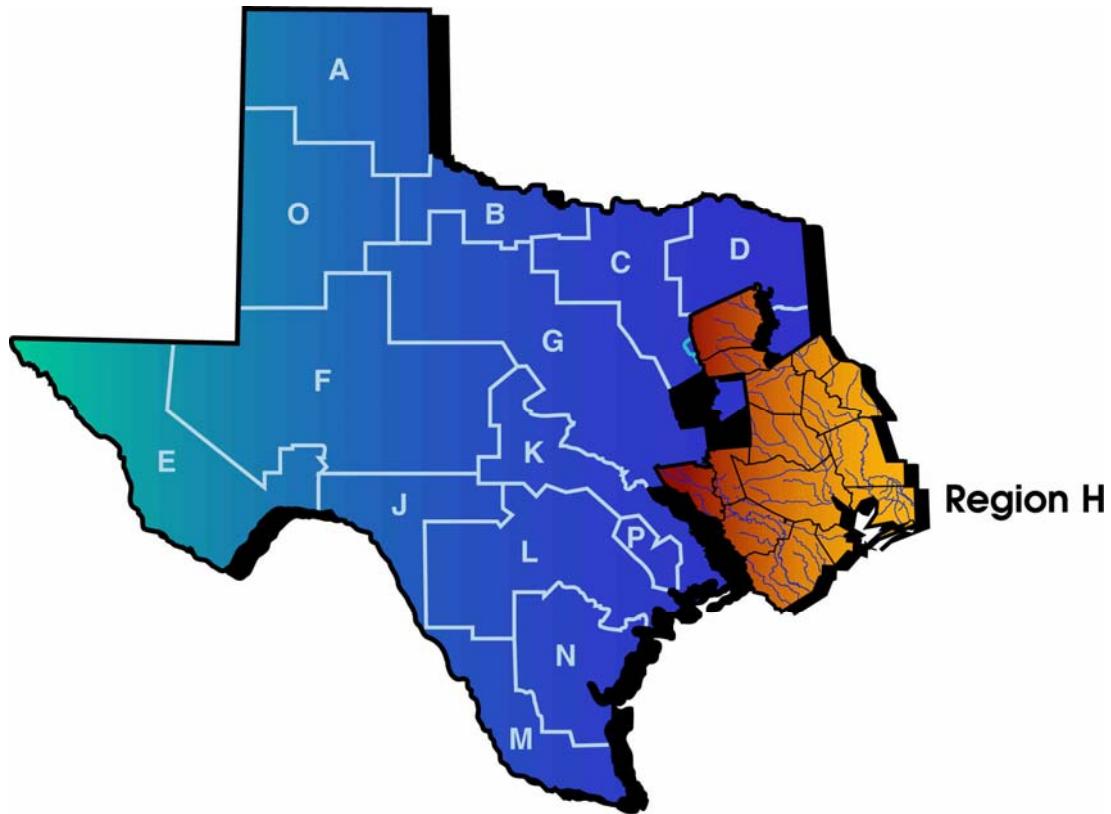


REGION H
WATER PLANNING GROUP
DRAFT



MEETING MATERIALS
February 6, 2008

prepared by

TCB | AECOM

Region H Water Planning Group
10:00 AM Wednesday
February 6, 2008
San Jacinto River Authority Office
Lake Conroe Dam
1577 Dam Site Rd.
Conroe, Texas

Agenda

1. Introductions.
2. Review and approve minutes of October 31, 2007 meeting.
3. Receive public comments on specific issues related to agenda items 4 through 10. (Public comments to be limited to 3 minutes per speaker).
4. Receive report and summary accounting of the Region H Water Planning Group General Fund (local-contribution) from San Jacinto River Authority.
5. Consider a motion to approve reimbursement of the San Jacinto River Authority for out-of-pocket expenses incurred related to Region H planning activities.
6. Receive report from Temple McKinnon on the status of the City of Groveton request for a waiver from the TWDB's consistency provisions.
7. Receive report from Temple McKinnon on second biennium funding and the TWDB Request for Applications.
8. Receive update from Consultants on status of Drought Contingency task.
9. Consider a motion to approve the Drought Contingency scope of work and approve SJRA to enter into a contract amendment for the Drought Contingency task with the TWDB.
10. Receive report from Consultants summarizing the recommendations made to the TWDB from the Region H Water Planning Group related to second biennium funding.
11. Consider a motion to establish a Region H Water Planning Group Scoping Committee for the purposes of guiding and establishing the scope of work and grant application in response to the TWDB Request for Applications.
12. Receive presentation from Consultant on the current status and progress of regional water planning.
13. Receive updates by local water agencies or other interested parties regarding any water related initiatives or projects currently underway or planned.
14. General public comments. (Public comments to be limited to 3 minutes per speaker)
15. Agency communications.
16. Next Meeting: TBD
17. Adjourn.

MINUTES
REGION H WATER PLANNING GROUP MEETING
10:00 A.M.
OCTOBER 31, 2007
SAN JACINTO RIVER AUTHORITY OFFICE
LAKE CONROE DAM
1577 DAM SITE ROAD
CONROE, TEXAS

MEMBERS PRESENT: John Baker, John R. Bartos, John Blount, Robert Bruner, Reed Eichelberger, Mark Evans, Jason Fluharty, Jack Harris, John Howard, Robert Istre, James Morrison, James Murray, Ronald Neighbors, Jeff Taylor, William Teer, Steve Tyler, Mike Uhl, Danny Vance, and Pudge Willcox.

DESIGNATED ALTERNATES: Tom Michel for Marvin Marcell, and Paul Nelson for Jimmie Schindewolf.

MEMBERS ABSENT: Roosevelt Alexander, Bob Hebert, Marvin Marcell, Jimmie Schindewolf, and C. Harold Wallace.

NON-VOTING MEMBERS PRESENT: Wayne Ahrens, Temple McKinnon, and Woody Woodrow.

PRESIDING: Jeff Taylor, Chairman

MINUTES OF AUGUST 1, 2007 MEETING

A motion was made by John Baker to approve the minutes of the August 1, 2007 meeting; second by Danny Vance. The motion carried unanimously.

PUBLIC COMMENTS ON AGENDA ITEMS 4 - 15

None.

CONSIDER APPROVAL OF PAYMENT PROCEDURES TO BE USED FOR REQUESTING GRANT FUNDS FROM THE TWDB AND PAYING INVOICES RECEIVED FROM THE CONSULTANT TEAM

Jace Houston gave an overview of procedures recommended by the Executive Committee for review and payment of consultant invoices submitted to Region H as follows: invoices received by the San Jacinto River Authority would be reviewed by SJRA, the Region H chairman, and the Region H member designated to review the finances of the planning group; then the invoices would be paid in a timely manner; and finally, a report of invoices received and payments made would be provided at each Region H meeting. After a short discussion, motion was made by Danny Vance and seconded by Jack Harris to pay invoices as needed and present quarterly reports on payments that had been made during the quarter.

RECEIVE REPORT FROM TEMPLE MCKINNON ON PROPOSED IMPLEMENTATION OF TWDB RULES REVISIONS

Temple McKinnon gave a report on the proposed implementation of TWDB rules related to planning and noted that there will be a 30-day comment period. Jeff Taylor commented about the expedited process for plan amendments and the impact that the planning groups had on this item.

RECEIVE REPORT FROM TEMPLE MCKINNON ON POTENTIAL FUTURE ACTIVITIES RELATED TO THE BRAZOS SALTWATER BARRIER PROJECT

Temple McKinnon and John Baker led the discussion regarding the enthusiastic stakeholder support related to the Brazos Saltwater Barrier Project and status of same. They will move forward with the feasibility study as funding is available for the initial step. Temple McKinnon toured the site with the Corps of Engineers on September 26, 2007, along with representatives from the Brazos River Authority and Dow. Mike Uhl noted that the feasibility study should provide better yield numbers for consideration as a management strategy in future plans.

CONSIDER RECOMMENDATIONS FROM THE BYLAWS REVIEW COMMITTEE FOR ADOPTION OF AMENDMENTS TO BYLAWS OF THE REGION H WATER PLANNING GROUP

John Bartos presented proposed amendments to the Region H bylaws for consideration by the planning group. The proposed amendments were developed by the bylaws committee appointed by Chairman Taylor and related to deleting the term limits provisions and modifying the quarterly meeting requirement. After a short discussion, motion was made by John Bartos and seconded by James Murray to adopt the proposed amendments to the bylaws. The motion passed unanimously.

CONSIDER RECOMMENDATIONS AND NOMINATIONS FROM THE NOMINATIONS COMMITTEE FOR THE BAY-BASIN AREA STAKEHOLDERS GROUP FOR THE SAN JACINTO-TRINITY RIVER BASIN

Jeff Taylor gave an overview of the environmental flows provisions adopted in the previous legislative session and the process for selection of members for the Basin-Bay Area Stakeholders group. He went through the list of individuals recommended by the nominations committee. After discussion, revisions were made to the proposed list. Motion was made by Ron Neighbors and seconded by John Baker to authorize the committee to finalize the list for submittal as directed by the group.

CONSIDER RECOMMENDATION AND APPROVE RESPONSE TO TWDB REQUEST FOR INFORMATION FOR 2ND BIENNIAL FUNDING

Mike Reedy with TCB discussed questions received from the TWDB along with potential responses to the same. Robert Istre gave an overview of language that he proposed regarding

back-up water rights for run-of-river rights counted in the regional plan. Ron Neighbors gave an overview of language that he proposed regarding groundwater issues in Harris, Galveston, and Fort Bend counties. Motion was made by Steve Tyler and seconded by John Blount to approve the responses recommended by the consultant team as amended to include the additional language proposed by Robert Istre and Ron Neighbors. The motion carried unanimously.

RECEIVE PRESENTATION FROM CITY OF GROVETON REGARDING A POTENTIAL REQUEST FOR WAIVER FROM THE TWDB CONSISTENCY PROVISIONS AND CONSIDER ACTION BY THE REGION H WATER PLANNING GROUP

Allen Draper, engineer for the City of Groveton, discussed the TWDB's request that they obtain a letter of support from Region H regarding the City of Groveton's request for a consistency waiver for a water supply project being proposed by the City. A discussion ensued regarding the proposed project and its relationship to the recommended management strategies in the Region H plan. Danny Vance indicated that the Trinity River Authority had no objection to the proposed project. Motion was made by James Morrison and seconded by Danny Vance to approve a letter from Region H supporting the City of Groveton's request for a consistency waiver. The motion passed unanimously.

RECEIVE PRESENTATION FROM CONSULTANT ON THE CURRENT STATUS AND PROGRESS OF REGIONAL WATER PLANNING

Mike Reedy and Jason Afinowicz with TCB reviewed and updated the group on four tasks included in the scope of work for the Region H water plan as follows:

- Task 1 – Environmental Flows
- Task 2 – Drought Contingency
- Task 3 – Interruptible Supplies
- Task 0 – Administration and Public Participation

Mr. Afinowicz gave a presentation regarding Task 1 – Environmental Flows. The consultant team met with the TWDB via teleconference to discuss the WAM assumptions to be used for the study. The proposed baseline conditions include Naturalized Flows, Existing Conditions with Return Flows, and Full Authorized Diversions with Return Flows. These baseline conditions will be used to compare the impacts of management strategies on the bay and estuary inflow targets. Future efforts will focus on potential mitigation strategies for each management strategy.

CONSIDER AND APPROVE WAM REVISIONS BY CONSULTANT TEAM AND AUTHORIZE SUBMITTAL TO TWDB FOR APPROVAL AS CONTRACTUALLY REQUIRED

Mike Personett and Dan Buhman with KBR gave a presentation regarding Task 3 – Interruptible Supplies. Dan Buhman discussed the overall goals of the study which include 1) quantify the interruptible amount of existing rights, 2) quantify the interruptible unappropriated supply, 3) compare interruptible supply amounts to potential demands, and 4) develop economic and policy implications.

Temple McKinnon stated that the group needed to take official action documenting and approving the WAM revision assumptions from an October 18, 2007 meeting between the consultant team and the TWDB regarding modeling assumptions used in Tasks 1 and 3. John Baker moved to authorize submittal of the distributed minutes as an official record of the October 18, 2007 meeting and to approve the WAM revision assumptions.

John Bartos questioned whether the consultant team had engaged the TPWD during development of the WAM assumptions. Mike Reedy stated that other than the involvement the TPWD may have had during the development of the original scope of work, the assumptions had not been presented to the TPWD officially. Mr. Reedy offered to seek input from the TPWD and discuss changes to the assumptions if needed. Woody Woodrow stated that the TPWD would welcome the opportunity to review the assumptions and offer any suggested modifications for consideration. This item was deferred to the next RWPG meeting. The motion was withdrawn.

RECEIVE PRESENTATION FROM CONSULTANT TEAM ON DEVELOPMENT STATUS OF THE REGION H WEBSITE

Mike Reedy and Jason Afinowicz gave an overview of the Region H website. The website address is www.regionhwater.org. Jason Afinowicz provided an overview of the website and the various information currently available. The website will continue to be updated and future meeting notices and meeting material will be posted.

RECEIVE UPDATE FROM TOM MICHEL REGARDING SURFACE WATER CONVERSION ACTIVITIES IN FORT BEND COUNTY

Tom Michel gave an update on surface water conversion activities, including information on regulations, population growth, and conversion plans in Fort Bend County. John Howard discussed the positive impact of the salt water barrier project on the Fort Bend County area.

RECEIVE UPDATES BY LOCAL WATER AGENCIES OR OTHER INTERESTED PARTIES REGARDING ANY WATER-RELATED INITIATIVES OR PROJECTS CURRENTLY UNDERWAY OR PLANNED

John Baker reported to the group that the Region G RWPG approved developing an amendment to their regional water plan for a 100,000 acre-foot strategy for power generation in the upper basin. This water will be provided through the systems operation permit, and the contract is contingent upon the permit. HDR will do the work to show the impacts from the strategy on Region H. The utility is amenable to paying for an amendment to the Region H plan. The Region G amendment will be presented at their February meeting and will have a 45-day comment period.

Robert Istre highlighted GCWA's need for water from the BRA system operation permit.

David Parkhill provided a brief report.

GENERAL PUBLIC COMMENTS

None.

AGENCY COMMUNICATIONS

Woody Woodrow had no update regarding the TPWD.

Temple McKinnon reported that there would be a State Revolving Fund workshop on November 15, 2007 at the San Jacinto River Authority, G & A Office, located at 1577 Dam Site Road in Conroe. She also mentioned the TWDB Water Summit that was scheduled for early December.

NEXT MEETING

February 6, 2007
San Jacinto River Authority
Lake Conroe Dam
1577 Dam Site Road
Conroe, Texas 77304

ADJOURNED

REGION H WATER PLANNING GROUP
UNAUDITED SOURCES AND USES OF FUNDS
THROUGH DECEMBER 31, 2007

	TOTAL	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998
WATER USER CONTRIBUTIONS											
INTEREST EARNED	\$ 165,810										
	<u>43,107</u>	9,131	10,548	4,031	1,479	1,475	2,215	1,800	5,568	6,153	73,450
TOTAL REVENUES	<u>208,917</u>										2,507
EXPENSES											
PUBLIC NOTICE ADS	7,053		1,653	326							
LIABILITY INSURANCE	4,140										
MEETING EXPENSES	6,885		575								
TRAVEL EXPENSES	312										
BANK FEES	120										
TOTAL EXPENSES	<u>18,510</u>	0	1,653	901	0	4,023	1,080	8,456	2,344	53	0
ENDING BALANCE	\$ 190,407	\$ 190,407	\$ 181,276	\$ 172,381	\$ 169,250	\$ 167,772	\$ 170,320	\$ 169,185	\$ 170,273	\$ 166,464	\$ 90,560
TWDB FUNDS											
TWDB GRANTS	\$ 3,076,865										
INTEREST EARNED	<u>14,248</u>										
TOTAL REVENUES	<u>3,091,113</u>										
EXPENSES											
WATER PLANNING STUDIES	3,065,061	0	460,137	653,943	261,856	335,896	4,553	618,982	484,044	245,649	
OTHER EXPENSES											
PUBLIC NOTICE ADS	5,335			5,161		174					
LIABILITY INSURANCE	5,604	1,379	1,403	1,539	1,283						
TRAVEL EXPENSES	1,221	200	522	337	162						
BANK FEES	99					25		20		54	
TOTAL OTHER EXPENSES	<u>12,259</u>	1,579	1,925	7,037	1,445	199	0	20	0	54	
ENDING BALANCE	\$ 13,793	\$ 13,793	\$ 15,147	\$ 43,562	\$ 151,249	\$ 31,642	\$ 6,579	\$ 6,965	\$ 6,919	\$ 118,814	\$ -
SJRA DIRECT EXPENSES											
LEGAL FEES	729										729
LIABILITY INSURANCE	1,579										
POSTING NOTICES	4,318	357	264	863	466	233	387	271	826	1579	
MEETING EXPENSES	199								199	651	
TOTAL SJRA EXPENSES	\$ 6,825	\$ 357	\$ 264	\$ 863	\$ 466	\$ 233	\$ 387	\$ 271	\$ 1,025	\$ 2,230	\$ 729



TEXAS WATER DEVELOPMENT BOARD



E. G. Rod Pittman, *Chairman*
William W. Meadows, *Member*
Dario Vidal Guerra, Jr., *Member*

J. Kevin Ward
Executive Administrator

Jack Hunt, *Vice Chairman*
Thomas Weir Labatt III, *Member*
James E. Herring, *Member*

TO: Members of the Board

THROUGH: Bill Mullican, Deputy Executive Administrator, Planning *BM*

FROM: Carolyn Brittin, Director, Water Resources Planning *CB*
David Carter, Agency Contract Administrator *RJf DC*

DATE: January 22, 2008

SUBJECT: Request to Publish a Request for Applications in the *Texas Register* for the Second Phase of the Third Cycle of Regional Water Planning

ACTION REQUESTED

Authorize staff to publish in the *Texas Register* a Request for Applications for the last three years of the third round of regional water planning. Applications will be due June 13, 2008.

BACKGROUND

Based upon stakeholder feedback and due to the decadal release of the national census results, the proposed process for the third round of regional water planning (January 2007 through January 2010) has been slightly revised so that regional water plans can be updated due to changed conditions and to incorporate region-specific studies. For the first two years of this cycle, the TWDB authorized contracting with the 16 regional water planning groups to conduct region-specific studies. Staff received input from the regional planning groups on the required activities for the remaining three years of this off-census cycle. This input is summarized and included as Attachment A. Staff propose that the remainder of this planning cycle be used to incorporate the results from the region-specific studies and to update the regional water plans in accordance with Texas Water Code §16.053 and 31 Texas Administrative Code Chapter 357.

PROPOSED REQUEST FOR APPLICATIONS

Work to be performed under this proposed Request for Applications (Attachment B) will be funded over a three year period with Fiscal Year 2008-2009 biennial appropriations and the estimated 2010-2011 appropriations. Staff has developed a Guidance for Preparation of the Scope of Work for Regional Water Planning and has included it as Attachment C.

Our Mission

To provide leadership, planning, financial assistance, information and education for the conservation and responsible development of water for Texas.

P.O. Box 13231 • 1700 N Congress Avenue • Austin, Texas 78711-3231

Telephone (512) 463-7847 • Fax (512) 475-2053 • 1-800-RELAYTX (for the hearing impaired)

www.twdb.state.tx.us • info@twdb.state.tx.us

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Funding for all activities during the three years covered by this effort is proposed to be provided to all planning groups in an amount not to exceed \$9 million or 100 percent of the total funds appropriated for the current biennium (\$6.0 million) and 50 percent of those estimated funds appropriated for the Fiscal Year 2010-2011 biennium (\$3 million). A summary of the total recommended funding by region is included as Table 1.

Staff proposes allocating funding into three categories of funds: ‘base’ funds, ‘additional’ funds, and ‘set-aside’ funds as follows:

A - Base Funding* (see Table 1 below):

The base funding is an estimate of the amount of money planning groups will need to update their regional plans based on foreseeable changed conditions. These funds will be used to perform most, if not all, tasks necessary to meet statute and rule requirements needed for updating the regional water plans including holding meetings and preparing and submitting all plan documents and data. These base funds are proposed to be allocated as follows:

- \$2.9 million allocated in a base level of funding for the update of Tasks 1, 6, 7, 8, 9, and 10 as contained in the scope of work guidance document. These fund amounts are associated with specific tasks and specific regions.
- \$1.3 million allocated in formula funding based on the number of water user groups and wholesale water providers in the region as a total for the update of four Tasks: 2, 3, 4, and 5. The planning groups may propose updates to these Tasks (projections, water supply analysis, water management strategies, and the strategies’ impact on water quality) based upon changed conditions.
- These base funding amounts are not guaranteed funds and must be requested in the grant application. All proposed work activities and associated dollars must be fully justified in order to receive funding. If a work scope cannot support the associated funding request, contracted amounts may be less than these initial amounts.

B – Additional Funding Requests:

- Additional funds within the overall budget for regional water planning are proposed for additional work beyond the base activities that regions will have to perform in making minimal changes in response to changed conditions.
- Recommendations for additional funding will be made based on need and scope of work. Applications for these additional funds will be evaluated on a competitive basis considering the following criteria (31 TAC 355.94): the amount and timing of need for water supplies in the region that will be addressed by the proposed task in the scope of

work; changed conditions; lack of duplication of effort; and soundness of scope of work including the budget.

C – Set-aside funding:

- Staff propose setting aside additional funding for regional water plan amendments and other unforeseen funding needs that may arise during the remaining years of this planning cycle.

Table 1. Summary of Base-Funding Allocations for Phase II of the Third Round of Regional Planning

		Tasks/Chapter Allocations									
		1	2	3	4	5	6	7	8	9	10
		Planning Area Description	Population & Water Demand Projections	Evaluation of Existing Water Supply	Identification of Water Needs and Selection of WMSS	Impacts of WMSSs on Water Quality	Conservation and Drought Management	Consistency with Long-term Protection of Natural Resources	Unique Reservoir/Stream Segments & Legislative Recommendations	Water Infrastructure Funding	Adoption of Plan (administration & public participation)
Region	Total Base Funding	Base	Total base funds to be allocated between Tasks 2-5 per the RWPG's Scope of Work				Base	Base	Base	Base	Base
A	\$175,380	\$10,000	\$45,930				\$10,000	\$10,000	\$15,000	\$4,400	\$87,750
B	\$135,740	\$10,000	\$24,190				\$10,000	\$10,000	\$15,000	\$1,400	\$66,800
C	\$637,040	\$10,000	\$242,670				\$10,000	\$10,000	\$15,000	\$67,600	\$282,320
D	\$234,410	\$10,000	\$91,510				\$10,000	\$10,000	\$15,000	\$10,000	\$90,100
E	\$171,380	\$10,000	\$15,570				\$10,000	\$10,000	\$15,000	\$2,600	\$109,860
F	\$215,570	\$10,000	\$44,290				\$10,000	\$10,000	\$15,000	\$7,400	\$121,080
G	\$400,160	\$10,000	\$171,610				\$10,000	\$10,000	\$15,000	\$25,800	\$163,800
H	\$564,720	\$10,000	\$197,470				\$10,000	\$10,000	\$15,000	\$58,000	\$264,800
I	\$230,960	\$10,000	\$68,050				\$10,000	\$10,000	\$15,000	\$9,400	\$109,060
J	\$122,340	\$10,000	\$11,060				\$10,000	\$10,000	\$15,000	\$500	\$65,680
K	\$246,030	\$10,000	\$72,020				\$10,000	\$10,000	\$15,000	\$16,400	\$115,360
L	\$332,950	\$10,000	\$106,550				\$10,000	\$10,000	\$15,000	\$22,800	\$161,900
M	\$277,970	\$10,000	\$101,430				\$10,000	\$10,000	\$15,000	\$12,800	\$118,740
N	\$149,660	\$10,000	\$22,710				\$10,000	\$10,000	\$15,000	\$1,800	\$81,800
O	\$174,710	\$10,000	\$36,260				\$10,000	\$10,000	\$15,000	\$7,800	\$88,950
P	\$103,510	\$10,000	\$6,310				\$10,000	\$10,000	\$15,000	\$200	\$52,000
Total	\$4,206,630	\$160,000	\$1,257,630				\$160,000	\$160,000	\$240,000	\$249,000	\$1,980,000

KEY ISSUES

This round of planning is an off-census update to the regional water plans. TWDB will not be conducting a full scale revision to the population and water demands of each planning area, but criteria do exist to allow requests for revisions for changed conditions.

The planning groups provided requested feed-back to staff about what activities they felt were necessary to complete their regional water plans this cycle and how they would like to see those efforts funded by the Board. These responses were taken into consideration when developing the funding recommendations presented herein.

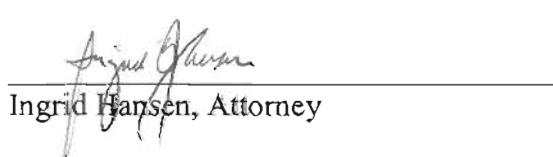
Funding recommendations for this round of regional water planning recognize that not all regions would need an equal amount of effort in order to complete the 10 fundamental planning tasks as defined in statute and rule for this third round of regional water planning.

Actual funding recommendations for each regional water planning group, including any set-aside funding, will be considered by the TWDB at your August 2008 meeting.

RECOMMENDATION

Staff recommends authorization to publish a Request for Applications in the *Texas Register* for the last three years of work in the third round of regional water planning.

This recommendation has been reviewed by legal counsel and is in compliance with applicable statutes and Board rules.


Ingrid Hansen, Attorney

ATTACHMENTS:

Attachment A: Regional Water Planning Group Responses to 6/27/2007 TWDB Letter

Attachment B: Request for Applications for Phase II of the Third Round of Regional Water Planning

Attachment C: Guidance for Preparation of Scope of Work for Regional Water Planning

Attachment A
Regional Water Planning Group Responses
to 6/27/2007 TWDB Letter

Question 1: Activities to produce plan

- Update Chapters 1 through 10 for changed conditions: A, B, C, D, G, L
- Update Chapters 1 through 10 a bit more thoroughly than just for changed conditions: H, I, K, M, O, P
- Incorporate DFC's/MAG numbers and/or other groundwater supply revisions: A, B, C, G, H, I, K, L, N, P
- Update surface water supplies due to WAMs or Water Right Permit updates/issuance/changes: G, H, I, K
- Updates due to Environmental Flows: G, H, I
- Inclusion of current special studies into 2011 plan: B, C, D, G, I
- Develop alternative strategies for every WUG with a need: D
- DB07 updates: B, C
- Update costs: A, B, C, D, M, N
- Updates due to climate change: G
- Updates to Population and Demand Projections: A, B, C, D, E, G, H, I, K, L, M, O, P
- Specific Mention of updating Population and Demand Projections without being required to reduce population in one area of the region to compensate for growth in another area of the region: B, C, L
- Review and include results from TWDB Studies
 - G – Small Impoundments, Barnett Shale
 - I – Electric Generation, Reservoir Site Protection Study
 - K - Drought Contingency Plans

Question 2 Region Specific Issues and Studies Requested:

- Almost every region reported region specific issues and/or the need to fund special studies.

Question 3: Funding Structure

- Formula:
 - A - on quantity of water used in region and importance of water to regional economy
 - C - on number of WUGs with needs
 - D - on total water resources in each region
 - E – based on relative shortages
 - G - similar to 2006 formula
 - O - on importance of water to regional and national economy and TWDB should consider funding based on an alternative regional water planning model (alternative model not listed or explained by O, however)
- Formula for base activities (admin plus tasks required by statute/rule) and competition for all other activities: I, L, M, N
- Base activities should include public outreach and/or concerns about not enough money for public outreach or participation: K, H, L, N, P
- Funding for special studies should be based on the specific SOW: B, C
- Legislature should provide funding for the SB3 Study Commission on Region C Water Supply: C, D
- Noted that Administrative funds are inadequate: B, H, P

Question 4: Three Year Contract

- No problem: E, F
- Yes, with last year contingent upon legislative funding: D, I
- Concerned about a three year contract but willing to discuss or restructure the contract: K, P
- Will sign or consider signing if contract includes special language that does not obligate the region/political sub/consultant to complete unfunded items in the scopes: A, B, C, D, G, H, I, and O.
- L, M, and N will sign but want the three year contract to specifically list funded and unfunded work.

Attachment B

Texas Water Development Board

Request for Applications

The Texas Water Development Board (TWDB) requests, pursuant to 31 Texas Administrative Code (TAC) §355.92, the submission of regional water planning applications leading to the possible award of contracts to revise or update regional water plans as described in 31 TAC Chapter 357. In order to receive a grant, the applicant must be a political subdivision of the state and must have been designated an eligible applicant by a regional water planning group as defined in 31 TAC §355.91. 31 TAC Chapter 355, Subchapter C provides guidance for regional water planning grants.

Description of Funding Consideration.

Total funding for activities related to the development or revision of a regional water plan shall not exceed 100 percent of the total cost of the planning for that regional water planning area as defined in 31 TAC §355.91. Funds awarded for grants under this request for applications may total up to the amount of funds appropriated for such activities for the Fiscal Year 2008-2009 biennium and anticipated for the Fiscal Year 2010-2011 biennium. This planning will conclude the five year planning cycle of Fiscal Year 2007 through 2010.

Funding is provided on a not-to-exceed basis for certain planning tasks as outlined in the Guidance for Preparation of Scope of Work for Phase II of the Third Round of Regional Water Planning. As further outlined in this Scope of Work Guidance, provisions exist for additional funding for tasks related to projections, water supply analysis, water management strategy evaluations, and the strategies' impact on water quality. In the event that acceptable applications are not submitted or that insufficient funds are available to fund proposed activities beyond the regional water planning tasks identified by the regional water planning group, the TWDB retains the right to not award contract funds.

Deadline, Review Criteria, and Contact Person for Additional Information.

Five double sided copies and an electronic version of a complete regional water planning grant application must be filed with the Board prior to 5:00 p.m., June 13, 2008. All applications should be prepared using the TWDB's application instruction sheet for Regional Water Planning Grants, the Guidance for Preparation of the Scope of Work for Phase II of the Third Round of Regional Water Planning, and the Guidelines for Regional Water Plan Development in Exhibit B of the Regional Water Planning Contracts. Applications will be evaluated according to the criteria listed in 31 TAC §355.94. All potential applicants may contact the Board to obtain the application checklist and guidance documents or they may be obtained from the Texas Water Development Board's webpage at: http://www.twdb.state.tx.us/rwpg/planning_page.asp

Applications must be directed either in person to David Carter, Texas Water Development Board, Stephen F. Austin Building, 1700 North Congress Avenue, Austin, Texas, or by mail to David Carter, Texas Water Development Board, P.O. Box 13231, Austin, Texas, 78711-3231. Requests for information, the Board's rules, and instruction sheet covering the research and

planning fund may be directed to Kathleen Ligon at the preceding address or by calling (512) 463-8294, or by e-mail at kathleen.ligon@TWDB.state.tx.us.

TRD-
Ingrid Hansen
Acting General Counsel
Texas Water Development Board
Filed:

Attachment C

Guidance for Preparation of Scope of Work for Regional Water Planning

Prepared for Phase II of the 3rd Round of Regional Water Planning

DRAFT

January 22, 2008

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Current Timeline for Regional Water Planning Contracting

January 28, 2008 - Board considers adopting revisions to 31 Texas Administrative Code 355 and 357.

January 28, 2008 – Board considers posting the Request For Applications for the development of regional water plans.

February 8, 2008 - TWDB posts Request for Regional Water Planning Applications, and releases Guidance for Preparation of Scope of Work for Regional Water Planning and Guidelines for Regional Water Plan Development.

June 13, 2008 - Proposal application and scope of work for Phase II of third round of regional water planning due to the TWDB.

June 14 - August 25, 2008 - TWDB staff review of scope of work and preparation of recommendation for Board consideration at the regularly scheduled August 2008 Board meeting.

August 26, 2008 – November 23, 2008 – Negotiate and execute regional water planning contracts.

September 1, 2009 – Estimated legislative appropriation for FY 2010-2011 becomes available for regional water planning activities.

March 1, 2010 – Submit Initially Prepared Regional Water Plans (IPPs) to TWDB.

September 1, 2010 – Submit Adopted Regional Water Plans to TWDB.

January 5, 2011 – Statutory deadline for submission of Adopted Regional Water Plans to TWDB.

Required Public Notices Associated with Preparing a Scope of Work and Submitting an Application to TWDB for Regional Water Planning Funds

There are two notices associated with developing a scope of work and filing an application (see Texas Administration Code §355.97 and §357.6):

- Notice of a RWPG public meeting to receive public input on scope of work 30 days prior to the RWPG meeting to receive public input
- Notice of intent to apply for Regional Water Planning funds 30 days prior to TWDB Board action

Introduction to Preparing Scope of Work and Summary of Available Funding

The scope of work included in the application for funding will address eligible updates to the 2006 regional water plans and produce a 2011 regional water plan to be adopted by the individual regional water planning group. TWDB anticipates that funding for the remaining three years of this regional water planning cycle will be limited to a maximum of \$9 million.

TWDB staff has initially allocated this funding into three categories of funds, 'base' funds, 'additional' funds, and 'set-aside' funds as follows:

A – Base Funding Allocation (see Table 1):

Base funding amounts are to be used to update regional plans based on foreseeable changed conditions to meet statute and rule requirements including holding meetings, preparing and submitting all plan documents, and providing all data.

These base funds were allocated as follows:

- **\$2.9** million allocated as a base level of funding for the update of Tasks 1, 6, 7, 8, 9, and 10 as contained in this scope of work guidance document. These fund amounts are associated with specific tasks and specific regions.
- **\$1.3** million allocated in formula funding based on the number of water user groups and wholesale water providers in the region as a total for the update of four Tasks: 2, 3, 4, and 5. The planning groups may propose updates to these tasks (projections, water supply analysis, water management strategies, and the strategy impacts on water quality) based upon changed conditions.
- These base funding amounts are not guaranteed funds and must be requested in the grant application. All proposed work activities and associated dollars must be fully justified in order to receive funding. If a work scope cannot support the associated funding request, contracted amounts may be less than these initial base amounts.
- All scope of work items to be funded with base funds must be summarized, eligible for Board funding, and indicated as base funds for each Task in the application.

B – Additional Funding Requests:

- Additional funds within the overall budget for regional water planning are proposed for additional work beyond the base activities that regional water planning groups will have to perform in making minimal changes in response to changed conditions.
- Recommendations for additional funding will be made based on need and scope of work. Applications for these additional funds will be evaluated on a competitive basis considering the following criteria (31 Texas Administrative Code 355.94): the amount and timing of need for water supplies in the region that will be addressed by the proposed task in the scope of work; lack of duplication of effort; and soundness of scope of work including the budget.
- All proposed scope of work items that would require additional funds beyond allocated base funds must be fully scoped with detailed budgets, eligible for Board funding, and indicated as non-base fund requests in the application.

Budget Request Format

Scopes of work must be submitted in a format that designates all proposed budget dollars as either base funding or as additional funding requests.

For example:

*"Task 1
base funding request \$_____*

*Task 2
base funding request \$_____
additional funding request\$_____*

*Task 10
base funding request \$_____
additional funding request \$_____*

Funding request for other eligible activities \$_____ "

Etc.

C – Set-aside funding:

- Staff proposes setting aside additional funding for regional plan amendments and other unforeseen funding needs that may arise during the remaining years of this planning cycle.

Upon submittal to TWDB, staff will thoroughly review each subtask included in the scope of work for: (1) changed conditions, (2) new information, (3) duplication with previous

studies, and (4) reasonableness of budget. Funding levels for the individual applications will be based upon the Task-specific criteria and the available planning funds.

The intent of this planning cycle is the revision of the 2006 regional water plans. Because each regional plan will require differing levels of revision, TWDB recognizes the need for flexibility. Once the scope of work and associated budget have been approved by the Board, and signed into contract, the regional water planning groups and their consultants will have the option of reallocating funds between the subtasks of a particular task and will be able to reallocate funds between tasks up to 35 percent of either task's budget, as described in the contract. The reallocation of funds beyond this limit will require an amendment to the contract's scope of work and budget.

Table 1.
Summary of Base-Funding Allocations for Phase II of the Third Round of Regional Planning

		Task/Chapter Allocations									
		1	2	3	4	5	6	7	8	9	10
Region	Total Base Funding	Base	Total base funds to be allocated between Tasks 2-5 per the RWPG's Scope of Work				Base	Base	Base	Base	Base
A	\$183,080	\$10,000	\$45,930				\$10,000	\$10,000	\$15,000	\$4,400	\$87,750
B	\$137,390	\$10,000	\$24,190				\$10,000	\$10,000	\$15,000	\$1,400	\$66,800
C	\$637,590	\$10,000	\$242,670				\$10,000	\$10,000	\$15,000	\$67,600	\$282,320
D	\$236,610	\$10,000	\$91,510				\$10,000	\$10,000	\$15,000	\$10,000	\$90,100
E	\$173,030	\$10,000	\$15,570				\$10,000	\$10,000	\$15,000	\$2,600	\$109,860
F	\$217,770	\$10,000	\$44,290				\$10,000	\$10,000	\$15,000	\$7,400	\$121,080
G	\$406,210	\$10,000	\$171,610				\$10,000	\$10,000	\$15,000	\$25,800	\$163,800
H	\$565,270	\$10,000	\$197,470				\$10,000	\$10,000	\$15,000	\$58,000	\$264,800
I	\$231,510	\$10,000	\$68,050				\$10,000	\$10,000	\$15,000	\$9,400	\$109,060
J	\$122,340	\$10,000	\$11,060				\$10,000	\$10,000	\$15,000	\$600	\$65,680
K	\$248,780	\$10,000	\$72,020				\$10,000	\$10,000	\$15,000	\$16,400	\$115,360
L	\$336,250	\$10,000	\$106,550				\$10,000	\$10,000	\$15,000	\$22,800	\$161,900
M	\$277,970	\$10,000	\$101,430				\$10,000	\$10,000	\$15,000	\$12,800	\$118,740
N	\$151,310	\$10,000	\$22,710				\$10,000	\$10,000	\$15,000	\$1,800	\$81,800
O	\$178,010	\$10,000	\$36,260				\$10,000	\$10,000	\$15,000	\$7,800	\$88,950
P	\$103,510	\$10,000	\$6,310				\$10,000	\$10,000	\$15,000	\$200	\$52,000
	\$4,206,630	\$160,000	\$1,257,630				\$160,000	\$160,000	\$240,000	\$249,000	\$1,980,000

Scope of Work Tasks and Associated Funding Requests

The SOW needs to address the remainder of the third planning cycle, which concludes January 5, 2011. The SOW must address all necessary elements required in a regional water plan as described in 31 TAC Chapter 357. This Guidance for Preparation of Scope of Work for Regional Water Planning document, the User Guide to the Regional Water Planning Data Web Interface (DB12 guide under separate cover), Guidelines for Regional Water Plan Development (under separate cover), and the final negotiated scope of work prepared in accordance with these documents, will serve as the core of the regional planning contracts during the remainder of this third round of regional water planning. However, all provisions of 31 Texas Administrative Code, Chapter 357 will serve as the foundational guidance for the development of regional water plans. Any revisions to 31 Texas Administrative Code, Chapter 357 adopted by the Board during the planning effort that result in a change to the planning efforts will be addressed through contract amendments.

Task 0: Scope of Work Development

The scope of work will include a detailed description of the tasks to be performed, identification of the responsible parties for task execution, a task schedule, and task, subtask, and expense budgets.

Funding

Funding for scope of work development will be considered a part of the Task 10 / Administrative base funding. The regional water planning groups may allocate up to \$10,000 from these administrative funds to pay for scope of work development. Regional water planning groups and their subcontractors may only charge for scope of work efforts performed after Board approval of posting this request for proposals but before execution of the associated contracts/subcontracts.

Required Application Information

None

Task 1: Planning area description

This task will be viewed as a limited effort to update the area descriptions contained in the 2006 approved regional water plans.

Required Application Information

Funds must be requested in the application and the scope of work must specify the work to be done.

Task 2: Select revisions of population and water demand projections

This task will focus on updating population and water demand projections from the 2006 regional water plans based on changed conditions only, including additional water user groups that meet population or water use criteria in 2005 as described in the Guidelines for Regional Water Plan Development.

This work may include, but is not necessarily limited to:

- 1) revisions of population projections for municipal water user groups.
- 2) revisions of water demand projections for water user groups and wholesale water providers, excluding steam-electric power demands.
- 3) inclusion of cities, non-city water utilities and wholesale water providers not included in previous regional water plans and that meet the water user group or wholesale water provider definition in Guidelines for Regional Water Plan Development.
- 4) review of new water demand projections for steam-electric power production.

TWDB has contracted with outside researchers to develop new methodology to project county-level water demand projections for steam-electric power. TWDB, Texas Commission on Environmental Quality, Texas Parks & Wildlife Department, Texas Department of Agriculture will utilize this information to develop draft steam-electric power water demand projections by the end of August 2008. The regional water planning groups will have the opportunity to review and request revisions to these projections.

Required Application Information

The application's scope of work for this task will include a listing of water user groups and wholesale water providers which are anticipated to meet the revision criteria and a brief description of which particular, qualifying, criteria applies under the Guidelines for Regional Water Plan Development. All revisions to population and water demand projections must meet the revision criteria described in the Guidelines for Regional Water Plan Development.

Task 3: Water supply analysis

This task will focus primarily on updating existing water supply numbers included in the 2006 approved regional water plans based upon changed conditions. This work may include, but is not necessarily limited to:

1. updating groundwater supply volumes based on information resulting from updated Groundwater Availability Models (see Table 2 for a list of models revised or completed since the completion of the 2006 regional water plans).

2. updating firm yield of surface water supply volumes due to changed water rights or approved surface Water Availability Models (as specified in the Guidelines for Regional Water Plan Development).
3. updating groundwater supply volumes based on Managed Available Groundwater volumes calculated by TWDB with desired future conditions adopted for the applicable Groundwater Management Area by January 1, 2008.
4. updating water supply numbers based on information indicating a new drought-of-record for one or more source.
5. updating the water supply to water user groups or wholesale water providers due to contractual or transmission infrastructure changes or due to changes in surface water rights by the Texas Commission of Environmental Quality.

Managed Available Groundwater volumes resulting from the Groundwater Management Area process **must** be used by planning groups if desired future conditions were submitted for a Groundwater Management Area to TWDB by the January 1, 2008 deadline. TWDB staff will provide these Managed Available Groundwater volumes on a per-county basis.

If a groundwater management area submits the desired future conditions to TWDB after January 1, 2008 and the regional water planning group believes that the resulting managed available groundwater volumes can be incorporated into the planning process, the regional water planning group may request funding for necessary update to the applicable water supply analysis.

Groundwater Availability Models that were not available during the preparation of the 2006 plan may be used to update groundwater availability numbers unless more accurate site-specific or timely Managed Available Groundwater information is available. Where new or updated Groundwater Availability Models have been developed, TWDB staff will work with the planning groups to prepare any necessary model runs to reflect region-specific availability policies. Contractors are encouraged to check the status of Groundwater Availability Models for their regions at the following Web site address, <http://www.twdb.state.tx.us/qam/>.

Specific guidance for methodology to be used to determine existing surface water supply, groundwater supply, and reuse supply during drought-of-record conditions is included in Guidelines for Regional Water Plan Development.

Required Application Information

Each proposed subtask for water supply analysis should specify the water source which will be analyzed and the changed conditions that make it necessary to reevaluate the water supply. Each subtask should also include the water user groups or wholesale water providers which utilize the specified source and a cost for the proposed subtask.

Task 4: Identification, evaluation and selection of water management strategies based on needs

This task will focus on the identification of water needs based upon changed conditions in demand or supply and updating the recommended water management strategies in the approved regional water plans as necessary.

This work **will** include:

- Update of water management strategies' capital cost estimates to second quarter 2007 price levels according to the Engineering News Record (ENR) Construction Cost Index (CCI). This can be accomplished by either updating total costs by applying the appropriate CCI conversion to each total cost in the current approved regional plan or by reevaluating/re-estimating costs at a more detailed level.
- Updating water management strategies annual costs (and any presented unit cost estimates) to reflect updated power and capital/debt service costs in accordance with revised capital costs or changes to power costs.

This work **may** include, but is not limited to:

- Identify, evaluate, and select new water management strategies for new water user groups or wholesale water providers with needs corresponding to individual retail public utilities and logical reporting units of retail public utilities and water user groups that have experienced changed conditions requiring the evaluation of additional or modified water management strategies. Examples of changed conditions include:
 - Documented changes in water demand such as projected demands exceeding the supplies available from previously adopted water management strategies,
 - Changes in availability such as supplies being less than demands, and
 - Regionalization of two or more water user groups.
- Revision of water management strategy analyses and modifications to existing water management strategies only if the water demands, water supply volumes, or identified water needs have changed.
- Review and revision of a water management strategy to ensure that all necessary project elements are included so as to qualify for funding under the TWDB Water Infrastructure Funding program.
- Development of new water management strategies if a strategy included in the current approved plan is: no longer feasible; if the regional planning group wants to add or remove a strategy; if a new water management strategy is identified; or if the sponsor of a strategy no longer supports the strategy.
- Development of a new or removal of an existing water management strategy based on revised water demand or supply figures.
- Revising analyses and descriptions as necessary for water management strategies (e.g. due to changes in routing, capacity, or timing) and revising the impact descriptions for any revised water management strategies.
- Establishment of alternative water management strategies: TWDB Rule 357.7(a)(7)(H) allows for the substitution of one evaluated alternative water management strategy for another if the strategy originally recommended is no longer feasible. These alternative water management strategies must be fully

evaluated in terms of costs and impacts on water quality, the natural environment and agriculture. In addition, the regional water plan will specifically identify the alternative water management strategies that may be substituted to meet needs.

Required Application Information

Each proposed subtask will specify the common changed conditions that make it necessary to reevaluate one or more water management strategies. Each subtask should also include the water user groups or wholesale water providers which utilize the water management strategy (Table 2).

**Table 2.
Example of Proposed Water Supply Analysis Revisions.**

Subtask	Changed Conditions	Water User Groups/Wholesale Water Providers	Cost
Revision of construction costs	Required revision and increase in costs	All WUGs/WWPs with WMS in 2006 Plan	\$20,000
Strategies to Meet Growth	Population and water demand projections increased.	11 Water User Groups in the IH-35 corridor: City A, City B, City C	\$10,000
Revised WMSs to address Managed Available Groundwater volumes	New managed available groundwater volumes from the Groundwater Management Area process	25 Water User Groups: City X, City y, County-Other A	\$54,000
New Groundwater Availability Model (GAM)	GAM availability volumes released in November 2007.	Irrigation in Counties J, K, L and P.	\$45,000

Task 5: Impacts of selected water management strategies on key parameters of water quality and impacts of moving water from rural and agricultural areas

This work will be limited to updating this section of the regional water plan as necessary to incorporate or address changed conditions and to address new Water Management Strategies developed during this current round.

Required Application Information

The application's scope of work must specify the work to be done and the additional funds needed.

Task 6: Water conservation and drought management recommendations

This work will be limited to updating this chapter of the regional water plan as necessary including, for example, to address updated information or to address new water management strategies developed during this current round.

Required Application Information

Funds must be requested in the application and the scope of work must specify the work to be done.

Task 7: Description of how the regional water plan is consistent with long-term protection of the state's water resources, agricultural resources, and natural resources

Work under this task will be limited to updating the current description in the 2006 regional water plan as necessary, for example, based on changed conditions and new water management strategies identified under previous tasks.

Required Application Information

Funds must be requested in the application and the scope of work must specify the work to be done.

Task 8: Unique stream segments/reservoir sites/legislative recommendations

Work under this task will be limited to updating the current descriptions of and potential revisions to recommendations for unique reservoir or stream segments in the currently approved regional plan and updating legislative recommendations as necessary. The legislative recommendations are to be developed by planning groups in a similar manner as for the previous approved regional water plans.

Required Application Information

Funds must be requested in the application and the scope of work must specify the work to be done.

Task 9: Report to Legislature on Water Infrastructure Funding Recommendations

A provision was integrated into the scope of work for the second round of regional water planning to survey municipal water user groups with needs in order to develop infrastructure funding recommendations.

To meet this requirement during the current round of regional planning, regional water planning groups must update their assessment of funding needs either through a water user group survey similar to the last round. Additional task guidance and a Board-developed survey instrument will be provided prior to execution of the contract.

Required Application Information

The application's scope of work must specify the work to be done and the additional funds needed.

Task 10: Adoption of plan

This task includes public participation, eligible administrative costs, eligible planning group member travel and, if elected, scope of work development. This task has a similar scope and effort as funded during the second round of regional planning.

Public participation was important in the development and adoption of the 2006 regional water plans and will continue to be so in this next round of regional water planning. Activities conducted by professional public relations staff are intended to inform and involve the members of the public. Therefore, TWDB funding limits will be based on population of the regional water planning area and further limited to eligible activities conducted by consultants under contract. Funding will be provided for translators deemed necessary and preparing copies of information for voting and non-voting members.

Since the major cost of eligible travel will be mileage paid to voting planning group members, the TWDB has determined that travel will be based on a combination of the relative land area and travel distance in the planning area. Due to a legislative intent agreement, voting member travel funding statewide cannot exceed \$50,000 per year or a total of \$250,000 during the five-year planning period. Each funding contract will include a provision limiting travel funding to the planning group's proportional share of total travel funds.

Other eligible activities:

- Work required to consider the impacts of climate change as a factor in the regional planning process.
- Work to catalogue the implementation of previously recommended water management strategies contained in prior regional and state water plans.

Required Application Information

The application's scope of work must specify the work to be done and the additional funds needed.

Data Entry into Relational Database

The data associated with the above tasks must be entered into a relational database **prior to submission of the initially prepared plan (IPP)**. The Board will not accept adopted regional water plans until the associated data in the TWDB regional water planning database (DB12) is complete and accurate.

Each regional water planning group will access and update the database via the Internet and will not need to have the software Microsoft Access in order to use the application. Additionally, a run-time version of the database will be available for download at the TWDB web site. Online data entry forms will be provided and reports can be generated

from the database to assist the planning groups with preparation of their 2011 regional water plans. TWDB staff will populate the database with the previously submitted 2006 regional water plan data. The planning groups and their contractors will be asked to review and revise, if necessary, the existing data and add new data to the database as required by updates and other work under the funded tasks described above. The intent of the database is to maintain standardization of data and to facilitate the compilation of statewide information. Specifics on data entry are available in [User Guide to the Regional Water Planning Data Web Interface](#). All incremental and total costs of updating DB12 to accurately reflect all work and changes associated with this round of planning are to be embedded within the scope of work budgets for Tasks 1-10.

Contracts Between the TWDB and the Regional Water Planning Groups

The planning contracts will identify the cost for the preparation of the regional water plans. Contracts will be for the full period through adoption of the next regional water plans. The contracts will include contingency language relative to funding authorization for planning efforts scheduled for the FY 2008-09 biennium and FY 2010-11 biennium. Contracts and scopes of work must clearly delineate deliverables based on a two-thirds/one-third split of total requested funds in order to allow for completing discrete deliverables in the event that FY 2010-11 biennium funding is not appropriated.

Two-thirds of the contracted funds will be immediately available for planning activities since two-thirds (\$6 million) of the total estimated \$9 million of funding has already been appropriated by the Legislature. The estimated remaining \$3 million for regional planning will be contingent on authorization and appropriation by the Texas Legislature for the FY 2010-11 biennium. The deliverables and work scope items must be designated to indicate which portion of these two funding sources will support the task or subtask. The regional water planning groups may delineate where and how this split is applied to their total budgeted amount as appropriate to accommodate its proposed work schedule and work plan.

Scope Item Number 2 – Impact of Drought Management Strategies on Surface Water Reservoirs in Region H

Statement of the Problem/ Issue

Drought management is not currently included as an identified water management strategy in the adopted 2006 Region H Regional Water Plan. Several comments were received during the last round of planning requesting that drought management be specifically considered during the planning process as a tool to reduce demands. Drought management has the potential, when plans are successfully implemented and enforced, for reducing overall water demands during periods of drought and therefore has the potential to stretch existing and future surface water supplies during these periods with the result of reducing or eliminating the need for additional surface water management strategies.

Allowable Board Category

This activity supports two categories of need established by the Texas Water Development Board (TWDB): No. 3, Refinement of water supply information or water management strategies; and No. 4, Activities that will help overcome problems from the last round of planning.

In order to better define the impacts of drought management on overall water demand and required water management strategies, additional study and refinement of regional water planning activities is required. Additionally, there were numerous requests by environmental and conservation interest groups to more fully consider the use of drought management as a water management strategy and to identify how drought management may reduce or eliminate other water management strategies currently included in the regional water plan.

Scope of Work

In order to ensure compatibility with the adopted State Water Plan, for all sub-tasks, any demand, supply, or water management strategy development and/or analysis will follow similar methodologies, agency rules, and guidance as used during the preparation of the 2006 Region H Regional Water Plan.

The TWDB will be performing a Water Research Study Priority Topic study on the role of Drought Contingency/Management strategies in the regional and state-wide water planning process. The TWDB state-wide study will be developing information related to commonly used drought management measures, the effectiveness of these measures, as well as impediments to implementing drought management plan in Texas.

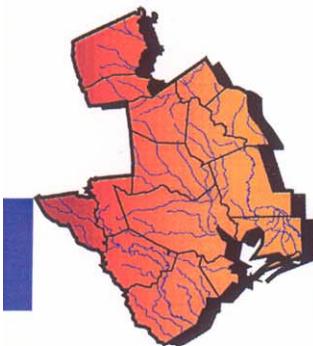
It is assumed that for the following scope of work for Region H, information developed during performance of the TWDB state-wide study will be used where applicable. In addition, it is also assumed that activities associated with developing information related to drought management strategies and the effectiveness of those strategies specific to Region H will be provided to the TWDB for use in developing the state-wide Water Research Study Priority Topic study.

- A. Assess the scope and efficacy of Drought Contingency planning in Region H.
 - A.1 Obtain listing of specific systems from TCEQ drought impact list.
 - A.2 Use TCEQ Water Utility Database to determine system size in terms of connections and population as well as peak day and average day usage information, if available.
 - A.3 Use information from TCEQ database and/or from TCEQ drought listing to contact system officials for drought impacted systems and request updated connection and water usage records. Records of drought contingency measures implemented will also be requested.

- A.4 Use records of water usage during implementation of drought contingency measures as well as for times when measures were not in place and compare per capita usages.
- A.5 Research national publications for information on efficacy of drought contingency measures in other climates.
- A.6 Develop a summary listing of commonly used Drought Contingency measures and the corresponding estimates of water savings associated with implementing these measures.
- A.7 For each WUG associated with the surface water reservoirs listed above, use the estimates for water savings associated with implementing Drought Contingency measures developed in Task A.6 to estimate projected water demands under drought conditions.
- B. Evaluate the relative impact of drought management strategies to existing and future water supplies in Region H.
 - B.1 Using the Texas Commission on Environmental Quality (TCEQ) WAM, evaluate the impact of drought conditions on existing Lake Livingston, Lake Conroe, and Lake Houston reservoirs and future Allens Creek reservoir supplies in the absence of drought management measures.
 - B.1.1. Develop graphs summarizing lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows) and demands.
 - B.1.2 Develop summary tables calculating the frequency, extent, and duration of low lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows), and demands.
 - B.1.3 Assess impacts on water supplies as a result of drought conditions extending beyond the current drought of record by estimating how many months the supply remaining at the end of the drought of record will meet demands.
 - B.2 Using the TCEQ WAM, evaluate the impact of drought conditions on existing Lake Livingston, Lake Conroe, and Lake Houston reservoirs and future Allens Creek reservoir supplies in the presence of drought management measures and expected water savings as estimated in Task A.7 above.
 - B.2.1. Develop graphs summarizing lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows), demands, and drought management strategies and triggers.
 - B.2.2 Develop summary tables calculating the frequency, extent, and duration of low lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows), demands, and drought management strategies and triggers.
 - B.2.3 Assess impacts on water supplies as a result of drought conditions extending beyond the current drought of record by estimating how many months the supply remaining at the end of the drought of record will meet demands.
- C. Evaluate the impacts, if any, of drought management on the size and timing of other future water management strategies in Region H.
- D. Prepare a summary technical report documenting the results including tables, graphs, and figures in accordance with guidelines in Exhibit B of the Drought Management task and present to the Region H RWG.

Region H 2006 Water Plan Budget
By Task and Year

Scope Item	Task Description	Total
Scope Item 2	Impact of Drought Management Strategies on Surface Water Reservoirs in Region H	\$110,550
A	Assess the scope and efficacy of Drought Contingency planning in Region H	\$26,080
A.1	Obtain listing of specific systems from TCEQ drought impact list	\$2,460
A.2	Use TCEQ Water Utility Database to determine system size in terms of connections and population as well as peak day and average day usage information, if available	\$3,780
A.3	Use information from TCEQ database and/or from TCEQ drought listing to contact system officials for drought impacted systems and request updated connection and water usage records. Records of drought contingency measures implemented will also be requested	\$5,300
A.4	Use records of water usage during implementation of drought contingency measures as well as for times when measures were not in place and compare per capita usages	\$6,420
A.5	Research national publications for information on efficacy of drought contingency measures in other climates	\$4,900
A.6	Develop a summary listing of commonly used Drought Contingency measures and the corresponding estimates of water savings associated with implementing these measures	\$2,180
A.7	For each WUG projected to receive water supply from Lake Livingston, Lake Conroe, Lake Houston, and future Allens Creek Reservoir, use the estimates for water savings associated with implementing Drought Contingency measures developed in Task A.6 to estimate projected water demands under drought conditions	\$1,040
B	Evaluate the relative impact of drought management strategies to existing and future water supplies in Region H	\$58,740
B.1	Using the Texas Commission on Environmental Quality (TCEQ) WAM, evaluate the impact of drought conditions on existing Lake Livingston, Lake Conroe, and Lake Houston reservoirs and future Allens Creek reservoir supplies in the absence of drought management measures	\$7,160
B.1.1	Develop graphs summarizing lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows) and demands	\$7,490
B.1.2	Develop summary tables calculating the frequency, extent, and duration of low lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows), and demands	\$7,110
B.1.3	Assess impacts on water supplies as a result of drought conditions extending beyond the current drought of record by estimating how many months the supply remaining at the end of the drought of record will meet demands	\$7,610
B.2	Using the TCEQ WAM, evaluate the impact of drought conditions on existing Lake Livingston, Lake Conroe, and Lake Houston reservoirs and future Allens Creek reservoir supplies in the presence of drought management measures and expected water savings as estimated in Task B, above	\$7,160
B.2.1	Develop graphs summarizing lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows), demands, and drought management strategies and triggers	\$7,490
B.2.2	Develop summary tables calculating the frequency, extent, and duration of low lake level and/or capacity under various hydrologic conditions (i.e., with and without return flows), demands, and drought management strategies and triggers	\$7,110
B.2.3	Assess impacts on water supplies as a result of drought conditions extending beyond the current drought of record by estimating how many months the supply remaining at the end of the drought of record will meet demands	\$7,610
C	Evaluate the impacts, if any, of drought management on the size and timing of other future water management strategies in Region H	\$4,810
D	Prepare a summary technical report documenting the results including tables, graphs, and figures in accordance with guidelines in Exhibit B of the Drought Management task and present to the Region H RWG	\$20,920



Region H Water Planning Group

November 1, 2007

Mr. William F. Mullican, III
Deputy Executive Director
Texas Water Development Board
1700 North Congress Avenue
Austin, TX 78711-3231

Subject: Response to TWDB Letter Dated June 27, 2007

Region H Regional Water Planning Group

Dear Mr. Mullican:

I am pleased to present the response from the Region H Regional Water Planning Group (Planning Group) to your letter dated June 27, 2007 regarding regional water planning activities in fiscal years 2008 and 2009. Your questions are repeated below along with the corresponding response from the Planning Group.

1. *What activities do you anticipate your region will need to accomplish in order to meet statute and rule requirements in adopting your 2011 Regional Water Plan?*

As explained further below, Region H will need to update the Water Availability and Water Supply numbers in Chapter 3, update and revise the Water Management Strategies in Chapter 4, and determine the Impacts of the Water Management Strategies in Chapter 5 in order to adopt the 2011 Regional Water Plan. Region H may also need to update specific WUG populations and water demands in Chapter 2 if supporting documentation is provided, review and amend policy statements and recommendations in Chapter 8 as appropriate, update Chapter 7 based upon changes to the water management strategies as appropriate, and add new public involvement activities to Chapter 10.

A few major WUGs identified in the 2006 Regional Water Plan (RWP) have developed updated demand projections that differ from the numbers presented to the Board for approval in the previous plan. These WUGs represent major municipal water demands and the magnitude of those demands drives the need for major raw and treated water projects within the Region. The Planning Group would anticipate submitting these revised demands to the Board for consideration in the 2011 RWP and would expect to need additional water management strategies to address these significant changes. Furthermore, the creation of the North Fort Bend Water Authority (NFBWA) will dictate the need for revisions to demand projections within Fort Bend County. The Planning Group has identified the update of water demand and subsequent supply strategies to be vital to the ongoing regional planning process.

2. *What region-specific issues would your planning group like to address and incorporate into your 2011 Regional Water Plan?*

As water supply strategies near later phases of planning and move toward eventual implementation, there is often some evolution in the details related to approach and execution. Many of the major raw water supply strategies within Region H are driven by the Subsidence District's regulations and will be implemented by the City of Houston (COH) and the large water supply authorities (North Harris County Regional Water Authority [NHCRWA], West Harris County Regional Water Authority [WHCRWA], Gulf Coast Water Authority [GCWA] and the NFBWA). It is the desire of the Planning Group to clarify and solidify the plans made in the 2006 RWP for meeting the demands of these WUGs and WWPs in a more complete and detailed form for the 2011 RWP. Additionally, ongoing facility planning for groundwater to surface water conversion in Montgomery County may call for similar updates and/or revisions to the major water supply strategies in that area.

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Groundwater availability for the 2006 round of regional planning was based on a number of data sources. While a groundwater availability model (GAM) was available at the time for the portion of the Carrizo-Wilcox aquifer in portions of Leon and Madison counties, this data was not available for the remainder of Region H. With the completion of the northern Gulf Coast aquifer GAM in April 2005, the Planning Group has another tool for estimating water availability for the remainder of the Region. The projected completion of the GAMs for the Brazos River Alluvium and Yegua-Jackson aquifers should provide GAM data for minor aquifers in Region H and will also warrant further review of total water availability within the Region.

In addition to data now available from the recent and soon completed GAMs, coordination with Groundwater Management Areas (GMAs) 12 and 14 may be necessary in the course of completing the 2011 RWP. Similarly, additional Groundwater Conservation Districts (GCDs) have been established within Region H since the development of the 2006 RWP. Coordination with the Bluebonnet, Brazoria County, Lower Trinity, and Mid-East Texas GCDs will be essential in developing groundwater supplies as rules and policies established by these entities will guide the development of available groundwater supplies in the counties they serve. Coordination with existing GCDs will also be essential. For instance, the Lone Star GCD will adopt Phase II of the District Regulatory Plan by July 1, 2008. This phase will establish specific regulations for groundwater reduction by new and historic users of groundwater which may lead to an adjusted level of groundwater availability in Montgomery County.

The Harris-Galveston Subsidence District's (H-GSD) most recent Regulatory Action Plan was adopted in 1999 and the Fort Bend Subsidence District (FBSD) adopted a new Regulatory Action Plan in 2003; both plans will likely be updated in 2012. Both districts continue to implement those plans through rules and permitting. Information developed during the process of issuing permits, reviewing Groundwater Reduction Plans, and developing data for plan revisions can all be utilized for the 2011 RWP. FBSD projects that the District already exceeds the 2010 population estimates and, therefore, is recommending significant changes to the population and water demand projections for Fort Bend County. Groundwater availability in Harris, Galveston, and Fort Bend Counties is determined by the respective subsidence districts through their Regulatory Action Plan. Unlike other areas of the State and Region, the primary focus of groundwater regulation in these particular counties is to end subsidence. Stopping subsidence requires strict limits on groundwater pumping, which the Districts accomplish by requiring permittees to convert up to 90% of their total water demand to surface water sources. Therefore, the new groundwater planning process requiring the GMA to establish a Desired Future Condition and then use the Gulf Coast GAM to establish a Managed Available Groundwater (MAG) number for each District in the GMA does not apply to the Subsidence Districts. Instead, groundwater availability decreases as surface water availability increases. These total demand numbers must be utilized in place of a MAG or groundwater availability for Harris, Galveston, and Fort Bend Counties.

Surface water availability within Region H is also a matter requiring additional attention in the regional planning process. One major issue is the firm supply of water available after accounting for anticipated return flows and system operation opportunities. During the completion of the 2006 RWP there were several permits applications related to surface water supplies that were filed and pending. The status of the Brazos System Operation permit application and the COH and San Jacinto River Authority (SJRA) major wastewater reuse permit applications are still pending and their approval may have significant impacts on water availability in the Brazos and San Jacinto River basins. Each of these permit applications could change the long-range surface water availability estimates for this region.

Another surface water availability issue is the availability of run of the river water rights during drought and the need for back-up water supply strategies for these rights.

As identified in item 1 above, municipal water demand projections for the NHCRWA and the WHCRWA have been updated as part of the authorities' ongoing efforts in long-term planning. Both of these revised projections are noticeably greater than the demands presented in the 2006 RWP. The Planning Group would like to work with the Board and these authorities to have the demand projections revised in the 2011 RWP to aid in the long-term strategic planning for the region. The creation of the NFBWA also calls for revision to the demand projections and methodology presented in the 2006 RWP. The NFBWA will consolidate some

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individual WUG demands and will also reclassify some demand that was originally represented as County-Other to be included now as part of the named, NFBWA WUG.

The Planning Group is also interested in the further analysis of the proposed Brazos River saltwater barrier. The Brazos saltwater barrier has been identified as a long-term strategy necessary for the prevention of saltwater intrusion into upper reaches of the Brazos River where fresh water supplies are at risk. In the 2006 RWP, it was projected that this project would become necessary by 2030 and would become economically viable in the 2020 decade. The extensive time constraints involved in permitting, planning, and implementing a project of this scale necessitates further study of this WMS within the upcoming years.

The Planning group also looks toward an expanded interactive role in the environmental flows advisory process, pursuant to the goals of the S.B. 3 legislation. This includes interaction with the Environmental Flows Advisory Group. The Planning Group has already taken the first steps in participating with this initiative by assembling an internal committee tasked with nominating individuals to be considered for a place in the Advisory Group. The Planning Group wishes to make coordination with and support for the Advisory Group to be budgeted in future efforts, commensurate with the important role that this group has in the regional planning process. Similarly, the Planning Group wishes to work with the Galveston Bay Freshwater Inflow Group (GBFIG) to enhance the advances being made within Region H on the topic of bay and estuary inflows. This will include discussion among the Planning Group, the Region H consultants, and GBFIG on technical and related policy issues.

There have also been a few miscellaneous requests by stakeholders for specific amendments to the 2006 RWP. For those stakeholders who do not proceed with the amendment process but still desire the proposed revisions, it will be important to account for these changes in their long-term water supply strategies as a part of the 2011 RWP.

3. What are your recommendations to the TWDB for allocations to the planning groups of the funding appropriated to complete the 2011 Regional Water Plans?

The issue of reaching and including members of public from municipal, agricultural, and industrial backgrounds is at the core of the regional planning process and requires a substantial amount of resources for coordination and communication. In the past, the Planning Group has used its public participation funds in an effective, efficient manner and will continue to maximize its resources in the future. However, the effort that is required to attend to the appropriate level of public participation is not adequately reflected by the amount budgeted to these tasks. The Planning Group would like to appeal to the Board on this issue and emphasize a need for increased funding of these activities in the future. Specifically, the current level of funding for public participation will not be adequate to continue the current level of participation into the second biennium of planning. Additional funds will be required to maintain these efforts throughout the entirety of the 2011 round of regional water planning.

4. Would the planning group be willing to enter into one contract for the entire scope of work required to complete the 2011 Regional Water Plans with the last year of funding contingent on legislative appropriations?

The Planning Group recognizes the difficulties inherent in the funding of a long term process in terms of two years at a time based on the firm funding available for that period. That being said, it should be noted that the Planning Group does not contract with the Board directly. The contract is between the Board and the San Jacinto River Authority (SJRA) on behalf of the RWPG. On behalf of the SJRA, the Planning Group is concerned that the contract will require deliverables that must be provided and that the deliverables will be impacted by the availability of funds or lack thereof at the very end of the project. Neither the SJRA nor the Consultant is comfortable signing a contract that obligates each of them to produce deliverables if the funds are not available to complete the work. The Planning Group is willing to consider alternative contractual language that the Board and its staff might propose to address this problem but remains concerned about this problem with the contractual arrangement.

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The Planning Group appreciates this opportunity to comment on and to help guide the planning process for fiscal years 2008 and 2009.

Sincerely,

Jeff Taylor
Chairman, Region H Water Planning Group

JDA

FROM: Jarrett Woodrow

SENT: Wed 11/21/2007 9:51 AM

SUBJECT: RE: Region H Response Letter to TWDB

Jeff Taylor and Region H Water Planning Group members,

Thank you for the opportunity to look over the proposed scopes for Task 1 & 3. We have reviewed the proposed scopes of work for the analysis of environmental flows (Task 1) and the use of interruptible water supplies (Task 3) and would like to offer the following recommendations.

With regards to Task 1, Region H proposes to evaluate different scenarios using Run 8 or Run 3, modified to include return flows. In our opinion, this analysis will provide an optimistic forecast regarding the future continuation of environmental flows. We recommend an additional model scenario using Run 3 without including return flows. A Run 3 simulation without return flows is important because the inclusion of return flows in these models provides a level of protection for the environment that may be overly optimistic. Unlike possible downstream water rights holders, the environment has no legal standing to receive return flows and thus there is no recourse if future return flows are overestimated today. Indeed, Run 3 (without return flows) is the only legally enforceable scenario under Texas law. Run 3 w/o return flows will provide a worst-case forecast for how flows may behave following the implementation of water management strategies. We appreciate that additional simulations necessitates additional work; however, a Run 3 simulation without return flows should be very efficient, as this run is already available to the consultants. By having two different estimates, Region H members will have a better sense for the range of possible future environmental flows on which to make judgments, decisions, and recommendations. Having the two different estimates may also encourage a proactive approach to ameliorate foreseeable problems. For example, Region H may recommend that in certain cases return flows be appropriated for, or otherwise dedicated to, the environment.

With regards to Task 3, we appreciate that Region H does propose Run 3 simulations without return flows. For this task, note that the issuance of significant interruptible permits (e.g., with a 75-75 reliability) would have the effect of extending droughts from a fish and wildlife perspective. Because many river reaches in Texas are fully appropriated using firm yield water permits, such reaches could legally go dry during a repeat of the drought of record, but would have some flows before and after the drought. The issuance of interruptible permits would extend the period of time that rivers could legally be dry and would also increase the frequency of low flow periods. Thus, while we are not opposed to Region H looking at interruptible supplies as a future water management strategy, we encourage all potential permit applicants to consider adequate safeguards for fish and wildlife.

I also want to let you all know that I have accepted a position with the US Fish and Wildlife Service with their Coastal Program here on the Upper Coast. I can only say that it has been a privilege to work with Region H. You have set the mark as a regional planning group. You were the first to recognize environmental flow needs as a responsibility and the first to recognize and nominate ecologically significant streams. You chose to take this next round of funding and use it to look at environmental effects of the management strategies. You made my job easy. The level of professionalism and dedication that you have exhibited to your mission has set an example for me and I have learned a great deal from each of you, past members, and from this experience.

I have copied Dan Opdyke and Cindy Loeffler on this email. Cindy will be working on my replacement and I would direct technical questions to either Cindy or Dan. Have a great Thanksgiving and I hope to see you at some point in my new endeavors.

Regards,
Woody

FROM: Taylor, Jeff
SENT: Fri 12/7/2007 4:21 PM
SUBJECT: RE: Region H Response Letter to TWDB

I am certain that I am missing sending this reply back to Woody so I am requesting that someone like Cindy forward this to him, if possible.

I do not disagree with the concepts voiced by Woody in terms of his underlying concerns. I would only mollify to an extent the timing of the potential impacts based on information that we have already seen.

Task1- remember the presentation presented by Tom Gooch of Freese & Nichols where he illustrated the quantity of proposed reuse within the Metroplex by the end of the planning period (2060) and the resultant return flows to Galveston Bay. His data suggests that through the planning period that we would not incur the impacts as voiced by Woody. I would request that the consultants dust off that work and incorporate it in some fashion into our environmental flows assessment. While Woody's general comments about the dangers of lack of return flows have merit, the data suggests that in the Trinity Basin, this may not occur through the next century if at all. We might alternately want to consider how to legally ensure that the return flows that are predicted to occur can be ensured to occur. This is a different discussion than to model a worst case scenario that is not predicted to occur.

Task 3- Again, Woody's basic concern has merit but it is much more applicable within the watersheds of central and west Texas than here within Region H. Many Regional Planning regions rely on interruptible supplies as fundamental components of there water supply sources. Our Region H plan has lacked any usage of interruptible supplies because our reservoir and groundwater supplies have been so plentiful. We don't have any management strategies of this type within our current plan. We do however have this task within our current work scope which specifically looks at these types of interruptible supplies. I would agree with Woody that if we consider this type of supply as a potential future source, that we base that decision on the assessment of its impact on environmental streamflows.

Please review and comment, as appropriate so that we can direct the consultants accordingly

TCB
5757 Woodway Drive, Suite 101W, Houston, Texas 77057-1599
T 713.780.4100 F 713.780.0838 www tcb.aecom.com

Meeting Minutes

Subject	Modeling Assumptions for Region H Tasks 1 and 3
Project reference	Region H – 2011 Round, 1 st Biennium
Place	Conference Call
Meeting date	October 18, 2007
Attendees	David Parkhill – TCB Mike Reedy – TCB Jason Afinowicz – TCB Dan Buhman – KBR Mike Personett - KBR Chris Krueger – KBR Temple McKinnon – TWDB Barney Austin – TWDB Yujuin Yang – TWDB Rubin Solis - TWDB
Date prepared	October 18, 2007
Prepared by	Jason Afinowicz

Distribution	Attendees Jeff Taylor – City of Houston Reed Eichelberger – SJRA Jace Houston - SJRA
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A meeting was called by the consultant team to discuss the modeling assumptions set forth for completion of Task 1 – Environmental Flows Investigations and Task 3 – Interruptible Supplies set forth in the SOW for the 1st biennium of the 2011 round of planning. A conference call was set up for the morning of Thursday, October 18, 2007 to discuss the current approach to these tasks. Attached to this document is an assembly of materials used for presenting this material during the meeting. This meeting was intended to fulfill the goals of Task Items 1.A.1.2 and 3.B.1, as submitted to the TWDB in March of 2007.

Task 1

The process for evaluating bay and estuary inflows was described with five types of models, as outlined in Task Item 1.A.1.1. These include A) naturalized flows from the TCEQ WAM, B) existing conditions with return flows, C) full authorized diversions with return flows, D) future 2060 conditions with existing permits only and full return flows, and E) future 2060 conditions with return flows and all recommended additional water management strategies as proposed in 2007 Plan. In addition, the “Condition D” model described above was proposed as a baseline for the incremental study of

individual water management strategies. Each strategy would be applied to the "Condition D" model and compared to the other conditions described above to determine the impacts of each strategy.

Furthermore, preliminary discussion was conducted on the topic of the evaluation of instream flow requirements which is included in the SOW as Task Item 1.B. This item addresses the impact of the Lyons methodology on allowable diversions and compares these results with the proposed diversions for each strategy.

The following points related to the environmental flows task were decided in the course of the meeting:

- Comparison of freshwater inflows to Galveston Bay will be done on a basis of total freshwater inflow. It was decided that these numbers would also be reported by basin as they would be output from WRAP so that they could be used for future study outside of the current SOW by the TWDB, the Planning Group, or other interested party.
- Freshwater inflows in this SOW are defined as flows generated in WAM runs. Inflows do not include direct precipitation, as these contributions are quantified in the estuary simulations.
- TWDB is currently engaged in a process for identifying critical segments within each basin for SB2 Instream Flow analysis purposes. This process may yield results over the next year in time to be considered within this SOW, but actual progress will have to be monitored to take advantage of this synergy between the efforts of TWDB and the Planning Group.
- TWDB can provide the WAM runs created for the upper Trinity and Brazos River basins as a part of the future condition simulations conducted during the 2006 Plan. These models will be used by TCB to simulate 2060 conditions in the lower basins for completion of both Tasks 1 and 2.
- Care must be taken in modifying the models to simulate return flows from the strategies so that existing return flows are not impacted. There may also be need to revisit the return flows incorporated with the BRA System Operations permit.

Task 3

The methodology for the interruptible supplies task was also presented. These activities are described in Task 3 Items B, C, and H and generally consist of 1) quantifying interruptible supplies in existing water rights, 2) quantifying interruptible supplies in unpermitted water, 3) relating each potential interruptible supply to irrigation permit locations, 4) determining the location of, amount of, and demand for each identified interruptible supplies, 5) quantifying the additional firm yield which could potentially be made available by the interruptible supplies, 6) quantify other potential uses for interruptible supplies, and 7) determine the impact on size and timing of water management strategies in Region H.

The following points related to the interruptible supplies task were decided in the course of the meeting:

- As with the environmental flows task, additional coordination will be performed with TWDB in selecting critical segments for study if data is available in a timely fashion to be incorporated in this SOW.

Summary

The methodology and assumptions planned for the WAM analysis in Task 1 and 3 were discussed in detail. Some minor clarifications and modifications were agreed to by all the attendees.

Subsequent to the meeting, it was also agreed that these notes would be created and presented to the Region RWPG for review and formal submittal to the TWDB as documentation of completion of Task items 1.A.1.2 and 3.B.1.

Attachments: Handout from 10/18 Meeting

Task 1 – Environmental Flows

Background

The current science and regulatory position regarding environmental flows in Texas is undergoing evaluation and evolution. Many of the management strategies proposed in the State Water Plan for Region H are impacted by potential future environmental flow requirements and the prospective availability of water supply from these management strategies may be significantly impacted as a result. Better understanding of the environmental flow needs within Region H and better understanding of the regulatory framework in which future projects and permits will be assessed is required to allow future financing, planning and implementation of water management strategies.

In order to better define the impacts of the proposed water management strategies on required environmental flow requirements, additional refinement and definition of the activities associated with each strategy will likely be required. Additionally, there have been numerous requests by environmental interest groups to more fully identify the potential impacts of the selected strategies in order to better define the reasonableness of these impacts and the consistency of the strategies with the long-term goals of the region to protect sensitive wildlife habitats, public lands, and agricultural resources, and meet overall environmental standards.

Role of WRAP

WRAP is to be used for the analysis of WMS impacts on the Galveston Bay Estuary. The existing, updated WAM Runs 3 and 8 will be obtained from TCEQ and modified to meet the following conditions (described in Task 1, Item A.1.1):

- A) Naturalized Flows (baseline data from TCEQ WAM)
- B) Existing Conditions with Return Flows
- C) Full Authorized Diversions with Return Flows
- D) Future 2060 Conditions with Existing Permits Only and Full Return Flows
- E) Future 2060 Conditions with Return Flows and All Recommended Additional Water Management Strategies Including Reuse Projects as Proposed in 2007 Plan

A.1.1. Establish base conditions for Water Availability Models (WAMs) to be used to demonstrate and compare the potential impacts of proposed future water management strategies using the agreed monthly targets for the estuary. Anticipated base conditions for five scenarios including: a) naturalized, b) existing with return flows, c) full authorized diversions with return flows, d) future 2060 conditions with existing permits only and full return flows (no new reuse permits), and e) future 2060 conditions with return flows and all recommended additional water management strategies including reuse projects as proposed in 2007 Plan.

In addition, the Condition D model described above (Future 2060 Conditions with Existing Permits Only and Full Return Flows) will be modified to represent each of the 17 WMSs individually, as described in Item A.1.3.

A.1.3. Develop WAM runs for each individual water management strategy (17 total) showing the impact of the individual strategy on the compliance frequency and shortage amount for meeting monthly targets for freshwater inflow as compared to the base conditions.

All of these models will be compared to develop summaries of impacts to bay and estuary inflows related to each strategy.

These same models will be ultimately be revised to develop potential methods for mitigating the impacts of the evaluated strategies. The assumptions related to these models will be considered once the first round of WRAP models reaches completion.

WRAP Runs for Task 1: Environmental Flows Investigation

Strategy		Synopsis	Base Model	Basins	Diversions	Return Flows	Area-Capacity	Term Water Rights
A	Naturalized		Naturalized	B-C, B, SJ-B, SJ, T-SJ, T, N-T	N/A	N/A	N/A	N/A
B	Existing with Return Flows	Condition A, plus current operations.	Run 8	B-C, B, SJ-B, SJ, T-SJ, T, N-T	10-yr Max Use	Assumed	Year 2000	Term Water Rights
C	Full Authorized Diversions with Return Flows	Condition B, plus full authorized diversions.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed (From Run 8)	Year 2000	No Term Water Rights
D ₀	Future 2060 Conditions with Existing Permits Only and Full Return Flows	Condition C, plus 2060 storage.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed (From Run 8)	Year 2060	No Term Water Rights
D ₁	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Municipal Conservation.	Condition D ₀ , plus revisions to diversions and return flows.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed, less portion of conserved municipal diversion	Year 2060	No Term Water Rights
D ₂	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Irrigation Conservation.	Condition D ₀ , plus revisions to diversions and return flows.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed (From Run 8)	Year 2060	No Term Water Rights
D ₃	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Freeport Seawater Desalination.	Condition D ₀ , plus revisions to return flows.	Run 3	B, SJ-B	Full	Assumed, plus portion from increased use	Year 2061	No Term Water Rights
D ₄	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Expanded Use of Groundwater.	Condition D ₀ , plus increased return flows from groundwater use.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed, plus portion from increased use	Year 2060	No Term Water Rights
D ₅	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Expand/Increase Current Contracts.	Condition D ₀ , plus increased return flows from expanded use.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed, plus increased return flow	Year 2060	No Term Water Rights
D ₆	Future 2060 Conditions with Existing Permits Only and Full Return Flows + New Contracts from Existing Supply.	Condition D ₀ , plus increased return flows from expanded use.	Run 3	B-C, B, SJ-B, SJ, T-SJ, T, N-T	Full	Assumed, plus revised points of return flow	Year 2060	No Term Water Rights
D ₇	Future 2060 Conditions with Existing Permits Only and Full Return Flows + BRA System Operations Permit.	Condition D ₀ , plus new diversions and corresponding return from SysOps supply	Run 3	B, SJ-B, SJ	Full, plus increased diversions from new Sys Ops supply	Assumed, plus portion from increased use	Year 2060	No Term Water Rights
D ₈	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Allens Creek Reservoir.	Condition D ₀ , plus Allens Creek supply, diversions, and returns	Run 3	B, SJ-B, SJ	Full, plus increased diversions from new Allens Creek supply	Assumed, plus portion from increased use and new points of return flow	Year 2060, plus Allens Creek storage	No Term Water Rights
D ₉	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Little River Off-Channel Reservoir.	Condition D ₀ , plus Little River supply, diversions, and returns	Run 3	B, SJ-B	Full, plus increased diversions from new Little River supply	Assumed, plus portion from increased use and new points of return flow	Year 2060, plus Little River storage	No Term Water Rights
D ₁₀	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Non-Municipal Contractual Transfers.	Condition D ₀ , plus Little River supply, diversions, and returns	Run 3	B-C, B, SJ-B	Full, plus revised take point	Assumed, plus new points of return flow	Year 2060	No Term Water Rights
D ₁₁	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Wastewater Reuse for Industry.	Condition D ₀ , plus reduced return flows	Run 3	SJ	Full	Assumed, less portion of reuse	Year 2060	No Term Water Rights
D ₁₂	Future 2060 Conditions with Existing Permits Only and Full Return Flows + TRA to Houston Contract.	Condition D ₀ , plus transfer of water from Trinity basin	Run 3	SJ-B, SJ, T	Full	Assumed, plus new points of return flow	Year 2060	No Term Water Rights
D ₁₃	Future 2060 Conditions with Existing Permits Only and Full Return Flows + TRA to SJRA Contract.	Condition D ₀ , plus transfer of water from Trinity basin	Run 3	SJ, T	Full	Assumed, plus new points of return flow	Year 2060	No Term Water Rights
D ₁₄	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Houston to GCWA Transfer.	Condition D ₀ , plus transfer of water from San Jacinto basin	Run 3	B, SJ-B, SJ, T	Full	Assumed, plus new points of return flow	Year 2060	No Term Water Rights
D ₁₅	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Houston Indirect Wastewater Reuse.	Condition D ₀ , plus redirection of return flows	Run 3	SJ, SJ-B	Full, plus new diversion point to capture reuse flows	Assumed, plus return flows at second point of use	Year 2060	No Term Water Rights
D ₁₆	Future 2060 Conditions with Existing Permits Only and Full Return Flows + NHCRWA Indirect Wastewater Reuse.	Condition D ₀ , plus redirection of return flows	Run 3	SJ	Full, plus new diversion point to capture reuse flows	Assumed, plus return flows at second point of use	Year 2060	No Term Water Rights
D ₁₇	Future 2060 Conditions with Existing Permits Only and Full Return Flows + Lake Houston Additional Yield.	Condition D ₀ , plus additional storage in Lake Houston	Run 3	SJ	Full, plus increased diversions from Lake Houston	Assumed, plus portion from increased use	Year 2060, plus additional yield	No Term Water Rights
E	Future 2060 Conditions with Return Flows and All Recommended Additional Water Management Strategies	Condition D ₀ , plus revisions for all strategies.	Run 3	B, SJ-B, SJ, T-SJ, T, N-T	Full, with strategies	Assumed, with all strategies	Year 2060, with strategies	No Term Water Rights

Task 3 – Interruptible Supplies

Background

Under current Texas Water Development Board (TWDB) guidance for regional water planning, only “firm yield” water supplies are to be considered “available” to meet future needs for all types of water uses. While this is a sound policy for most municipal and industrial uses, which typically require supplies with a high degree of reliability, some water users, including agricultural users, may be able to use supplies that are less dependable. Future demands, combined with limited supplies of surface water in Region H, will result in significant increases in the cost of water in the future. Costly water management strategies to develop additional firm water supplies may result in costs that are too great for some end users, such as agricultural irrigators. This study will evaluate the availability and use of “interruptible” water supplies for agricultural and recreational water demands and will provide a refinement of water supply information in the 2006 Region H Regional Water Plan. In general, “interruptible” water supplies represent supplies that are available except during moderate drought conditions.

A water policy will be developed for this strategy to describe the conflicts in the demands for water, and how to best meet the competing demands. The management plan will describe how interruptible water supplies will be curtailed so that firm water demands can be fully met. This water management plan will be patterned similar to that of the Lower Colorado River Authority (LCRA). LCRA has a Texas Commission on Environmental Quality (TCEQ) approved water management plan for supply from the Highland Lakes that allows LCRA to manage the yield for the reservoir system to provide interruptible supply to rice farmers.

Role of WRAP

WRAP will be used to quantify interruptible supplies associated with existing water rights, as described in Task 3, Item B.2. This item aims to quantify the amount of water between the 75-75 rule and the firm yield of each right.

B.2. Perform an analysis of the “75-75” rule using the WAM under various conditions including WAM Run 1, Run 3, and Run 8 for all permitted and contracted water rights in Region H which might be amenable to use as interruptible supplies.

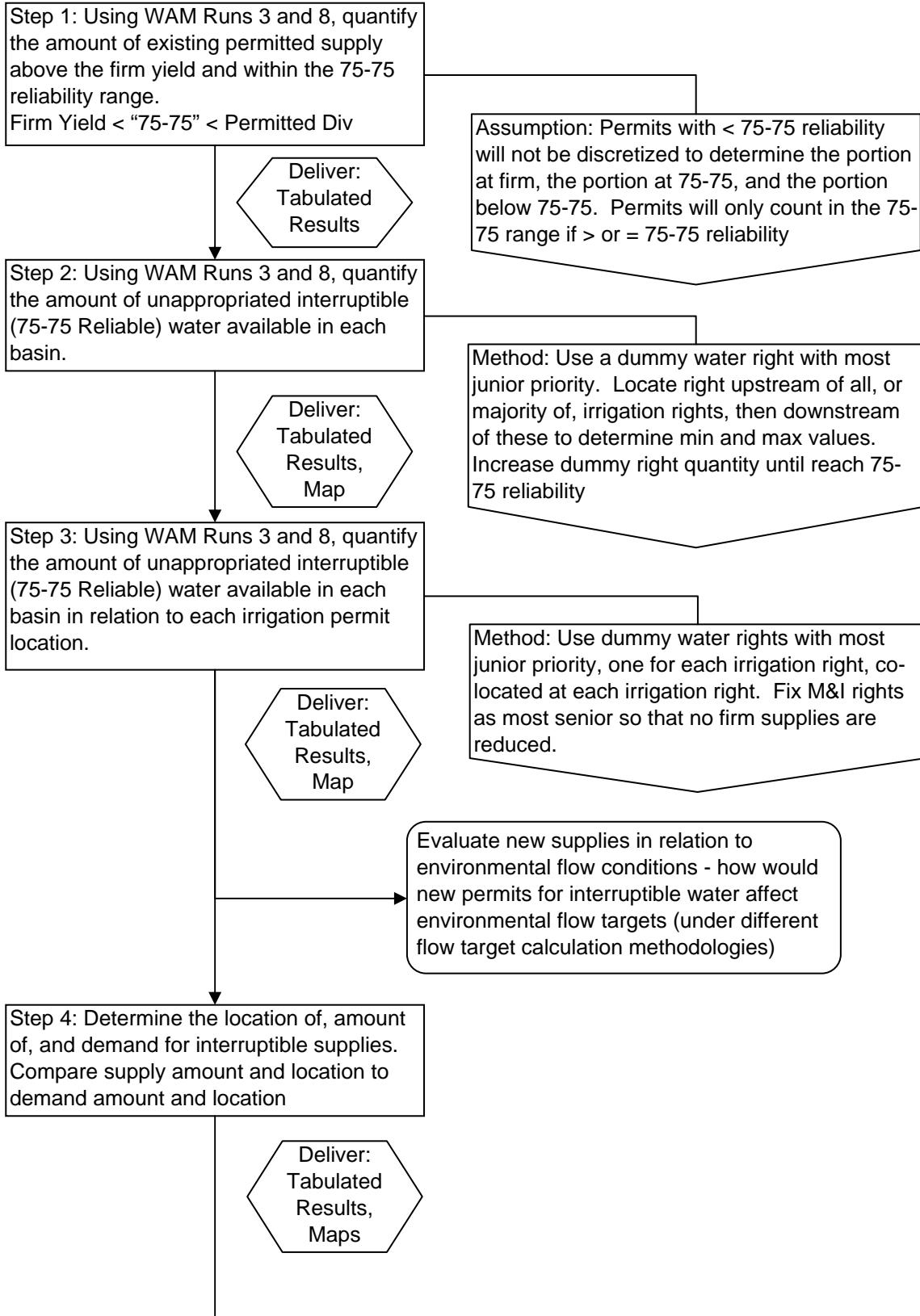
Another analysis will investigate the available interruptible supply that is in excess of the currently permitted rights, as described in Task 3, Item C.2.

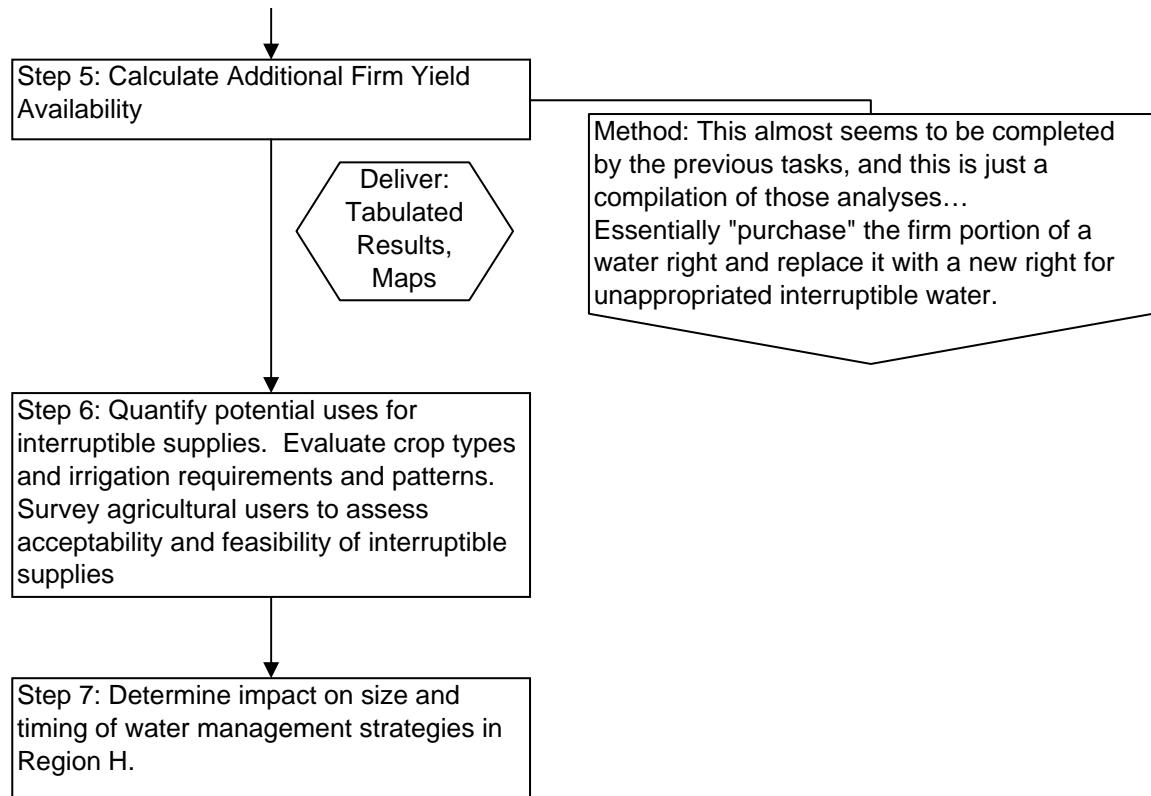
C.2. Perform analysis of the “75-75” rule at specific points in the WAM near irrigation demands in Region H under various conditions including WAM Run 1, Run 3, and Run 8 to identify and quantify new un-permitted interruptible supplies.

Once the available interruptible supplies have been quantified, the impacts of these supplies on the management strategies presented in the 2006 RWP will be evaluated. This will require further use of WAM Run 3.

Scenario		Description	Base Model	Diversions	Return Flows	Reservoir Condition	Term Rights
A (Permitted Interruptible Supplies)	A ₁	Current Conditions with Return Flows	Run 8	10-yr Max	100%	2000	Yes
	A ₂	Year 2060 Full Authorized without Return Flows	Run 3	Full Authorized	0%	2060	No
	A ₃	Year 2060 Full Authorized without Return Flows and Region C & H WMS	Run 3	Full Authorized + Strategies	0%	2060	No
B (Unappropriated Interruptible Supplies)	B ₁	Current Conditions with Return Flows	Run 8	10-yr Max	100%	2000	Yes
	B ₂	Year 2060 Full Authorized without Return Flows	Run 3	Full Authorized	0%	2060	No
	B ₃	Year 2060 Full Authorized without Return Flows and Region C & H WMS	Run 3	Full Authorized + Strategies	0%	2060	No

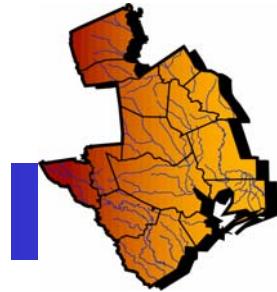
Interruptible Supply Analysis Methodology





Principle Results:

1. The amount of Firm Supply freed up to industrial and municipal users
2. The economic impact of removing firm supply from current agricultural water rights. (This would include the economic impact on irrigators and the potential for delaying future water management Strategies.)
3. Identify the feasibility and extent of current potential interruptible supplies

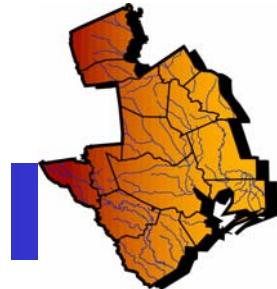


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Consultants Report

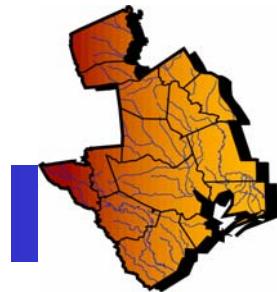
February 6, 2008



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RWPG Meeting Package

- February 6, 2008 Region H WPG Meeting Agenda
- Meeting Minutes from Region H WPG Meeting on October 31, 2007
- TAB 1 – Region H General Fund Accounting
- TAB 2 – Second Phase of Regional Planning
 - TWDB request to Publish RFP
- TAB 3 - Task 2 Drought Management
 - Proposed Scope of Work and Budget
- TAB 4 – Region H Recommendations for Second Phase Planning
 - Region H response letter to TWDB regarding proposed planning activities for second phase

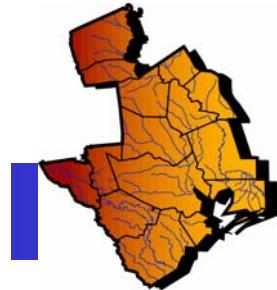


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RWPG Meeting Package

- TAB 5 – TPWD Review of Tasks 1 and 3
 - E-mail from Woody Woodrow dated November 21, 2007
 - E-mail from Jeff Taylor dated December 7, 2007
 - Meeting minutes dated October 18, 2007 between TWDB and Consultant Team
- TAB 6 – February 6, 2008 Consultants Report
 - Presentation from today
- TAB 7 – RWPG Correspondence
 - Letter from Region H dated November 6, 2007 supporting waiver for City of Groveton
 - Letter from BRA dated November 26, 2007 providing update on the West Fort Bend Regional Surface Water Treatment Plant Project
 - Letter from Speaker of the House Tom Craddick dated November 27, 2007 regarding Region H recommendations to BBAS committee
 - Letter from TWDB dated November 29, 2007 offering training modules to the RWPG's
 - TWDB Fall 2007 Rain Catcher Award for Webster, Texas (announcement linked to Region H website)

All of the above information available at www.regionhwater.org

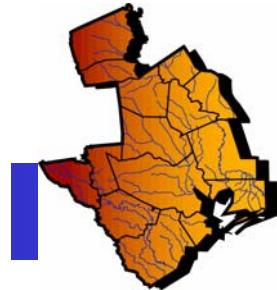


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Second Phase of Regional Planning TWDB Planning Grant Timeline

- February 8, 2008 – TWDB posts RFP for Planning Grant Applications
- May 7, 2008 (or earlier date) – Region H WPG meeting and Public Meeting to receive public input on scope of work (30-day notification required)
- June 13, 2008 – Planning Grant Applications due to TWDB
- August 2008 – Recommendation for Board consideration
- September thru November – Negotiate and execute regional water planning contracts

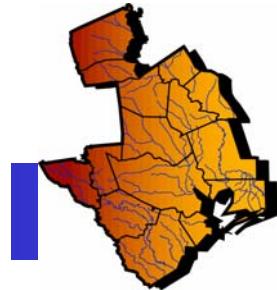
TAB 2



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Second Phase of Regional Planning TWDB Planning Grant Funding

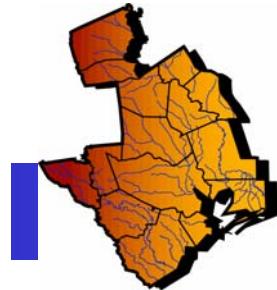
- Total of \$9 million budgeted by TWDB for completion of RWP's
- \$6 million for FY 2008-09 and \$3 million for FY 2010-11
- Planning grants will include activities for completion of RWP and delineate the split between FY 2008-09 and FY 2010-11 funding sources



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Second Phase of Regional Planning Region H Funding

- Base Funding – allocated by formula
 - \$4.2 million total allocated to all regions
 - \$565K target allocation to Region H
- Additional Funding – competitive based on need
- Set-aside Funding – Staff recommended for discretionary purposes
- Depending on Set-aside, a total of \$4 million potentially available to all regions for additional funding

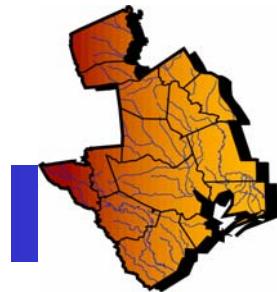


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Task 2 Scope of Work Drought Management

- TWDB approved Drought Management task and budget with the original grant application.
- TWDB requested that consultants coordinate with Board staff and outside consultants responsible for State-wide Drought Management Research Study.
- Due to timing issues, TWDB requested consultants to develop an independent scope of work for the Region H Drought Management work.

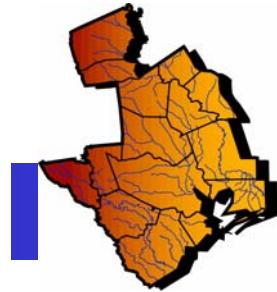
TAB 3



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Task 2 Scope of Work Drought Management

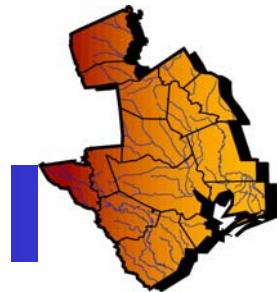
- Evaluate and assess the impacts of drought management on regional water demand and proposed water management strategies
- Assess and estimate the efficacy of drought management measures on water demand in Region H
- Assess the relative impact of drought management measures on existing and future water supplies using the TCEQ WAM
 - evaluate water supplies and resulting conditions with and without drought management measures
 - lake level and capacity of reservoirs
 - ability to extend supplies in reservoirs
- Evaluate the impacts, if any, of drought management measures and/or timing of water management strategies in the Regional Water Plan



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Task 2 Scope of Work Drought Management

- TWDB has reviewed revised scope and budget and has provided preliminary approval.
- Original scope of work versus new scope of work:
 - Additional efforts to determine the efficacy of drought contingency planning in Region H
- Request Planning Group approval to formally submit scope of work and budget to TWDB.
- Contract amendment between TWDB and SJRA will be required.



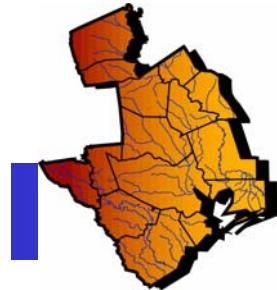
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Second Phase of Regional Planning Region H Recommendations

What activities do you anticipate your region will need to accomplish in order to meet statute and rule requirements in adopting your 2011 Regional Water Plan?

- Update and revise chapters:
 - Chapter 2 –WUG Demands
 - Chapter 3 - Water Availability and Water Supply
 - Chapter 4 –Water Management Strategies
 - Chapter 5 –Impacts from Water Management Strategies
 - Chapter 7 – Strategy Related Revisions
 - Chapter 8 – Revise Policy Statements
- Changes to WUG demands:
 - Demand projections for major WUGS
 - Creation of NFBWA as a WUG
- All of the above covered, at least in part, by TWDB baseline funding

TAB 4

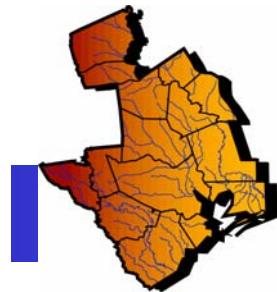


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Second Phase of Regional Planning Region H Recommendations

What region-specific issues would your planning group like to address and incorporate into your 2011 Regional Water Plan?

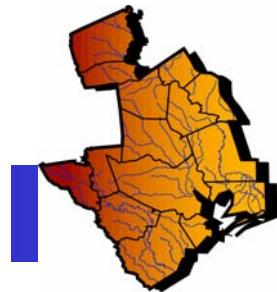
- Updates to major raw water strategies:
 - Luce Bayou
 - Supply sources for individual WUG's
 - New and pending water rights applications (City and BRA)
 - NFBWA conversion plans
 - Montgomery County conversion plans
- Change in groundwater availability
 - GAM's
 - GMA's
 - GCD's
 - Subsidence Districts



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Second Phase of Regional Planning Region H Recommendations

- Firm yield of municipal run-of-river rights
 - Monthly versus Annual reliability
 - Existing municipal rights and potential irrigation rights which may be converted to municipal at a later date
- Brazos Saltwater Barrier
 - Project development and planning
 - Stakeholder involvement
- Region H interaction with Environmental Flows Advisory Group
 - S.B. 3 Environmental Flows Advisory Group
 - Galveston Bay Freshwater Inflows Group
- All of the above are eligible for additional funding from the TWDB
- Region H Scoping Committee recommended



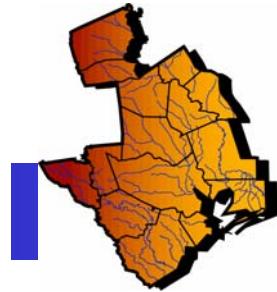
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TPWD Review of Proposed Scope of Work Tasks 1 and 3

E-mail from Woody Woodrow dated 11/21/2007:

- Task 1: Environmental Flows
 - TPWD requested that Run 3 w/out return flows be added as a baseline model
 - Run 3 will provide a worst-case scenario
 - Inclusion of return flows may provide an overly optimistic level of protection for the environment
- Task 3: Interruptible Supplies
 - TWDB noted that the use of interruptible supplies may result in extending low flows during times of drought
 - TWDB not opposed to the study of interruptible flows but requests that adequate safeguards for fish and wildlife be considered

TAB 5

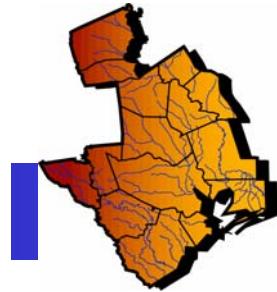


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TPWD Review of Proposed Scope of Work Tasks 1 and 3

E-mail from Jeff Taylor dated 12/07/2007:

- Task 1: Environmental Flows
 - Past studies have indicated that return flows from the Metroplex will result in minimizing the impacts voiced by TPWD
 - Considerations for legally ensuring that predicted return flows are realized may be better option than analyzing a scenario not currently predicted to occur in this planning cycle
- Task 3: Interruptible Supplies
 - TPWD concern probably more applicable to central and west Texas
 - Region H has not utilized interruptible supplies due to the plentiful nature of our groundwater and reservoir supplies
 - In agreement that if interruptible supplies are to be included in the regional plan, impacts on environmental flows should be considered.

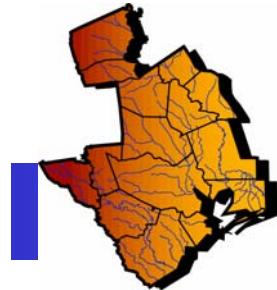


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TPWD Review of Proposed Scope of Work Tasks 1 and 3

Additional comments from consultant team:

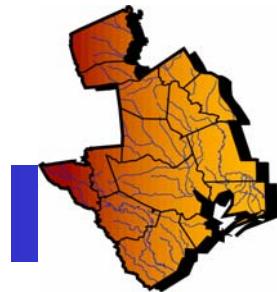
- Task 1: Environmental Flows
 - The goal of Task 1 is not necessarily to quantify a **worst-case** future scenario but instead assess impacts of water management strategies based on **expected** future conditions
 - Majority of the Region H strategies involve the additional diversion of existing water rights and proposed reuse strategies. Run 3, by its very nature, will not allow a robust analysis of these strategies.
 - Run 3 results can be used as a comparative to the study results.
- Task 3: Interruptible Supplies
 - The current Task 3 scope requires an analysis of potential impacts to environmental flows.



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TPWD Review of Proposed Scope of Work Tasks 1 and 3

- Baseline models from approved Scope of Work:
 - A -Naturalized Flow Model
 - B - Current Diversions w/ Return Flows Model
 - C - Full Authorized Diversions w/ Return Flows Model
 - D - Future 2060 Conditions w/ Existing Permits and Full Return Flows
- Recommend that results from a Run 3 model be added to the list of baseline runs for comparison purposes
- Request approval of baseline, individual, and cumulative strategy WAM technical modeling approach (including addition of the Run 3 model) from Region H WPG
- WAM technical modeling approach for Region H potential mitigation strategies to be approved by TWDB and Region H WPG at next scheduled meeting



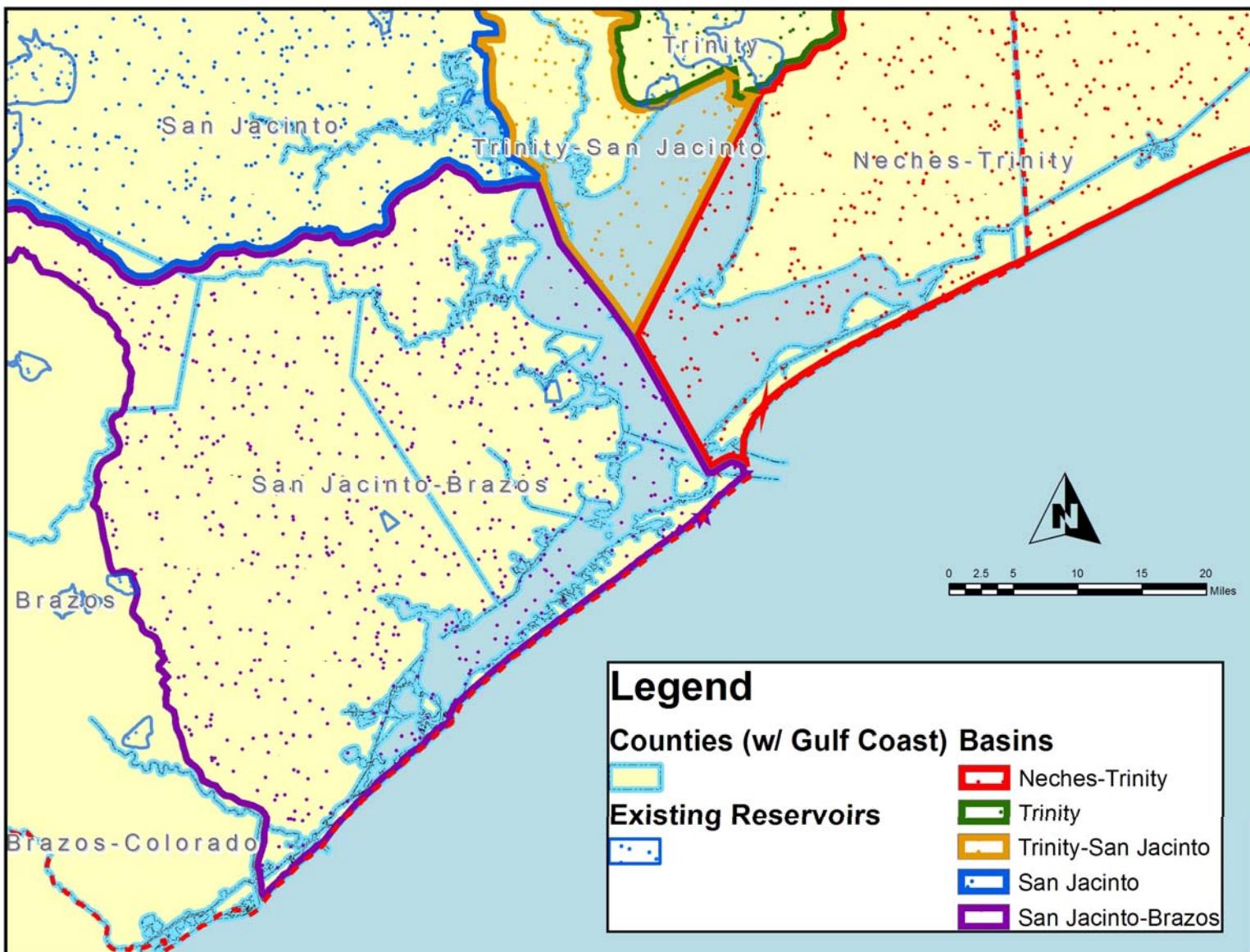
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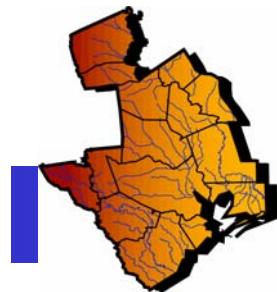
*Task 1 Update
Environmental Flows*

Progress Since October 31st Meeting

- A -Naturalized Flow Model
- B - Current Diversions w/ Return Flows Model
- C - Full Authorized Diversions w/ Return Flows Model

TAB 6

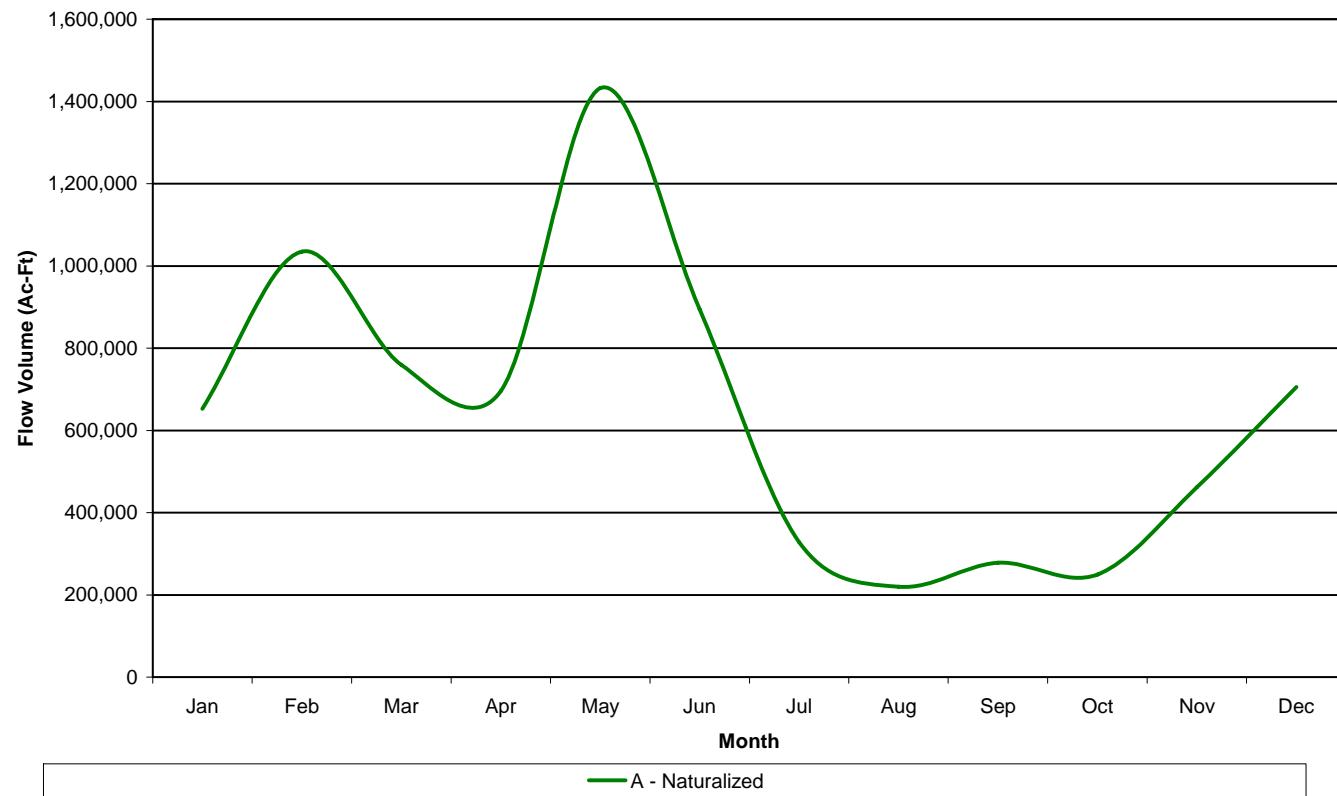


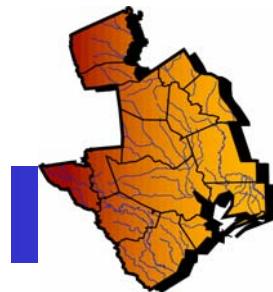


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Task 1 Update Regulated Median B&E Inflows

A Model – Naturalized Conditions

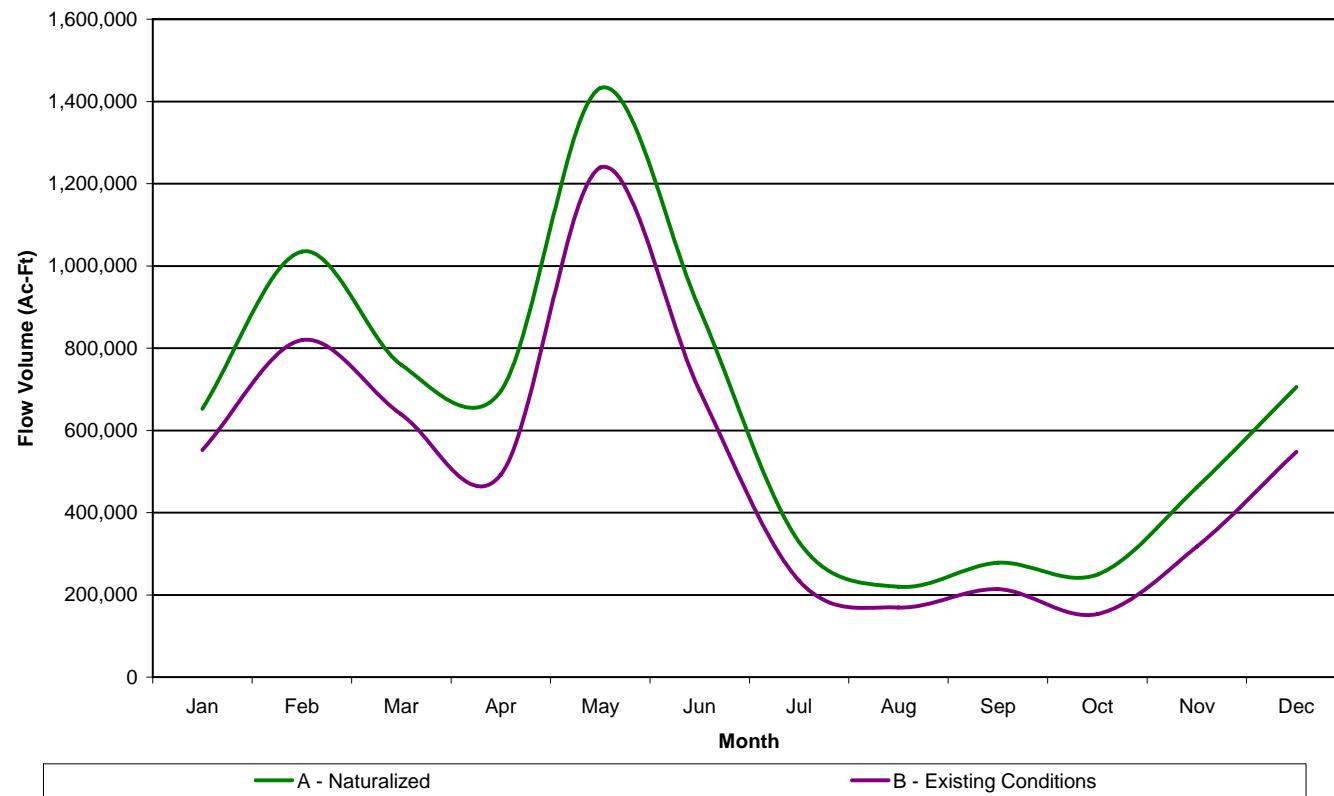


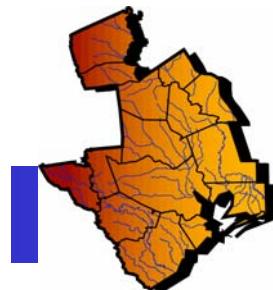


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Task 1 Update Regulated Median B&E Inflows

B Model – Current Conditions

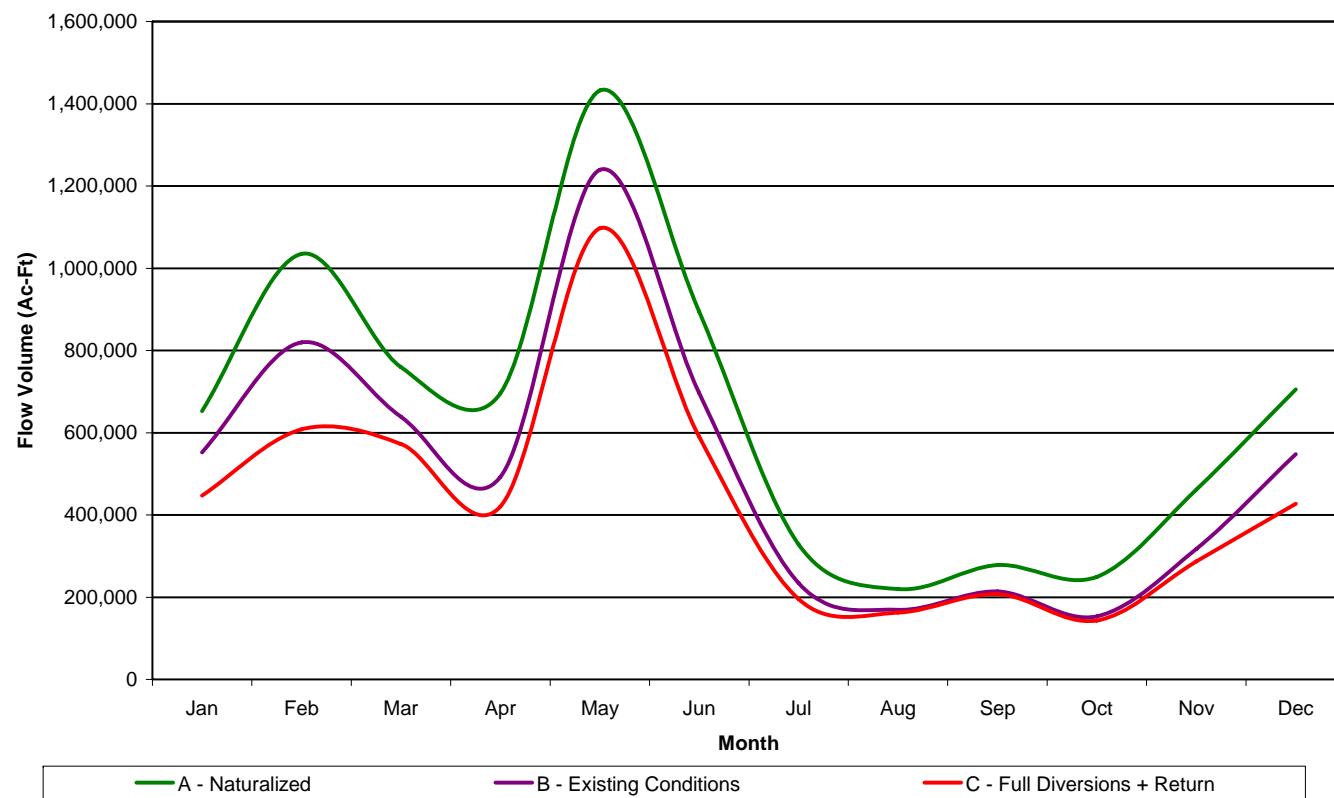


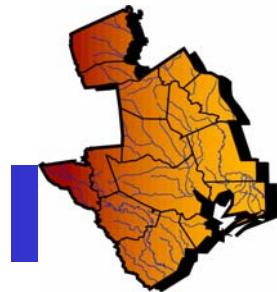


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*Task 1 Update
Regulated Median B&E Inflows*

C Model – Full Diversions w/ Return Flows



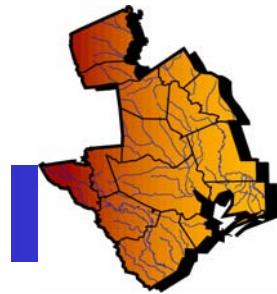


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***Task 1 Update
B&E Inflow Targets***

Recommended Inflow Targets

- Max H – Inflows required for maximum bay and estuary fisheries harvest as recommended by TPWD.
- Min Q – Minimum inflow required to maintain the bay and estuary fisheries harvest.
- Min Q-Sal – Minimum acceptable inflow required to maintain the salinity needed for bay and estuary fisheries production.

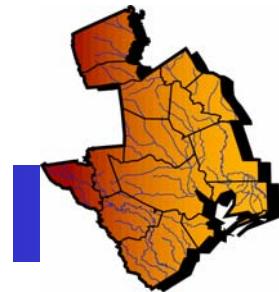


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*Task 1 Update
B&E Inflow Targets*

Recommended Inflow Targets

Month	Max H	Min Q	Min Q-Sal
January	150,500	150,500	150,490
February	155,200	216,700	216,700
March	652,800	363,900	363,900
April	632,500	352,600	267,270
May	1,273,700	679,700	309,970
June	839,700	448,100	413,560
July	211,500	232,700	211,500
August	140,000	154,000	140,000
September	103,000	330,200	102,960
October	78,600	251,900	78,600
November	351,500	351,500	164,390
December	626,800	626,800	93,870
TOTAL	5,215,800	4,158,600	2,513,210

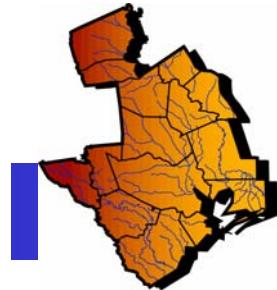


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*Task 1 Update
B&E Inflow Targets*

Annual Inflow Frequencies

Scenario	Max H	Min Q	Min Q-Sal
GBFIG Target	50%	60%	75%
A - Naturalized	68%	67%	83%
B – Current Conditions	63%	58%	79%
C – Full Diversion w/ Return Flows	59%	53%	75%
Full Diversions w/ RF and Reg C&H Strat. (2006 RWP)	69%	64%	85%

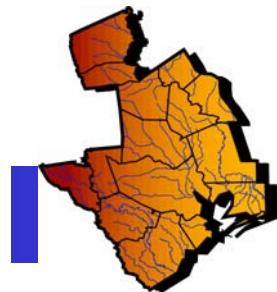


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*Task 1 Update
B&E Inflow Targets*

Alternative Examination of Inflow Frequency

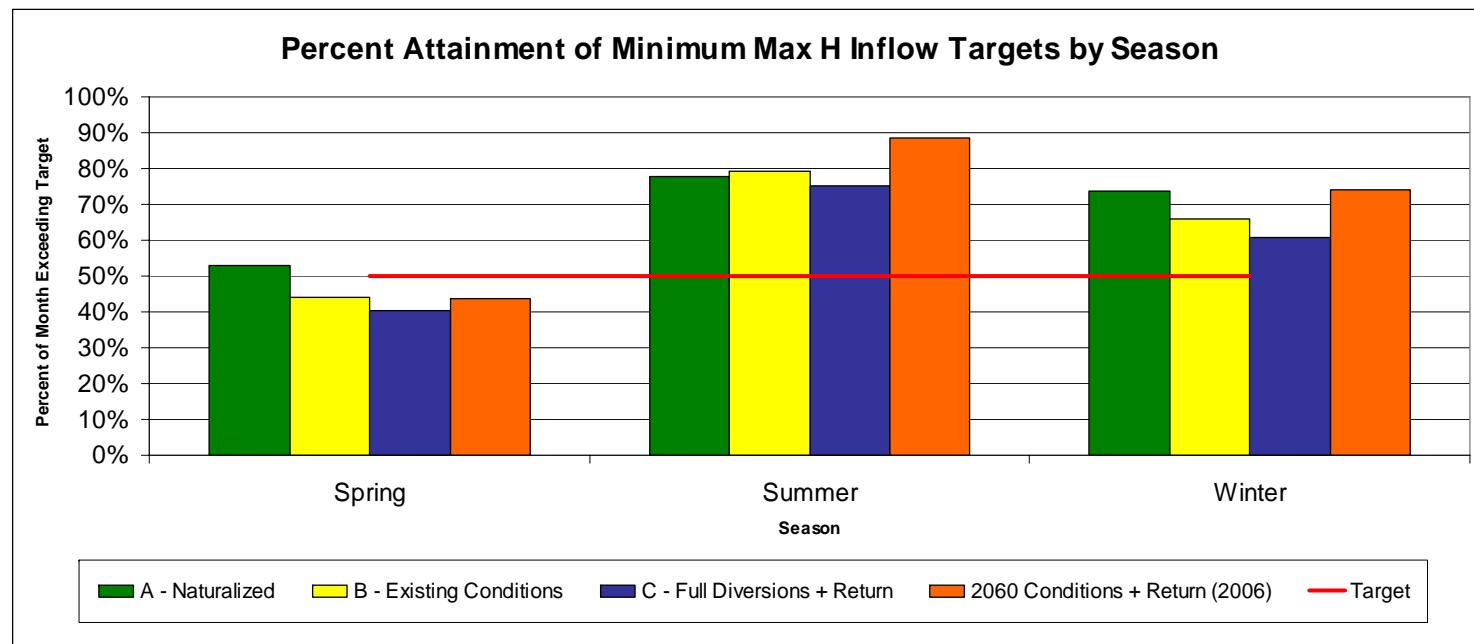
- Seasonally – 3 Seasons
 - Spring: March - June
 - Summer: July - October
 - Winter: November - February
- Monthly

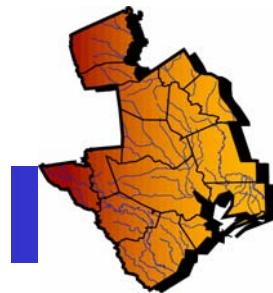


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*Task 1 Update
B&E Inflow Targets*

Seasonal Max H

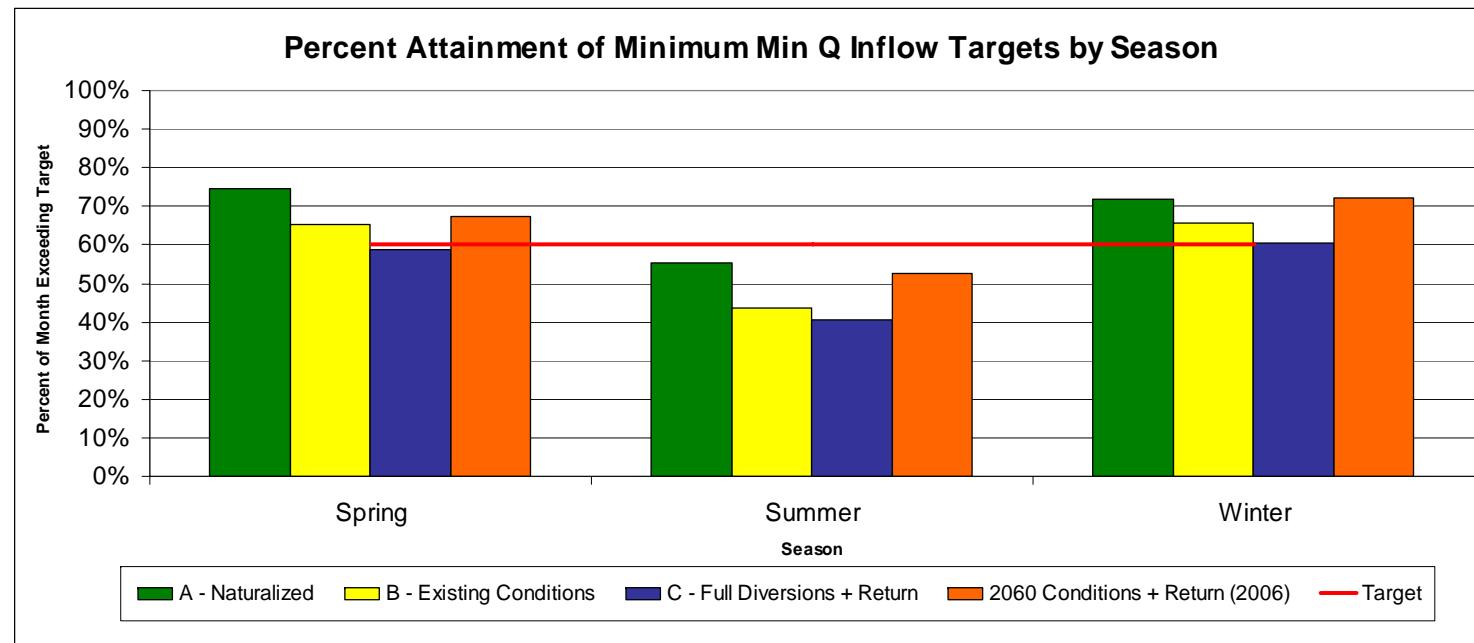


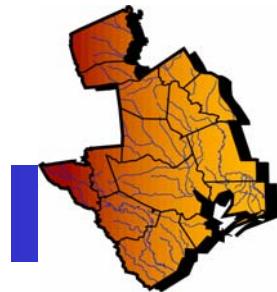


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*Task 1 Update
B&E Inflow Targets*

Seasonal Min Q

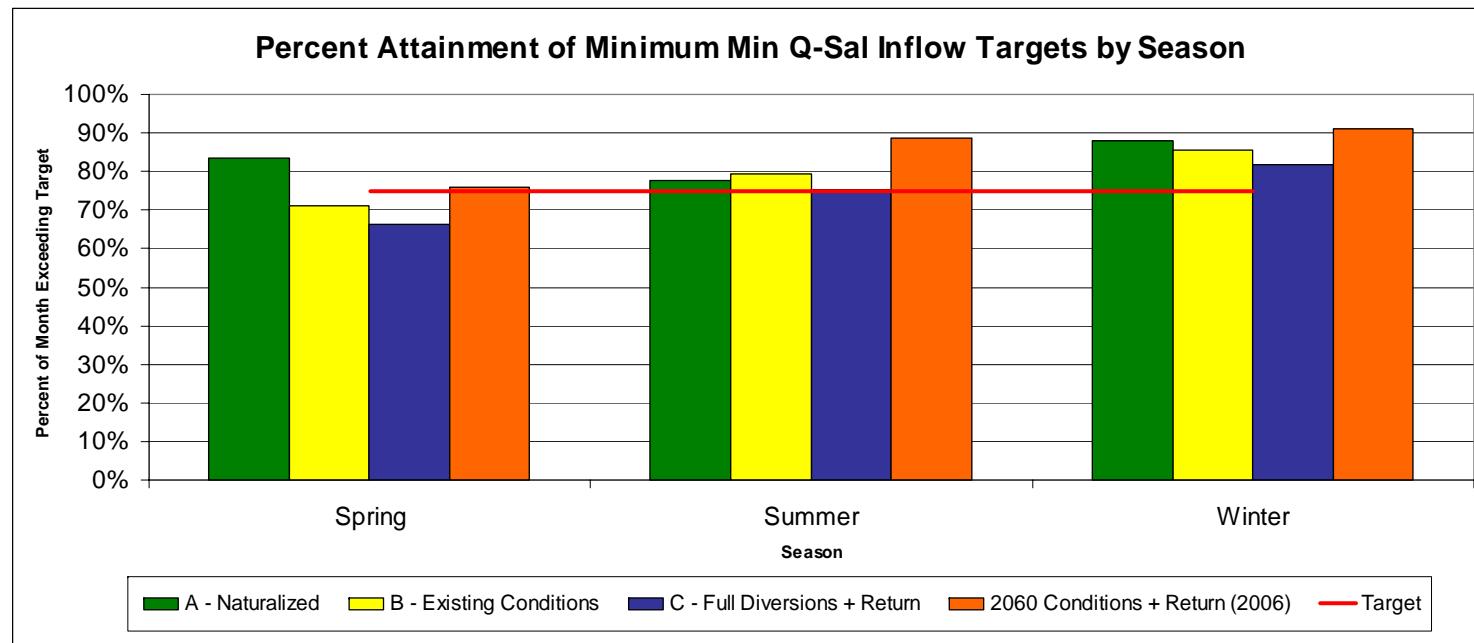


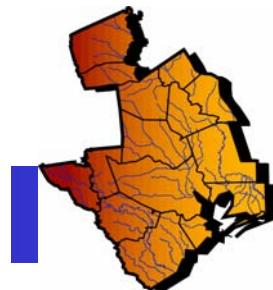


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*Task 1 Update
B&E Inflow Targets*

Seasonal Min Q-Sal

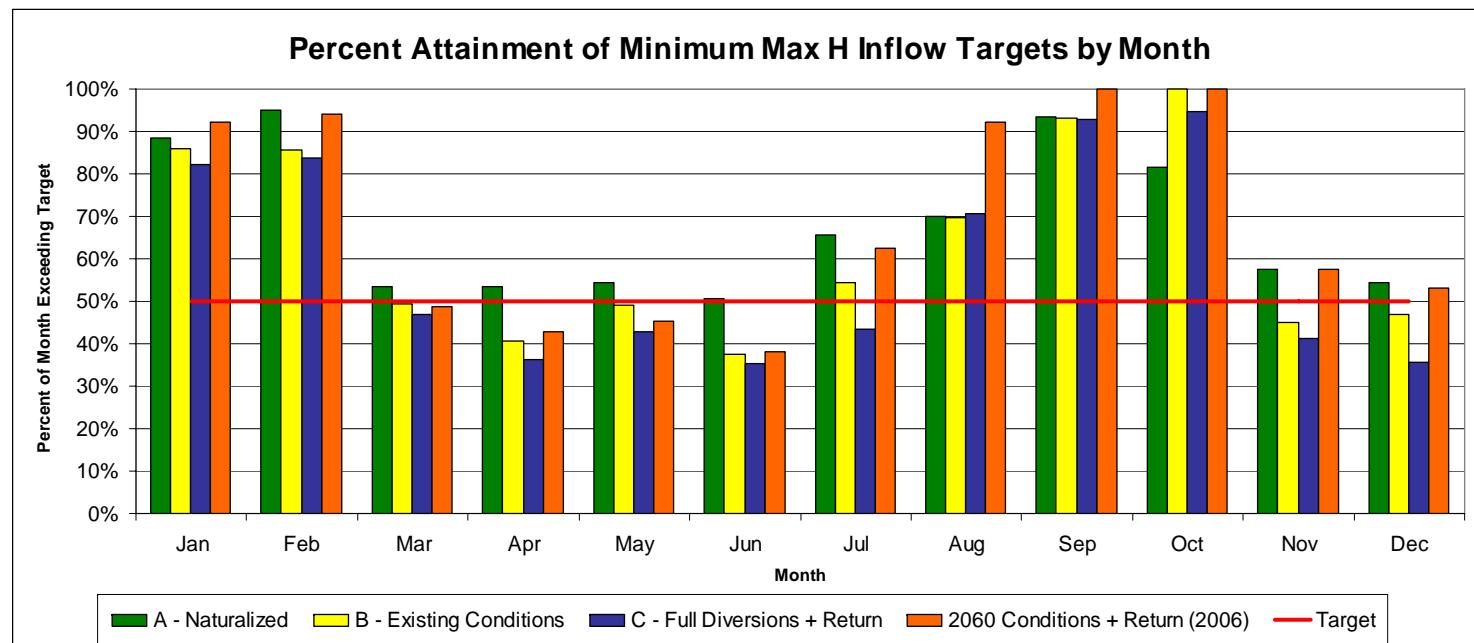


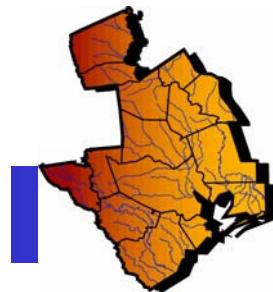


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Task 1 Update B&E Inflow Targets

Monthly Max H

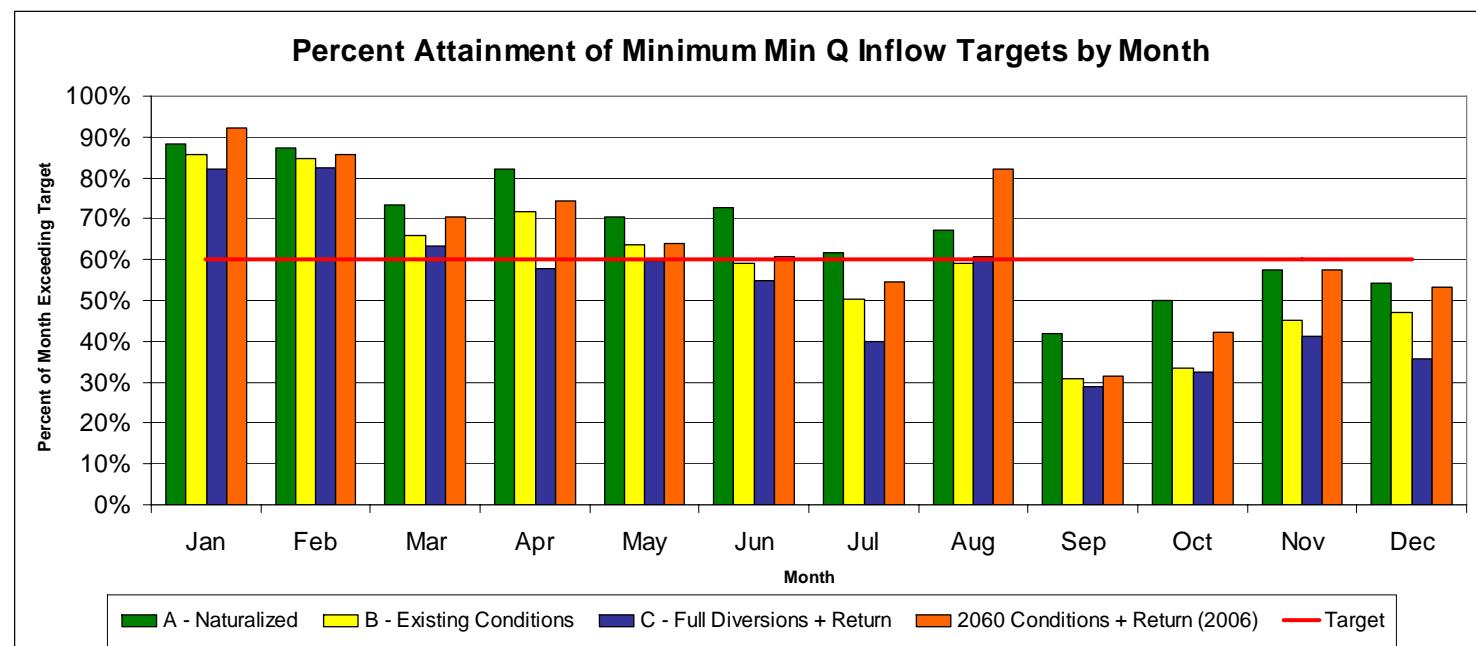


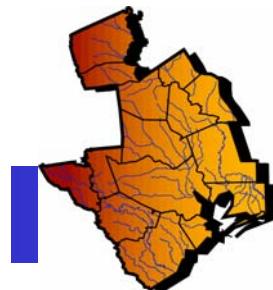


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Task 1 Update B&E Inflow Targets

Monthly Min Q

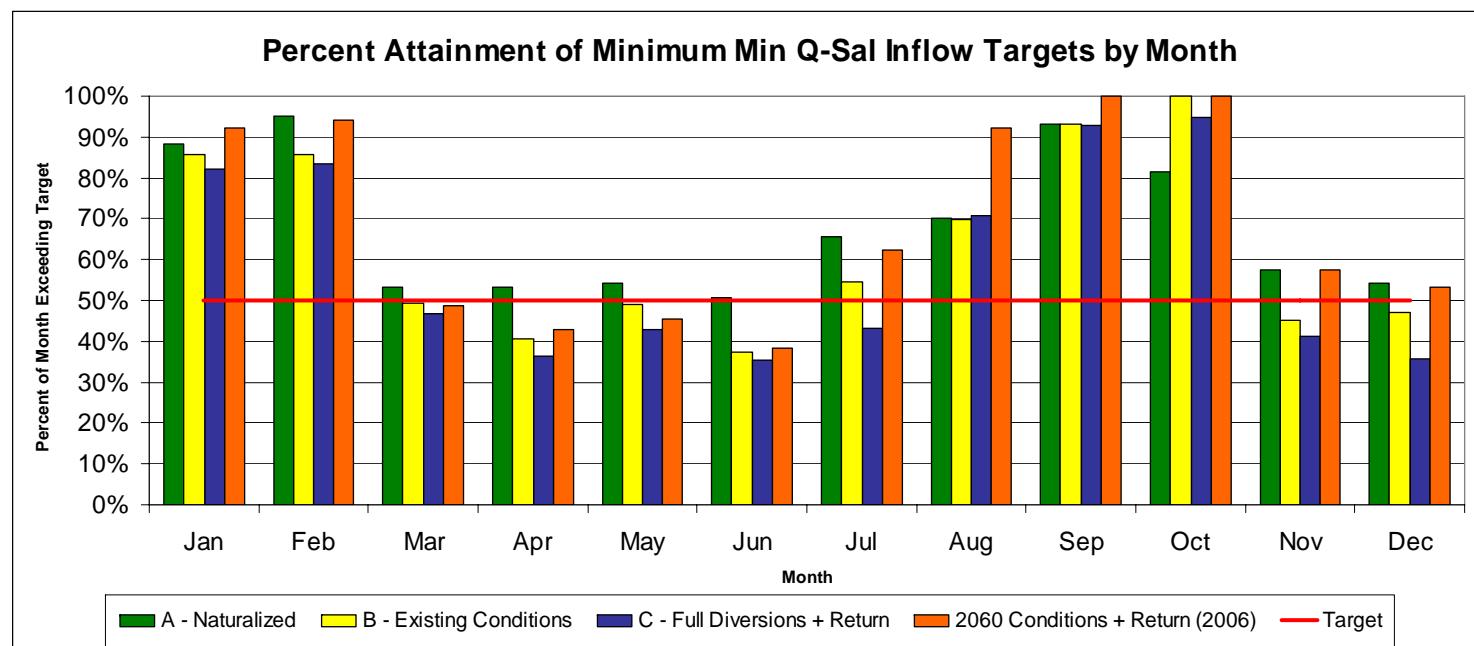


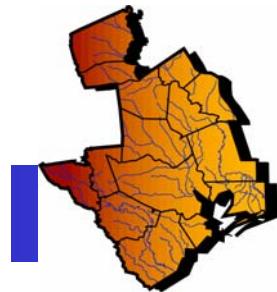


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Task 1 Update B&E Inflow Targets

Monthly Min Q-Sal

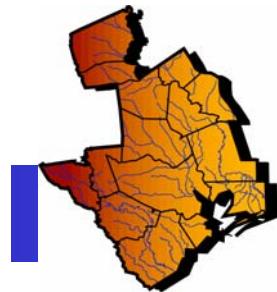




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Task 1 Update B&E Inflow Targets

- Expected upstream conditions (strategies and return flows) significantly impact Galveston Bay flows
- Current (Existing Conditions) flows appear to meet annual and seasonal inflow targets
- Inflows are reduced as water rights are perfected
- The question of “frequency” becomes a critical argument
- How should the targets be applied for Galveston Bay (monthly, seasonal, annually, etc.)?
- What are the associated impacts and possible mitigation strategies associated with Region H strategies?

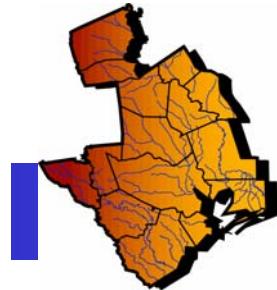


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***Task 1 Update
Environmental Flows***

Next Steps to Prepare for May 7th Meeting

- Complete Future 2060 Conditions Model
- Complete Individual Strategy and Cumulative Strategy Models and Analysis
- Present Methodology for Evaluating Alternative Methods for Mitigating Potential Freshwater Inflow Shortages
- Determine Appropriate Instream Flows for Critical Stream Reaches

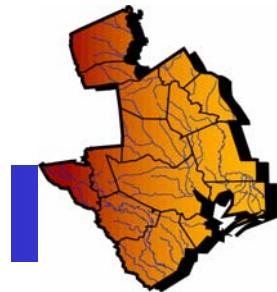


Interruptible Surface Water Supply:

- 75% of the water must be available 75% of the time
(when distributed on a monthly basis and based upon the available historic stream flow record).
- Two approaches:
 - “Percent of Time” → 75% of the water must be available in 75% of the years

OR

- 100% of the water must be available 75% of the months.

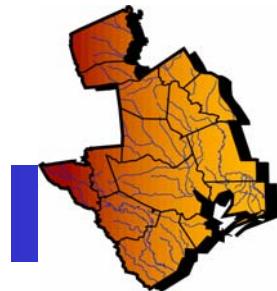


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Task 3 Interruptible Supplies

Summary of Tasks:

- Estimation of existing permitted interruptible supplies (on-going)
- Estimation of un-appropriated interruptible supplies
- Calculation of un-appropriated interruptible supplies in relation to existing irrigation rights (results being summarized)

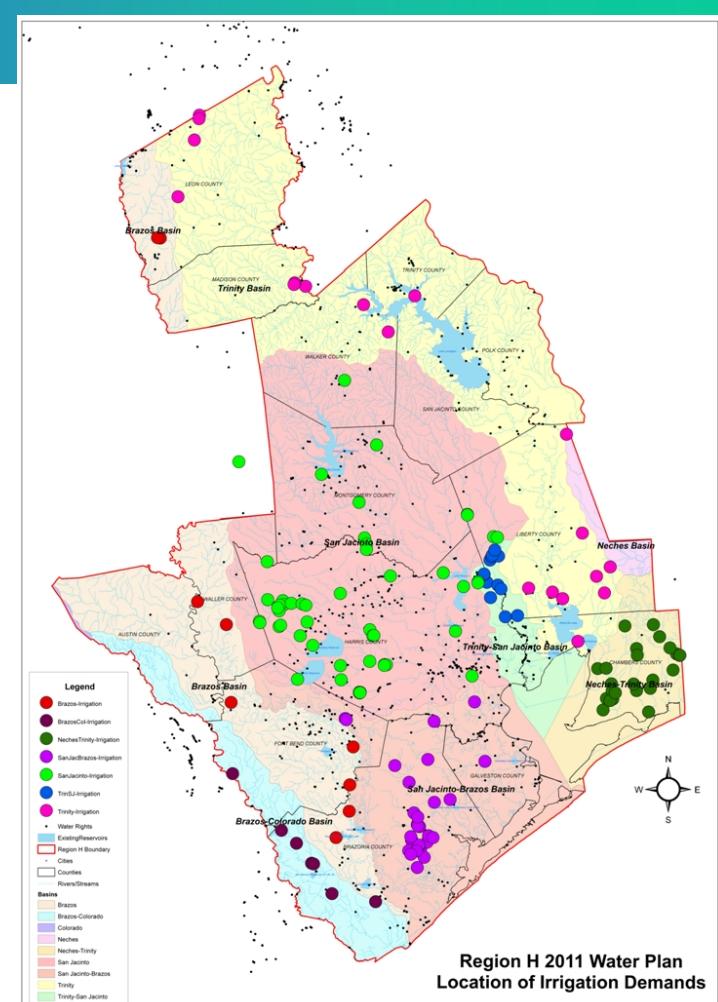


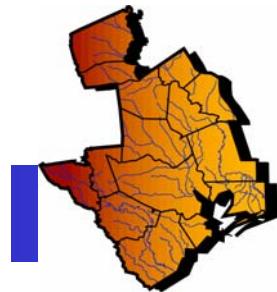
*Region H
Water Planning Group*

Task 3 Interruptible Supplies: Existing Permits

Map illustrates:

- Basins, counties, locations of all control points
- Locations of control points in relation to existing permitted irrigation rights

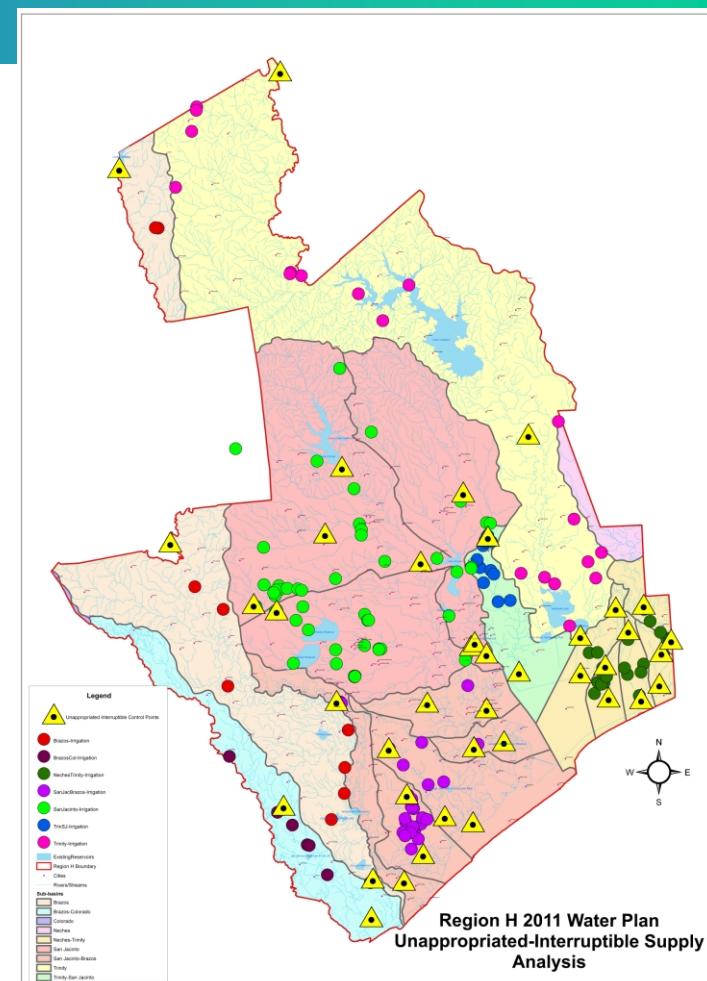


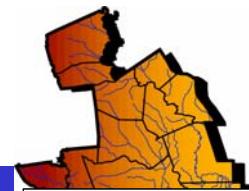


*Region H
Water Planning Group*

Task 3 Interruptible Supplies: Unappropriated Basin-Wide

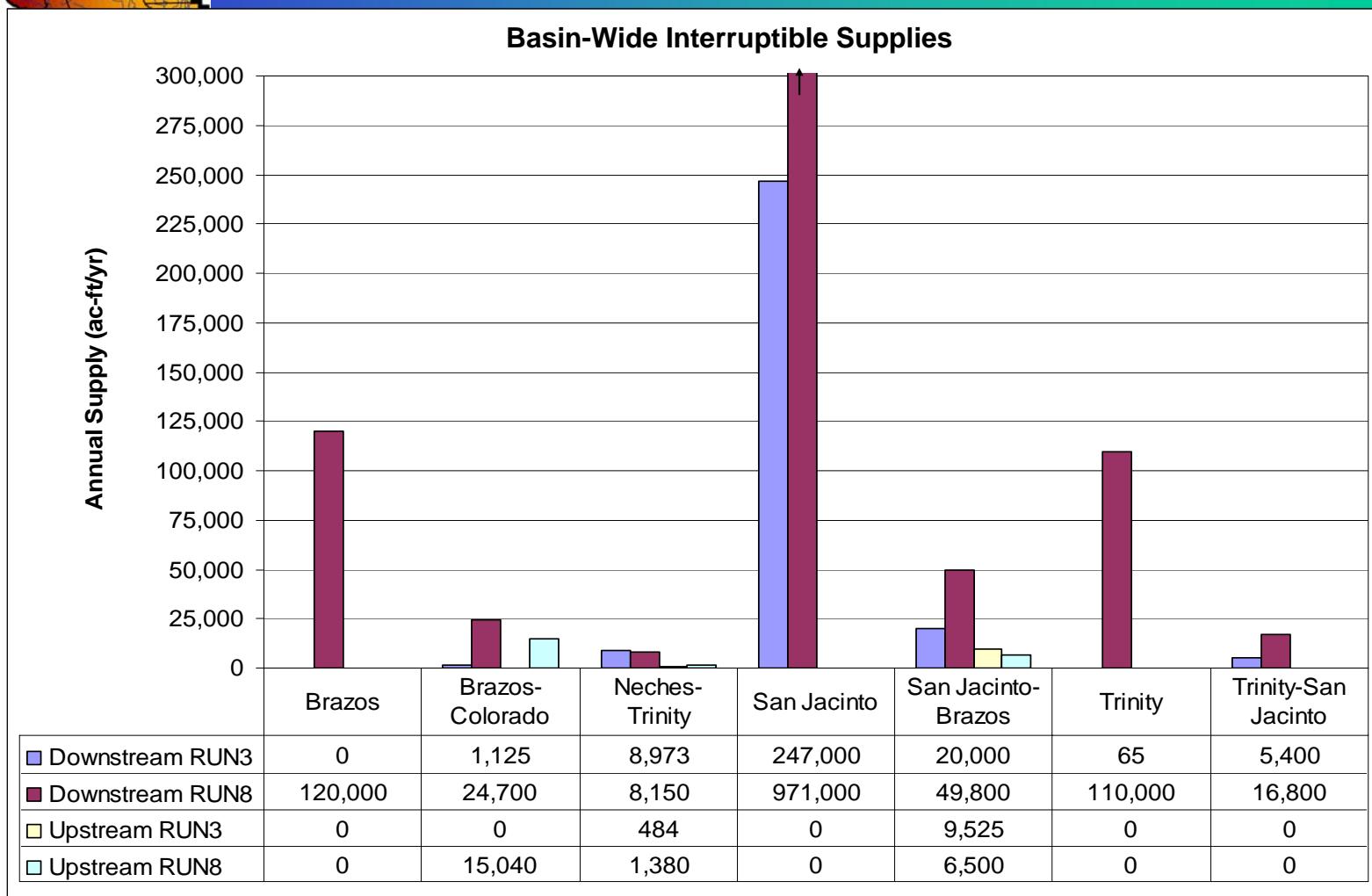
Locations of irrigation rights in relation to control points selected to analyze un-appropriated interruptible flows

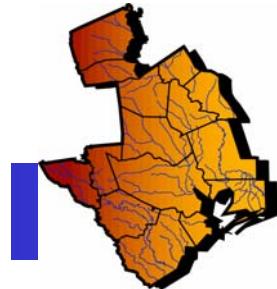




*Region H
Water Planning Group*

Task 3 Interruptible Supplies: Basin-Wide



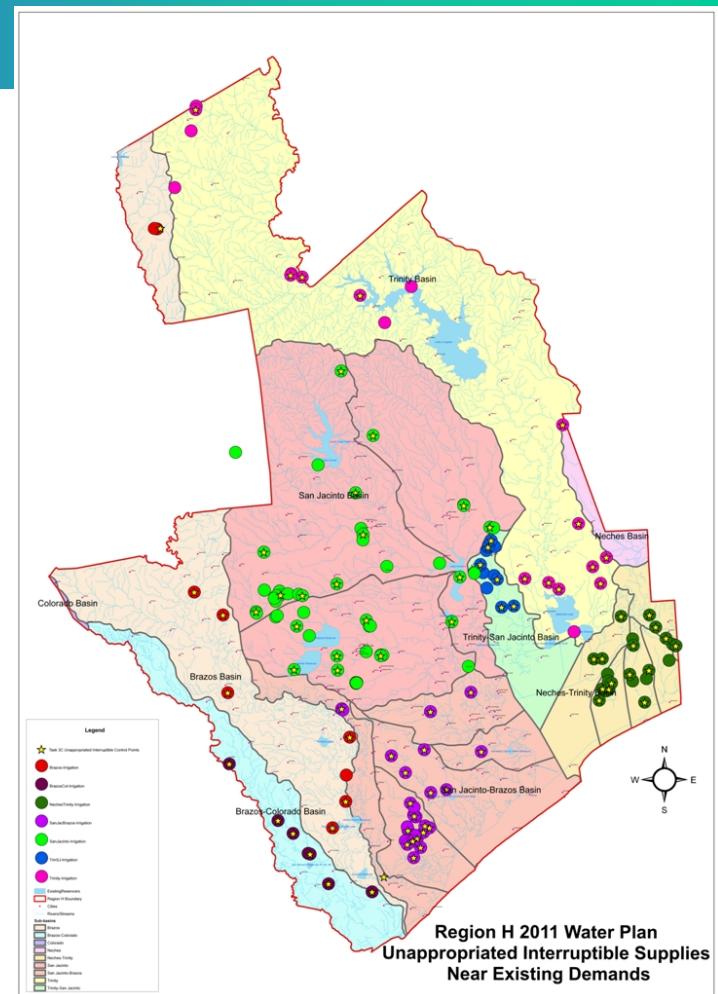


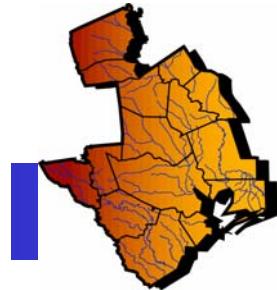
Region H Water Planning Group

Task 3 Interruptible Supplies: Where are unappropriated supplies?

Map illustrates:

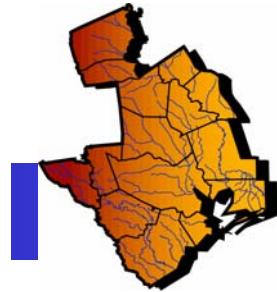
- Existing Irrigation Demands
 - Locations to analyze unappropriated supplies adjacent to these existing demands





Summary:

- Existing, interruptible, permitted supplies in Region H
- Basin-wide calculations of un-appropriated, interruptible supplies in all Region H basins
 - Downstream-most Locations
 - Run 3 = 282,500 ac-ft/yr, Run 8 = 1,300,500 ac-ft/yr
 - Upstream-most Locations
 - Run 3 = 10,000 ac-ft/yr, Run 8 = 22,900 ac-ft/yr
 - Majority of irrigation demand in Brazos and Trinity Basins, but un-appropriated interruptible supplies per “Full Authorization” WAM Run 3 in these basins is negligible

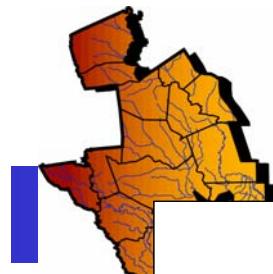


*Region H
Water Planning Group*

Task 3 Interruptible Supplies: Potential Uses

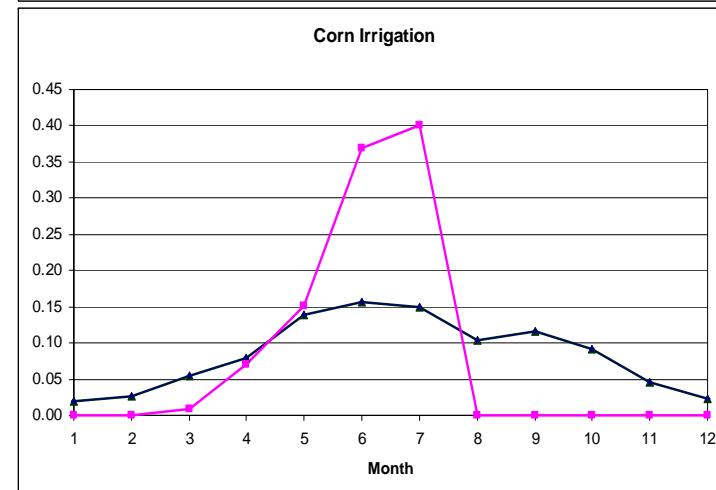
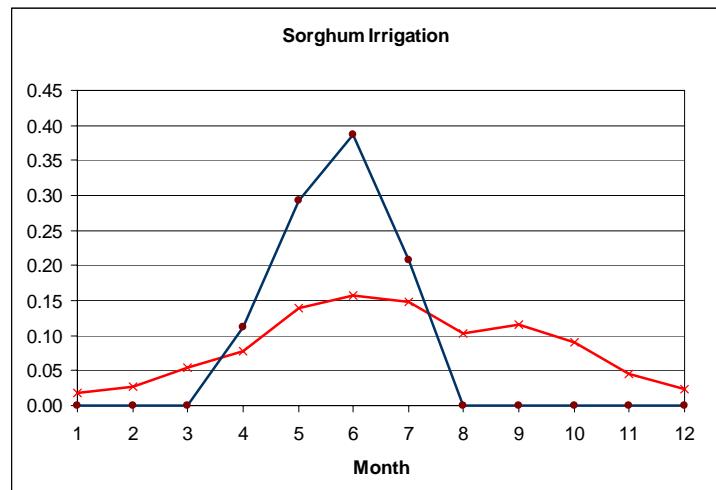
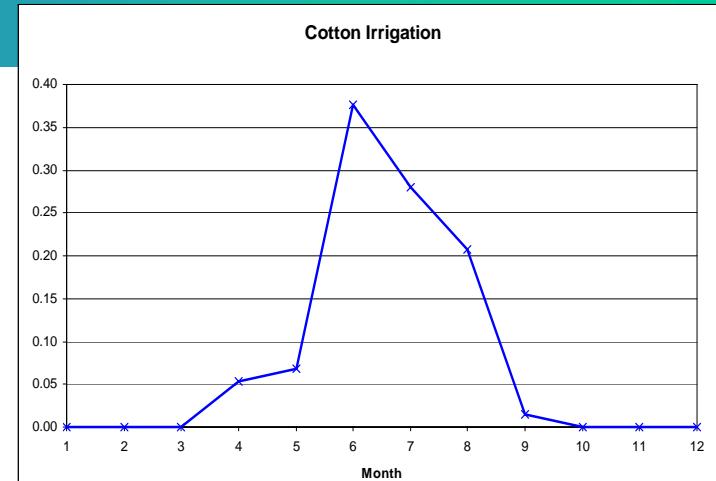
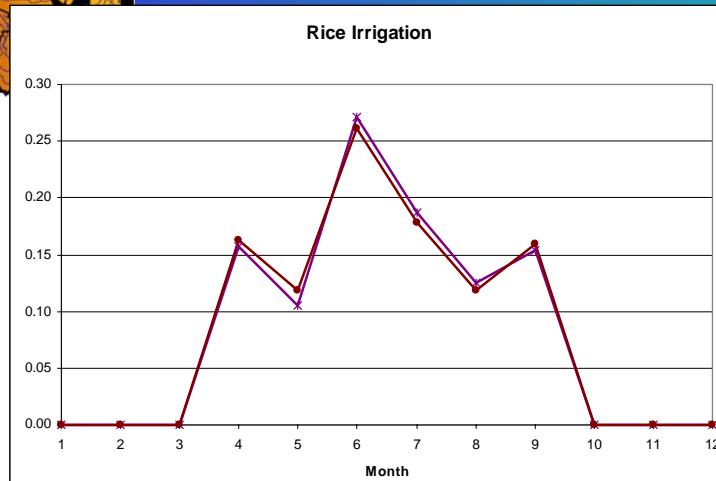
Regional Crop Types:

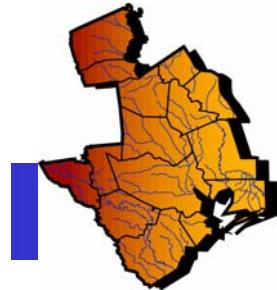
- In 2002, rice production accounted for approximately 72% of irrigated acreage in Region H counties
- Relatively small acreage in corn, sorghum, cotton, hay
- In 2002, a Region H weighted average of 21% of irrigation was supplied from groundwater
- Total irrigation demand has decreased by more than 50% from 1987 to 2002



*Region H
Water Planning Group*

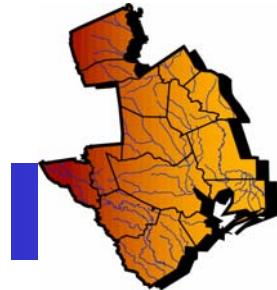
Task 3 Interruptible Supplies: Potential Uses





Next Steps:

- Complete analysis of existing, permitted, unappropriated supplies
- Compile results from calculations comparing unappropriated interruptible water to irrigation demand locations
- Survey of major irrigation interests
- Assessment of potential regulatory and institutional issues and constraints
- Evaluate potential impacts of use of interruptible supplies



*Region H
Water Planning Group*

Revised Schedule

Meeting Date	Task 1 – Environmental Flows	Task 3 – Interruptible Supplies
02/06/08	-Galveston Bay inflows baseline WAM modeling (A-B) results	-Interruptible supplies existing use, availability, and potential use
05/07/08	-Galveston Bay inflows baseline WAM modeling results including upstream strategies (Condition D Model) -Galveston Bay inflows strategy WAM modeling results -Instream flow determinations and allowable diversions	-Compilation of interruptible supply/demand quantity/location -Irrigation survey -Evaluation of barriers to implementing the use of interruptible supplies -Evaluate environmental and WMS impacts
08/06/08	-Evaluation of mitigation strategies for offsetting WMS impacts -Results of windshield surveys	-Estimate and quantify additional firm yield made available
11/05/08	-Review results and Draft reports	
02/04/09	-Review Planning Group comments for Draft reports	
04/02/09	-Review TWDB comments for Draft reports -Approval of Final reports for TWDB submittal	



REGION H WATER PLANNING GROUP

Senate Bill 1 - Texas Water Development Board

c/o San Jacinto River Authority
P. O. Box 329, Conroe, Texas 77305
Telephone 936-588-1111 Facsimile 936-588-3043

Agricultural

Robert Bruner
Pudge Wilcox

November 6, 2007

Counties

John Blount
Judge Mark Evans, Vice Chair
Commissioner Jack Harris

Kevin Ward, Executive Administrator
Texas Water Development Board
1700 N Congress Ave
Austin, Texas 78701

Electric Generating Utilities

Jason Fluharty

Environmental

John R. Bartos

Dear Mr. Ward:

Industries

James Murray
Mike Uhl

The Region H Water Planning Group, at a public meeting on October 31, 2007, approved a motion supporting the City of Groveton's request for a consistency waiver related to its application for funding for a new water well. The purpose of this letter is to notify you of Region H's support for granting the requested consistency waiver.

Municipalities

Jeff Taylor, Chair
Robert Istre

The City of Groveton's request is supported by reasonable facts and meets the spirit and intent of the state's water planning policies. Groveton's current water treatment system has limited capacity and new surface water treatment is not an economically feasible alternative at this time. In addition, the proposed well will be supplementary in nature, and the groundwater will be blended with the current surface water supply rather than serving as a sole source of supply.

Public

Roosevelt Alexander

Please contact us if we can be of any further assistance.

River Authorities

John Baker
Danny F. Vance
Reed Eichelberger

Respectfully submitted,

/s/

Jeff Taylor, Chair
Region H Water Planning Group

cc: Mr. Troy Jones, City of Groveton

Small Businesses

Judge Bob Hebert
John Howard
Steve Tyler

Water Districts

Marvin Marcell
Ron Neighbors, Secretary
Jimmy Schindewolf

Water Utilities

James Morrison
William Teer
C. Harold Wallace

TWDB Liaison

Temple McKinnon



Brazos River Authority

November 26, 2007

Mr. Jeff Taylor
Chairman
Region H Water Planning Group
c/o San Jacinto River Authority
P.O. Box 329
Conroe, Texas 77305

Re: West Fort Bend Regional Surface Water Treatment Plant Project

Dear Mr. Taylor:

I wanted to provide an update on the above referenced project. The Brazos River Authority (Authority) has been working with the Cities of Richmond and Rosenberg, Pecan Grove Municipal Utility District (MUD), and Fort Bend County MUD 25 to identify options for conversion to surface water.

The West Fort Bend County Regional Water Study Preliminary Engineering Report (PER) was completed in July of this year. The PER recommended an initial phase of 6 million gallons per day (MGD), with ultimate capacity at 21 MGD.

The next steps in the project would include determining who will participate in a surface water treatment plant and identifying what role, if any, the Authority will play. As the project moves forward, a funding mechanism for construction will also need to be identified.

Pecan Grove MUD has decided that they will opt out of this working group and build their own plant.

If I can provide any additional information, including a copy of the PER, please let me know.

Sincerely,

JOHN B. HOFMANN
Regional Manager, Central & Lower Basins

JBH:kld

cc: Mr. Jace Houston, Harris-Galveston Coastal Subsidence District
Mr. Mike Reedy, Turner Collie & Braden

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TEXAS HOUSE OF REPRESENTATIVES
TOM CRADDICK
SPEAKER

November 27, 2007

Mr. Jeff Taylor
Region H Water Planning Group
San Jacinto River Authority
PO Box 329
Conroe, Texas 77305

Dear Mr. Taylor:

Thank you for your recent letter regarding membership recommendations to the Basin and Bay Area Stakeholders (BBAS) committee for the Trinity and San Jacinto Rivers and Galveston Bay system.

As you know, the Environmental Flows Advisory Group is responsible for appointing the BBAS committee. Input from regional water planning groups is important and will be taken into consideration by the Advisory Group. I am confident that a diverse group of stakeholders will be appointed to this committee. Having stakeholders from different backgrounds will contribute significantly to ensuring a proper balance between consumptive and environmental needs for the State of Texas.

I appreciate you providing me with a list of members to be considered to serve on the BBAS committee. Please keep me informed.

Sincerely,

A handwritten signature in black ink that reads "Tom Craddick".

TOM CRADDICK
Speaker

cc: Representative Robert Puente
Representative Mike Hamilton
Representative Jodie Laubenberg

TC/clw



TEXAS WATER DEVELOPMENT BOARD



E. G. Rod Pittman, *Chairman*
William W. Meadows, *Member*
Dario Vidal Guerra, Jr., *Member*

J. Kevin Ward
Executive Administrator

Jack Hunt, *Vice Chairman*
Thomas Weir Labatt III, *Member*
James E. Herring, *Member*

November 29, 2007

Dear Regional Water Planning Group Chairs:

Because several of you have indicated an interest in obtaining additional basic water planning knowledge, the Texas Water Development Board (TWDB) is in the process of developing training modules on various topics for presentations to regional water planning groups. These training modules will consist of 15-30-minute PowerPoint presentations. A list of modules that will be available by January 1, 2008, is attached. Upon request of the planning group, your TWDB project manager can make arrangements to have a presenter available to you.

Thank you for your service in the regional water planning process and for striving to provide education for your planning group members. This educational material is being provided to you on a voluntary basis and it is each region's choice to use it or not. If you would like additional information about the training modules, or if you wish to schedule a presentation on any of these topics, please contact your TWDB project manager.

Sincerely,

Bill

William F. Mullican III
Deputy Executive Administrator
Planning

c: Designated Political Subdivisions

Attachment

Our Mission

To provide leadership, planning, financial assistance, information and education for the conservation and responsible development of water for Texas.

P.O. Box 13231 • 1700 N Congress Avenue • Austin, Texas 78711-3231
Telephone (512) 463-7847 • Fax (512) 475-2053 • 1-800-RELAYTX (for the hearing impaired)
www.twdb.state.tx.us • info@twdb.state.tx.us

TNRIS – Texas Natural Resources Information System • www.tnris.state.tx.us
A Member of the Texas Geographic Information Council (TGIC)



TWDB Training Modules For Regional Water Planning Groups

1. Advanced Regional Water Planning – The Texas Model
2. TWDB Financial Assistance Programs
3. Population and Water Demand Projections
4. Groundwater Data Collection, Availability Modeling, and Desired Future Conditions Process
4. Rainwater Harvesting
5. TWDB Desalination Program – Seawater and Brackish Groundwater
6. Environmental Flows (Instream, Bays &Estuaries and Senate Bill 3)
7. Stream Segments of Unique Ecological Value
8. Hydrographic Survey Program
9. Agricultural Water Conservation Programs, including Agricultural Demonstration Initiative
10. Water Loss Audits and Leak Detection Programs
11. Municipal Water Conservation – Plans, Education Programs, and Public Awareness Programs
12. Water Conservation Best Management Practices –Who, What, When, Where, and How (Agricultural & Municipal)



Rainwater Harvesting

[Desalination](#)[Rainwater Harvesting](#)[Water Reuse](#)[About Us](#)[Contact](#)

RWHEC Final Report

FAQs

System Size Calculator

Documents

Links

Meetings

You Are Here: [Rainwater Harvesting](#) » [Texas Rain Catcher Award - 2007](#)

Texas Rain Catcher Award - Fall 2007

Medical Office Building, Webster

Design Team:

Jacob White Construction Co.,
Houston, Texas
Joe Webb, Architect

System Location:

251 East Medical Center
Webster, Texas

Capacity:

175,000 gallons in 4' by 8'
underground box culverts

Catchment Area:

14,500 square foot roof area plus
parking area

Water Use:

Irrigation and toilet flushing

The System:

The heart of the rainwater collection system is the 700 feet of 4' by 8' concrete box culverts that are concealed beneath the parking lot and are used for both storm water retention and irrigation. The culverts can collect excess runoff from the roof at a rate of 2,400 gallons per inch of rain, as well as storm water runoff from the parking lot at a rate of about 45,000 gallons, per inch of rain. They can

**Award-Winning
Rainwater Harvesting System
at
Medical Office Building
Webster, Texas**

Click on Thumbnail to Enlarge



hold about 175,000 gallons of water.

Another unique component of the collection system is the green roof on top of the building. The living roof includes 4 inches of spray foam insulation board placed on top of the concrete roof. The insulation board is covered by a 40 mil reinforced waterproofing membrane that mantles the roof, sidewalls, and drains. A water retention product consisting of a post-industrial, recycled polypropylene drainage core, fused and molded into a waffle pattern covers the reinforced waterproofing membrane. This water retention fabric is designed to hold 10 to 12 times its weight in water. Finally, a nine-inch-thick layer of special lightweight soil substitute with lava rock is placed on the retention fabric, and grassy, shallow-rooted plants planted in the soil.

The living roof can absorb and reuse up to 2 inches of rainfall. Seventy percent of all rain that falls on the living roof is retained to sustain the vegetation growth. The remainder (about 24,000 gallons a month) drains to the culvert collection system under the parking lots. The site retains and reuses 90 percent of its water.

The cisterns under the parking lot hold a three-month supply of water. They supply the facility's entire irrigation and gray water needs, reducing city water use (and the water bill) by 70 percent. There is no connection to city services for irrigation - filtered water from the cisterns is used. Water from the cisterns is also filtered, treated and dyed blue for use in toilets.

The building was completed in February 2007, and is now 75 percent occupied. Water and electrical savings are on target. The building is LEED Gold Registered.

System Cost:

The cistern system cost \$225,000 but there was no need to build a retention pond which saved the owner \$350,000. Net savings over 20 years are estimated to be about \$349,000 including \$125,000 on initial costs and \$224,000 on recurring costs for city water, and taxes and maintenance for the pond.