channel storage, treated effluent from municipal and industrial water users, terms and conditions of the water rights, and the prior appropriation doctrine as enforced by the South Texas Watermaster of the Texas Commission on Environmental Quality (TCEQ). Given that the GBRA Lower Basin Water Rights point of diversion near Tivoli is below the San Antonio River confluence and that they are senior in priority to most upstream water rights, it is recognized that they are quite reliable but not firm.

Table 4C.13-1.
GBRA Lower Basin Water Rights

Certificate of Adjudication	Priority Date	Annual Diversion (acft/yr)	Authorized Uses	Ownership
18-5173	2/3/1941	2,500	Irrigation/Industrial	GBRA/Dow
18-5174	6/15/1944	1,870	Irrigation/Industrial	GBRA/Dow
18-5175	2/13/1951	940	Irrigation/Industrial/ Mining/Livestock	GBRA/Dow
18-5176	6/21/1951	9,944	Irrigation/Industrial/ Municipal	GBRA/Dow
18-5177	1/3/1944	10,000	Irrigation/Industrial/ Municipal	Dow
	1/3/1944	32,615	Irrigation/Industrial/ Municipal	GBRA/Dow
	1/26/1948	8,632	Irrigation/Industrial	GBRA/Dow
18-5178	1/7/1952	106,000	Irrigation/Industrial/ Municipal	GBRA/Dow
18-3863	3/1/1951	3,000	Irrigation/Industrial/ Municipal	GBRA
18-5484	5/15/1964	N/A	Diversion Dam & Salt Water Barrier	GBRA


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Wet Year = 1992
Total Flow = 2,246,790 af/yr
Gaged Runoff (Goliad) 82% (1,842,027 af/yr)
San Antonio and San Pedro Springflow 3% (66,081 af/yr)
SAWS Effluent 5% (106,235 af/yr)
Ungaged Runoff (Below Goliad) 10% (232,447 af/yr)


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Average Year = 1994
Total Flow = 531,144 af/yr
Gaged Runoff (Goliad) 66% (349,683 af/yr)
San Antonio and San Pedro Springflow 3% (15,884 af/yr)
SAWS Effluent 15% (82,520 af/yr)
Ungaged Runoff (Below Goliad) 16% (83,057 af/yr)


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Dry Year = 1996
Total Flow = 187,261 af/yr
San Antonio and San Pedro Springflow 1% (2,697 af/yr)
Gaged Runoff (Goliad) 45% (83,587 af/yr)
SAWS Effluent 37% (68,646 af/yr)
Ungaged Runoff (Below Goliad) 17% (32,331 af/yr)

October 14, 2014

Mr. Con Mims
Chairman
South Central Texas Regional Water Planning Group
C/o Mr. Cole Ruiz
San Antonio River Authority
100 East Guenther
San Antonio, Texas 78204

Delivered via Electronic Mail

Re: Region L Reuse Workgroup Questions on GBRA Lower Basin Storage Project

Dear Mr. Mims:

Pursuant to your letter of September 9, 2014 and guidance provided therein, following are the Region L Reuse Workgroup questions assigned to HDR and HDR's responses to these questions.

1. What would be the impact on the yield of the project presented for consideration as an amendment to the 2011 plan without effluent contributions from the Guadalupe and San Antonio Rivers? Please detail the volume of effluent used to determine yield coming from each river?

Response: The reported firm yield of the GBRA Lower Basin Storage (500-acre site) project under the approved hydrologic assumptions for the 2011 Region L Water Plan (which include treated effluent at levels reported for 1997 adjusted to account for SAWS direct recycled water commitments) is 59,569 acft/yr. The assumed volumes of effluent (at their points of discharge) used in the calculation of this firm yield are 138,396 acft/yr in the San Antonio River Basin and 38,781 acft/yr in the Guadalupe River Basin. As discussed during the August 7, 2014 Region L meeting, the firm yield of this project without these effluent contributions would be about 49,000 acft/yr.

2. How many years in the modeling of the drought of record is the effluent from the San Antonio River and Guadalupe River relied upon to firm up the yield of the project?

Response: The firm yield of the project (with or without effluent) is based on a critical off-channel storage drawdown period of a few months in 1956. Hence, effluent is relied upon to firm up the yield of the project in only one year.

3. Please confirm and/or correct the accuracy of the volumes of contribution in the slides that HDR previously prepared and provide data for these contributions based on flows in 2006?

Response: New slides are attached illustrating the approximate relative contributions of gaged runoff, ungaged runoff, springflow, and SAWS effluent from the San Antonio River Basin to Guadalupe River in calendar years 1992, 1994, 1996, and 2006. Small corrections have been

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applied to the gaged runoff component estimates previously reported for calendar years 1992, 1994, and 1996.

4. What was the volume contribution of effluent in the rivers for the portion of the water right that would be used for this project at the time each of GBRA's existing water right permits were granted?

Response: There may be several water rights and a broad range of significant dates associated with this project, and the definition of "granted" may be interpreted in a variety of ways. Hopefully, the following list of dates, brief notes regarding significance, and estimated effluent volumes (at their points of discharge) in the river basins will provide some insights. Effluent volumes shown below were used in development of the natural streamflow files for the Texas Commission on Environmental Quality (TCEQ) Guadalupe – San Antonio River Basin Water Availability Model (GSA WAM).

1941 Earliest priority date among GBRA/Dow lower basin water rights.
7,488 (Guadalupe) + 26,400 (San Antonio) = 33,888 acft/yr.

1952 Latest priority date among GBRA/Dow lower basin water rights.
11,200 (Guadalupe) + 50,090 (San Antonio) = 61,290 acft/yr.

1984 Adjudication of Water Rights in the Lower Guadalupe River Basin.
24,741 (Guadalupe) + 148,884 (San Antonio) = 173,625 acft/yr.

2014 Amendment of GBRA/Dow water rights to authorize additional storage.
Effluent volumes not yet available.

5. Does GBRA's existing water right permit specifically mention a volume of effluent which was the basis of the granting of the permit?

Response: No.

6. If any utilities were to develop a project in the future, before the GBRA Lower Basin Project is operational, to increase the volume in their "purple pipe" system, or to store effluent for another water need and not discharged to the river, would the reliability of water from the Lower Basin storage project be impacted?

Response: Yes. Any reduction in the volume of effluent assumed for a baseline evaluation of GBRA Lower Basin Storage project water supply reliability would result in a reduction of such reliability compared to that baseline. The magnitude of the reduction in reliability would depend on the magnitude of the reduction in effluent.

7. Which other firm yield surface water management strategies in the 2011 plan will be impacted in the 2016 plan by the change in WAM modeling with no effluent in the model; list the projects and the potential change in firm yield.

Response: Following is a list of recommended water management strategies in the 2011 plan that, if technically evaluated for the 2016 plan, could be impacted by the exclusion of effluent. Potential changes in firm yield associated with effluent exclusion are unknown due to simultaneous integration of enhanced springflow associated with full implementation of the Edwards Aquifer Habitat Conservation Plan and/or other factors.

- Edwards Aquifer Recharge, Type 2 Projects – Not currently under consideration for the 2016 plan.
- Recycled Water Programs
- Wimberley & Woodcreek Water Supply Project

- Storage above Canyon Reservoir (ASR)
- GBRA-Exelon Project
- GBRA Lower Basin Storage (100-acre site) – Not currently under consideration for the 2016 plan.
- GBRA New Appropriation (Lower Basin)
- GBRA Mid-Basin (Surface Water)
- CRWA Siesta Project
- Medina Lake Firm-Up (ASR) – Not currently under consideration for the 2016 plan.
- Surface Water Rights
- Balancing Storage

There are two additional recommended water management strategies in the 2011 Region L plan for which the portions of the technical evaluation associated with water availability and firm yield were performed by other consultants (outside of Region L). Data available in our files is insufficient to determine whether the firm yield associated with these two water management strategies would be affected by effluent exclusion in the 2016 Region L plan.

- LCRA-SAWS Water Project – Not currently under consideration for the 2016 plan.
- Lavaca River Off-Channel Reservoir

8. Which groundwater water management projects in the 2011 plan will be impacted in the 2016 plan with the change in the rule that the existing MAG cannot be exceeded; list the projects and the potential change in the firm yield.

Response: Following is a list of recommended water management strategies in the 2011 Region L Plan that, if technically evaluated for the 2016 Region L plan, could be impacted by compliance with MAG estimates.

- Regional Carrizo for SAWS: 2011 WMS Yield = 11,687 acft/yr; 2016 Existing Supply Yield = 11,418 acft/yr; Minor MAG limitation at 2030.
- Regional Carrizo for SSLGC Project Expansion: 2011 WMS Yield = 10,364 acft/yr; 2016 WMS Yield = 6,500 acft/yr; Limitation by SSLGC choice.
- Hays/Caldwell PUA Project: 2011 WMS Yield = 35,000 acft/yr; 2016 WMS Yield = 21,833 acft/yr; MAG limitation.
- Local Groundwater Supplies: 2011 WMS Yield = 38,471 acft/yr; 2016 WMS Yield = 11,693 acft/yr; Multiple water user groups and source aquifers; MAG limitations and changes in projected needs.
- Brackish Wilcox Groundwater for SAWS: 2011 WMS Yield = 26,400 acft/yr; 2016 WMS Yield = 5,622 acft/yr; MAG limitation.
- Brackish Wilcox Groundwater for Regional Water Alliance: 2011 WMS Yield = 14,700 acft/yr; 2016 WMS Yield = 3,839 acft/yr; MAG limitation; Identified as Brackish Wilcox for CRWA in the 2016 plan.
- Brackish Wilcox Groundwater for SSWSC: 2011 WMS Yield = 1,120 acft/yr; 2016 WMS Yield = 0 acft/yr; MAG limitation.
- CRWA Wells Ranch Project: 2011 WMS Yield = 5,800 acft/yr; 2016 WMS Yield = 7,829 acft/yr; CRWA choice for expansion; MAG limitiation; Identified as Wells Ranch Phase 2 in the 2016 plan.
- TWA Regional Carrizo: 2011 WMS Yield = 21,000 acft/yr; 2016 WMS Yield = 14,680 acft/yr; Limitation by TWA choice and MAG at 2030.
- GBRA Simsboro Project – Not currently under consideration for the 2016 plan.

- LCRA-SAWS Water Project – Not currently under consideration for the 2016 plan.

9. What specific needs/WUGS in the 2011 Plan does the project serve? (Where does the project delivery stop?) What actual quantities serve the need? Are the needs served by other supply projects in the Plan? (This question, also, was sent to GBRA.)

Response: In the 2011 plan, the project [as part of "Purchase from WWP (GBRA)"] meets industrial needs in Victoria County ranging from 2,969 acft/yr in 2020 to 14,411 acft/yr in 2060 and Steam-Electric Power needs in Victoria County ranging from 1,791 acft/yr in 2010 to 1,950 acft/yr in 2060. Cost estimates are reported for raw water in the project reservoir or GBRA Main Canal. Existing GBRA pipeline transmission facilities with available capacity end in Calhoun County near the Victoria Barge Canal about five miles from the Victoria County line. The referenced needs are served only by Purchase from WWP (GBRA) in the 2011 plan.

10. Where is the associated delivery system for all customers? The submittal for the substituted reservoir does not show infrastructure to serve a WUG. What costs are added by the distribution system and how would it affect the unit cost? Does the project proposed for the amendment (the alternative 2011 GBRA Lower Basin Storage Project 500 acre size) meet Texas Water Development Board (TWDB) criteria for describing the transmission component?

Response: As water demand projections for industrial and steam-electric uses are made at the county level and actual sites for future industrial and steam-electric power generation facilities are unknown, cost estimates for delivery systems were not prepared and how such costs might affect the unit cost associated with the project is unknown. Since the TWDB reviewed and approved the 2011 plan including technical evaluations of both the recommended and alternative project formulations, HDR believes that TWDB criteria for describing the transmission components have been met.

11. What change in needs between the time this was made an alternate in the 2011 plan and the current request necessitate this change? Does GBRA's request to amend the 2011 plan to substitute the 500 acre Lower Basin Storage Project request any amendment to the needs evaluation of the 2011 Plan?

Response: Draft projected needs for Calhoun and Victoria counties in the 2016 plan are greater than those in the 2011 plan. In Calhoun County, projected industrial/manufacturing needs at year 2060 have increased from 2,021 acft/yr to 6,945 acft/yr. In Victoria County, projected industrial/manufacturing needs at year 2060 have decreased slightly from 14,441 acft/yr to 14,243 acft/yr. Also in Victoria County, projected steam-electric needs at year 2060 have increased from 51,076 acft/yr to 70,696 acft/yr. These increases in projected needs for additional water supply total 24,346 acft/yr. HDR is not aware of any request to amend the needs evaluation in the 2011 plan.

12. The "water management strategy summary sheet" for the 500 acre GBRA Lower Basin Storage strategy in the 2011 Region L plan states that the quantity of water from this strategy is 59,569 acft/yr and that the reliability is "firm."
    a. Is this estimate based on modeling that assumes the availability of return flows? If so what specific return flow assumptions were used?

Response: Yes. Assumed treated effluent quantities throughout the Guadalupe and San Antonio River Basins were those reported for calendar year 1997 after accounting for SAWS direct reuse contracts under their recycled water program.

b. Where is this modeling located in the Region L plan?

Response: This modeling is described in Section 4C.13 (i.e. the technical evaluation of the GBRA Lower Basin Storage Project) found in Volume 2 of the Region L plan.

c. Please define "firm" in this context.

Response: A good definition for firm yield in this context is available in the TWDB's First Amended General Guidelines for Regional Water Plan Development (October 2012) quoted as follows:

> *Reservoir firm yield is the maximum annual volume of water a reservoir can provide every year throughout a drought of record with existing water right permits using original reservoir capacity and under the assumption that senior water rights are satisfied first. "Firm" means that the use-appropriate monthly percentage of the annual firm diversion amount must be satisfied in each and every month of the estimation period (or a shorter period if it is used in the estimation) for all surface water diversions.*

d. Please explain the analysis used to characterize the reliability of this strategy as "firm."

Response: The analysis used to calculate the firm yield of this project is described in detail in Section 4C.13 of the Region L plan. In summary, it involves application of the GSA WAM subject to specified technical assumptions to assess water availability on a monthly timestep that is then disaggregated to a daily timestep for refined availability calculations constrained by assumed project facilities (i.e. diversion works and reservoir capacity) and ultimately used in daily reservoir contents simulations subject to net evaporation losses in order to ascertain the firm yield in accordance with the definition quoted above.

e. What role does the assumption of return flows play in the analysis characterizing the reliability as "firm?"

Response: Absent bed and banks transfer authorizations, return flows are a component of state water flowing in the river that is available for diversion, impoundment, and use in accordance with prior appropriation, provisions within GBRA's certificates of adjudication, and assumed project facilities constraints. If assumed return flows were less, then firm yield would be less. Similarly, if assumed return flows were greater, then firm yield would be greater.

13. Does the 2011 Region L plan state the quantity of water available from the 500 acre GBRA Lower Basin Storage strategy if return flows are subject to interruption due to reuse or other lawful reasons? If so what is the firm yield using this assumption, where is this stated, and where in the plan is this modeling located?

Response: No, the 2011 plan does not present a project firm yield estimate without effluent because that would be inconsistent with the approved hydrologic assumptions for the 2011 plan and no such estimate was requested by Region L or the project sponsor at that time. As stated during the August 7, 2014 Region L meeting, the estimated project firm yield without effluent (but subject to other approved hydrologic assumptions for the 2011 plan) would be about 49,000 acft/yr.

14. Does the 2011 plan identify the reliability of the 500 acre GBRA Lower Basin Storage strategy if return flows are subject to interruption due to reuse or other lawful reasons? If so what is this reliability and where is this stated?

Response: See response to question 13.

15. The “water management strategy summary sheet” for the 500 acre GBRA Lower Basin Storage Project in the 2011 Region L plan states that the unit cost of the water is $109 /acft/yr. The “cost estimate summary” that estimates this unit cost assumes a project yield of 59,569 acft/yr and a total annual cost of $6,519,000. The cost estimate summary states that the cost for “purchase of water” for this strategy is $0.
    a. Please confirm that the unit cost of water is calculated by dividing the total annual cost by the available project yield.

Response: Confirmed.

    b. Is the “purchase of water” heading on the cost estimate summary the place in the plan where cost of contracting to ensure return flows would be identified? If not, where would this cost be identified?

Response: Yes.

    c. Does the 2011 Region L plan state the unit cost of water for this strategy if the project yield is determined assuming that the return flows are subject to interruption by reuse or other lawful reasons?

Response: No.

    d. Does the 2011 Region L plan state the unit cost of water for this strategy if it is necessary for GBRA to enter into contractual arrangements with dischargers to ensure the continued availability of the return flows assumed to achieve the project yield of 59, 569 acft/yr?

Response: No.

16. The 2011 Region L plan states at page 4C.13-1, §4C.13-1 that the GBRA Lower Basin Water Rights that will be used in the Lower Basin Storage Project strategy are “quite reliable, but not firm”.
    a. Does the 2011 Region L plan quantify this reliability? If so where and what is it?

Response: Yes, the reliability of these rights is generally characterized on annual, monthly, and daily timesteps in Figures 4C.13-2, 4C.13-3, and 4C.13-4, respectively. More specific information regarding reliability of these water rights based on monthly timestep calculations is available in Appendix B entitled “Reliability Information for Surface Water Rights.” As shown in Figure 4C.13-4 and stated during the August 7, 2014 Region L meeting, the estimated firm yield of the GBRA/Dow water rights subject to approved hydrologic assumptions for the 2011 plan is about 41,000 acft/yr based on daily timestep calculations.

    b. Does this description of the reliability of those water rights assume the availability of return flows not subject to interruption?

Response: Yes.

    c. Does the 2011 Region L plan identify the reliability of these water rights if the return flows used in the modeling are subject to interruption due to reuse or other lawful reasons?

Response: No. As stated during the August 7, 2014 Region L meeting, the estimated firm yield of the GBRA/Dow water rights without the project and without effluent (but subject to other approved hydrologic assumptions for the 2011 plan) would be about 8,000 acft/yr.

17. Are there other strategies in the 2011 Region L plan that rely on return flows that include the potential source of those return flows or an estimate of the cost to contract for the use of those return flows? If so please identify those strategies and their location in the plan.

Response: In the 2011 plan, all surface water based water management strategies and existing supplies in the Guadalupe and San Antonio River Basins and having associated priority dates junior to 1944 rely on treated effluent to the extent that such effluent has been historically discharged (e.g., in 2006), is not committed to direct reuse, and is a component of state waters flowing in streams and rivers. Following is a list of recommended water management strategies (and their locations in the 2011 plan) affected by the presence or absence of treated effluent in streams and rivers:

- Edwards Aquifer Recharge – Type 2 Projects (Section 4C.4)
- Wimberley & Woodcreek Water Supply Project (Section 4C.8)
- Storage above Canyon Reservoir (ASR) (Section 4C.9)
- GBRA-Exelon Project (Section 4C.10)
- GBRA Lower Basin Storage (100-acre site) (Section 4C.13)
- GBRA New Appropriation (Lower Basin) (Section 4C.14)
- GBRA Mid-Basin (Surface Water) (Section 4C.15)
- CRWA Siesta Project (Section 4C.28)
- Medina Lake Firm-Up (ASR) (Section 4C.30)
- Surface Water Rights (Section 4C.32)

Only the CRWA Siesta Project specifies potential treated effluent sources (i.e. SARA and/or CCMA) and includes an estimated cost ($75/acft/yr) to contract for the exclusive use of this effluent under a bed and banks transfer authorization from TCEQ. The other projects and many existing surface water supplies are affected by the presence or absence of treated effluent as a component of state waters in streams and rivers in accordance with their non-exclusive access to such state waters based on relative seniorities within the prior appropriation system for surface water rights.

18. What specific water needs in the 2011 Region L plan is GBRA's Lower Basin Storage project intended to meet?

Response: In the 2011 plan, the project [as part of "Purchase from WWP (GBRA)"] is intended to meet industrial needs in Victoria County ranging from 2,969 acft/yr in 2020 to 14,411 acft/yr in 2060 and Steam-Electric Power needs in Victoria County ranging from 1,791 acft/yr in 2010 to 1,950 acft/yr in 2060.

19. What request, correspondence, data or analysis was used to identify and quantify those needs? Where in the plan are these located?

Response: TWDB projections of demand were compared to existing water supplies to calculate needs for additional water supply. Victoria County industrial needs to be met by GBRA through the project are shown in Table 4B.2.19-6 and Victoria County steam-electric needs to be met by GBRA through the project are shown in Table 4B.2.19-8. GBRA, as the only wholesale water provider (WWP) serving this area, chose to plan for meeting these (and other) projected needs as reflected in Table 4A-3. GBRA's intent to plan for meeting these needs was communicated to HDR during one of a series of coordination meetings that HDR has with each WWP as part of the development of each regional plan.

20. What were the WAM model assumptions that went into the modeling of the lower basin storage project?

Response: Technical assumptions used for applications of the GSA WAM in evaluation of this project are summarized in Section 4C.13 (page 4C.13-3) of the 2011 plan. Treated effluent quantities reported for calendar year 1997 after accounting for SAWS direct reuse contracts under their recycled water program.

21. Do the firm yield assumptions include full implementation of the HCP components including spring flow implementation?

Response: No.

22. What is the earliest identified decade of need in the 2011 Region L plan for the Lower Basin Storage project?

Response: Project is shown in the 2011 plan as being operational by year 2030.

23. When did HDR first become aware of GBRA's interest in substituting in the 2011 Region L plan the 500 acre site for the 100 acre site for the Lower Basin Storage Project?
    a. What role did HDR play in developing GBRA's request for this substitution and what specific actions did HDR take?

Response: HDR became aware of GBRA's decision to request this substitution in the 2011 plan on April 30, 2014. Pursuant to GBRA's request on that date, HDR reviewed a draft letter from GBRA to Region L Chairman Mims requesting the substitution and provided comments, along with the TWDB's Water Planning Rules (31 TAC) and Texas Statute Reference Pamphlet for Regional Water Planning, in electronic format.

Should you or the Reuse Workgroup require additional information, please contact Brian Perkins or me at your convenience.

Sincerely,
HDR Engineering, Inc.

Samuel K. Vaugh, P.E.
Vice President

Cc: David Meesey, Texas Water Development Board
Steve Raabe, San Antonio River Authority
Bill West, Guadalupe-Blanco River Authority

Attachment

Region L
South Central Texas Regional Water Planning Group

c/o San Antonio River Authority
P.O. Box 839980
San Antonio, Texas 78283-9980

(210) 227-1373 Office
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www.RegionLTexas.org

September 9, 2014

Bill West, General Manager
Guadalupe-Blanco River Authority
933 East Court Street
Seguin, Texas 78155

RE: Region L Reuse Workgroup Questions on GBRA Lower Basin Storage Project

Dear Bill:

At the August 7, 2014 meeting of the South Central Texas Regional Water Planning Group (Region L), Guadalupe-Blanco River Authority (GBRA) requested that Region L's 2011 Regional Water Plan (Plan) be amended to replace the recommended GBRA Lower Basin Storage Project 100 acre water management strategy (WMS) with the alternative 500 acre WMS.

In discussing this request, it became clear that the planning group would not be in a position to recommend this Plan amendment at its November 6, 2014 meeting without having answers to a number of questions. Consequently, I created what has become known as the Reuse Workgroup to develop a list of questions to submit to HDR Engineering, Inc., (HDR) to obtain answers that the Workgroup believes are important in considering this Plan amendment request.

A preliminary list of questions was developed prior to the Workgroup's first meeting, held yesterday. They were forwarded to HDR to determine, among other things, if they were being directed to the proper entity, being HDR. HDR responded, and the Workgroup agreed, that the following questions needed to be directed to GBRA:

1. Would GBRA be willing to submit for 2011 plan amendment, the 2016 non-effluent 500 acre storage project presented at the August 2014 planning group meeting rather than the alternate 500 acre storage project in the 2011 plan?

2. What specific needs/WUGS in the 2011 Plan does the project serve? (The Workgroup is submitting this question to both GBRA and HDR.)

3. If the need is not experienced until 2030, why is this needed as an amendment to the 2011 plan vs. being addressed in the 2016 plan?

4. Has GBRA evaluated the feasibility of GBRA's Lower Basin Storage Project under the assumption that effluent return flows upstream of GBRA's diversion points are subject to interruption by reuse or other lawful purposes? What did GBRA conclude about the feasibility of GBRA's Lower Basin Storage Project under this assumption? (Note: HDR responded that it does not determine project feasibility. Accordingly, the Workgroup agreed to submit these questions to GBRA; i.e. what is GBRA's conclusion about the project feasibility under the stated assumption?)

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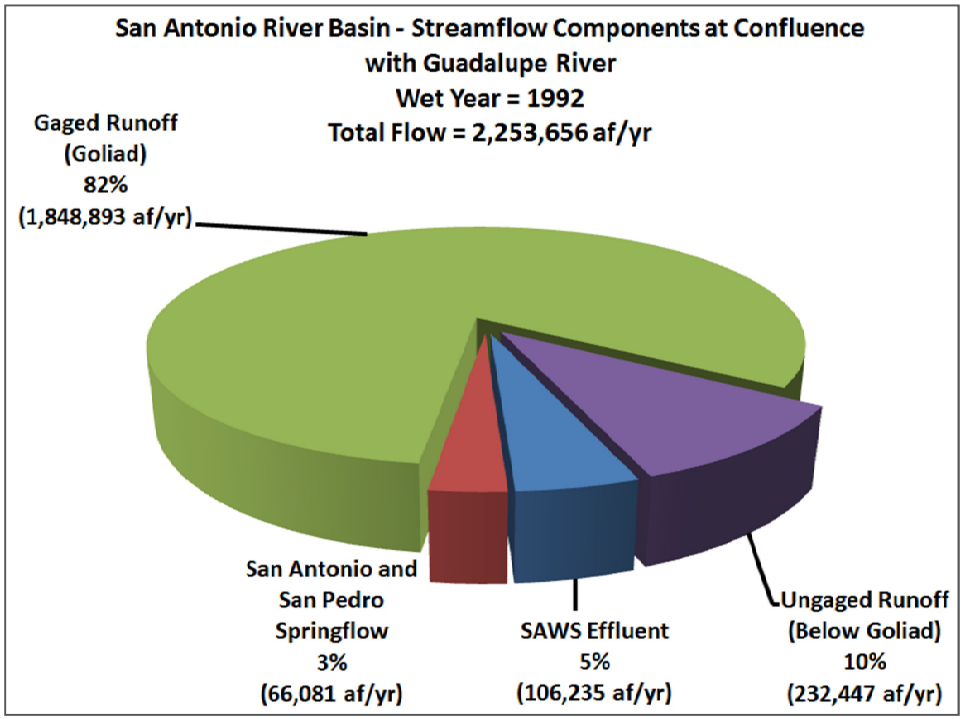
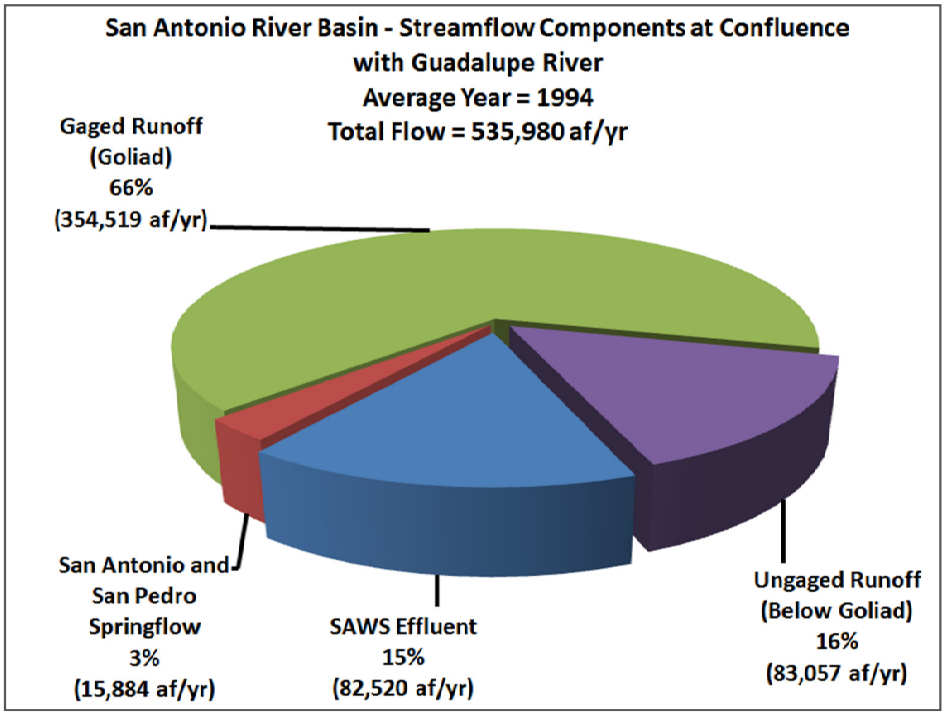
Your assisting the Workgroup by answering these questions will be greatly appreciated. Certainly, the more promptly and directly these questions can be answered, the better prepared the planning group will be to respond to this 2011 Plan amendment request. Please email your responses to me at cmims@nueces-ra.org. Thanks.

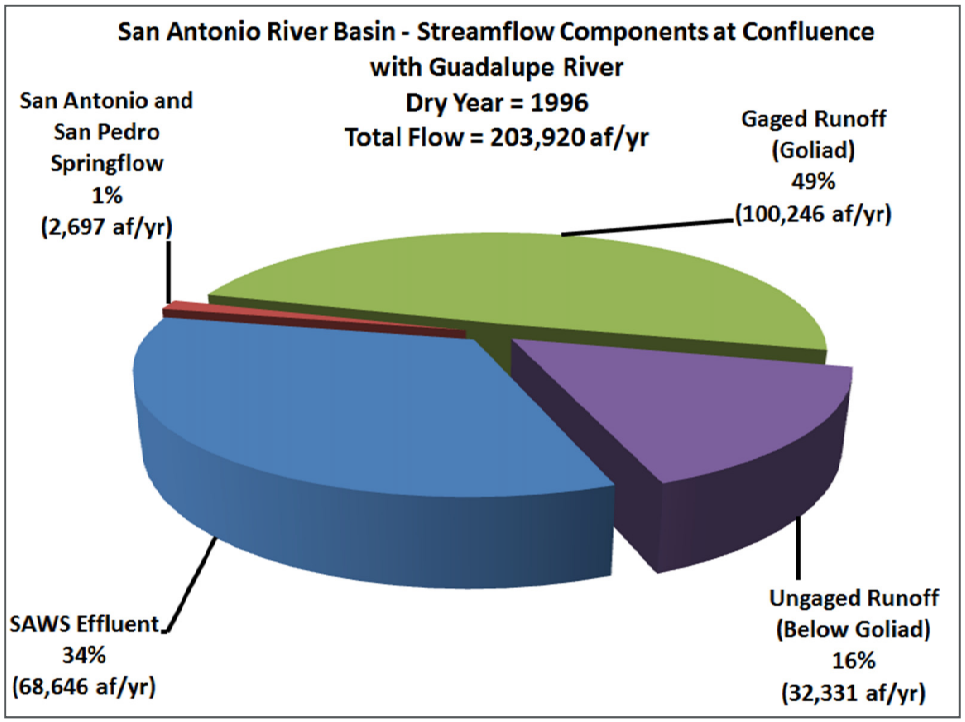
Sincerely,

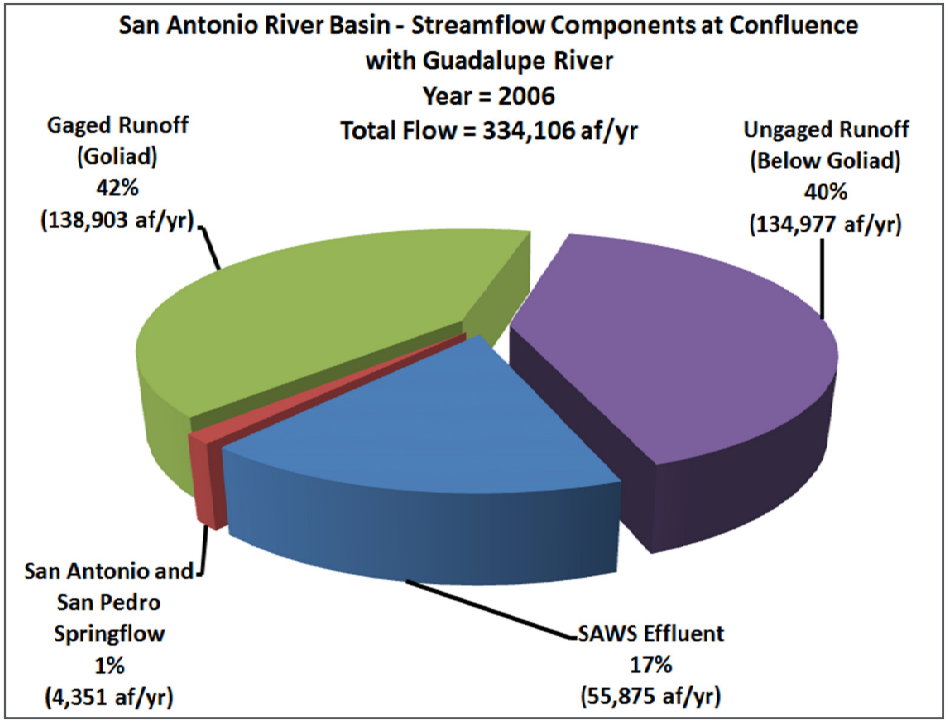
Con Mims, Chair
Region L

cc: David Meesey, Manager, Regional Water Planning (TWDB)
Steve Raabe, PE, Director, Technical Services (SARA)
Brian Perkins, PE, Water Resources Engineer, HDR Engineering, Inc.
Region L Reuse Workgroup


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Wet Year = 1992
Total Flow = 2,253,656 af/yr
Gaged Runoff (Goliad) 82% (1,848,893 af/yr)
San Antonio and San Pedro Springflow 3% (66,081 af/yr)
SAWS Effluent 5% (106,235 af/yr)
Ungaged Runoff (Below Goliad) 10% (232,447 af/yr)


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Average Year = 1994
Total Flow = 535,980 af/yr
Gaged Runoff (Goliad) 66% (354,519 af/yr)
San Antonio and San Pedro Springflow 3% (15,884 af/yr)
SAWS Effluent 15% (82,520 af/yr)
Ungaged Runoff (Below Goliad) 16% (83,057 af/yr)


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Dry Year = 1996
Total Flow = 203,920 af/yr
San Antonio and San Pedro Springflow 1% (2,697 af/yr)
Gaged Runoff (Goliad) 49% (100,246 af/yr)
SAWS Effluent 34% (68,646 af/yr)
Ungaged Runoff (Below Goliad) 16% (32,331 af/yr)


San Antonio River Basin - Streamflow Components at Confluence with Guadalupe River
Year = 2006
Total Flow = 334,106 af/yr
Gaged Runoff (Goliad) 42% (138,903 af/yr)
Ungaged Runoff (Below Goliad) 40% (134,977 af/yr)
San Antonio and San Pedro Springflow 1% (4,351 af/yr)
SAWS Effluent 17% (55,875 af/yr)

September 11, 2014

Con Mims
c/o San Antonio River Authority
P.O. Box 839980
San Antonio, TX 78283

Dear Con,

Thank you for your letter of September 9, 2014. I have included below answers to questions submitted by the Region L Workgroup. I have omitted restating the questions in the interest of brevity.

Question 1 –GBRA is not "willing to submit for the 2011 plan amendment the 2016 non-effluent 500 acre storage project presented at the August 2014 planning group meeting." GBRA prefers to submit the amendment to the 2011 plan using the rules adopted for the 2011 plan.

Question 2 – Industrial customers in Calhoun and Victoria Counties.

Question 3 – The ongoing drought, which has stressed our industrial customers and others, ongoing activity in the Eagle Ford Shale, and a significant increase in commercial and industrial real estate activity along the Texas Coast Bend in the last 3-4 years necessitate moving forward to design and possibly construction in 2015. This project cannot wait on potential TWDB funds until 2017.

Question 4 – Significant uncertainty lingers about the State of Texas allowing the San Antonio Water System (SAWS) to capture 100% of the water it pumps from the Edwards Aquifer and/or discharges into the San Antonio River. Allowing SAWS to claim title to water discharged from its wastewater treatment facilities would have the effect of transforming previously firm surface water rights into interruptible water rights of limited or no value. This course of action would create chaos in the State's administration of water rights, comparable to the outcome had the Aransas Project prevailed in its Endangered Species Act litigation. It is unlikely the State would choose to follow that path.

Please advise if I may be of further assistance in this matter. I am confident that the more the Region L members know about our project, the more likely it is that they will accede to GBRA's 2011 Plan Amendment request.

Sincerely,

W.E. West, Jr.
General Manager

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GBRA Guadalupe-Blanco River Authority
flowing solutions

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September 9, 2014

David Meesey
Texas Water Development Board
1700 North Congress Avenue
P.O. Box 13231
Austin, TX 78711-3231

RE: Region L Reuse Workgroup Questions on GBRA Lower Basin Storage Project

Dear David:

At the August 7, 2014 meeting of the South Central Texas Regional Water Planning Group (Region L), Guadalupe-Blanco River Authority (GBRA) requested that Region L's 2011 Regional Water Plan (Plan) be amended to replace the recommended GBRA Lower Basin Storage Project 100 acre water management strategy (WMS) with the alternative 500 acre WMS.

In discussing this request, it became clear that the planning group would not be in a position to recommend this Plan amendment at its November 6, 2014 meeting without having answers to a number of questions. Consequently, I created what has become known as the Reuse Workgroup to develop a list of questions to submit to our technical consultants, HDR Engineering, Inc., (HDR), to obtain answers that the Workgroup believes are important in considering this Plan amendment request.

A preliminary list of questions was developed prior to the Workgroup's first meeting, held yesterday. They were forwarded to HDR to determine, among other things, if they were being directed to the proper entity, being HDR. HDR responded, and the Workgroup agreed, that the following questions needed to be directed to Texas Water Development Board:

1. If the GBRA Lower Basin Storage Project in the 2011 configuration relies on the flow from SAWS effluent for yield, and, hypothetically, if SAWS was able to request an amendment to the 2011 plan for a project using that effluent to meet a water need, how would that be handled, given in the planning process two water projects cannot rely on the same water?

2. How would the planning process deal with who has claim to the (SAWS effluent) water?

3. If SAWS was to submit (in the future) an effluent based project as an amendment to the 2016 plan and the GBRA (lower basin) storage project is in the 2016 plan, the restriction of two projects relying on the same water supply would not apply for the 2016 plan (for these two projects) because the effluent is not considered a water source for the GBRA project (effluent may not be used in calculating a project yield) in the 2016 plan, is that correct?

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4. How would the 2011 regional plan (which allows use of effluent in project yield calculations) reflect that a source of water relied upon for a project (such as effluent) is not guaranteed to be available for a project (because it can be reused)? Is that reflected in the reliability of the firm yield of the project?

5. Based on the current TWDB rules for submission of plan amendments, is it a requirement to include the new information known about the project given the change in the 2016 planning parameters?

6. Is amending the 2011 plan, now, instead of waiting for the 2016 plan a way to circumvent the 2016 planning parameters?

7. How does TWDB account for changes in projects from plan year to plan year as planning parameters change?

8. Can an amended water plan or a TWDB loan be used in in any way to indicate State support for the project? Or a guarantee that the project is in some way endorsed by the State for the purposes of permitting, legal action or waiver of compliance with other legislative laws, administrative practices—can the project be seen as grandfathered in any way and not subject to challenge through other actions?

Your assisting the Workgroup by answering these questions will be greatly appreciated. Certainly, the more promptly and directly these questions can be answered, the better prepared the planning group will be to respond to this 2011 Plan amendment request. I realize that some of these questions may be difficult to understand, since you were not involved with the Workgroup discussions. If you need any clarifications, please contact me. You may email your responses to me at cmims@nueces-ra.org. Thanks.

Sincerely,

Con Mims, Chair
Region L

cc: Steve Raabe, PE, Director, Technical Services (SARA)
Brian Perkins, PE, Water Resources Engineer, HDR Engineering, Inc.
Region L Reuse Workgroup

Region L
South Central Texas Regional Water Planning Group

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September 9, 2014

David Meesey
Texas Water Development Board
1700 North Congress Avenue
P.O. Box 13231
Austin, TX 78711-3231

RE: Region L Reuse Workgroup Questions on Underpinnings of TWDB Rules and Requirements

Dear David:

As you recall, at the August 7, 2014 Region L planning group meeting a workgroup was tasked with developing a set of questions for the planning group's technical consultants regarding water management strategies that rely on use of discharged effluent.

At the workgroup's meeting on September 4, 2014, the participants raised the following questions that relate to rules and requirements of the Texas Water Development Board:

1. In the case where multiple water management strategies are available to meet a single water user group's need, and each of the strategies can, individually, meet the water user's need, may the planning group designate multiple strategies as recommended strategies for that user group? In other words, may the planning group designate multiple recommended strategies for a user group, the total supply of which exceeds the user group's needs?
2. Was the distinction of alternate vs. recommended water supply strategies created to prevent double or triple serving the same unmet need?
3. If the end water user group is a water utility holding a CCN and it selects the project(s) to serve it, can other entities list that utility as the end water users of other proposed projects to serve their needs without their consent?
    a. Who makes the determination in the plan of which projects will serve a given need (CCN holders, WUGs, or the Planning Group)?
4. To what point in the delivery system to a water user group does a water management strategy have to reflect project costs? This is particularly pertinent to meeting future needs of water user groups within a county or region where exact locations of those needs are not known.

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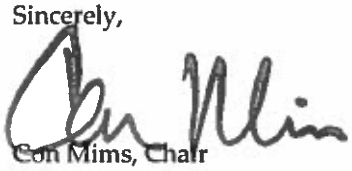
We would appreciate TWDB's guidance on these questions. If you need clarification, please contact Steve Raabe at sraabe@sara-tx.org. We would appreciate an expedited response so the workgroup can be prepared to discuss these points at our November meeting.

Sincerely,



Con Mims, Chair
Region L

cc: Steve Raabe, PE, Director, Technical Services (SARA)
Brian Perkins, PE, Water Resources Engineer, HDR Engineering, Inc.
Region L Reuse Workgroup

Texas Water Development Board

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Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

September 23, 2014

Mr. Con Mims
Chairman
South Central Regional Water Planning Group
C/O San Antonio River Authority
P.O. Box 839980
San Antonio, Texas 78283-9980

Dear Chairman Mims:

We received both of your letters dated September 9, 2014 which ask questions related to fundamental issues about the water planning process as well as questions related to the Guadalupe-Blanco River Authority (GBRA) storage project.

TWDB staff has reviewed these questions and prepared responses, which are enclosed. Our responses are intended to provide you and the South Central Texas Regional Water Planning Group (Region L) with sufficient information to make any necessary regional water planning decisions.

Thank you for letter and your continued support of the regional water planning process. If you have any questions or wish to discuss any of these issues further, please contact David Meesey, Region L project manager at (512) 936-0852 or david.meesey@twdb.texas.gov.

Sincerely,

Jeff Walker
Deputy Executive Administrator
Water Supply and Infrastructure

Enclosures

Cc: David Meesey, TWDB

Guadalupe-Blanco River Authority Storage Project

Below are responses from the Texas Water Development Board (TWDB) regarding questions from the Region L Reuse Workgroup regarding the Guadalupe-Blanco River Authority (GBRA) Storage Project.

1. If the GBRA Lower Basin Storage Project in the 2011 configuration relies on the flow from SAWS' effluent for yield, and, hypothetically, if the San Antonio Water Supply (SAWS) was able to request an amendment to the 2011 plan for a project using that effluent to meet a water need, how would that be handled, given in the planning process two water projects cannot rely on the same water?

   TWDB: The decision to amend the 2011 Region L plan is a decision that must be made by the Region L planning group. In making this decision, the group might have to reconcile the two projects to ensure that the available water supply is not over-allocated.

2. How would the planning process deal with who has claim to the (SAWS effluent) water?

   TWDB: For planning purposes, the determination of which water management strategies are included in a regional water plan is at the discretion of the regional water planning group, as long as the water supply is not over-allocated. The Texas Commission on Environmental Quality is the agency that administers surface water rights and permits for surface water diversions.

3. If SAWS was to submit (in the future) an effluent-based project as an amendment to the 2016 plan and the GBRA (lower basin) storage project is in the 2016 plan, the restriction of two projects relying on the same water supply would not apply for the 2016 plan (for these two projects) because the effluent is not considered a water source for the GBRA project (effluent may not be used in calculating a project yield) in the 2016 plan, is that correct?

   TWDB: Two recommended projects cannot rely on the same water supply in a way that would over-allocate the source. The regional water planning group must decide how to allocate water supply availability in its plan.

4. How would the 2011 regional plan (which allows use of effluent in project yield calculations) reflect that a source of water relied upon for a project (such as effluent) is not guaranteed to be available for a project (because it can be reused)? Is that reflected in the reliability of the firm yield of the project?

   TWDB: Firm yields of the 2011 Regional L Regional Water Plan projects are based on the modeling assumptions that were requested by the Region L planning group and approved by TWDB in July 2009.

5. Based on the current TWDB rules for submission of plan amendments, is it a requirement to include the new information known about the project given the change in the 2016 planning parameters?

   TWDB: This question is unclear. Generally speaking, use of the most current information in developing regional water plans is recommended, however hydrologic assumptions approved by TWDN for use in developing the 2011 plan would also be applied to any amendment to that same 2011 plan.

6. Is amending the 2011 plan, now, instead of waiting for the 2016 plan a way to circumvent the 2016 planning parameters?

   TWDB: A regional water planning group may choose to amend its plan at any time. As long as, a planning group follows the TWDB guidelines for amendments in place for each planning cycle, we do not consider the planning process to be circumvented.

7. How does TWDB account for changes in projects from plan year to plan year as planning parameters change?

   TWDB: The planning group makes the decision regarding how projects change from plan to plan and which projects to include in each regional water plan. If the projects included in a plan are developed in accordance with the TWDB requirements for that planning cycle, the plan may be approved.

8. Can an amended water plan or a TWDB loan be used in in any way to indicate State support for the project? Or a guarantee that the project is in some way endorsed by the State for the purposes of permitting, legal action or waiver of compliance with other legislative laws, administrative practices-can the project be seen as grandfathered in any way and not subject to challenge through other actions?

   TWDB: Funding from TWDB is provided to sponsors for projects that qualify to receive loans under the associated agency funding programs. TWDB funding is not in any way an endorsement of any particular project and does not create a basis for avoiding compliance with regulations or laws.

Texas Water Development Board Rules and Requirements

Below are responses from the Texas Water Development Board (TWDB) regarding questions from the Region L Reuse Workgroup regarding the TWDB's water planning rules and requirements.

1. In the case where multiple water management strategies are available to meet a single water user group's need, and each of the strategies can, individually, meet the water user's need, may the planning group designate multiple strategies as recommended strategies for that user group? In other words, may the planning group designate multiple recommended strategies for a user group, the total supply of which exceeds the user group's needs?

   TWDB: Yes.

2. Was the distinction of alternate vs. recommended water supply strategies created to prevent double or triple serving the same unmet need?

   TWDB: Not that we are aware of.

3. If the end water user group is a water utility holding a CCN and it selects the project(s) to serve it, can other entities list that utility as the end water users of other proposed projects to serve their needs without their consent?

   TWDB: The decision is up to the regional water planning group.

3a. Who makes the determination in the regional water plan of which projects will serve a given need (CCN holders, WUGs, or the Planning Group)?

   TWDB: The regional water planning group.

4. To what point in the delivery system to a water user group does a water management strategy have to reflect project costs? This is particularly pertinent to meeting future needs of water user groups within a county or region where exact locations of those needs are not known.

   TWDB: The planning group and its consultants shall use the best information available as to where water will be conveyed to water user groups and sometimes must rely on best professional judgment.

Texas Water Development Board

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October 9, 2014

Mr. Con Mims
Chairman
South Central Regional Water Planning Group
C/O San Antonio River Authority
P.O. Box 839980
San Antonio, Texas 78283-9980

Dear Chairman Mims:

This follow-up letter provides supplemental information to our September 23rd response, in which we answered your questions related to the Guadalupe-Blanco River Authority storage project.

Our staff has further reviewed these questions and elaborated on our original responses. Our original responses have not changed, instead the revised responses, which are enclosed, provide additional detail and cite specific sections in the Texas Administrative Code. This information is intended to further assist you and the South Central Texas Regional Water Planning Group (Region L) in making any necessary regional water planning decisions.

Thank you for your letter and your continued support of the regional water planning process. If you have any questions or wish to discuss any of these issues further, please contact David Meesey, Region L project manager at (512) 936-0852 or david.meesey@twdb.texas.gov.

Sincerely,

Kevin Patteson
Executive Administrator

Enclosures

Cc: David Meesey, TWDB

Texas Water Development Board Rules and Requirements

Below are responses from the Texas Water Development Board (TWDB) regarding questions from the Region L Reuse Workgroup regarding the TWDB's water planning rules and requirements.

1. In the case where multiple water management strategies are available to meet a single water user group's need, and each of the strategies can, individually, meet the water user's need, may the planning group designate multiple strategies as recommended strategies for that user group? In other words, may the planning group designate multiple recommended strategies for a user group, the total supply of which exceeds the user group's needs?

   TWDB response: There is nothing in statute or rule that precludes that option. Note that the 2011 Region L Regional Water Plan included a greater recommended strategy water supply volume than was required to meet identified water needs in the plan as illustrated by Figure ES-8 in the 2011 Region L Regional Water Plan.

2. Was the distinction of alternate vs. recommended water supply strategies created to prevent double or triple serving the same unmet need?

   TWDB response: 31 TAC § 357 does not include a reason for having the distinction between alternative and recommended strategies. An "unmet need" is an unidentified water need that would remain unmet even after the implementation of all recommended water strategies per 31 TAC § 357.40(c). Staff understands that the purpose of having alternative strategies was to expedite the regional water plan amendment process in certain instances. Per the previous response, there is nothing in statute or rule that precludes recommending water supply volumes from water management strategies that exceed the associated needs.

3. If the end water user group is a water utility holding a CCN and it selects the project(s) to serve it, can other entities list that utility as the end water users of other proposed projects to serve their needs without their consent?

   TWDB response: The regional water planning groups make the decision regarding which entities are associated with which strategy in their regional water plans per 31 TAC § 357.35 taking into consideration local and regional water plans, for example, per 31 TAC § 357.22(a) and 31 TAC § 358.3. Rules do not require "consent" from a political subdivision to associate a recommended strategy with that political subdivision, however 31 TAC § 357.35(e) addresses objections by political subdivision to being associated with recommended strategies as follows:

   > *"Specific recommendations of water management strategies to meet an identified need will not be shown as meeting a need for a political subdivision if the political subdivision in question objects to inclusion of the strategy for the political subdivision and specifies its reasons for such objection. This does not prevent the inclusion of the strategy to meet other needs."*

3a. Who makes the determination in the regional water plan of which projects will serve a given need (CCN holders, WUGs, or the Planning Group)?

TWDB response: The regional water planning group in accordance with all local regional water planning rules.

4. To what point in the delivery system to a water user group does a water management strategy have to reflect project costs? This is particularly pertinent to meeting future needs of water user groups within a county or region where exact locations of those needs are not known.

TWDB response: The regional water planning group and its consultants shall use the best information available as to where recommended water management strategy supplies will be conveyed to each water user group per 31 TAC § 357.34(d)(3)(A). For example, a recommended water management strategy that is to supply water to a specific municipal water user group of greater than 500 population shall include the costs of conveying that water at least to within the vicinity of that specific municipal water group's future distribution system (e.g., to the main water treatment plant) whether it would rely on existing infrastructure or require new proposed infrastructure. Sometimes the regional water planning group and their consultants must rely on best professional judgment to select a best planning location.

Guadalupe-Blanco River Authority Storage Project

Below are responses from the Texas Water Development Board (TWDB) regarding questions from the Region L Reuse Workgroup regarding the Guadalupe-Blanco River Authority (GBRA) Storage Project.

1. If the GBRA Lower Basin Storage Project in the 2011 configuration relies on the flow from SAWS' effluent for yield and, hypothetically, if the San Antonio Water Supply (SAWS) was able to request an amendment to the 2011 plan for a project using that effluent to meet a water need, how would that be handled, given in the planning process two water projects cannot rely on the same water?

   TWDB response: The decision to amend the 2011 Region L Regional Water Plan is a decision that must be made by the Region L Regional Water Planning Group. In making this decision, the group might have to reconcile the two projects to ensure that the water source is not over-allocated per TWC 16.051(a) and 31 TAC § 357.10(16).

2. How would the planning process deal with who has claim to the (SAWS effluent) water?

   TWDB response: For planning purposes, the determination of which water management strategies are included in a regional water plan is at the discretion of the regional water planning group, as long as the water source is not over-allocated per TWC 16.051(a) and 31 TAC § 357.10(16). The Texas Commission on Environmental Quality is the agency that administers surface water rights and permits for surface water diversions.

3. If SAWS was to submit (in the future) an effluent-based project as an amendment to the 2016 plan and the GBRA (lower basin) storage project is in the 2016 plan, the restriction of two projects relying on the same water supply would not apply for the 2016 plan (for these two projects) because the effluent is not considered a water source for the GBRA project (effluent may not be used in calculating a project yield) in the 2016 plan, is that correct?

   TWDB response: Regional water planning groups cannot recommend water management strategies that would over-allocate a water source per TWC 16.051(a) and TAC 31 § 357.10(15, 16). The regional water planning group must decide how to allocate water availability in its plan.

4. How would the 2011 regional plan (which allows use of effluent in project yield calculations) reflect that a source of water relied upon for a project (such as effluent) is not guaranteed to be available for a project (because it can be reused)? Is that reflected in the reliability of the firm yield of the project?

   TWDB response: Firm yields of the 2011 Regional L Regional Water Plan projects are based on the modeling assumptions that were requested by the Region L Regional Water Planning Group and approved by TWDB in July 2009 per 31 TAC § 357.32(c).

5. Based on the current TWDB rules for submission of plan amendments, is it a requirement to include the new information known about the project given the change in the 2016 planning parameters?

   TWDB response: Generally speaking, use of the most current information in developing regional water plans is recommended. However, hydrologic assumptions requested by the Region L Regional Water Planning Group and approved by TWDB in July 2009 per 31 TAC § 357.32(c) for use in developing the 2011 regional water plan would also be applied to any amendment to that same 2011Region L Regional Water Plan for which those hydrologic assumptions were approved.

6. Is amending the 2011 plan, now, instead of waiting for the 2016 plan a way to circumvent the 2016 planning parameters?

   TWDB: A regional water planning group may choose to amend its regional water plan at any time per TWC § 16.053(h) and 31 TAC § 357.51. As long as a planning group adheres to the statute and rules for making regional water plan amendments, we do not consider the regional water planning process to be circumvented.

7. How does TWDB account for changes in projects from plan year to plan year as planning parameters change?

   TWDB response: The regional water planning groups make the decision regarding how projects change from one regional water plan to another and which projects to include in each regional water plan per 31 TAC § 357.34-35. A regional water plan must be developed in accordance with the statute and rules that are in place for that planning cycle in order for the TWDB to approve the regional water plan.

8. Can an amended water plan or a TWDB loan be used in any way to indicate State support for the project? Or a guarantee that the project is in some way endorsed by the State for the purposes of permitting, legal action or waiver of compliance with other legislative laws, administrative practices-can the project be seen as grandfathered in any way and not subject to challenge through other actions?

   TWDB response: Funding from TWDB is provided to sponsors for projects that qualify to receive loans under the associated agency funding programs. TWDB funding is not in any way an endorsement of any particular project for the purposes of permitting and does not create a basis for avoiding compliance with regulations or laws, or a basis for potential legal causes of action,

Public Meeting

Discussion and Appropriate Action Regarding the Guadalupe-Blanco River Authority's (GBRA) Proposed Minor Amendment of the Integrated Water Power Project to the 2011 Regional Water Plan

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

October 21, 2014

Mr. Con Mims
Region L Chair
Nueces River Authority
200 E. Nopal, Suite 206
Uvalde, Texas 78802

Re: Region L's written request, received August 20, 2014, for approval of a minor amendment to the 2011 Region L Regional Water Plan for the Guadalupe-Blanco River Authority (GBRA) Integrated Water Power Project (IWPP) as a new recommended water management strategy under 31 TAC §357.51(c).

Dear Chairman Mims:

The Texas Water Development Board (TWDB) has reviewed Region L's request for a minor amendment determination for the GBRA's Integrated Water-Power Project. According to the information submitted to TWDB, staff understands that the proposed amendment to the 2011 Region L Regional Water Plan:

- would assume delivery of 50,000 acre-feet/year of the total 100,000 acre-feet/year supply to Gonzales County;
- does not include in the $2,290 per acre-foot unit cost the additional costs of infrastructure that would be required to deliver the Gonzales County supply volume to water user groups; and,
- would not involve assignment of any portion of the additional Gonzalez County or Calhoun County water supply volumes to specific municipal or other water user groups in the regional plan (or, accordingly, the state water planning database (DB12)).

Based on Region L's request and supporting materials, TWDB has determined that adding GBRA's Integrated Water-Power Project as a recommended water management strategy constitutes a minor amendment under 31 TAC §357.51(c). If Region L adopts the proposed minor amendment, Region L will need to:

1. Provide the (TWDB) with documentation of the planning group action adopting this water management strategy as a minor amendment;
2. Issue and distribute an addendum to the 2011 Region L Regional Water Plan updating the plan accordingly;
3. Provide TWDB with corrected DB12 data to reflect all the associated changes to the 2011 Region L Regional Water Plan and the 2012 State Water Plan; and,

4. Request that the Guadalupe-Blanco River Authority obtain a web link from TWDB staff in order to fill out an associated online Infrastructure Financing Survey regarding how the entity plans to finance the projects associated with the amendment.

If Region L makes any substantive changes to the project components or configuration during the minor amendment process, TWDB will need to review the modified proposed amendment to ensure that the modified project still meets all of the criteria under 31 TAC §357.51(c).

If you have any questions concerning this approval or its associated requirements, please contact David Meesey, the Board's designated regional water planning project manager for this region.

Sincerely,

Kevin Patteson
Executive Administrator

cc: Ms. Suzanne Scott, General Manager, San Antonio River Authority
David Meesey, TWDB

GBRA Integrated Water Power Project (IWPP) Requested Amendment of the 2011 Region L Water Plan

- **Requested Amendment:**
  - Addition of a seawater desalination Water Management Strategy co-located with a power generation facility in Calhoun County, capable of delivering up to 100,000 acft/yr of treated water
  - GBRA seeks a minor amendment to the 2011 SCTRWP

GBRA IWPP – Minor Amendment Determination

Per TWDB rules for regional water planning, an amendment is minor if it meets the following criteria:

A. "Does not result in over-allocation of an existing or planned source of water"
- GBRA intends to divert seawater from the Gulf of Mexico. This source will not be over-allocated.

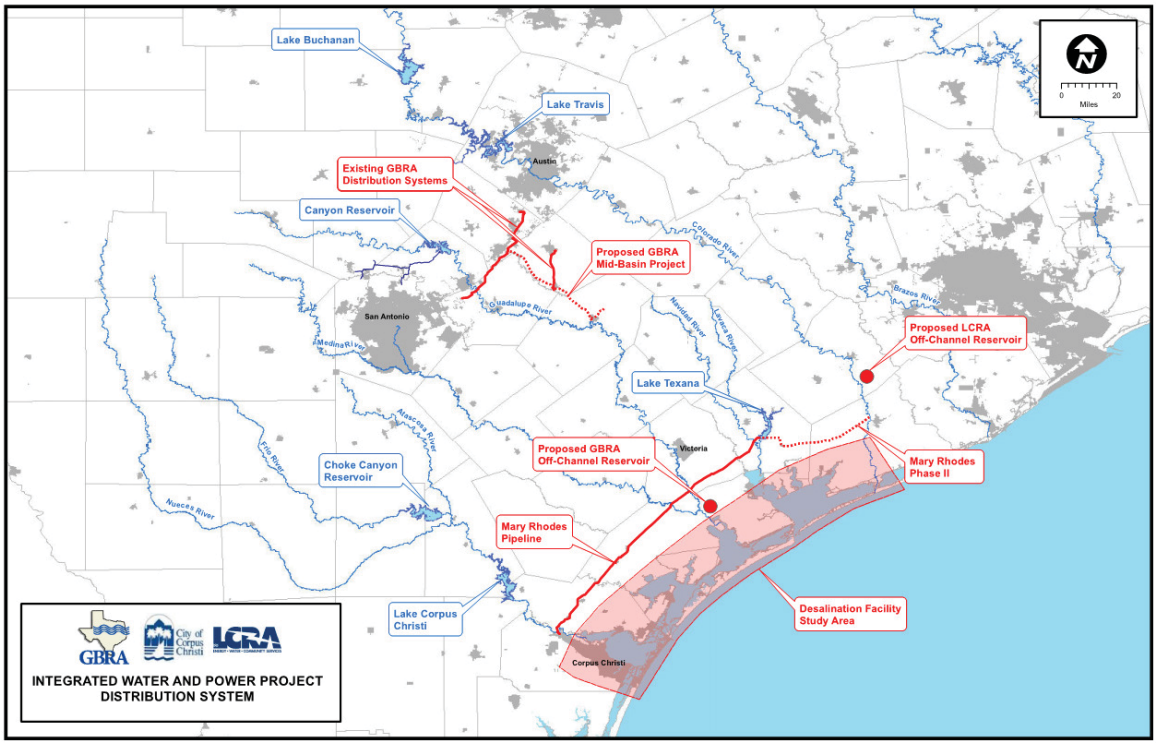
B. "Does not relate to a new reservoir"
- The project does not include a new reservoir.

C. "Does not have a significant effect on instream flows, environmental flows, or freshwater inflows to bays and estuaries"
- Given that the source water is Gulf of Mexico seawater, the project will not have an effect on instream flows, environmental flows or freshwater inflows.

D. "Does not have a significant substantive impact on water planning or previously adopted management strategies"
- Addition of this WMS does not impact water planning or previously adopted WMSs.

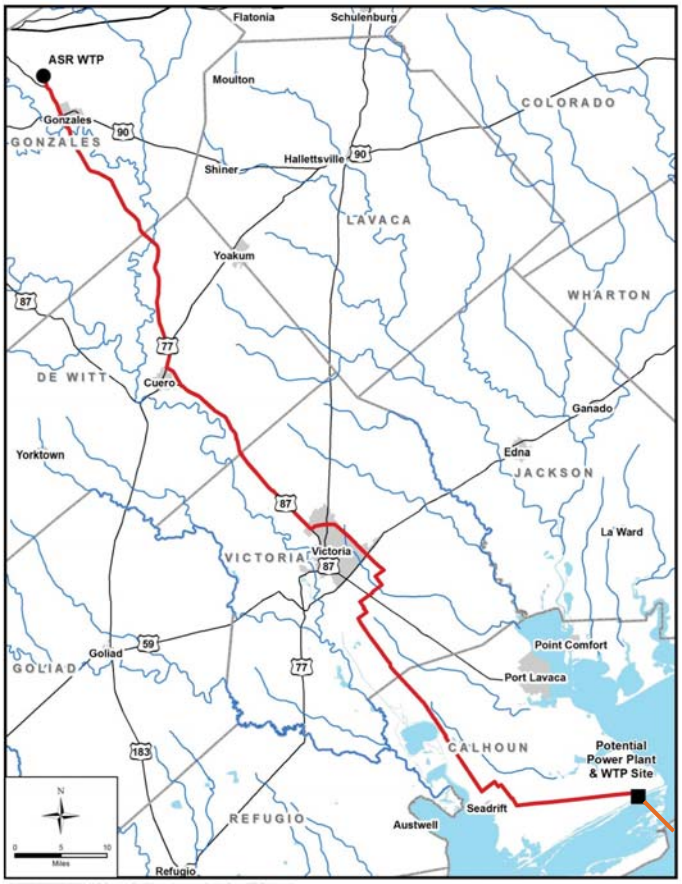
E. "Does not delete or change any legal requirements of the plan"
- Inclusion of this WMS will not delete or change any legal requirement of the plan.

GBRA IWPP – Minor Amendment to 2011 SCTRWP



11/6/2014 SCTRWPG Meeting

GBRA IWPP – Minor Amendment to the 2011 SCTRWP



11/6/2014 SCTRWPG Meeting

GBRA IWPP – Minor Amendment to 2011 SCTRWP

- GBRA has an on-going study with MWH
- Source and Supply:
  - Seawater from the Gulf of Mexico
  - Total Envisioned Project Size = 100,000 acft/yr
    - 50,000 acft/yr available in Calhoun County
    - 50,000 acft/yr delivered to Gonzales County
  - Delivery point: Mid-Basin WSP ASR WTP
- Facilities:
  - Peaking Factor = 1.0
  - Off-Shore Intake and 78-inch, 10-mile Pipeline to WTP near Port O'Connor
  - 98.2 MGD Reverse Osmosis WTP
  - 54-inch, 141-mile Transmission Pipeline
  - Pump Station/Booster Stations
  - 24-inch, 10 mile Concentrate Pipeline with Multiport Diffuser Off-Shore

GBRA IWPP – Minor Amendment to 2011 SCTRWP

	GBRA IWPP
Capital Costs	$795,863,000
Project Costs	$1,181,020,000
Annual Costs	$185,208,000
Project Yield (acft/yr)	100,000 (50,000 in Calhoun; 50,000 delivered to Gonzales)
Unit Costs* ($/acft/yr)	$1,852

**Note: Costs in September 2008 dollars, per the 2011 SCTRWP*

GBRA IWPP
Requested Amendment of the 2011 Region L Water Plan

- **August 7, 2014 SCTRWPG Meeting:**
  - After presentation of the proposed amendment, the planning group acted to request a determination from the EA of the TWDB on whether the proposed amendment is a minor amendment under TWDB rules.
- **November 6, 2014 SCTRWPG Meetings:**
  - Discussion and appropriate action regarding a minor amendment of the 2011 Region L Water Plan to include the GBRA IWPP.

AGENDA ITEM 14

Reconvene the Regular Meeting of November 6, 2014, of the South Central Texas Regional Water Planning Group

AGENDA ITEM 15

Appropriate Action Regarding the Adoption of Guadalupe-Blanco River Authority's (GBRA) Proposed Substitution of the Lower Basin Storage 500 Acre Site Project for the Lower Basin Storage 100 Acre Site Project in the 2011 Regional Water Plan and Request the Texas Water Development Board (TWDB) to Amend the 2012 State Water Plan

AGENDA ITEM 16

Appropriate Action Regarding Adoption of Guadalupe-Blanco River Authority's (GBRA) Proposed Minor Amendment of the Integrated Water Power Project to the 2011 Regional Water Plan and Request the Texas Water Development Board (TWDB) to Amend the 2012 State Water Plan

AGENDA ITEM 17

Possible Agenda Items for the Next South Central Texas Regional Water Planning Group Meeting

AGENDA ITEM 18

Public Comment