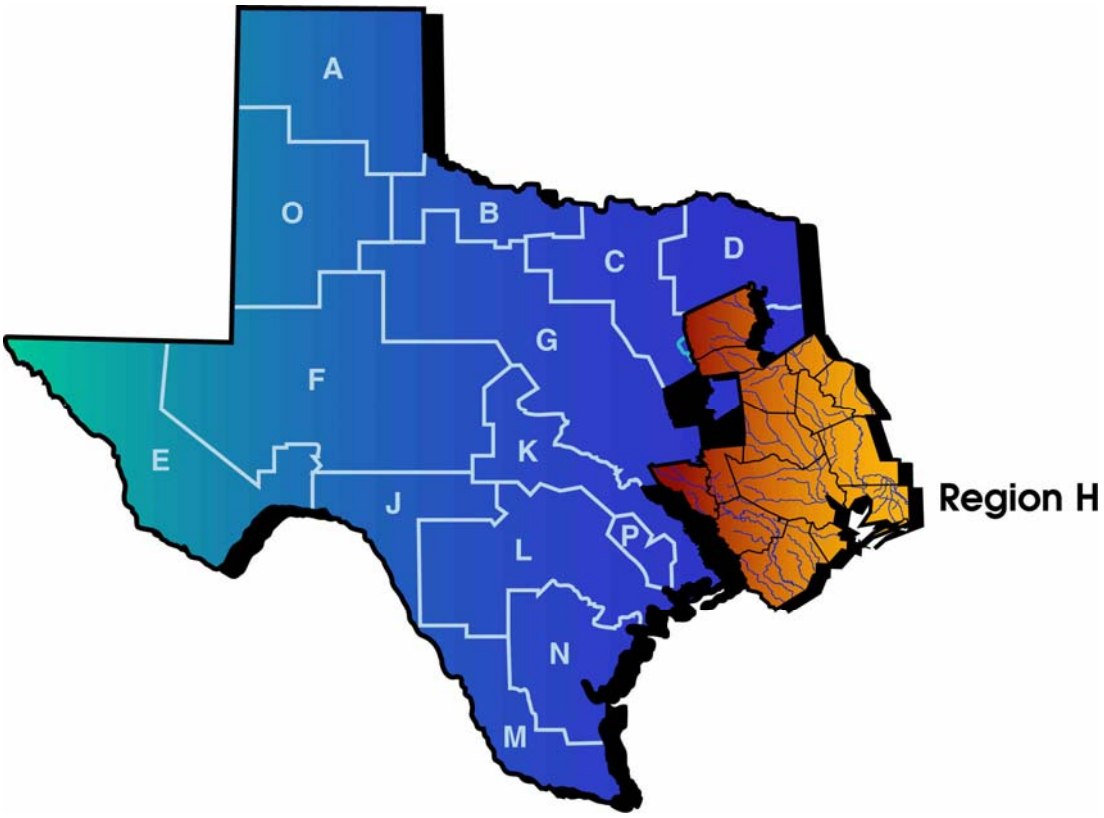
REGION H
WATER PLANNING GROUP



MEETING MATERIALS
May 28, 2008

Region H Water Planning Group
10:00 AM Wednesday
May 28, 2008
San Jacinto River Authority Office
Lake Conroe Dam
1577 Dam Site Rd.
Conroe, Texas

Agenda

Call to Order Public Meeting:

1. Receive public comment on the preparation of scope of work and TWDB planning grant application for development of the 2011 Region H Regional Water Plan.
2. Adjourn Public Meeting.

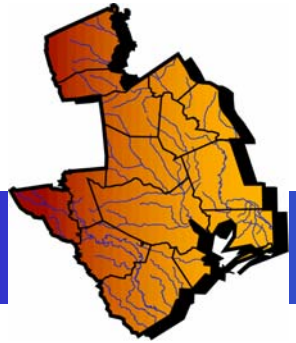
Call to Order Regular Meeting of the Region H RWPG:

1. Introductions.
2. Review and approve minutes of February 6, 2008 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. Consider a motion to authorize the Region H Water Planning Group Scoping Committee to finalize and approve a planning grant application for development of the 2011 Region H Regional Water Plan and submit to the TWDB on behalf of the Region H WPG.
5. Consider a motion to include the North Fort Bend Water Authority as a non-voting member of the Region H Water Planning Group.
6. Receive presentation from Jeff Taylor related to on-going work and City of Houston initiatives related to water quality and source water protection for Lake Houston.
7. Receive presentation from Kathy Jones on the current groundwater regulatory plan for the Lone Star GCD.
8. Receive briefing by Pudge Wilcox on a proposed amendment to the 2006 Region H RWP.
9. Receive presentation from Consultant on the current status and progress of regional water planning.
10. Receive updates by local water agencies or other interested parties regarding any water related initiatives or projects currently underway or planned.
11. General public comments. (Public comments to be limited to 3 minutes per speaker)
12. Agency communications.
13. Next Meeting: TBD
14. Adjourn.

Public Meeting

Agenda Item 1

Receive public comment on the preparation of scope of work and TWDB planning grant application for development of the 2011 Region H Regional Water Plan.

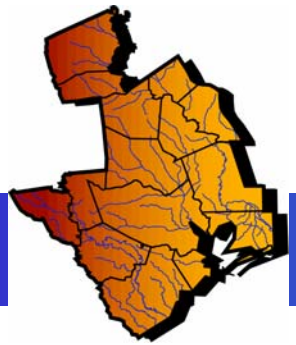


Region H
Water Planning Group

2001 Planning Round
Second Biennium
Scope of Work

Region H Water Plan

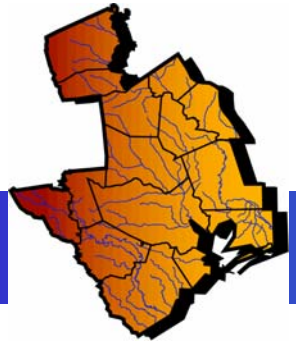
May 28, 2008



Region H
Water Planning Group

Introduction

- Base Funding - $565,270
  - Determined by TWDB
- Supplemental Funding - $665,530
  - Proposed by Planning Group
- Total Budget - $1,230,800



Region H
Water Planning Group

Base Funding

Base Funding Specified by Task

	Task	TWDB Budget
1	Planning Area Description	$10,000
2	Population and Water Demands	$197,470
3	Water Supply Analysis	
4	Identification, evaluation and selection of water management strategies based on needs	
5	Impacts of selected water management strategies on key parameters of water quality and impacts of moving water from rural and agricultural areas	
6	Water conservation and drought management recommendations	$10,000
7	Description of how the regional water plan is consistent with long-term protection of the state's water resources and natural resources	$10,000
8	Unique stream segments/reservoir sites/legislative recommendations	$15,000
9	Report to Legislature on Water Infrastructure Funding Recommendations	$58,000
10	Adoption of plan	$264,800
	TOTAL	**$565,270**

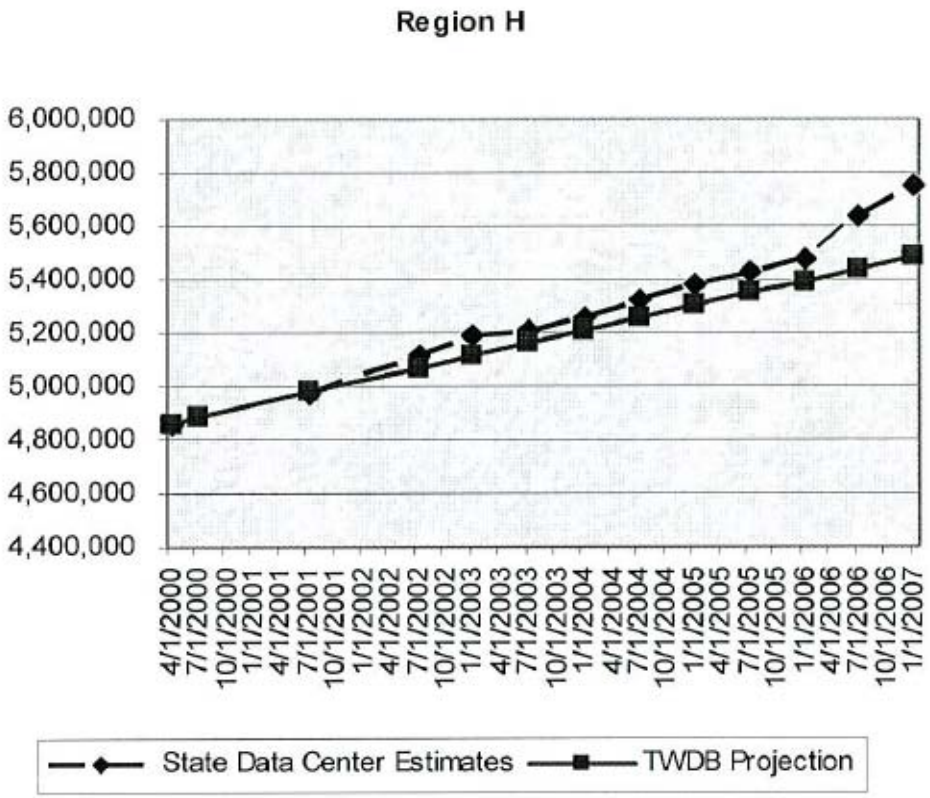
Supplemental Funding Critical Issues

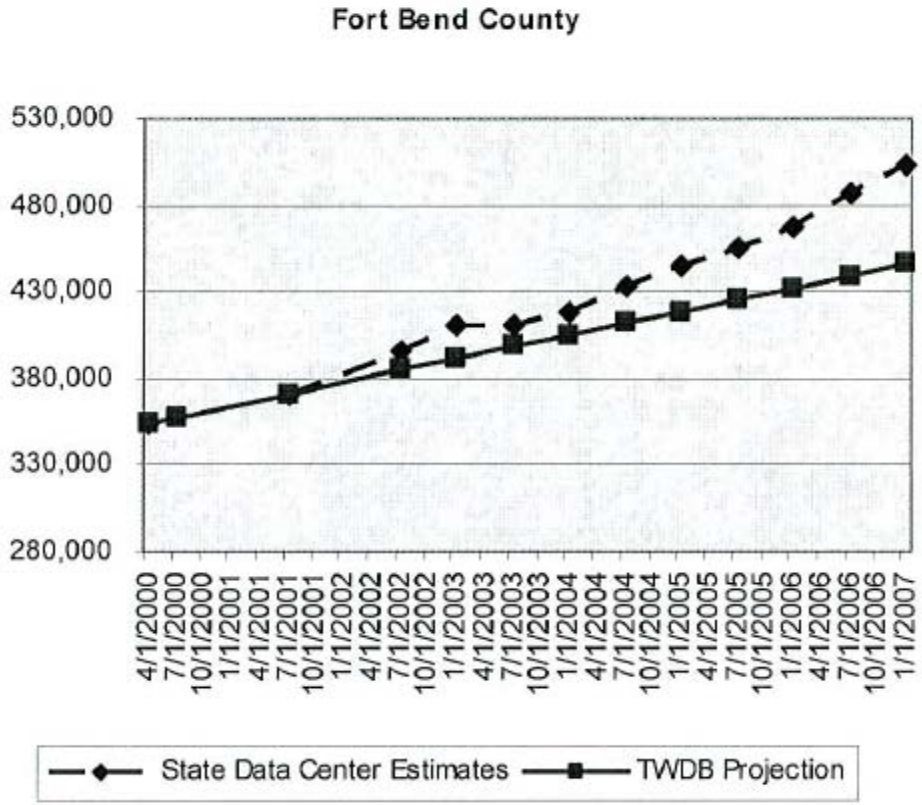
Major Issues Addressed with Supplemental Funds

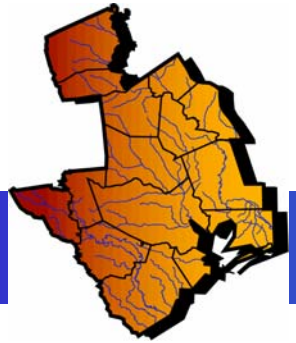
- Mid-census population projections
- Alternative yield of surface water supplies
- Updates to existing water management strategies and alternative water management strategies
- Expanded information to incorporate details of new raw and treated water facilities

Supplemental Funding Critical Issues

Mid-Census Population Projections





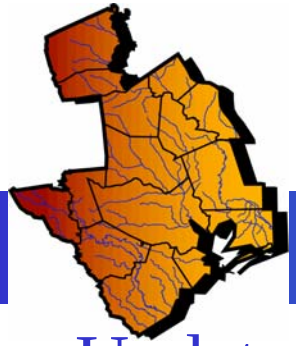


Region H
Water Planning Group

Supplemental Funding Critical Issues

Alternative Supply Analysis for Surface Water Supplies

- Surface water supplies in the plan are determined based on annual firm yield or firm diversions
- Certain major water rights in Region H are significantly less reliable when examined on a monthly basis
- Decreases ability to utilize a water supply for its intended purpose as specified in the 2006 RWP
- Some surface water supplies will need to be evaluated based on a monthly time step to assess alternative supply estimates

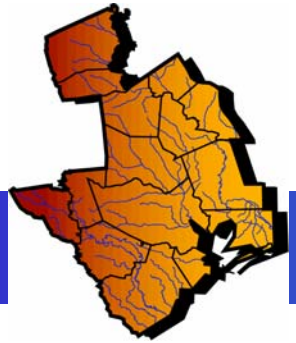


Region H
Water Planning Group

Supplemental Funding Critical Issues

Updates to Existing WMS and Alternatives WMS

- Many of the current WMS presented in the 2006 RWP have on-going permitting, environmental, and stakeholder issues
- Issues could either jeopardize the implementation of the strategy and/or reduce the amount of water developed
- Lots of moving parts in Region H (Montgomery County and Fort Bend County groundwater conversion, etc.)
- Alternative strategies are recommended as a mechanism to provide a back-up to this uncertainty
- Many existing WMA also are/will be undergoing changes that will need to be reflected in the plan

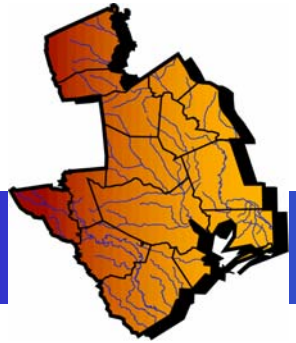


Region H
Water Planning Group

Supplemental Funding Critical Issues

Expanded Information for New Raw and Treated Water Facilities

- Region H is often asked to provide opinion and information related to potential infrastructure projects
- Better facilitate the ability to obtain funding from TWDB for major facilities expected to be implemented in next 10 years
- Incorporate additional detail in the plan for major transmission and treatment facilities for:
  - NHCRWA
  - WHCRWA
  - CHCRWA
  - NFBWA
  - City of Houston
  - GCWA



Region H
Water Planning Group

Supplemental Funding Important Issues

Other Important Issues Addressed with Supplemental Funding

- Detailed environmental flow analysis
  - Current Environmental Flows Study only assesses 2060 conditions and does not evaluate the changes and impacts over time
  - Build upon the environmental flows work conducted during first phase of planning
  - Examine each planning decade to investigate Galveston Bay inflows at all stages of planning

- Advanced water conservation analysis
  - Water conservation legislation has been passed since development of the 2006 RWP
  - Incorporate observed conservation data
  - Detailed investigation of conservation impacts

Task 0 – Scope of Work Development

- Coordination and planning meetings with Region H Scoping Committee
- Develop draft scope of work and cost estimate for second phase of planning
- Coordinate with TWDB on scope items and allowable tasks
- Base Funding = $10,000 (allocated from Task 10)

Task 1 – Description of Region

- General information about the Region
- Descriptions of new WUG's
- List of threatened and endangered species
- Drought preparations
- Recommendations from 2006 RWP
- Base Funding = $10,000

Task 2 – Population Projections and Water Demands

- Correspondence to all WUGs regarding demand projections
- Addition of new WUGs
  - TWDB: 3 new cities and 37 new districts = 40 new WUGs
  - NFBWA
  - CHCRWA
- Steam-electric power demands
- Base Funding = $40,000

Task 2 – Population Projections and Water Demands

- Mid-Census Population Projections
  - Review 2007 city and county population estimates and compare to 2006 RWP
  - Develop projections for 2010
  - Extend projections out to 2060
  - Develop revised population for each WUG (currently over 400)
  - Use 2006 RWP per capita demand to estimate total demand for each WUG
- Supplemental Funding = $98,200

Task 3 – Water Supply Analysis

- Update groundwater availability
  - Revisions to Gulf Coast GAM
  - GMA 14 Desired Future Conditions
  - New requirements or new GCD's
- Water right/contract revisions
- Update firm yield surface water supply information
- Base Funding = $52,000

Task 3 – Water Supply Analysis

- Alternative Supply Analysis
  - Evaluate water rights on monthly basis
  - Incorporate expected return flows for Trinity supplies
  - Consult with WWPs on results of study
  - Assign revised water supplies to WUGs and update shortages

- Supplemental Funding = $140,600

Task 4
Base Funding

Task 4 – Water Management Strategies

- Update WMS Costs to 2nd Quarter 2007
- Select new strategies for identified shortages
- Incorporate results from Environmental Flows Study performed during first phase of planning
- Incorporate results from Interruptible Supply study performed during first phase of planning
- Base Funding = $73,470

Task 4
Supplemental Funding

Task 4 – Water Management Strategies

- Changed Conditions for Strategies
- Environmental Flows Investigation
- Environmental Flows Coordination
- Alternative Strategy Formulation
- Total Task 4 Supplemental Funding = $363,600

Task 4 – Water Management Strategies

- Changed Conditions for Strategies
  - Update BRA System Operation strategy and determine impacts to future water supplies in Region H
  - Update Montgomery County surface water conversion strategy and incorporate into Plan
  - Re-definition of Luce Bayou strategy based on revised needs and updated project details
  - Identify major transmission and treatment facilities to be included in order to facilitate TWDB funding

- Supplemental Funding = $121,200

Task 4 – Water Management Strategies

- Environmental Flows Investigation
  - Create models for 2010, 2020, 2030, 2040, 2050, and 2060 conditions
  - Review RWPs for Regions C and G to determine future conditions based on WMS implementation
  - Evaluate impacts to Galveston Bay estuary in each decade
  - Compile information on impacts associated with each Region H strategy

- Supplemental Funding = $111,700

Task 4 – Water Management Strategies

- Environmental Flows Coordination
  - Galveston Bay Freshwater Inflow Group
    - Sponsor meetings
    - Present technical information from Region H study
  - Environmental Flows Allocation Process
    - Bay and Basin Stakeholder Groups
    - Present technical information from region H study
  - Updates to Region H WPG on activities of environmental flow stakeholder groups

- Supplemental Funding = $45,000

Task 4 – Water Management Strategies

- Alternative Strategy Formulation
  - Update strategies not selected in 2006 RWP
  - Potential new strategies
    - New storage to firm up run-of-river supplies
    - Aquifer Storage and Recovery (ASR)
    - Brackish water desalination
  - Develop costs and impact matrix in order to make recommendations for alternative strategy selection

- Supplemental Funding = $75,700

Task 5 – Water Management Strategy Impacts

- Update management strategy impacts with information gained since the 2006 RWP
  - Water quality impacts
  - Impacts of moving water from rural and agricultural areas

- Base Funding = $32,000

Task 6
Base Funding

Task 6 – Water Conservation and Drought Management

- Survey each WUG regarding conservation strategies and available information on impacts of water conservation
- Compare results to proposed conservation in 2006 RWP
- Incorporate results of Drought Management Study performed during first phase of planning
- Base Funding = $10,000

Task 6 – Water Conservation and Drought Management

- Water Conservation Evaluation
  - Review submitted water conservation plans submitted to TCEQ and TWDB
  - Review expected efficacy of submitted water conservation plans
  - Request information pertaining to observed conservation efficacy
  - Adjust conservation strategies accordingly

- Supplemental Funding = $63,500

Task 7
Base Funding

Task 7 – Plan Consistency with Long-term Protection of State's Natural Resources

- Update descriptions of water management strategies and alternative strategies identified this round

- Base Funding = $10,000

Task 8 – Unique Stream Segments / Reservoir Sites / Legislative Recommendations

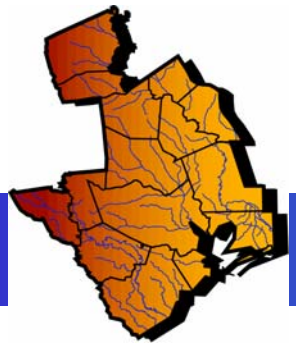
- Review designations and recommendations from 2006 RWP
- Provide descriptions of any new reservoir projects
- Identify changes in stream segment classifications
- Review legislative recommendations from 2006 RWP to determine need to add and/or remove
- Base Funding = $15,000

Task 9 – Water Infrastructure Funding

- Contact individual WUGs regarding possible funding requests
- Tabulate needs as reported by individual WUGs including project costs
- Incorporate information into Plan
- Provide summary in Plan pointing to the location of potential funding needs in the 2011 RWP
- Base Funding = $58,000

Task 10 – Adoption of Plan

- Planning Group meetings
- Public notices
- Public meetings
- Administrative support
- Base Funding = $254,800



Region H
Water Planning Group

Path Forward

- Revise Scope of Work, if needed, as a result of Public Meeting
- Finalize Scope of Work and Grant Application
- Post Final Grant Application package on Region H website
- Submit Grant Application to TWDB on or before June 13, 2008

REGION H WATER PLANNING GROUP
2011 REGIONAL WATER PLAN
SCOPE OF WORK

Introduction

The Region H Water Planning Group (WPG) has developed the following scope of work, included as part of a Texas Water Development Board (TWDB) Regional Water Planning Grant Application, for completion of the 2011 Region H Regional Water Plan (RWP). The Region H WPG has identified, through stakeholder collaboration and public input, many complex and critical issues that will need to be addressed during development of the 2011 RWP. Region H includes over 400 individual Water User Groups (WUGs), three major river basins, four coastal basins, and nineteen Wholesale Water Providers (WWPs).

As a result, the development of a useable plan for Region H which accurately represents water needs, water supplies, and water management strategies is significantly more complex and burdensome than most other regions in the State. The Region H WPG is recommending supplemental funding for Tasks 2, 3, and 4 to properly address these issues. The following major issues, many of which are specific to Region H, are deemed critical and necessary for the development of the 2011 Regional Water Plan for Region H and will require supplemental funding if approved:

1. Based on mid-census projections provided by the TWDB, Region H is expected to exceed the population projections provided in the 2006 RWP by more than 300,000 people for the year 2010. This increased population could result in additional water demands of approximately 40,000 to 50,000 acre-feet per year in 2010. In addition, the majority of this increased population is projected to occur in the highly developed urbanized counties where significant water shortages are already identified in the 2006 RWP. The Region H WPG considers this issue to be critical for the region and is committed to using the best and most up to date information in developing projections of needs for the region. A supplemental scope of work and budget is provided in Task 2, beyond the base funding amount, to address the development of population and water demands for Region H.
2. A large portion of the available and allocated surface water supply in Region H consists of run-of-river water rights. For regional supply planning purposes, firm yield determinations were made based on an annual firm reliability. In Region H however, there exist water rights which are significantly less reliable when analyzed on a monthly time-step. In fact, many water rights, when analyzed at a monthly time step, exhibit zero reliable diversion for multiple consecutive months during the drought of record. This situation decreases the ability to utilize a water supply for many of the intended purposes as currently specified in the 2006 Region H RWP. The Region H WPG considers this issue to be critical for the region and recommends that an evaluation be made to assess the impact and modify, where applicable, projected water supplies for the region. A supplemental scope of work and budget is provided in Task 3, beyond the base

funding amount, to address the development of revised water supply projections for Region H.

3. Many of the water management strategies currently presented in the 2006 Region H RWP (BRA System Operations, wastewater reuse, desalination, etc.) have ongoing permitting, environmental, and stakeholder issues which could either jeopardize the implementation of the strategy or significantly reduce the amount of water developed as a result of implementation. Due to this uncertainty as well as a potential reduction in existing water supplies as outlined in 2 above, it is recommended that alternative water management strategies be developed for Region H. In addition, many strategies have or potentially will be undergoing some changes (Luce Bayou, Montgomery County, etc.), either to expected supply development and/or project configuration, since development of the 2006 RWP. The Region H WPG considers this issue to be critical for the region and recommends that an evaluation be made to ensure that the most up to date information is incorporated into the selected management strategies and projected water supplies for the region. Supplemental scopes of work and budgets are provided in Task 4, beyond the base funding amount, to address the development of revised and alternative water management strategies for Region H.
4. There are significant large raw and treated water projects expected to be implemented in Region H in the next 10 to 20 years, primarily as a result of the conversion from groundwater to surface water taking place throughout Region H. These projects include large transmission systems to convey raw and treated water from source of supply to end use, surface water treatment plants and expansions, and raw water development projects. It is expected that some, if not all, of the stakeholders for these projects will eventually seek funding from the TWDB for implementation. Not all of these projects are currently easily identifiable in the 2006 RWP. The Region H WPG considers this issue to be critical for the region and recommends that detail be added to the plan to more easily identify these important projects which in turn will maximize the potential for implementation. A supplemental scope of work and budget is provided in Task 4, beyond the base funding amount, to address the development of more detail and inclusive information related to large water facility projects in Region H.

In addition to the above critical issues which are required to be addressed for the 2011 Region H RWP, the Region H WPG has also identified issues that are important to the region, have significant public support, and ultimately, if addressed, would create a better overall RWP for Region H. The Region H WPG is recommending supplemental funding for Tasks 4 and 6 to properly address these issues. The following issues are recommended to be addressed and will require supplemental funding if approved:

1. Environmental Flows and specifically the impact of water management strategies on Bay & Estuary (B&E) Inflows to Galveston Bay continues to be an important issue to the public and the many stakeholders involved in the Region H RWP process. The Region H WPG received funding during the First Biennium which focused on future 2060 conditions and the impacts of future

management strategies on inflows to Galveston Bay. Water Management Strategies recommended in the 2006 RWP interact in a complex manner that may result in widely varied impacts on both instream flows and bay and estuary inflow throughout the planning horizon. Identifying impacts of management strategies throughout the planning horizon will better prepare the Region H WPG for selecting environmentally conscious solutions to water supply issues. A supplemental scope of work and budget is provided in Task 4, beyond the base funding amount, to address the impact of Water Management Strategies to B&E Inflows to Galveston Bay throughout the planning horizon in Region H.

2. Region H has continued to experience rapid growth and increased water needs beyond that projected in the 2006 Region H RWP. In addition, there are also issues which may result in a reduction of the total supply available for allocation in the region. As a result, there will continue to be increased competition for water resources over the planning period, limitations on viable water management strategies, and ultimately a greater need to implement successful water conservation measures to reduce overall demands and needs. Region H has been at the forefront in incorporating water conservation strategies into the regional water planning process. The Region H WPG considers water conservation to be critical to the region and recommends that additional work be conducted to better quantify the amount of water conservation currently being implemented and the future benefits that can be realized through the planning cycle. A supplemental scope of work and budget is provided in Task 6, beyond the base funding amount, to address the projected benefits of water conservation throughout the planning horizon in Region H.

Proposed Scope of Work

TOTAL BASE FUNDING REQUEST = $565,270

TOTAL SUPPLEMENTAL FUNDING REQUEST = $665,530

TOTAL FUNDING REQUEST = $1,230,800

TASK 0. SCOPE OF WORK DEVELOPMENT

Task 0 Base Funded Amount: ***$10,000 (allocated from Adoption of plan/Administration and Public participation)***

Tasks to be performed under Base Funding:

1. Meet with Scoping Committee twice prior to May 28, 2008 Region H WPG meeting to detail and discuss draft scope items to be included in Grant Application for 2nd Phase funding.
2. Develop schedule for development of draft documents to the Committee, presentation of Grant Application to the RWPG, and submittal to the TWDB.
3. Coordinate with TWDB on allowable tasks and subtasks.

4. Develop draft scoping document narrative for submission to the Scoping Committee for approval of overall tasks prior to development of cost estimate.
5. Coordinate with Region C and G on modeling tasks that potentially impact water availability and supply estimates.
6. Receive feedback from Scoping Committee and prepare draft scope narrative and estimated cost estimates for review by Scoping Committee.
7. Revise Narrative scope document based on feedback from Scoping Committee and revise cost estimates for subtasks.
8. Submit task and subtask budgets and narrative scope to Scoping Committee for final approval.
9. Make final modifications to scope document and prepare for Region H WPG Chairman signature and submit to TWDB.

TASK 1. PLANNING AREA DESCRIPTION

Task 1 Base Funded Amount: $10,000

Tasks to be performed under Base Funding:

1. Review listing of Water User Groups (WUGs) from this round with list from last round and include descriptions of any new WUGs
2. Review TPWD listing of threatened and endangered species and their habitat and incorporate any changes since the listing from the last round.
3. Update section of report summarizing population and water demands for Region H in accordance with revisions made to Tasks 2 and 3 for the 2011 Region H Regional Water Plan.
4. Update section of the report summarizing Drought Preparations in accordance with results obtained as a result of the Drought Management Study performed as part of Phase 1 planning for the 2011 Region H Regional Water Plan.
5. Update section of report summarizing recommendations made in the 2006 Region H Regional Water Plan.
6. Submit revised Chapter 1 to Region H WPG members for review and approval.
7. Make changes based on comments.

Task 1 Supplemental Funding Amount: $0

TASK 2. POPULATION AND WATER DEMANDS

Task 2 Base Funded Amount: $40,000

Tasks to be performed under Base Funding:

1. Prepare correspondence to all WUGs detailing population and demand projections for the 2011 regional plan and request that they reply with any comments or requested changes.

2. Prepare estimates of projected population and water demands for new municipal WUGs in Region H including, but possibly not limited to, North Fort Bend Water Authority.
3. Meet with Wholesale Water Providers to determine what requests for service are in their planning horizons and compare to population projections for individual WUGs and County-other.
4. Review TWDB contracted steam-electric power generation demand numbers and make changes to the figures and tables based on the updated amounts as appropriate.
5. Review any comments received for compliance with TWDB requirements and incorporate changes which meet TWDB conditions for changes.
6. Prepare and submit draft chapter text and changes to the Region H WPG for review and approval prior to seeking TWDB approval.
7. Provide any changes to TWDB for review and approval prior to finalizing.
8. Incorporate changes to database tables as appropriate.

Task 2 Supplemental Funding Amount: $98,200

Changed Condition: The State demographer has prepared mid-Census population estimates which indicate that the populations of many of the Counties and Cities in Region H have already surpassed the 2010 projections. This condition is true for Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Montgomery, Polk, and Waller County. The RHWPG sees this task as an essential part of the Plan development process as the accurate forecasting of population trends directly impacts future water demands and drives the need for strategies.

Tasks to be performed under the supplemental funding request include:

1. Research Texas State Data Center population projections for individual cities and determine what growth rate has occurred in the 5 years since the 2000 census, as well as individual projections by year since the 2005 mid-census estimates.
2. Review studies of population and demand growth conducted by local stakeholders including but not limited to the North Harris County Regional Water Authority, West Harris County Regional Water Authority, Central Harris County Regional Water Authority, and the North Fort Bend Water Authority.
3. Develop projections for 2010 based on growth rates experienced during the first five years after the census, and any individual year projections since that time.
4. Develop adjusted year 2010 populations for those WUGs which have experienced increases and/or decreases from the 2006 Regional Plan projections.
5. Review county-wide Texas State Data Center population projections to determine whether or not the regional total population should be adjusted upward.

6. Incorporate study results from local stakeholders, as appropriate.
7. Prepare methodology for allocating population at the WUG level and for developing population projections beyond 2010 through the 2060 planning cycle which meets TWDB requirements and submit to RWPG for approval.
8. Submit RWPG approved methodology to TWDB for concurrence prior to developing revised projections applying methodology proposed.
9. Develop revisions for individual WUG populations.
10. Provide mail out to each WUG concerning the revised population and water demand estimates and ask for concurrence with these projections for the next plan.
11. Using per capita water usage from the 2006 RWP or updated per capita water usage if applicable, determine impacts on water demands due to increased and/or decreased populations for each individual WUG.
12. Prepare tables of population and water demands for RWPG approval.
13. Submit to TWDB for approval of draft numbers.
14. Make changes based on TWDB comments as appropriate and provide final numbers to RWPG for approval.

TASK 3: WATER SUPPLY ANALYSIS

Task 3 Base Funded Amount: $52,000

Tasks to be performed under Base Funding:

1. Update groundwater supply volumes for the Gulf Coast Aquifer based on revisions to the groundwater availability model, where appropriate.
2. Incorporate managed available groundwater (MAG) numbers for aquifers covered under GMA 14 Desired Future Condition adoption, where appropriate.
3. Reviewing the Desired Future Condition status of other GMA's covering Region H to determine status and whether or not they will be completed in time to be incorporated into the 2011 regional plan. Review will include establishment of a deadline for inclusion in the 2011 RWP for MAG's with minor impact and for MAGs with major impacts to available groundwater.
4. Incorporate, where applicable, changes to groundwater supplies as a result of changed conditions and/or requirements of existing or new Groundwater Conservation Districts (GCDs) in Region H.
5. Include information and/or results from other studies, including those provided by the TWDB, related to groundwater availability that may impact Region H.
6. Incorporate revisions to water rights and/or contracts that have occurred since the last plan.
7. Update firm yield surface water supplies based on water right reliability and supply contracts.
8. Revise wording for Chapter 3 of the plan to include new supply availability numbers.

9. Submit revised chapter to Region H WPG members for review and approval.
10. Submit approved chapter to TWDB for comment.
11. Present TWDB comments to planning group with associated recommended changes and seek approval for final.
12. Entering the data from this portion of the plan into DB12.

Task 3 Supplemental Funding Amount: $140,600

Changed Condition: The Region H Regional Water Plan estimated current and future surface water supply based on annual firm yields (reservoirs) and annual firm diversions (run-of-river) determined from the TCEQ WAMs. However, there are water rights in Region H that have a significant loss of yield when subjected to a more stringent requirement of no monthly shortages. There have been requests by water providers in Region H to perform an evaluation to quantify the impact of this issue and to provide additional management strategies, where applicable, to address this shortage. This is especially important to run-of-river surface water rights. The RHWPG views this task as essential in evaluating, in detail, the actual water supply available from both reservoir and run-of-river supplies and will be instrumental in identifying strategies to firm up the reliabilities of these resources.

1. Using the updated version of the TCEQ WAM Run 3 for the Brazos, San Jacinto, Trinity, and the coastal basins within Region H, evaluate surface water rights to quantify the firm yield of water supplies on a monthly basis for each planning decade (2010 to 2060).
2. Review the Region C 2006 RWP and identify WMSs that may reduce return flows to the lower basin and Lake Livingston.
3. Perform a desktop analysis of upper Trinity River Basin WUG demands and reuse strategies to estimate the annual return flow that can be expected.
4. Coordinate with the Region C Planning Group to determine the suitability of these return flow estimates.
5. Perform a firm yield analysis with the Trinity River WAM to determine if the projected return flow volume is sufficient for maintaining the firm yield of the Lake Livingston water rights.
6. Perform several iterative firm yield analyses with the Trinity River WAM to determine the necessary level of return flows required for making the Livingston rights firm. Compare this number to the calculated return flows from Region C to determine excess return flows or the projected shortfall between the two numbers.
7. Make a summary of the study results available to the Region C Water Planning Group for review and input.
8. Prepare a summary section for the Chapter 3 report.
9. Compare this re-evaluation of firm yield to the firm yields and surface water supplies projected in the 2006 Region H Regional Water Plan for each planning decade (2010 to 2060).
10. Present the results of the analysis to the Region H WPG and the TWDB.

11. Meet and coordinate with major surface water rights holders in Region H (e.g., City of Houston, GCWA, BRA, TRA, CLCND, etc.) on the results of this analysis. Incorporate information and requests from major surface water rights holders into analysis.
12. Coordinate with Regions G and C on the impact, if any, of these modified firm yield determinations.
13. Recommend what, if any, surface water supply numbers require modification from the 2006 Region H Regional Water Plan based on these modified firm yield determinations.
14. Assign revised available water supplies to appropriate WUGs based on existing knowledge of wholesale contracts and information gained from contacting water providers.
15. Revise projected shortages for WUGs, where applicable, based on recommended revised surface water supply estimates.

TASK 4 IDENTIFICATION, EVALUATION, AND SELECTION OF WATER MANAGEMENT STRATEGIES BASED ON NEEDS

Task 4 Base Funded Amount: $73,470

Tasks to be performed under Base Funding:

1. Perform an update of water management strategies capital costs to second quarter 2007 price levels for all strategies from the 2006 plan that will be carried over to the 2011 regional plan. This update will be performed for the majority of the strategies by updating the existing cost tables to the required index.
2. Perform an update of water management strategies Operations and Maintenance (O&M) costs for strategies as noted above to be reflective of updated power and labor costs as well as annualized capital costs.
3. Identify, evaluate, and select new management strategies for the current WUGs in order to provide adequate strategies for those WUGs that have seen a reduction in available supplies from the new model and from the increase environmental flow needs or have experienced increases in demand due to revised population projections or reductions in firm yield due to an application of a “no monthly shortages” policy.
4. Incorporate revisions from modeling done in the first biennium of this planning round, and the associated environmental flow needs and concerns into the matrix of available options and reevaluate the adequacy and effectiveness of the management strategy selected.
5. Incorporate the potential for use of interruptible supplies identified in the First Biennium study as a potential management strategy to be compared with other existing strategies.
6. Select water management strategies for identified needs.
7. Re-run Water Availability model to test environmental impacts of new strategies on environmental flows

8. Revise wording for Chapter 4 of the plan to include the new management strategies.
9. Submit revised chapter to Region H WPG members for review and approval.
10. Submit approved chapter to TWDB for comment
11. Present TWDB comments to planning group with associated recommended changes and seek approval for final.
12. Incorporate data into the TWDB website

Task 4 Supplemental Funding Amount:	***$121,200 (Item 1)***
	$111,700 (Item 2)
	$45,000 (Item 3)
	$75,700 (Item 4)
Total Task 4 Supplemental:	***$363,600***

1. Changed Conditions for Strategies: Several strategies in Region H are being refined on a continuous basis. Furthermore, there are outstanding permitting and environmental issues that impact the development of strategies. The items listed below are targeted at the review of strategies that have undergone known modification since the 2006 RWP or have arisen since the publication of that Plan. Updating these strategies to current plans is essential to completing the RWP and is also necessary to allow for the future funding of water management strategy projects through state funding.

    a. Update to BRA Systems Operations Permit
        i. Coordinate with BRA status regarding the status of the System Operations permit and identify any expected changes in yield, return flows, and supply volumes for Region H.
        ii. Determine the impact on water availability from the System Operations strategy due to the permitting process as well as other factors in the Brazos Basin (increased demands, environmental, etc.).
        iii. Obtain the Brazos System Operations WAM from BRA.
        iv. Modify the System Operation model to include other major water management strategies in the Brazos basin.
        v. Use modified WAM to compare the availability of interruptible supplies that could be captured and stored in the lower basin before and after the implementation of System Operation and other upstream strategies.
        vi. Identify WUGs that were assigned water from the System Operations strategy that will require water from another WMS and identify an available source to meet shortages.
        vii. Revise applicable portions of the Plan to include revised System Operations supply and new WMS allocation.
        viii. Identify operational mechanisms/conditions of the System Operation strategy intended to protect Region H downstream water

right reliability. Prepare a summary of the operating plan including a list of these safeguards and their levels.

ix. Update Plan and DB12 to reflect changed condition.

b. Montgomery County Surface Water Supply
   i. Consult with SJRA regarding the current plans for surface water conversion in Montgomery County.
   ii. Revise source allocations for Montgomery County to reflect current strategy and reallocate sources and WMSs for other WUGs in the 2006 RWP where necessary.
   iii. Update strategy costs according to data provided by SJRA.
   iv. Update Plan and DB12 to reflect changed condition.

c. Luce Bayou Strategy Re-Definition
   i. Update Luce Bayou strategy to parallel the preliminary engineering report accompanying CWA's application for WIF funding.
   ii. Correspond with CWA as well as the COH, NHCRWA, WHCRWA, CHCRWA, and NFBWA as necessary to determine the latest status of the project.
   iii. Revise the strategy as necessary to reflect changes in WUG shortages identified in the process of updating demands and supplies.
   iv. Update Plan and DB12 to reflect changed condition.

d. Identification of New or Revised Raw and Treated Water Projects
   i. Prepare correspondence to all WWPs to request information regarding major water projects to be considered for inclusion in the 2011 RWP, including treatment facility construction and upgrades as well as raw and treated water transmission projects.
   ii. Meet with WWPs known to be planning extensive projects that may utilize WIF and state participation funding and any WWPs indicating an interest in response to the correspondence described above.
   iii. Review Plan for consistency with existing projects identified in the 2006 RWP and any known, changed conditions since development of the 2006 Plan.
   iv. Obtain projected costs from project sponsors for inclusion in Plan.
   v. Update Plan and DB12 to reflect changed condition.

2. Environmental Flows Investigation: Efforts in the First Biennium focused on future 2060 conditions and the impacts of future management strategies on inflows to Galveston Bay. The preliminary results of this study and further investigation indicate that the management strategies recommended in the 2006 RWP interact in a complex manner that may result in widely varied impacts on bay and estuary inflow throughout the planning horizon. This is especially the case as the timing of certain strategies such as reuse and the importation of water occur in different decades. The end result may be a worst-case scenario for inflows to Galveston occurring in a decade sooner than 2060. Identifying impacts

of management strategies throughout the planning horizon will better prepare the RHWPG for selecting environmentally conscious solutions to water supply issues. The following tasks aim to investigate this possibility in greater detail than was possible in the First Biennium study:

a. Obtain the latest Run 8 (Current Conditions) WAM models from TCEQ for the Neches-Trinity, Trinity, Trinity-San Jacinto, San Jacinto, and San Jacinto-Brazos Basins.
b. Use TWDB's DB07 to identify the projected water usage from each existing water right and future strategy within the study areas encompassing the two river and three coastal basins, including strategies implemented by Region C.
c. Correspond with Region C where necessary in order to accurately characterize the availability of return flows in each decade entering the lower Trinity River Basin.
d. Link water usage as a result of demand (not allocation) from each WUG to each supply source and each water right. Compile these demands for each water right to determine projected diversion for each water right in the years 2010, 2020, 2030, 2040, 2050, and 2060.
e. Compile the amount of water used in every decade of the planning period for each current and/or new water right associated with management strategies.
f. Modify the Run 8 models for each basin to create a future condition for the years 2010, 2020, 2030, 2040, 2050, and 2060.
    i. Insert the proper code to represent new management strategies in the appropriate decade.
    ii. For each decade, insert the proper diversions for each water right as identified above.
    iii. Modify static return flows (CI cards) where necessary to properly represent return flows from Interbasin transfers, groundwater, and any otherwise "hard-wired" return flows.
    iv. Develop area-capacity-elevation (ACE) curves to simulate storage in major reservoirs within the study basins and enter into model.
g. Execute the modified Run 8 models to develop regulated flows at the basin outlets into Galveston Bay for:
    i. Each planning decade
    ii. Each strategy in the 2006 Region H RWP individually and collectively.
h. Compile the model regulated flows for the modified Run 8 models to determine the impacts of each strategy individually and conjunctively with all other strategies and determine which strategies have the greatest impacts (positive and negative) on inflows to Galveston Bay.
i. Summarize the results of the analysis in a technical memorandum and add accompanying text to Chapter 4.
j. Include the evaluation of bay and estuary inflows as a criterion for evaluating impacts from water management strategies in Chapter 4.

3. Environmental Flows Coordination: The issue of environmental flows is central to the determination of impacts from Water Management Strategies that lead to the preferential selection of strategies within the RWP. This task aims to enhance coordination with the ongoing initiatives to evaluate the need for both instream and bay and estuary flows and the impacts that strategies will have on these critical factors.
    a. Galveston Bay Freshwater Inflow Group (GBFIG)
        i. Sponsor up to 3 GBFIG meetings, including planning and organizing the meeting logistics, announcements, agendas, and meeting facilities.
        ii. Arrange for professional facilitation of the meetings and implementation of the meeting requirements.
        iii. Present technical information developed under this work task and other related Region H studies at the meetings.
        iv. Record, post and distribute the summary notes, relevant results and supporting materials of all meetings.
        v. Prepare a summary report of the GBFIG activities and of any consensus agreements of GBFIG participants for distribution to RHRWPG and the TWDB.
    b. Coordination with Environmental Flows Allocation Process
        i. Attend meetings of the Bay/Basin Stakeholder Group for the Trinity and San Jacinto Rivers/Galveston Bay Area and maintain contact with the Trinity-San Jacinto Bay and Estuary Science Team.
        ii. Provide input on Region H experience in environmental flows as requested by the stakeholder groups.
        iii. Provide technical support for the flow allocation process from expertise developed in the Regional Planning Process
        iv. Prepare a summary report detailing efforts supporting the Environmental Flows Allocation process including any technical memoranda provided to the stakeholder groups in support of their efforts.
    c. Region H Water Planning Group
        i. Periodically update the RHWPG on the activities of the GBFIG and Instream Flow stakeholder groups.
        ii. Summarize and report on findings of the Environmental Flows task as suitable milestones in the conduct of the program.
        iii. On behalf of the RHWPG, meet with other interest groups such as Galveston Bay Foundation, the Galveston Bay Estuary Program of TCEQ, and various state and federal agencies to review the results and discussions of the two stakeholder groups.

4. Alternative Strategy Formulation: Several strategies in the 2006 RWP rely on several specific factors to be successfully implemented. As time passes between the development of the RWPs, some alternative strategies with comparable cost

benefit ratios to selected strategies may become more attractive alternatives in light of new information. The recommendation of alternative strategies will increase the flexibility of the Plan and enhance the ability of stakeholders to obtain funding for projects to respond to rapidly increasing demands in the near-term. Furthermore, this task promotes the investigation of new strategies that have not been considered in the existing RWPs.

a. Update pertinent information for strategies that were not selected in the 2006 RWP.
b. Identify new strategies that may be effective strategies. This includes but is not limited to the development of storage to enhance yields from run-of-river rights, aquifer storage and recovery (ASR), and the desalination of brackish water.
c. Meet with local stakeholders that are considering strategies outside of those listed in the 2006 RWP for their input on potential strategies.
d. Develop yield and cost figures for each strategy in order to compare to current strategies.
e. Develop a matrix of impacts associated with each potential alternative strategy.
f. Link alternative strategies to WUG shortages currently being met with a selected strategy from the 2006 RWP.
g. Present results of alternative management strategy analysis to RWP group to decide which, if any, alternative water management strategies will be recommended for inclusion in the 2011 RWP.
h. Based on RWP group decision, incorporate recommended alternative water management strategies for identified WUGs in the 2011 RWP.
i. Summarize the results of this study within Chapter 4.

TASK 5 IMPACTS OF SELECTED WATER MANAGEMENT STRATEGIES ON KEY PARAMETERS OF WATER QUALITY AND IMPACTS OF MOVING WATER FROM RURAL AND AGRICULTURAL AREAS

Task 5 Base Funded Amount: $32,000

Tasks to be performed under base funding:

1. Review and update information in plan for all strategies which have remained the same
2. Address quality impacts of new management strategies developed during this round of planning
3. Revise wording for Chapter 5 of the plan to include the new management strategies.
4. Submit revised chapter to WPG members for review and approval.
5. Submit approved chapter to TWDB for comment
6. Present TWDB comments to planning group with associated recommended changes and seek approval for final.

Task 5 Supplemental Funding Amount: $0

TASK 6 WATER CONSERVATION AND DROUGHT MANAGEMENT RECOMMENDATIONS

Task 6 Base Funded Amount: $10,000

Tasks to be performed under base funding:

1. Produce and distribute a survey for each WUG asking about water conservation measures implemented and measures planned, as well as what impacts of conservation measures they have been able to measure.
2. Compare information received to information contained in the 2006 plan to determine level of impact.
3. Revise conservation strategies in the Plan to reflect information gained from survey.
4. Incorporate results of First Biennium study on drought contingency into Chapter 6.
5. Revise wording for Chapter 6 of the plan to include the new management strategies.
6. Submit revised chapter to Region H WPG members for review and approval.
7. Submit approved chapter to TWDB for comment
8. Present TWDB comments to planning group with associated recommended changes and seek approval for final.

Task 6 Supplemental Funding Amount: $63,500

Water Conservation Evaluation: The conservation strategies in the 2006 RWP were based upon available information on conservation within the Region. These levels of conservation may not be appropriate to actual results in all water systems due to size or socioeconomic factors. This task will evaluate actual observed conservation impacts from a number of water systems and verify the practicality of strategies that are already recommended in the 2006 RWP. Performing this study will be essential for determining the role of water conservation strategies or recommending alternative strategies to augment conservation goals that have been diminished due to observed efficacy.

Tasks to be performed under the supplemental funding request include:

1. Contact TCEQ and TWDB in order to obtain any water conservation plans that have not been received by the RWPG.
2. Identify entities that were required to submit specific plans for water conservation and review the submitted plans to prepare a summary of recommended water conservation practices throughout Region H and the expected efficacy of these techniques.

3. Contact these entities and request any preliminary information pertaining to actual observed efficacy and cost to implement.
4. Compare planned and actual water conservation performance and cost to the conservation strategies presented in the 2006 RWP.
5. Use this information to make adjustments to conservation WMS volumes and costs for Region H in Chapter 4.
6. Assign alternative strategies as necessary to supplement shortfalls in supply from revised conservation strategy.
7. Add summary section to Chapter 6 to address the information gained in this study,

TASK 7 DESCRIPTION OF HOW THE REGIONAL WATER PLAN IS CONSISTENT WITH LONG-TERM PROTECTION OF THE STATE'S WATER RESOURCES AND NATURAL RESOURCES

Task 7 Base Funded Amount: $10,000

Tasks to be performed under base funding:

1. Update the current descriptions of water management strategies with any new strategies developed during this planning round, as well as any alternate strategies which are developed for specific WUGs with shortages which need additional flexibility.
2. Revise wording for Chapter 7 of the plan to include the new management strategies.
3. Submit revised chapter to Region H WPG members for review and approval.
4. Submit approved chapter to TWDB for comment.
5. Present TWDB comments to planning group with associated recommended changes and seek approval for final.

Task 7 Supplemental Funding Amount: $0

TASK 8 UNIQUE STREAM SEGMENTS / RESERVOIR SITES / LEGISLATIVE RECOMMENDATIONS

Task 8 Base Funded Amount: $15,000

Tasks to be performed under base funding:

1. Convene RWPG to review designations and recommendations from last round.
2. Provide any updates of descriptions of reservoir projects and any changes in classifications in stream segments.
3. Review the legislative recommendations made in the last round of planning and determine the need for addition to or removal from the list.

4. Revise wording for Chapter 8 of the plan to include the new management strategies.
5. Submit revised chapter to Region H RWPG members for review and approval.
6. Submit approved chapter to TWDB for comment.
7. Present TWDB comments to planning group with associated recommended changes and seek approval for final.

Task 8 Supplemental Funding Amount: $0

TASK 9 REPORT TO LEGISLATURE ON WATER INFRASTRUCTURE FUNDING RECOMMENDATIONS

Task 9 Base Funded Amount: $58,000

Tasks to be performed under base funding:

1. Integrate WIF information request into conservation plan letter to individual WUGs.
2. Receive and collate information on infrastructure needs from individual WUGs and develop tables of total funds needed.
3. Coordinate with WUGs indicating a need for WIF funding to determine detailed needs and costs associated with their anticipated projects.
4. Revise wording for Chapter 9 of the plan to include the updated WIF funding needs.
5. Include text in Chapter 9 to summarize each proposed WIF project and indicate its location in the RWP along with the sources and WUGs associated with the project.
6. Submit revised chapter to Region H WPG members for review and approval.
7. Submit approved chapter to TWDB for comment.
8. Present TWDB comments to planning group with associated recommended changes and seek approval for final.

Task 9 Supplemental Funding Amount: $0

TASK 10 ADOPTION OF PLAN

Task 10 Base Funded Amount: $254,800

Tasks to be performed under base funding:

A. *Public Participation for Planning Grant Process* – Provision for public comment on the proposed scope of work, schedule of activities, and required budgets for the three remaining years of the third planning cycle.

1. Provide public notification of Region H RWPG intent to apply for grant funding for the next three years of the third planning cycle.

2. Make grant applications available to the general public throughout Region H.
3. Make presentations explaining the proposed grant funding for Region H RWPG in a public meeting.
4. Incorporate changes requested by Region H RWPG as a result of public comments.

B. *Periodic Meetings of the Region H RWPG* – Technical support and participation of the regular and special called meetings of the Region H RWPG.

1. Participate in approximately 12 regular meetings of the Region H RWPG.
2. Participate in developing agendas, arranging speakers, and coordinating activities for the Region H RWPG.
3. Develop presentations and handout materials for the regular and special meetings to provide technical and explanatory data to the Region H RWPG and its subcommittees.

C. *Required Public Meetings* – Provide technical support and participate in three required public meetings for:
   a. Receiving input on draft water demand calculations for applicable water user groups in the region.
   b. Receiving input on the selected water management strategies.
   c. Receiving input on the draft 2011 Regional Water Plan.

1. Provide notice for the three public meetings.
2. Develop presentations and handout materials for the public meetings to provide to the general public.
3. Provide draft responses for RWPG approval to any questions that are asked at the public meetings.

D. Administrative Support

1. Prepare and submit invoices to the SJRA for work performed for the RWPG and provide consultant's status report for each meeting.
2. Maintain lists of contacts for regional planning information in the region, coordinated with Jace Houston at SJRA.
3. Attend and prepare presentation and handout materials for public meetings in various locations of the region to solicit input on the draft Region H Regional Plan.
4. Prepare report section summarizing Task 10 activities.
5. Prepare and transmit correspondence once Region H RWPG approval of draft responses is obtained.

Task 10 Supplemental Funding Amount: $0

P.O. Box 753
Madisonville, Texas 77864-0753
May 1, 2008

Region H Water Planning Group
Reed Eichelberger, PE
General Manager
San Jacinto River Authority
P.O. Box 329
Conroe, Texas 77305-0329

Subject: Scope of Work---Items to Include in the Updated Region H Water Plan

Dear Mr. Eichelberger:

Concerned citizens and taxpayers of Madison County, Texas, want to make the officials of Region H Water Planning Group aware of the following concerns in our county governed by the Mid-East Texas Groundwater Conservation District. The following list of needs gives a condensed view of existing problems. The scope of Region H must be expanded to oversee the education of the local citizens of each GCD in Region H and to insure that information is available to these taxpayers. Following the list is a detailed description of each problem.

1. the need for providing information about Region H and the Mid-East Texas Groundwater Conservation District to the general public

2. the need to provide educational seminars to the general public regarding water distribution, water depletion, and water recharge from the aquifers in the counties governed by the Mid-East Texas Groundwater Conservation District

3. the need to establish a method of informing the general public of the month to month activities of the GCD (---perhaps a website?)

4. the need to **share** the data collected by the GCD from Region H as well as from the U.S. Geological Survey

5. the need to hold general town meetings in a central location of the GCD to release information about Region H through visual presentations and written handouts

6. the need for a representative from the Mid-East Texas Water Conservation District to attend the Region H meetings and to report its activities to citizens.

Explanation of Item 1
The names and addresses of the Mid-East Texas Groundwater Conservation District as well as the rules for the district were not readily available in our county. A freedom of information request was filed with the GCD and an oral request was made at a County Commissioners Court Meeting. The latter yielded a copy of the rules. Finally, the GCD produced a list of the names and addresses of the members of the Board of the GCD as well as copies of the current and past rules. The process was long and arduous.

By chance, I found information about Region H on the internet. Some sort of planned printed information should be provided for citizens and made available at a public place.

Explanation of Item 2
The average person is unaware of the meaning and consequences of lack of water conservation. Limits set on each aquifer as well as desired future conditions does not figure in the daily life of average citizens. Slide show presentations as well as printed bulletins should be available to all citizens at the office of the county judge or in any highly visible and accessible location.

Explanation of Item 3
The minutes of each GCD meeting should be easily accessible by the general public. These minutes should be posted on a website/and filed in the office of the county clerk or placed on file in the county library or all three. Lack of availability conveys an air of secrecy and wrongdoing whether real or implied. A financial report of the GCD should be made available on a monthly basis also.

Explanation of Item 4
Even though volumes of Region H material are available in the Madison County Library, if the general public is not aware of their presence, the material might as well be non-existent. The GCD has a responsibility to share the information produced by the U.S. Geological Survey with the taxpayers within the District whether by booklet distributed at town meetings or by the local librarian. Of course, the members of the Board of the GCD should certainly have easy access to this information as it becomes available on a regular basis.

Explanation of Item 5
Even though the taxpayers voted the GCD into existence, most voters did so with very little knowledge of the workings of the GCD and how it functions. Each GCD should have town meetings on a yearly basis to provide a visual presentation about the GCD as well as printed handouts to be made available to citizens. These meetings should be advertised in the local newspapers.

Explanation of Item 6

Citizens need information about the activities of Region H. A representative from Mid-East Texas GCD needs to attend the Region H WPG meetings and to report its activities through news releases and/or messages on a website devoted to the GCD activities.

Madison County Citizens for Water Conservation request that the Texas Water Development Board consider the above items when considering the grant application of the RHWPG. We also ask that the scope of work developed by the RHWPG include all of the above items.

Power Plants in Texas
Finally, our county is experiencing the possibility of the location of an electric power plant. The plant will use between 3 and 5 million gallons of water per day from the Wilcox aquifer. The potential use will exceed the allotment for our county for the period of one year. If this amount is accurate, the aquifer cannot replenish itself fast enough to compensate for the large volume of water being used.

After speaking with representatives from Region H as well as members of the Texas Water Development Board, we were told that we were at the mercy of the GCD. This is the same GCD that does not attend the Region H meetings. If we had not contacted the TWDB and Region H, no one would have known what the GCD was or was not (?) about to approve. This is why it is so important for the data that Region H, TWDB, and U.S. Geological Survey prepare to actually reach the hands of the members of the GCD.

We beg you to take an active stance in policing the amounts of water used from each aquifer in each county for all purposes so that ordinary people are not left without water in order that private enterprise can confiscate the water under the land of private landowners and use it for monetary gain. If control is not used, the courts will be filled with cases over water disputes.

Additionally, there will no water to support humans and livestock. Water is our most valuable resource. Perhaps it is more valuable than oil and gas.

Think about it------if the water is not valuable---why are so many power plants trying to locate in Texas? They are using our water and sending the electricity out of our state to sell it in peak periods of usage when the price is better. Fellow Texans and ranchers need to be aware of this threat.

Thank you for your attention to the concerns of our group. Please send notices, mailings, and newsletters to Angela Fannin, Madison County Citizens for Water Conservation, P.O. Box 753, Madisonville, Texas 77864-0753.

Sincerely,

Angela Fannin

Angela Fannin
(Mrs. Jerry W. Fannin)
Madison County Citizens for Water Conservation

Copy to: J. Kevin Ward
Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

4/19/2008

Mr Ward:

I do not know if the outcome of the region H water plan will effect us at Harris Co. Fresh Water Supply District #6 or not, but I must assume a defensive posture. It is nice to be able to access information on my computer but I have a hard time asking it questions and discussing different possibilities.

If there is to be Public Meetings — have them in every sector of the region and at Times when Local working people can attend, App. 7pm.

Thank You
Ronald Rushing
President
H. C. F. W. S. D. #6

TEXAS WATER DEVELOPMENT BOARD

James E. Herring, *Chairman*
Lewis H. McMahan, *Member*
Edward G. Vaughan, *Member*

J. Kevin Ward
Executive Administrator

Jack Hunt, *Vice Chairman*
Thomas Weir Labatt III, *Member*
Joe M. Crutcher, *Member*

May 1, 2008

Mr. Ronald Rushing, President
Harris County Fresh Water Supply District #6
718 Coolidge Street
Channelview, Texas 77530-4604

Dear Mr. Rushing:

Thank you for your comments in your letter dated April 19, 2008. The regional water planning process is designed to allow for public involvement, with notice posted and meetings held in accordance with the Texas Open Meetings Act. However, it is up to each regional water planning group to determine the time and place of their meetings. I am forwarding your concerns to Mr. Jeff Taylor, the Chairman of the Region H Planning Group and to Mr. Jace Houston of the San Jacinto River Authority (SJRA), the designated political subdivision for the Region H Planning Group.

The next meeting of the Region H regional water planning group is scheduled for May 28, 2008 at 10:00 a.m. at the offices of the SJRA. They will also hold a public meeting specifically to take input on the scope of work for the development of the next regional water plan.

Thank you again for your interest in the regional water planning process. Please contact Ms. Temple McKinnon of my staff at (512) 475-2057 if you have additional questions.

Sincerely,

J. Kevin Ward
Executive Administrator

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)

Regular Meeting

Agenda Item 2

Review and approve minutes of February 6, 2008 meeting.

MINUTES
REGION H WATER PLANNING GROUP MEETING
10:00 A.M.
FEBRUARY 6, 2008
SAN JACINTO RIVER AUTHORITY OFFICE
LAKE CONROE DAM
1577 DAM SITE ROAD
CONROE, TEXAS

MEMBERS PRESENT: Roosevelt Alexander, John Baker, John R. Bartos, Reed Eichelberger, Mark Evans, Jason Fluharty, Jack Harris, Robert Istre, Marvin Marcell, James Murray, Jimmie Schindewolf, Jeff Taylor, William Teer, C. Harold Wallace, and Pudge Willcox.

DESIGNATED ALTERNATES: Reeves Gilmore for John Blount, Danny Pierce for Robert Bruner, D'Neal Krisch for Bob Hebert, Tom Michel for Ronald Neighbors, and Robert Stevens for Danny Vance.

MEMBERS ABSENT: John Blout, Robert Bruner, Bob Hebert, John Howard, James Morrison, Ronald Neighbors, Steve Tyler, Mike Uhl, and Danny Vance.

NON-VOTING MEMBERS PRESENT: Temple McKinnon.

PRESIDING: Jeff Taylor, Chairman

MINUTES OF OCTOBER 31, 2007 MEETING

A motion was made by James Murray to approve the minutes of the October 31, 2007 meeting; second by John Bartos. The motion carried unanimously**.**

PUBLIC COMMENTS ON AGENDA ITEMS 4 - 10

None.

Mike Reedy described the handout package and the ability to access the uploaded materials on the Region H website at www.regionhwater.org.

RECEIVE REPORT AND SUMMARY ACCOUNTING OF THE REGION H WATER PLANNING GROUP GENERAL FUND (LOCAL-CONTRIBUTION) FROM SAN JACINTO RIVER AUTHORITY

Mike Jackson with the San Jacinto River Authority reported on the fund balances and expenditures related to the Region H Water Planning Group, including the Local Contribution Fund, the TWDB Planning Grant Fund, and unreimbursed expenses in the amount of $6,825.00 incurred by the San Jacinto River Authority. Jimmy Schindewolf stated his appreciation for the San Jacinto River Authority facilities and staff. Jace Houston provided a description of the expenses related to each fund and explained the liability insurance coverage maintained on

behalf of the Region H Water Planning Group. Discussion was led by Jeff Taylor on how the remaining local contribution funds could be utilized in the future. A number of members expressed the opinion that attempting to return the contributed funds to the original contributing entities would create accounting problems and maintaining the account for future planning expenses would be consistent with the original intent of the contributors.

CONSIDER A MOTION TO APPROVE REIMBURSEMENT OF THE SAN JACINTO RIVER AUTHORITY FOR OUT-OF-POCKET EXPENSES INCURRED RELATED TO REGION H PLANNING ACTIVITIES

After a brief discussion, motion was made by Tom Michel to reimburse the San Jacinto River Authority in the amount of $6,825 for out-of-pocket expenses related to Region H planning activities; seconded by Marvin Marcell. The motion carried unanimously.

RECEIVE REPORT FROM TEMPLE MCKINNON ON THE STATUS OF THE CITY OF GROVETON REQUEST FOR A WAIVER FROM THE TWDB'S CONSISTENCY PROVISIONS

Temple McKinnon gave an update on the status of the City of Groveton's request for a consistency waiver related to its application for funding for a new water well. Groveton will pursue economically disadvantaged facility planning funding from TWDB for their new well project. Their consistency waiver (supported by Region H) will be considered with possible TWDB loan funds later in 2008.

RECEIVE REPORT FROM TEMPLE MCKINNON ON SECOND BIENNIUM FUNDING AND THE TWDB REQUEST FOR APPLICATIONS

Temple McKinnon described TWDB's memo requesting applications for funding for the third round of planning. She described the procedures for preparing a scope of work and applications, applicable notice and hearing requirements, and the schedule and deadlines for same. She reviewed the total funding budgeted for completion of the third round of planning, the amount allocated for base funding, and the amount allocated for funding on a competitive basis. She explained that the scoping committee should consider the funding formulas while prioritizing projects.

A discussion ensued regarding the schedule for submittal of a funding application with regard to the current meeting schedule for Region H.

RECEIVE UPDATE FROM CONSULTANTS ON STATUS OF DROUGHT CONTINGENCY TASK

Mike Reedy discussed the relationship and impact of the statewide drought management study to the Region H task. Mr. Reedy indicated that Region H was recently instructed by TWDB to proceed with the Region H task. He explained that the task involved studying how drought management activities impact water supplies and management strategies. He explained the need

to approve the scope of work so consultants can proceed and the need for an amendment to the contract between the San Jacinto River Authority and the TWDB. Temple McKinnon stated that TWDB had already reviewed and approved the proposed scope of work. Robert Istre inquired as to whether or not the study would cover Brazos run-of-river rights. Mike Reedy explained that Brazos run-of-river rights were not specifically included, but the issue can probably be partially addressed because the study will determine how drought management strategies might be incorporated in future planning efforts.

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

After a brief discussion, motion was made by John Baker to approve the drought contingency scope of work and to authorize the SJRA to enter into a contract amendment for the drought contingency task with the TWDB; seconded by Marvin Marcell. The motion carried unanimously.

RECEIVE REPORT FROM CONSULTANTS SUMMARIZING THE RECOMMENDATIONS MADE TO THE TWDB FROM THE REGION H WATER PLANNING GROUP RELATED TO SECOND BIENNIUM FUNDING

Mike Reedy reviewed the November 1st letter to the TWDB from Region H describing the planning activities anticipated by Region H for the third round of planning. He also explained that the next step is to appoint a scoping committee to incorporate these activities into a funding request for the third round of planning. Discussion ensued regarding the need for backup strategies to address months in which run-of-river rights are not available due to reliability issues.

CONSIDER A MOTION TO ESTABLISH A REGION H WATER PLANNING GROUP COMMITTEE FOR THE PURPOSE OF GUIDING AND ESTABLISHING THE SCOPE OF WORK AND GRANT APPLICATION IN RESPONSE TO THE TWDB REQUEST FOR APPLICATIONS

Jeff Taylor requested volunteers willing to serve on the scoping committee. After a brief discussion, motion was made by Mark Evans to establish a Scoping Committee made up of the following members: Jimmie Schindewolf, Robert Istre, John Baker, John Bartos, and Ron Neighbors (Chair); seconded by John Baker. The motion carried unanimously.

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

Mike Reedy discussed the modeling assumptions agreed on by Region H and TWDB for Tasks 1 and 3. He reviewed comments submitted by Woody Woodrow and Jeff Taylor's response to same regarding which WAM runs were appropriate to use in Tasks 1 and 3. Mr. Reedy discussed the rationale behind the WAM runs selected by the consultant team and Region H. Dan Opdyke with the TPWD commented on the TPWD's position on this issue. He expressed

that the timing of return flows due to interbasin transfers should be considered during planning and also expressed concern if environmental flows are met by using return flows as these flows are not legally enforceable. Mr. Reedy agreed and explained that some of these concerns could be addressed when there is additional funding available. Jeff Taylor explained the Lake Livingston permit in regards to return flows and how the issue will have to be decided legislatively with regard to reuse and return flows.

Mr. Reedy explained that a motion was needed regarding the modeling assumptions used for Tasks 1 and 3, which is a requirement based on the TWDB planning grant contract. He explained that there were four baseline model runs that were included in the original scope of work and that the consultant team and TWDB agreed to add results from Run 3 to address TWPD's comments.

After a brief discussion, motion was made by Marvin Marcell to approve the baseline, individual, and cumulative strategy WAM technical modeling approach (including addition of the Run 3 model) used for Tasks 1 and 3; seconded by James Murray. The motion carried unanimously.

Mike Reedy continued with an update on the status of current regional planning efforts.

Task 1 Update. He explained the goal of this task is to analyze the impact of Region H's recommended management strategies on environmental flow targets developed by TPWD and TWDB. The initial results show that when Region C and H management strategies from the 2006 plans are included in the modeling, the frequency of meeting the environmental flow targets increased. The ultimate goal of this task is to analyze impacts and possible integration strategies for each Region H management strategy. Dan Opdyke offered TPWD's assistance on determining appropriate instream flows for various streams.

Task 3 Update. Dan Buhman with KBR discussed Task 3 related to interruptible supplies and the current status of the project. He explained the goal of Task 3, which is to analyze the impact of interruptible supplies on Region H planning by completing the following:

- Estimation of existing permitted interruptible supplies
- Estimation of un-appropriated interruptible supplies
- Calculation of un-appropriated interruptible supplies in relation to existing irrigation rights

He commented that the preliminary results show that the majority of irrigation demand is in the coastal Brazos and Trinity basins, but un-appropriated interruptible supplies per WAM Run 3 in these basins are negligible.

Mike Personnet with KBR reviewed the next steps involved with Task 3, which include:

- Complete analysis of existing, permitted, un-appropriated supplies

- Compile results from calculations comparing un-appropriated 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

Mike Reedy gave an overview of the schedule for completing Tasks 1 and 3. The goal is have draft reports ready for November 2008 meeting.

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

Temple McKinnon gave an overview of rule amendments being considered by TWDB related to regional planning. She mentioned that a number of WIF funding applications had been received from agencies in the Region H area. She also stated that the Brazos Salt Water Barrier project is moving along.

Priscilla Weeks with Houston Advanced Research Center gave an update on the status of nominees to the BBAS group for the San Jacinto-Trinity basin. Proposed nominees will have to fill out additional information requested by the Lt. Governor's office.

Lloyd Behm with Bluebonnet Groundwater Conservation District stated that Waller County had been annexed into the Bluebonnet Groundwater Conservation District. He stated that there are approximately 45 groundwater users in Waller County that will need permits and 1,200 exempt wells that need to be registered.

Dan Opdyke with TPWD introduced Rebecca Hensley. He stated that a replacement for Woody Woodrow will be designated soon.

Jeff Taylor reported that the Coastal Water Authority has applied for WIF funding for the Luce Bayou project and it may be considered by TWDB in March. The application was for $28,000,000 to include preliminary engineering, permitting, and environmental. He also reported that the Northeast Water Purification Plant near Lake Houston (80 mgd facility) has transferred operations to City of Houston personnel instead of contract operators. This should result in cost savings.

Pudge Willcox representing the Chambers-Liberty Counties Navigation District gave an update on their project to move water into West Chambers County.

Tom Michel with the Harris-Galveston Subsidence District suggested holding a future Region H meeting at the new Northeast Water Purification Plant.

Reed Eichelberger with the San Jacinto River Authority gave an update on the surface water conversion project in Montgomery County.

GENERAL PUBLIC COMMENTS

None.

AGENCY COMMUNICATIONS

NEXT MEETING

May 7, 2008
San Jacinto River Authority
Lake Conroe Dam
1577 Dam Site Road
Conroe, Texas 77304

ADJOURNED

Regular Meeting

Agenda Item 5

Consider a motion to include the North Fort Bend Water Authority as a non-voting member of the Region H Water Planning Group.

NORTH FORT BEND WATER AUTHORITY

April 15, 2008

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

Re: North Fort Bend Water Authority
Region H Planning Group

Dear Mr. Taylor:

This letter is to request that the North Fort Bend Water Authority (NFBWA) be established as a non-voting member of the Region H Water Planning Group and be included in the Region H planning process.

NFBWA encompasses an area of approximately 147 square miles and a projected population of approximately 160,000 people in 2010. NFBWA currently includes 43 Utility Districts, 1 City and 26 private owners subject to groundwater pumpage fees.

If you have any questions or need additional information, please contact me at 281-558-8700.

Sincerely,

David C. Scholler, PE
Program Manager

cc: Peter Houghton, NFBWA President
David Oliver, Esq., Allen Boone Humphries Robinson, LLP

c/o Allen Boone Humphries Robinson LLP ♦ 3200 Southwest Freeway, Suite 2600 ♦ Houston, TX 77027
www.nfbwa.com ♦ 713-860-6400 ♦ 713-860-6401 Fax

Regular Meeting

Agenda Item 6

Receive presentation from Jeff Taylor related to on-going work and City of Houston initiatives related to water quality and source water protection for Lake Houston.

Lake Houston Source Water Protection Program

City of Houston

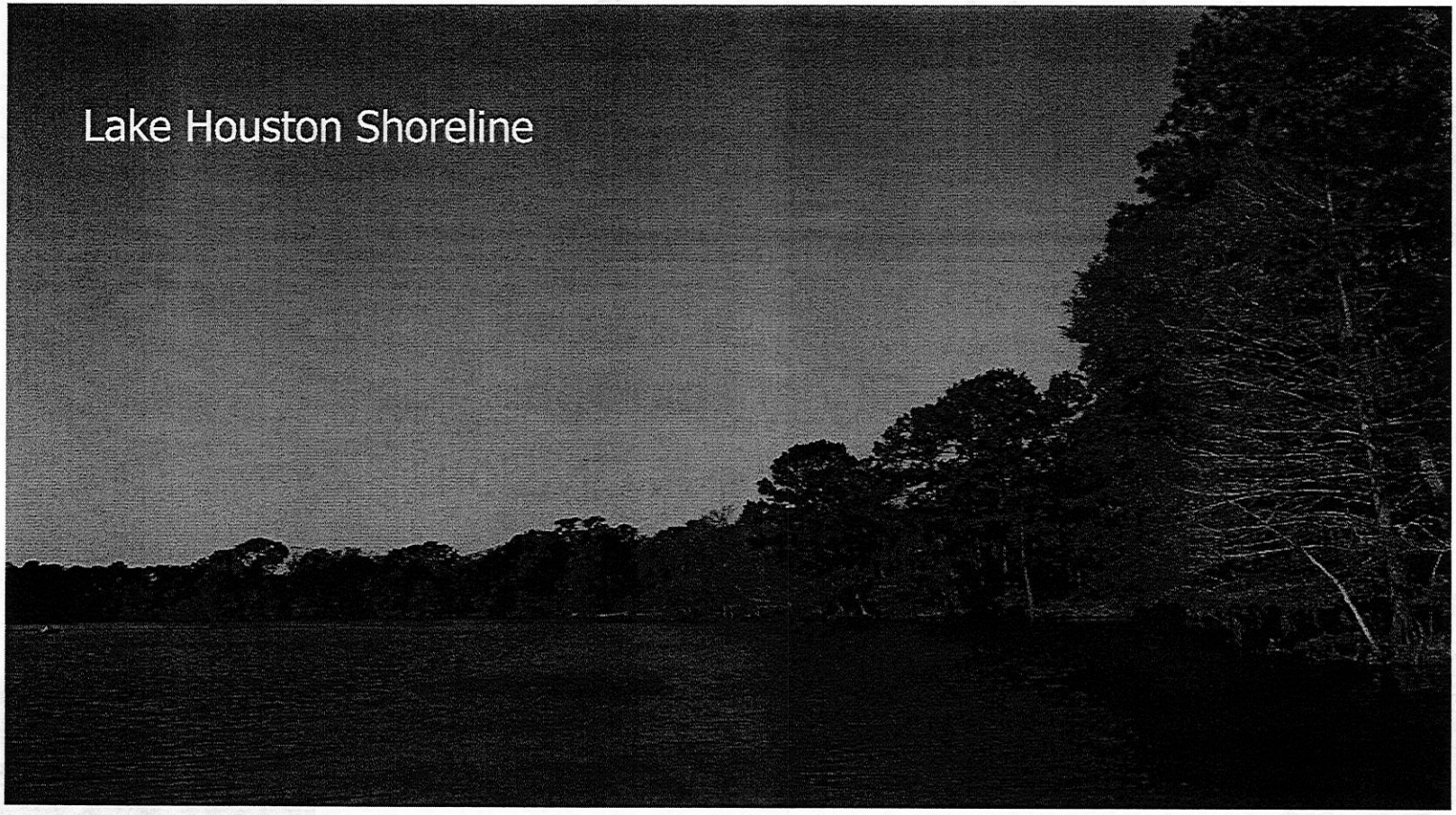
Public Utilities Division

Drinking Water Operations

USGS

science for a changing world

A Healthy Watershed Means Healthy Drinking Water

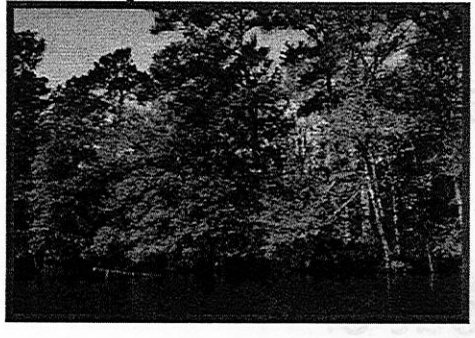


EPA Source Water Protection Plan Elements

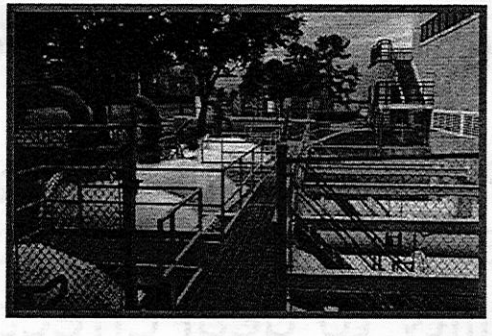
EPA considers that a comprehensive plan to achieve maximum public health protection using a multi barrier approach includes:

- Risk Prevention – Keep contaminants out of source waters
- Risk Management –PWS are the 1st line of defense with treatment and emergency response
- Risk Monitoring – Ability to deal effectively and constant vigilance
- Action – individual measures that can be implemented

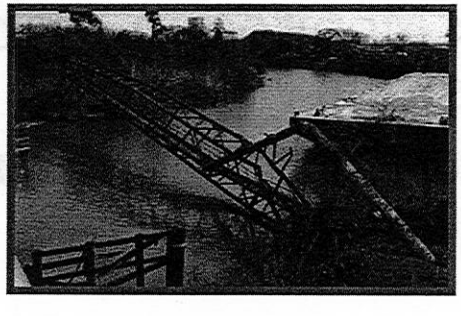
The Safe Drinking Water Act
Multiple Barrier Approach to Public Health Protection



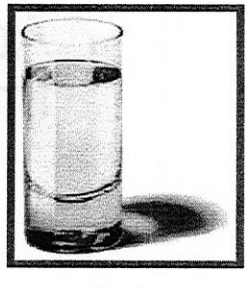
Prevention



Standards & Treatment



Distribution System



User -- Information

Goal: Protect Current & Future Sources of Drinking Water

AWWA Source Water Protection Standard

- Program must have:
  - Vision Statement and Goals
  - Geographic delineation of areas of concern
  - Water quality data
  - Potential contaminants associated with land uses
  - Security and emergency preparedness planning
  - Development of Action and Implementation Plans
  - Continual evaluation and revision

Houston's Source Water Program

- Two Needs Identified
  - Source Water Protection *Policy*
  - Source Water Quality Management *Strategy*
    - Total Water Management – Source to Tap

Proposed Source Water Policy

- Implement effective management controls to provide an additional contaminant reduction barrier in source waters

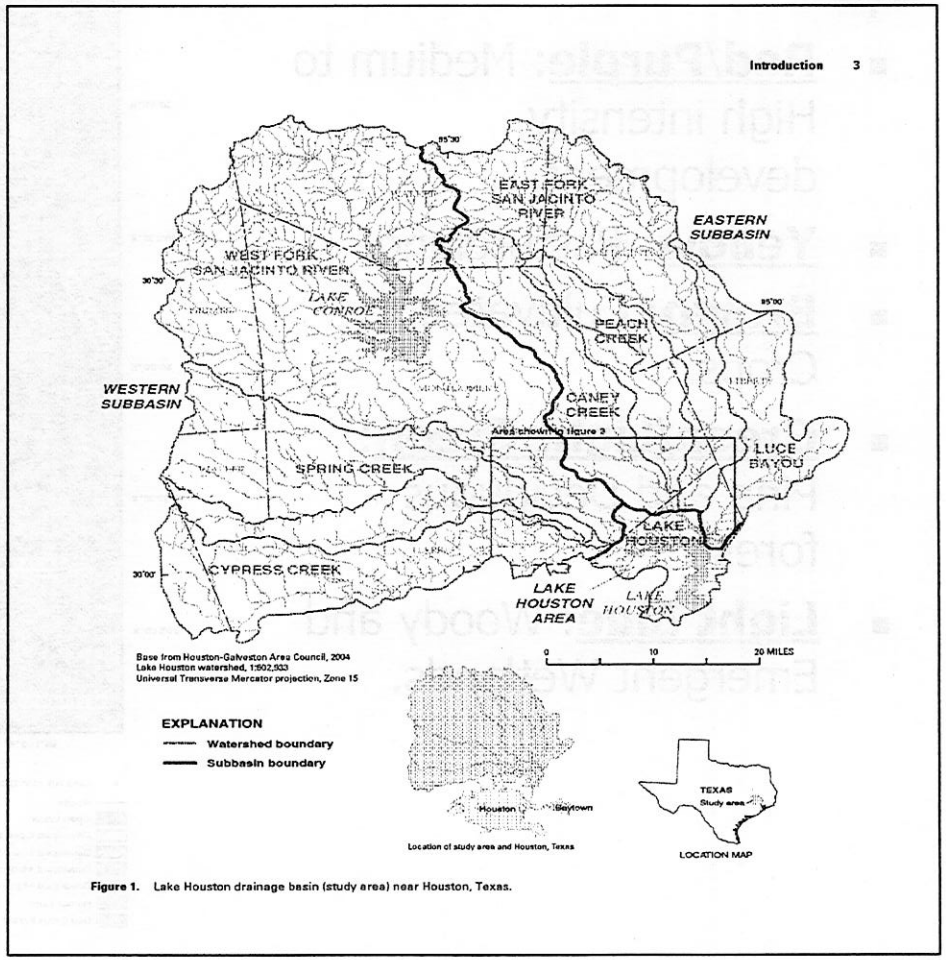
Public Health Risk Management Approach

Proposed Source Water Management Strategy

- Initial focus on Lake Houston Watershed
- Implementation Plan development based on public stakeholder discussions
- Management of source water quality, which includes monitoring, assessment and development of appropriate science based structural and administrative control measures
- Ordinance reinforcement with regards to development permits, storm water and wastewater discharges, and nutrient source uses

Lake Houston

- Lake Houston watershed, including delineated subbasins and individual tributaries spans 2,835 sq. mi. across 7 Counties.
- All 3 subwatersheds in the Western drainage subbasin are currently impaired for bacteria (303d).



Lake Houston Land Use

- **Red/Purple**: Medium to High intensity development.
- **Yellow**: Pastureland.
- **Brown**: Cultivated Crops.
- **Green/Light Green**: Pine and Deciduous forest.
- **Light Blue**: Woody and Emergent Wetlands.

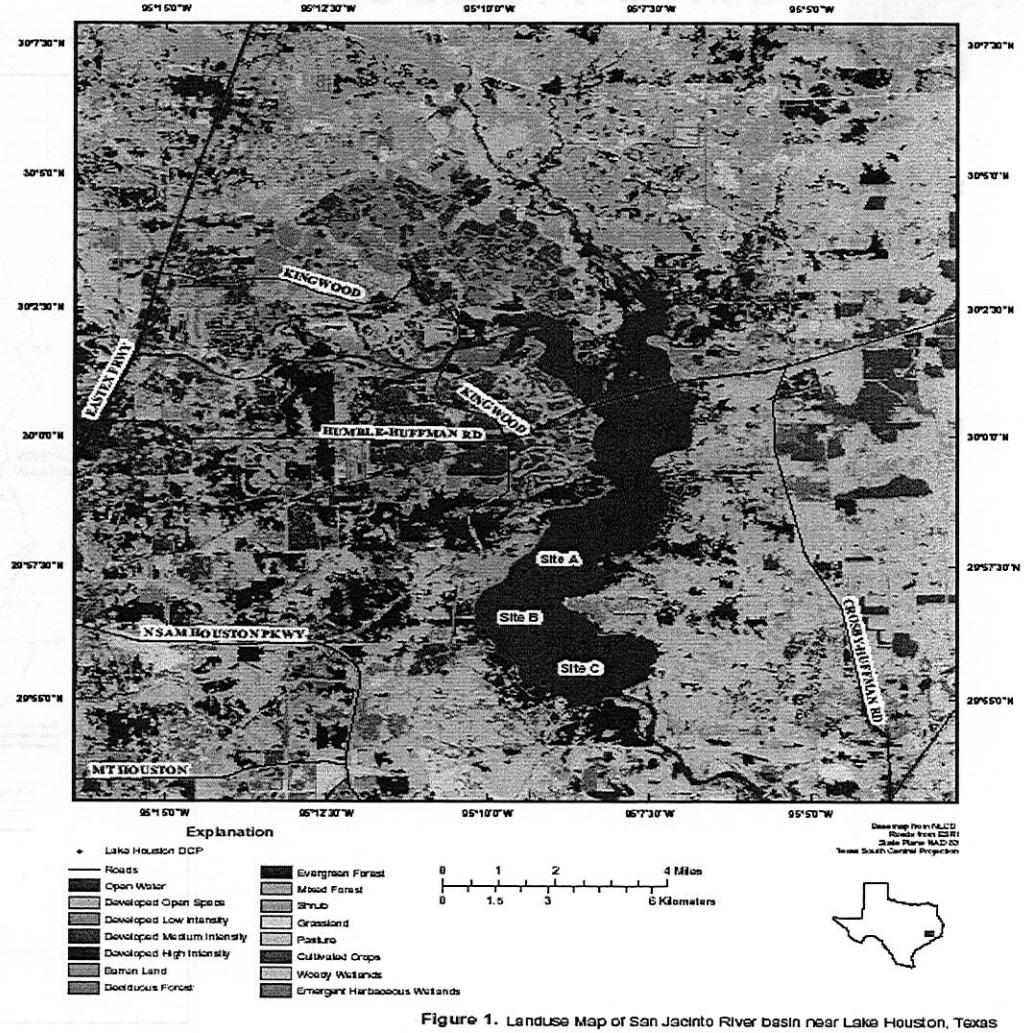
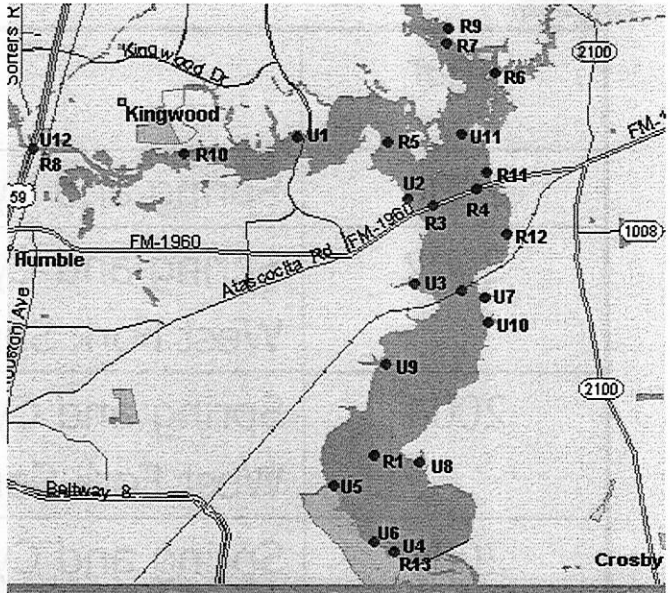


Figure 1. Landuse Map of San Jacinto River basin near Lake Houston, Texas

Protecting Houston's Drinking Water Sources

- Monitoring
  - Lake Houston Sampling Program
    - HGAC/Clean Rivers water quality monitoring of 25 recreational and urban run-off sites
    - USGS fixed and real-time monitoring stations in East Fork of Trinity River, West Fork of San Jacinto River and in Lake Houston



Lake Houston Sample Sites

Recreational	Urban Runoff
R1. Lake Shadows Middle of Lake	U1. Kingwood (Golf)
R2. Railroad Bridge Middle of Lake	U2. Atascocita
R3. West Fork McKay Bridge	U3. Walden
R4. East Fork McKay Bridge	U4. Duessen Park (DP-8)
R5. Atascocita Point	U5. Jack's Ditch (DP-4)
R6. Luces Bayou Water Wonderland	U6. Metro Ditch (DP-6)
R7. Treasure Island Magnolia Point	U7. Happy Hideaway
R8. West Fork HWY 59	U8. Lake Shadows
R9. B.J's Marina	U9. W. Lake Ditch (DP-1)
R10. Kingwood Marina	U10. Indian Shores
R11. Lake Houston Marina	U11. Scott's Point
R12. Lake Patrol Marina	U12. West Fork HWY 59
R13. Duessen Park Marina	

Texas Water Quality Impairments 303 (d) List

Year	Water Segment	Category
2000	Spring and Cypress Creeks	Bacteria
2002	Spring and Cypress Creeks, West Fork San Jacinto River	Bacteria
2004	Spring and Cypress Creeks, West Fork San Jacinto River	Bacteria
2006	Spring and Cypress Creeks, Lake Houston, West and East Fork San Jacinto River, Caney and Peach Creeks	Bacteria
2008 (draft)	Spring and Cypress Creeks, Lake Houston, West and East Fork San Jacinto River, Caney and Peach Creeks	Bacteria

Lake Houston Pathogens

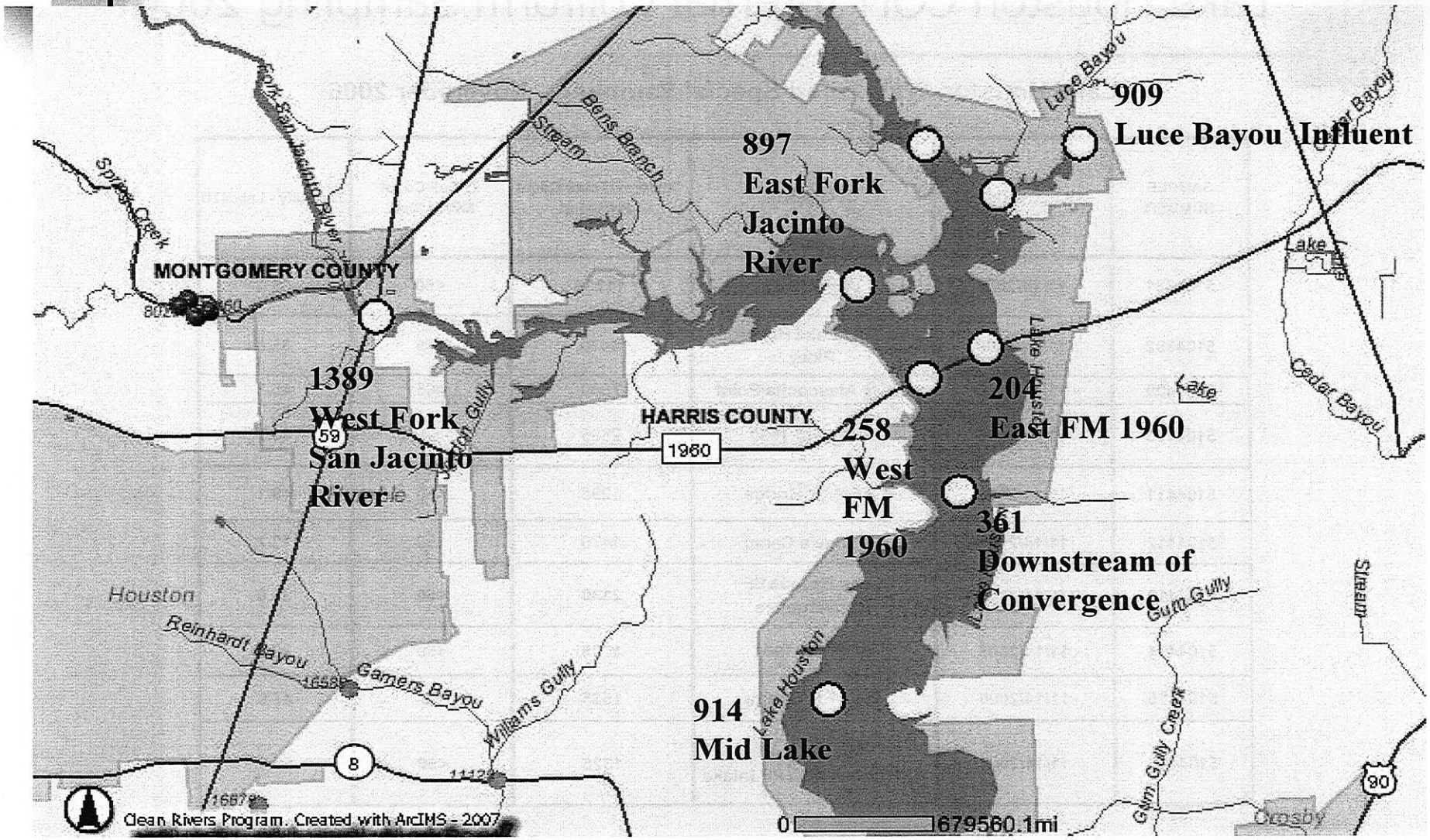
- Background
  - Cryptosporidium was detected in 1998 and 2004 at levels ranging from 0.1 to 0.67 oocysts per liter
  - Giardia has been detected in 2006 and 2007, ranging from 0.067 to 0.3 cysts per liter
  - Internal sampling in October and November 2006 indicated E.Coli levels above 100 colonies/100 mL at influent and lake sample locations
  - HGAC study indicates influents from Cypress and Spring Creeks are potential pathogen sources

HGAC Historical Lake Houston Bacteria Data

Criteria Index (126 cfu/100 mL)

Location	*E Coli* (cfu/100mL) (2000-2003)	*E Coli* (cfu/100mL) most recent published
West Fork San Jacinto Rover	1101	1389
East Fork San Jacinto River	153	897
Luce Bayou	275	908
West FM 1960	208	258
East FM 1960	160	204
Missouri-Pacific Rail Rd	139	361
Mid Lake	493	914

Most Recent Published Bacteria Count in Lake Houston by H-GAC



Lake Houston COH Internal Coliform Sampling 2006

Lake Houston Watershed Special Sampling - November 2006

SAMPLE NUMBER	COLLECTED DATE	COMMENTS	Coliform (Total) Count MPN/100mL	E_Coli Count MPN/100mL	Turbidity - Lab NTU
5104391	11/14/2006	WF@US 59	11235	<50	38.4
5104392	11/14/2006	WF@W.Lake Houston Pkwy	4420	155	35.8
5104409	11/14/2006	WF@ Atascocita Point	7500	465	45.8
5104410	11/14/2006	WF@ FM 1960	2865	50	43.7
5104411	11/14/2006	WF@RR Bridge	1295	<50	49.1
5104412	11/14/2006	Strange's Camp	1470	150	12.7
5104413	11/14/2006	Luce Bayou&EF Convergence	2130	<50	34.0
5104414	11/14/2006	EF@ FM 1960	1705	<50	39.5
5104415	11/14/2006	EF@ RR Bridge	1525	50	47.6
5104416	11/14/2006	Midpoint of RRBridge&NEWPP Intake	1325	<50	50.1

Protecting Houston's Drinking Water Sources

- What is the Connection Between Microbial Contamination and Turbidity?
  - Drinking water treatment plants primarily achieve removal requirements through the filtration process
  - Microorganisms are assumed to attach to particles, and if the particles (as turbidity) can be removed to a high degree, credit is given for treatment efficiency
  - *Therefore, the higher the source water turbidity, and the higher the microbial count in the water, the more pressure on the treatment plant to achieve the required removals, and the higher the health risk to the public*

Protecting Houston's Drinking Water Sources

Why are Pathogens a Concern?

- Surface water must be filtered and treated to remove microbial contaminants
- TCEQ regulations require the following minimum treatment efficiencies for microbial contaminants:
  - Cryptosporidium - 99% (2-log removal)
  - Giardia – 99.9% - (3-log removal)
  - Viruses – 99.99% - (4-log removal)
  - E.Coli – 100% - A violation occurs if the presence of E.Coli is confirmed

Source Water Quality and Water Treatment Plant Requirements

Raw Water Parameters	Lake Houston (08/05 – 02/08)	Trinity River (01/03 – 02/08)
Turbidity (NTU)	40-150	10-50
TOC (mg/L)	5.0 – 17.0	5.0 – 8.0
Color (pct)	20 – 100	5 - 40
Threshold Odor Number (T.O.N)	6.0 – 8.0	3.0 – 6.0

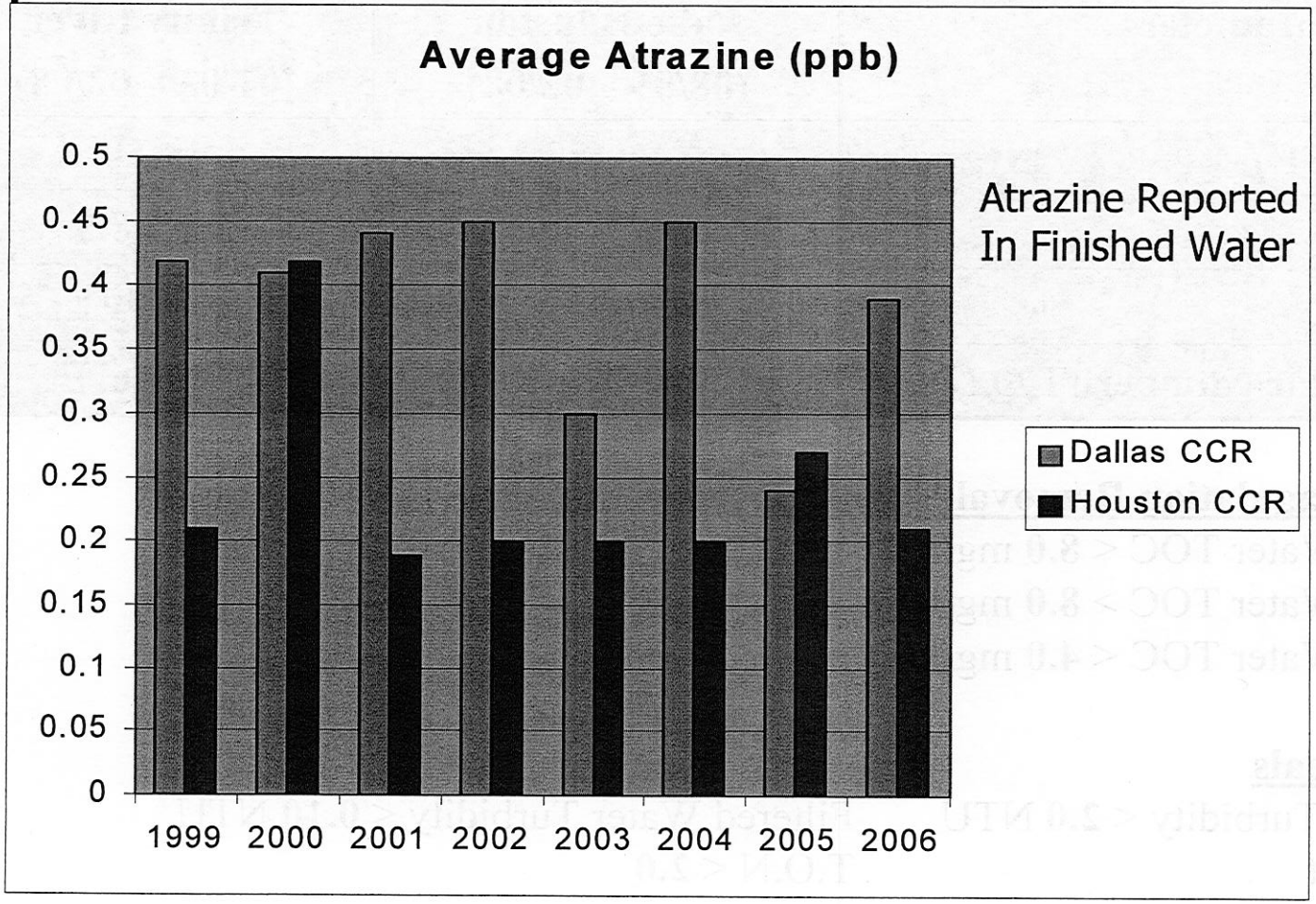
Enhanced Coagulation Removal Requirements

35% -- Raw Water TOC < **8.0** mg/L
50% -- Raw Water TOC > **8.0** mg/L
15% -- Raw Water TOC < **4.0** mg/L

Treatment Goals

Settled Water Turbidity < **2.0** NTU
Color < **5.0** pct
Filtered Water Turbidity < **0.10** NTU
T.O.N < **2.0**

Comparison of Upstream and Downstream Atrazine Levels



Atrazine Reported In Finished Water

Pesticides exist in Lake Houston

Protecting Houston's Drinking Water Sources

- Increased Treatment Costs for Lake Houston
  - Turbidity Removal
    - *"Enhanced Coagulation" chemical costs* - $20/MG
  - Organics Removal
    - *"Enhanced Coagulation" and carbon chemical costs* - $20/MG
  - Taste and Odor Reduction
    - *Increased carbon costs* - $50/MG
  - Total Increase per MG - $90/MG
    - ✓ ***For Average COH Daily Surface Water Production Rate of 40 MGD an additional $1,300,000 per year in chemical costs occurs to remove contaminants in source water***

Protecting Houston's Drinking Water Sources

- Increased Treatment Costs for Lake Houston
  - Atrazine Removal
    - *Increased carbon costs* - $50 to $100/MG
  - Additional Disinfection for Pathogen
    - *Use of Ultraviolet (UV) Irradiation – increased electrical costs - $30/MG*
  - Residuals Treatment
    - *Increased solids disposal costs - $20/MG*
  - ***These represent additional increases in operating costs as a result of Lake Houston source water quality***

Protecting Houston's Drinking Water Sources

- Source Water Program Targeted Parameters
  - Constituents
    1. **Pathogens** – **Primary concern, no treatment process will be 100% effective (**fecal coliforms, Giardia, potential for Cryptosporidium**)**
    2. **Nutrients and Sediments –** Pathogens travel with solids and can re-proliferate with nutrients
    3. **Spills and other Chemical Releases** – Need for operational contingency planning
    4. **Emerging Contaminants** – Atrazine, not removed by conventional treatment

Protecting Houston's Drinking Water Sources

- Initial Goals
  - Lake Houston
    - Reduction in frequency and quantity of pathogens detected – focus on coliforms
    - Reduction in frequency and quantity of atrazine detected
    - Reduction in severity of seasonal algal blooms by controlling nutrients and in-lake treatment
    - Control of sediments through permitting, partnerships and in-lake treatment
    - Increase visibility in community with sign posting and education efforts

Have not established parameter concentration or loading targets

Lake Houston Targeted Parameter Source Identification

Potential Pollutant Sources

- Stormwater Runoff
- Agricultural Runoff
- Sand and Gravel Operations
- Septic Systems in Rural Northern and Eastern Watersheds
- WWTPs on Spring and Cypress Creeks

Source Water Program

- **Tactical Actions**

  Implement continual improvement process – as we accomplish objectives, the overall program will be re-evaluated and new targets set, based on improvements realized

  - First Round – Keep it simple
    - Plan for incremental improvements over next 2 to 3 years
    - Leverage public outreach and education opportunities to engage discussion
    - Establish science to support future control measures
    - Begin evaluation of potential land use changes such as acquiring greenbelts or conservation easements

Source Water Program

- Tactical Actions (continued)
  - Management of source water quality
    - Implement expanded monitoring
    - Implement stake holder group to raise issue visibility and educate public
    - Enforce current ordinances
    - Develop TMDL program focusing on stormwater runoff
  - Establish Additional Resources –
    - Increase USGS funding level, double current spending
    - Increase Lake inspection and technical staff to include limnologist and aquatic biologists
    - Increase water quality monitoring staff

Source Water Program

- **Stake Holder Group** (can consider parameter targets, etc.)
  - Potential Participants:
    - TRA, SJRA, and CWA
    - Texas A&M Agricultural Extension/Soil Conservation
    - Harris County
    - Business, Civic, Environmental, Academic
- **Lake Houston Ordinances**
  - Enforce septic discharge and marine structure ordinances
    - Increase inspections focusing on water quality
  - Ordinance reinforcement in regards to organics, sediments and nutrients (development permits, storm water and wastewater discharges, and nutrient source uses)

Regular Meeting

Agenda Item 8

Receive briefing by Pudge Wilcox on a proposed amendment to the 2006 Region H RWP.

CHAMBERS-LIBERTY COUNTIES NAVIGATION DISTRICT

P.O. Box 518
211 Miller Street
Anahuac, Texas 77514-0518

Phone: 409-267-3541
Fax: 409-267-4042
website: www.clcnd.com

April 30, 2008

Jace Houston
San Jacinto River Authority
P.O. Box 329
Conroe, Texas 77305

Dear Mr. Houston,

As per your conversation with Pudge, I am enclosing the resolution that was passed by the Board of Navigation and Canal Commissioners of the Chambers-Liberty Counties Navigation District requesting an amendment to the Region H Water Plan.

If you need anything else, please let me know.

Thank you,

Mary Beth Stengler

Mary Beth Stengler, General Manager

Enc.

RESOLUTION 001-08

RESOLUTION OF THE BOARD OF NAVIGATION AND CANAL COMMISSIONERS OF CHAMBERS-LIBERTY COUNTIES NAVIGATION DISTRICT REQUESTING AN AMENDMENT TO THE REGION H WATER PLAN

WHEREAS, Chambers-Liberty Counties Navigation District proposes to construct a 2.5 MGD Surface Water Treatment Facility to provide wholesale potable water to the area of West Chambers County and Southwest Liberty County; and

WHEREAS, this project complies with the strategies of the Region H Plan by replacing ground water supplies with surface water and by regionalizing several small ground water systems into one surface water supply; and

WHEREAS, this project is not specifically included in the current Region H Plan; now

THEREFORE BE IT RESOLVED, that the Board of Navigation and Canal Commissioners of the Chambers-Liberty Counties Navigation District respectfully requests the Region H Water Planning Group to amend the Region H Water Plan to include this specific project.

Adopted this 28th day of April, 2008.

Terry Haltom, Chair

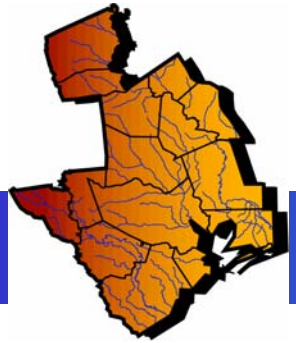
ATTEST:

James M. Sterling, III, Secretary

Regular Meeting

Agenda Item 9

Receive presentation from Consultant on the current status and progress of regional water planning.

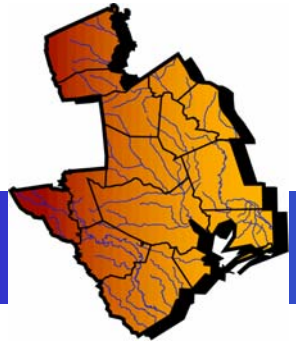


Region H
Water Planning Group

Region H Water Planning Group

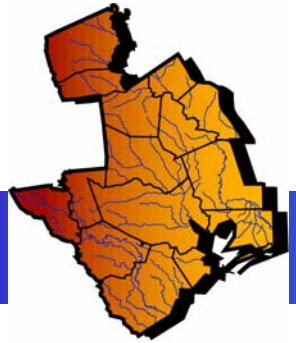
Consultants Report

May 28, 2008



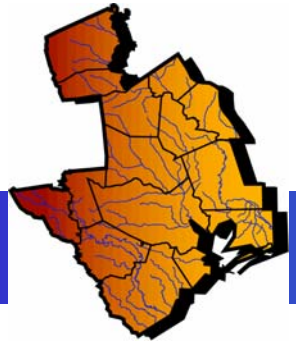
Region H
Water Planning Group

Environmental Flows Investigation: Impacts of Recommended Water Management Strategies on Galveston Bay Estuary



Introduction

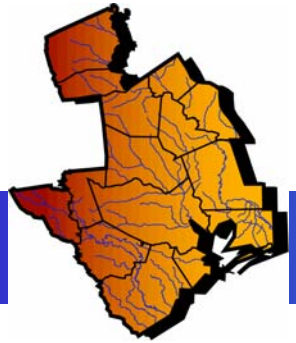
- Water Availability Models Developed
  - Base conditions
  - Individual strategies
  - All strategies



Introduction

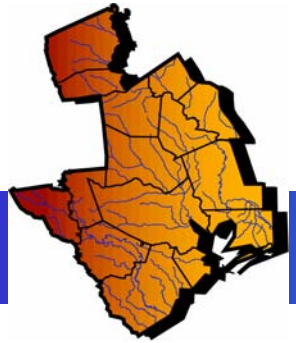
Modeled Water Management Strategies

- Expanded Use of Groundwater ~ 91,000 ac-ft/yr
- BRA System Operations ~ 119,000 ac-ft/yr
- Allens Creek Reservoir ~ 97,000 ac-ft/yr
- Little River Off-Channel Reservoir ~ 32,000 ac-ft/yr
- Industrial Wastewater Reuse ~ 67,000 ac-ft/yr
- TRA to Houston Contract ~ 153,000 ac-ft/yr
- TRA to SJRA Contract ~ 50,000 ac-ft/yr
- Houston to GCWA Contract ~ 56,000 ac-ft/yr
- Houston Indirect Reuse ~ 61,000 ac-ft/yr
- NHCRWA Indirect Reuse ~ 31,400 ac-ft/yr
- Lake Houston Additional Yield ~ 1,000 ac-ft/yr
- Freeport Seawater Desalination ~ 28,000 ac-ft/yr



Introduction

- Several strategies not modeled
  - Municipal and Irrigation Conservation
  - Expand / Increase Current Contracts
  - New Contracts from Municipal Supply
  - Non-Municipal Contractual Transfers
- Reasons
  - WRAP considers rights / diversions, not contracts
  - “Contract” water already diverted
  - Conserved water utilized at another location



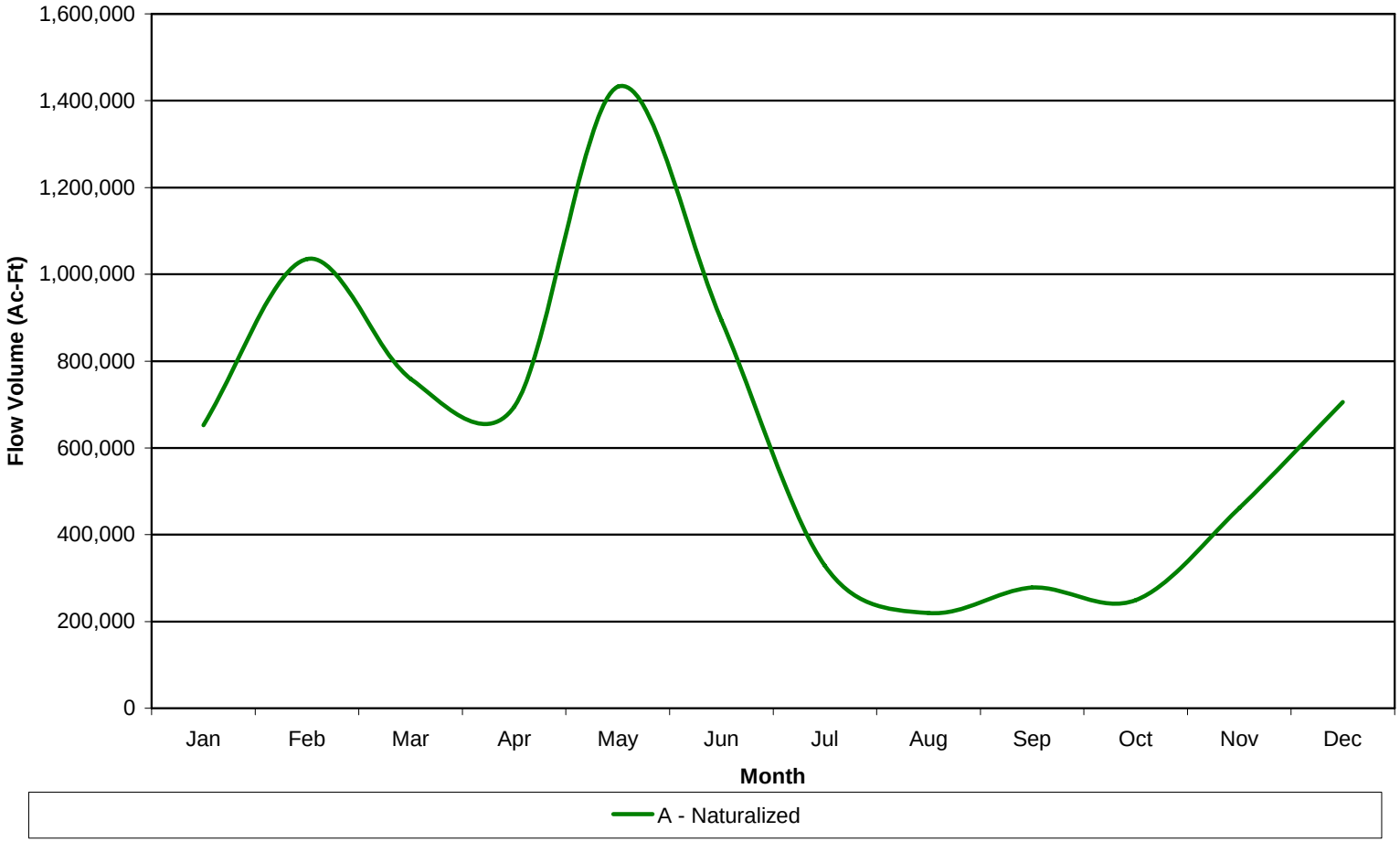
Region H
Water Planning Group

Model Scenarios

Scenario		Diversions	Return Flows	Upstream Strategies?	Reservoir Storage
A	Naturalized Flows	N/A	N/A	No	N/A
B	Existing Conditions	10-Yr Max Use	Current Assumed	No	Year 2000
C	Current Conditions + Full Diversions	Full Permit	Current Assumed	No	Year 2000
D	Future 2060 Conditions	Full Permit	Current Assumed	YES	Year 2060
D + Strategies	Future 2060 Conditions + Individual Strategies	Full Permit + Strategies	Current Assumed + Strategies	YES	Year 2060
E	Future 2060 + ALL Strategies	Full Permit + All Strategies	Current Assumed + All Strategies	YES	Year 2060
F	TCEQ Permit Run	Full Permit	None	No	Original ACE

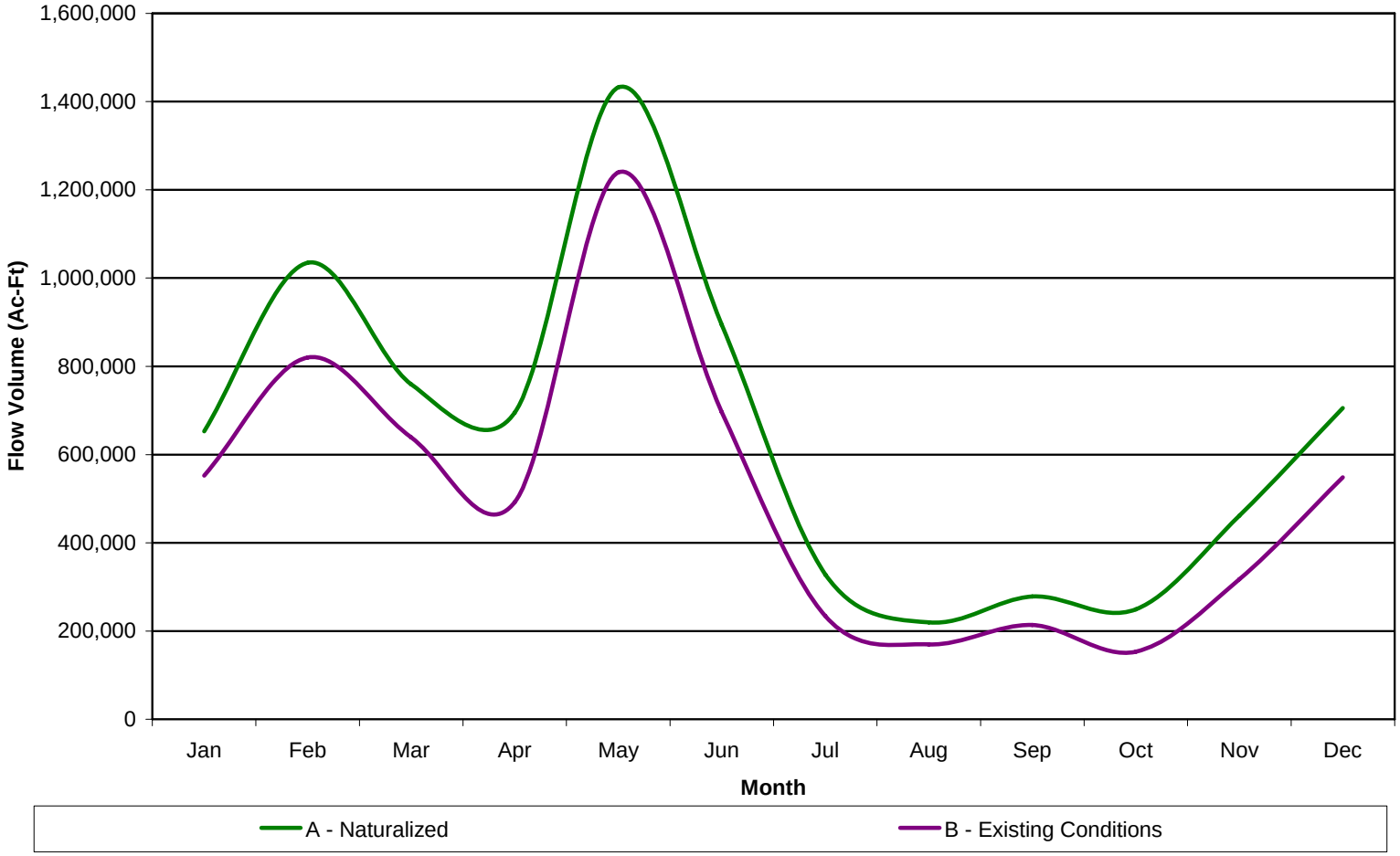
Median B&E Inflows

A Model – Naturalized Conditions



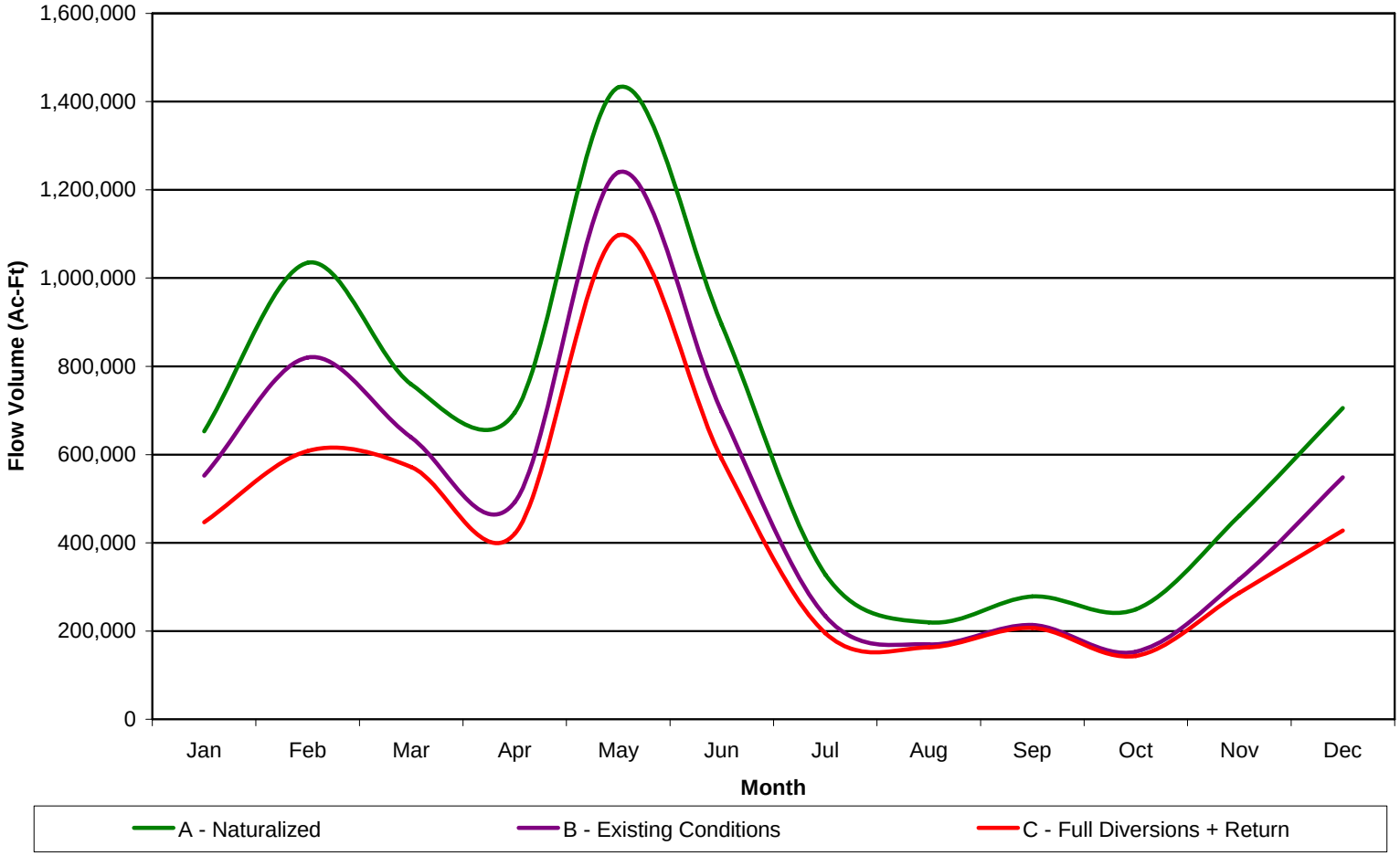
Median B&E Inflows

B Model – Current Conditions



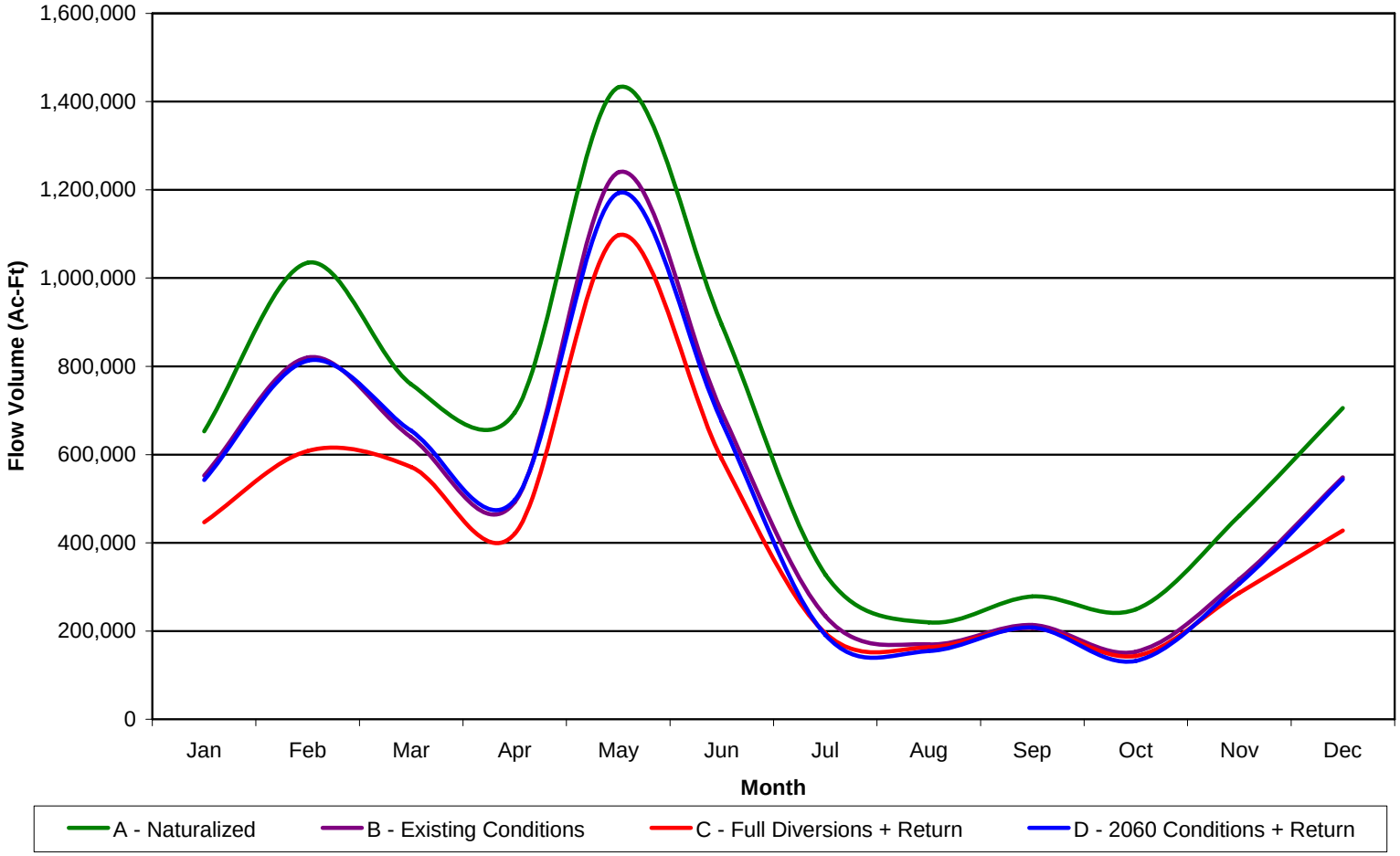
Median B&E Inflows

C Model – Full Diversions w/ Return Flows



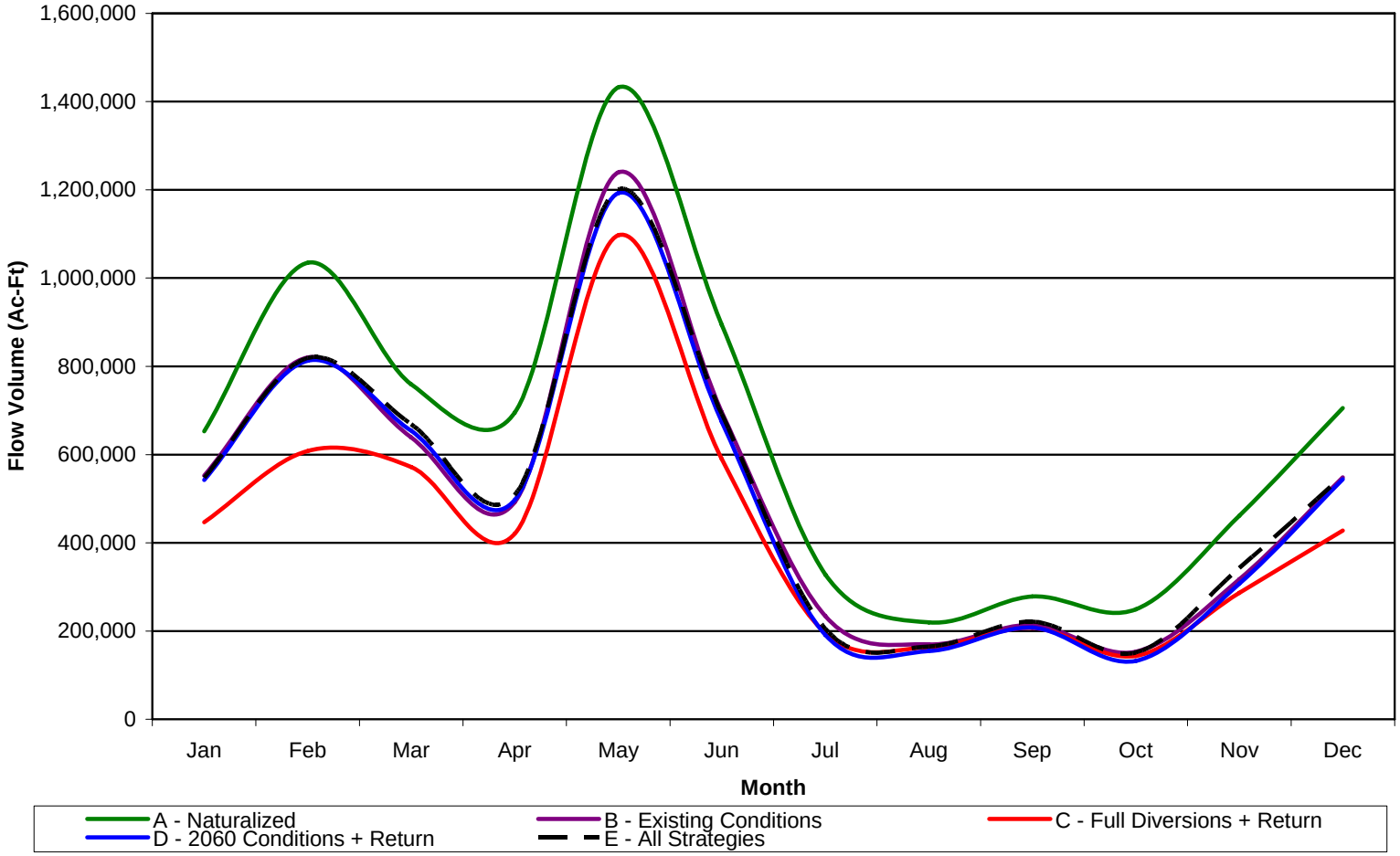
Median B&E Inflows

D Model – Future Conditions



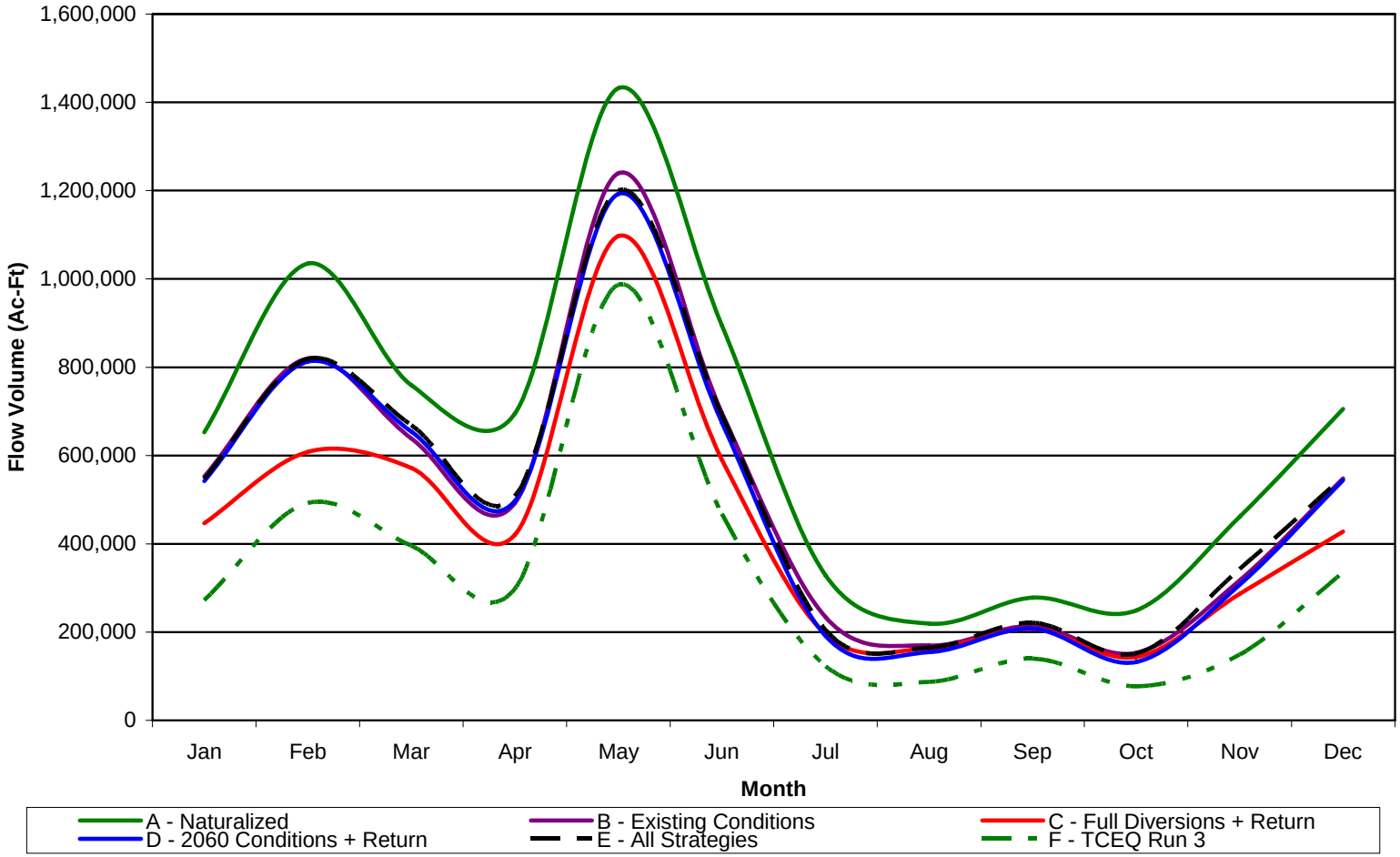
Median B&E Inflows

E Model – All Strategies



Median B&E Inflows

F Model – TCEQ Run 3

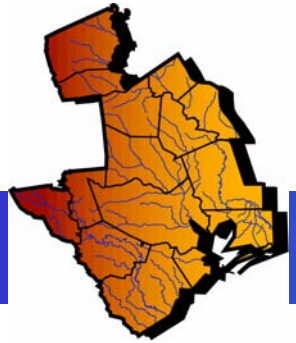


TWDB Inflow Targets

- Max H – Inflows required for maximum bay and estuary fisheries harvest as recommended by TWDB/TPWD.

- Min Q – Minimum inflow required to maintain the bay and estuary fisheries harvest as recommended by TWDB/TPWD.

- Min Q-Sal – Minimum acceptable inflow required to maintain the salinity needed for bay and estuary fisheries production as recommended by TWDB/TPWD.



Region H
Water Planning Group

B&E Inflow Targets

TWDB Inflow Targets

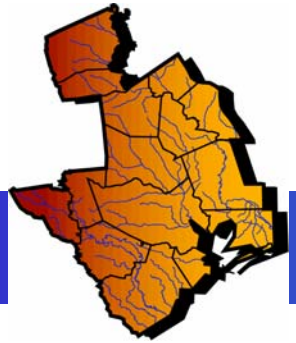
Month	Max H	Min Q	Min Q-Sal
January	150,500	150,500	150,490
February	155,200	216,700	216,700
March	652,800	363,900	363,900
April	632,500	352,600	267,270
May	1,273,700	679,700	309,970
June	839,700	448,100	413,560
July	211,500	232,700	211,500
August	140,000	154,000	140,000
September	103,000	330,200	102,960
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

B&E Inflow Targets

Inflow Frequencies

- Based on the percentage of flow records meeting or exceeding the monthly inflow target.

- Statistics for longer period (seasonal, annual) are composed of averages of the monthly percentiles



Region H
Water Planning Group

B&E Inflow Targets

Annual Inflow Frequencies

Scenario	Max H	Min Q	Min Q-Sal
GBFIG Recommendation	50%	60%	75%
A - Naturalized	68%	67%	83%
B – Current Conditions	63%	58%	79%
*C – Full Diversion	59%	53%	75%
*D – 2060 Conditions	60%	56%	74%
*E – All Strategies	62%	59%	77%
F – TCEQ Run 3	43%	43%	56%

*C, D, and E scenarios include return flows.

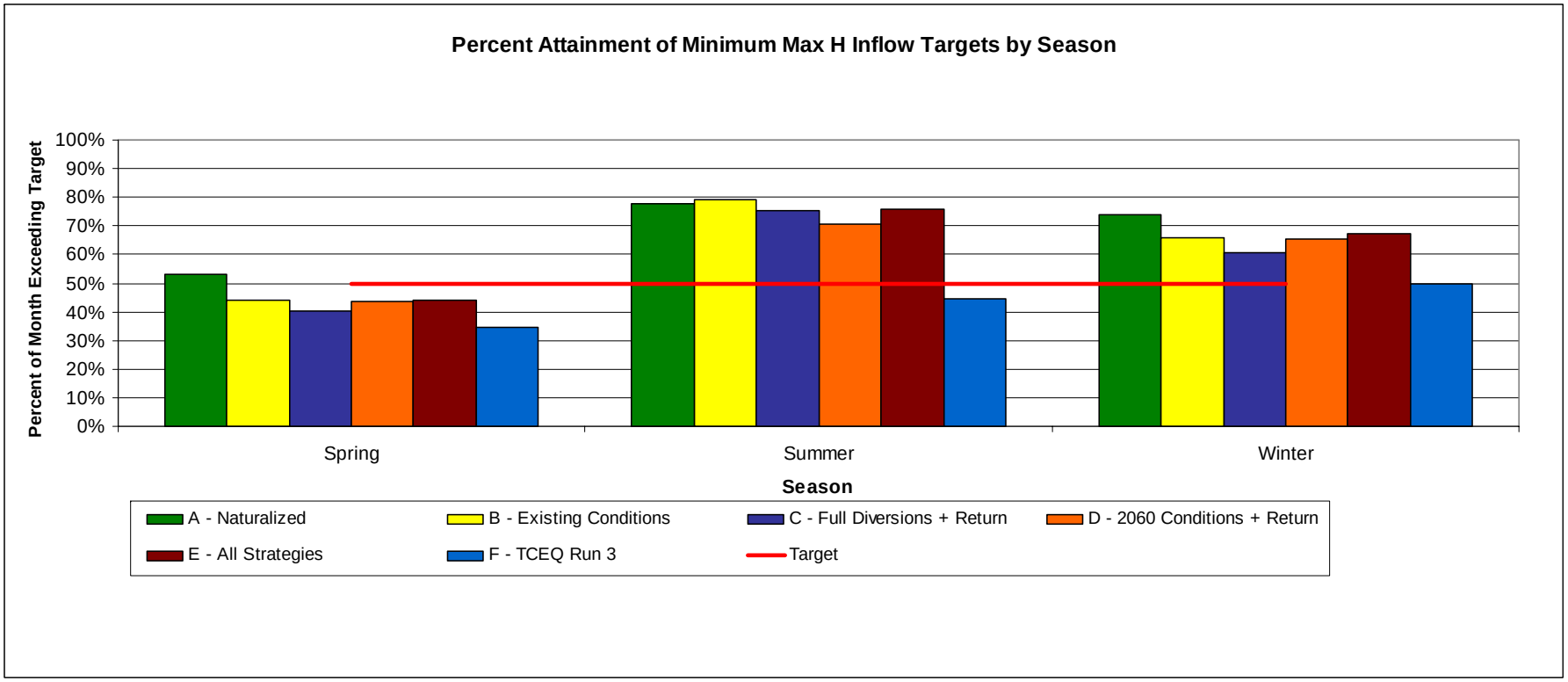
Alternative Examination of Inflow Frequency

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

- Monthly

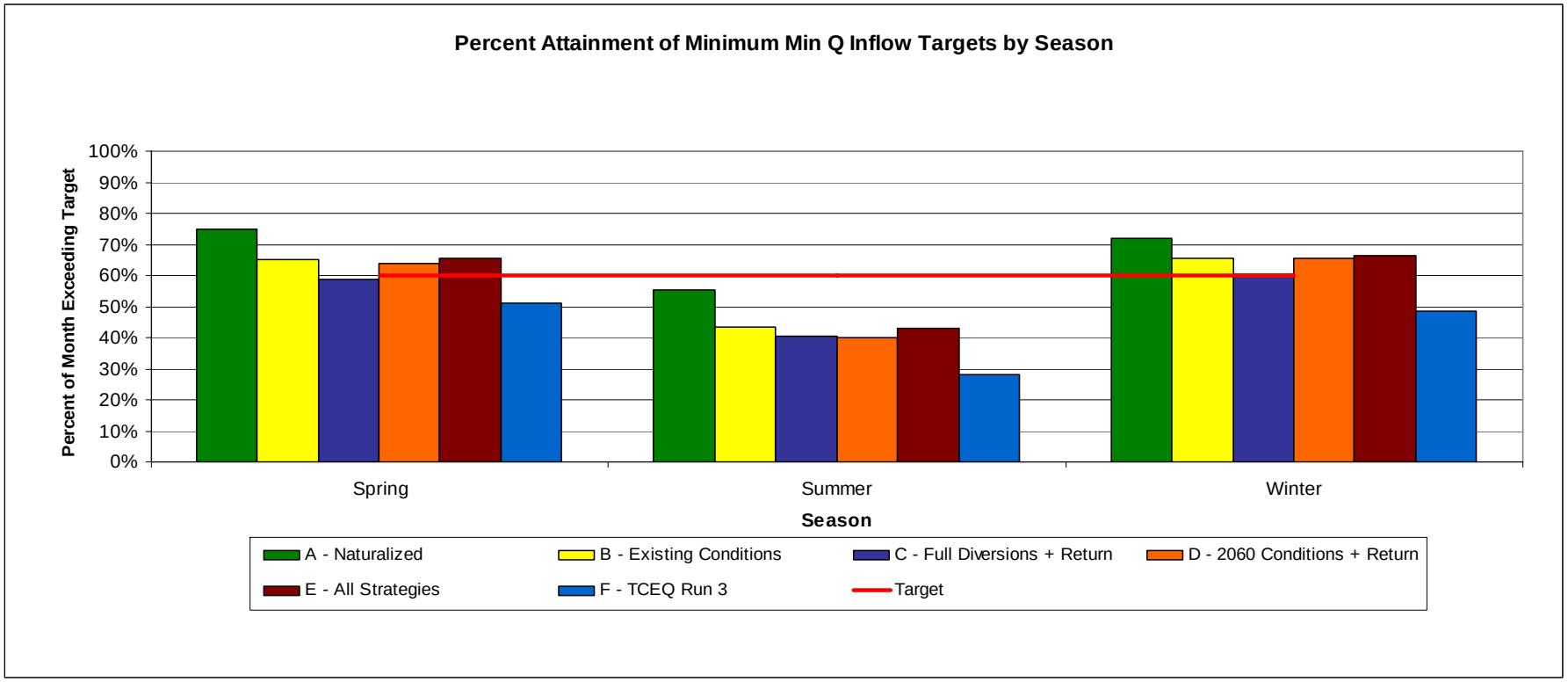
B&E Inflow Targets

Seasonal Max H



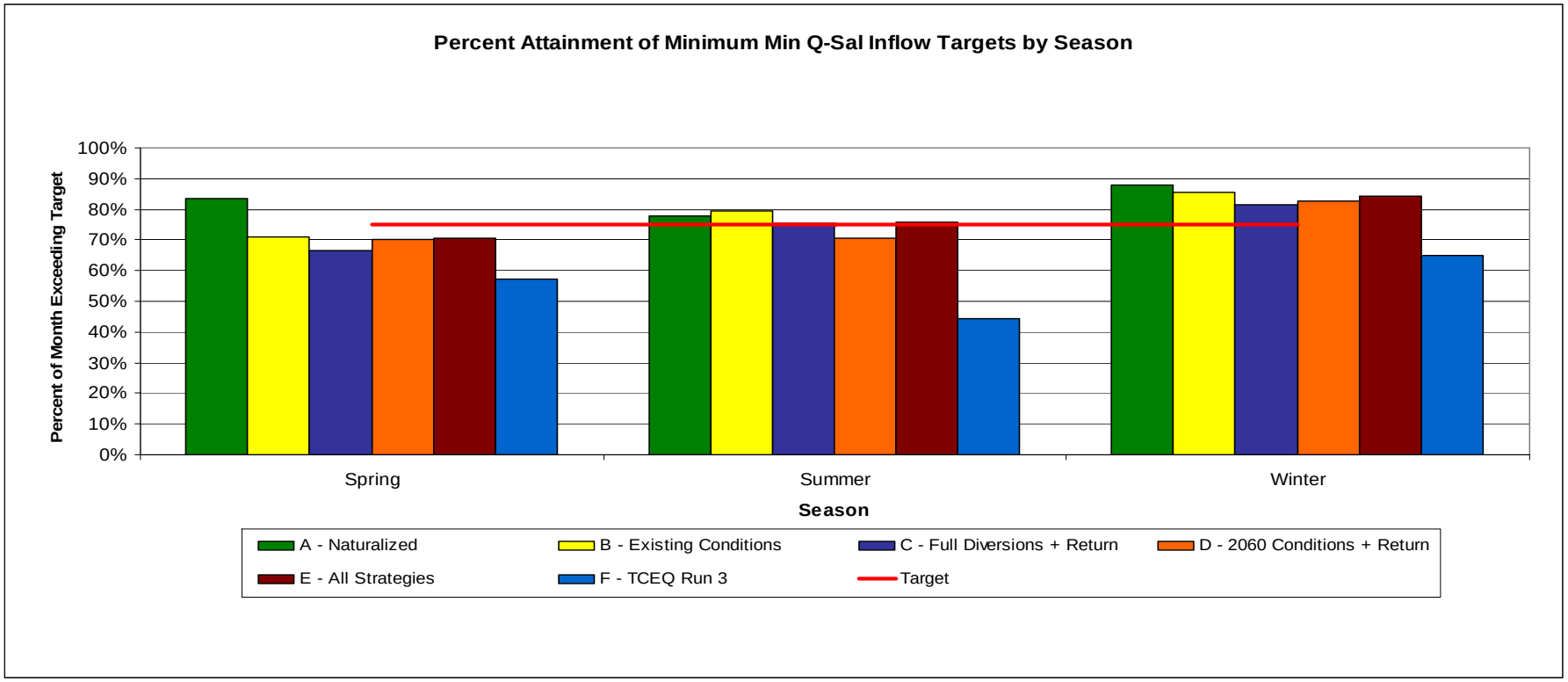
B&E Inflow Targets

Seasonal Min Q



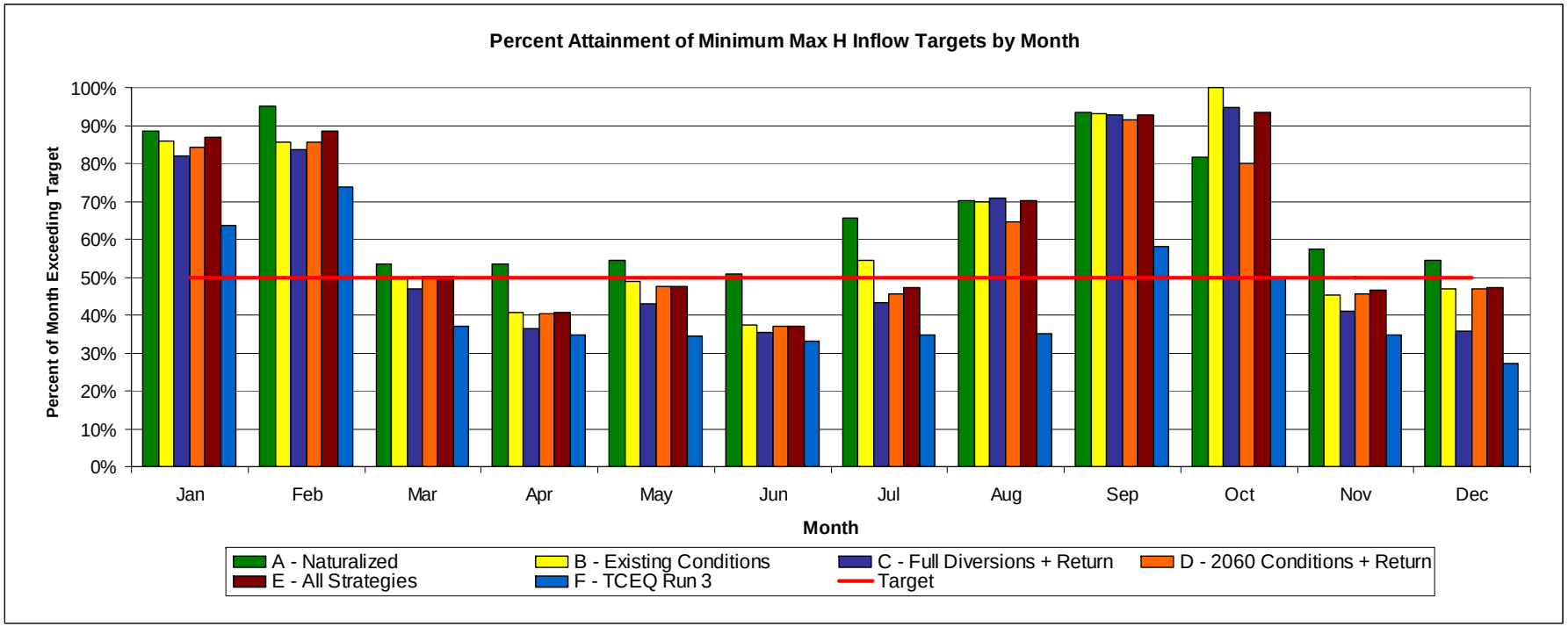
B&E Inflow Targets

Seasonal Min Q-Sal



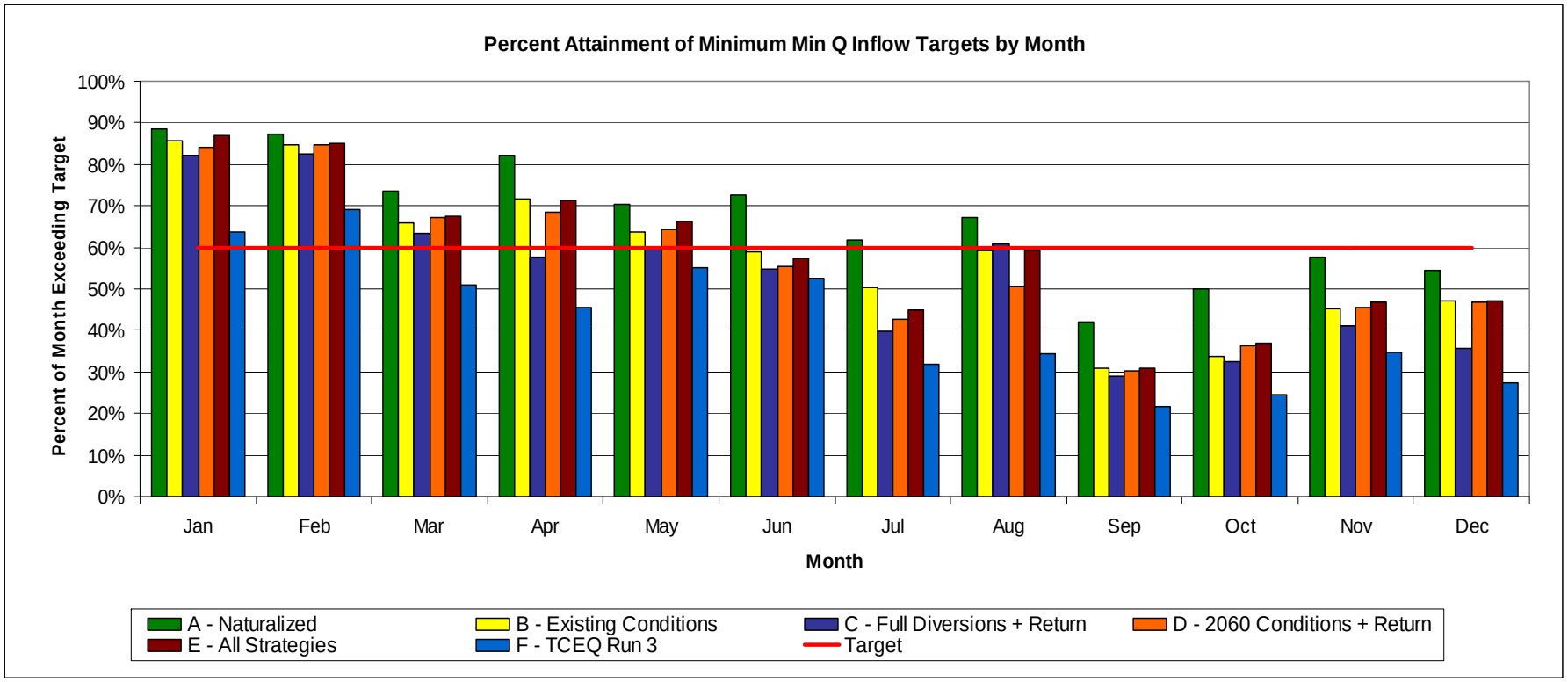
B&E Inflow Targets

Monthly Max H



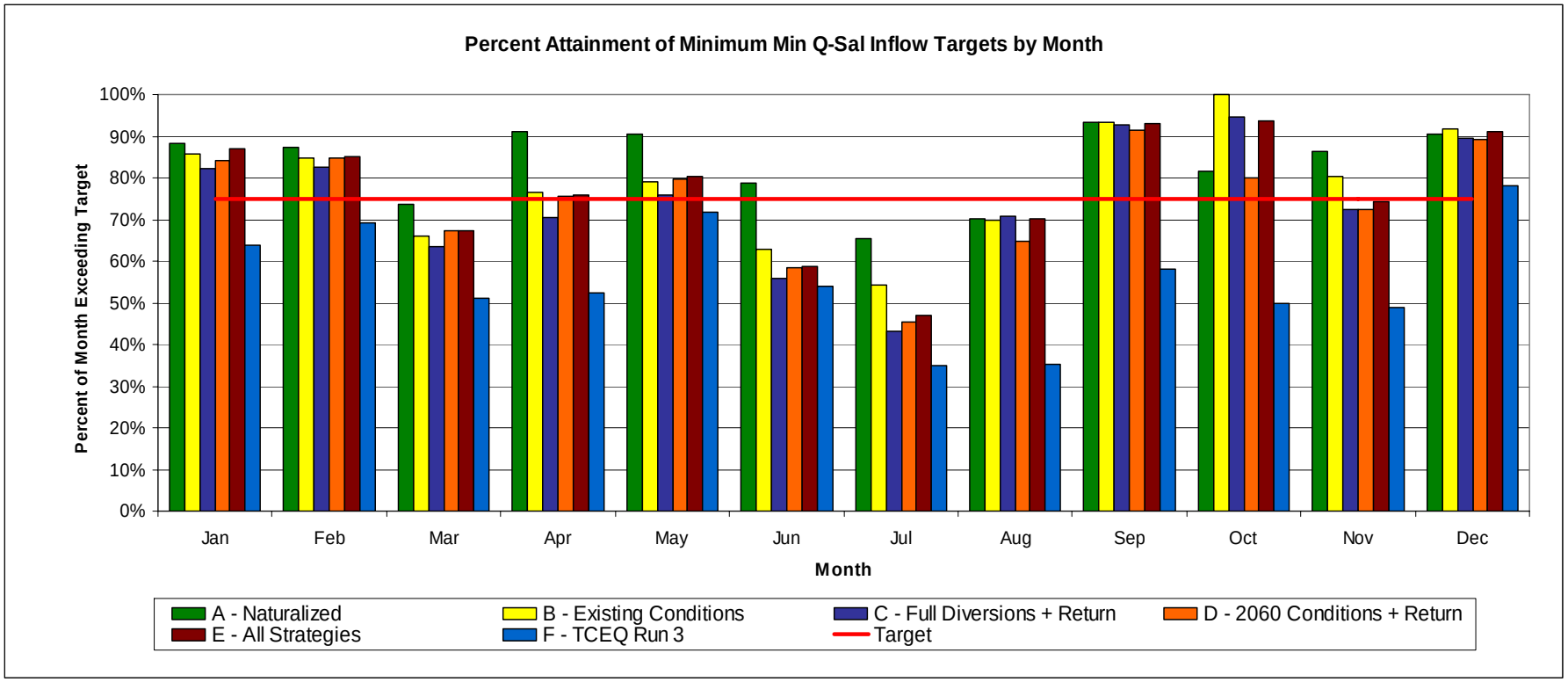
B&E Inflow Targets

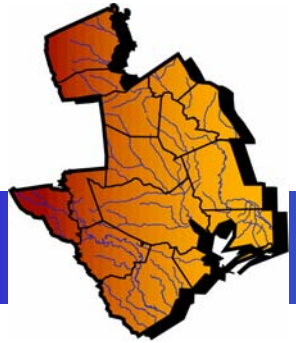
Monthly Min Q



B&E Inflow Targets

Monthly Min Q-Sal





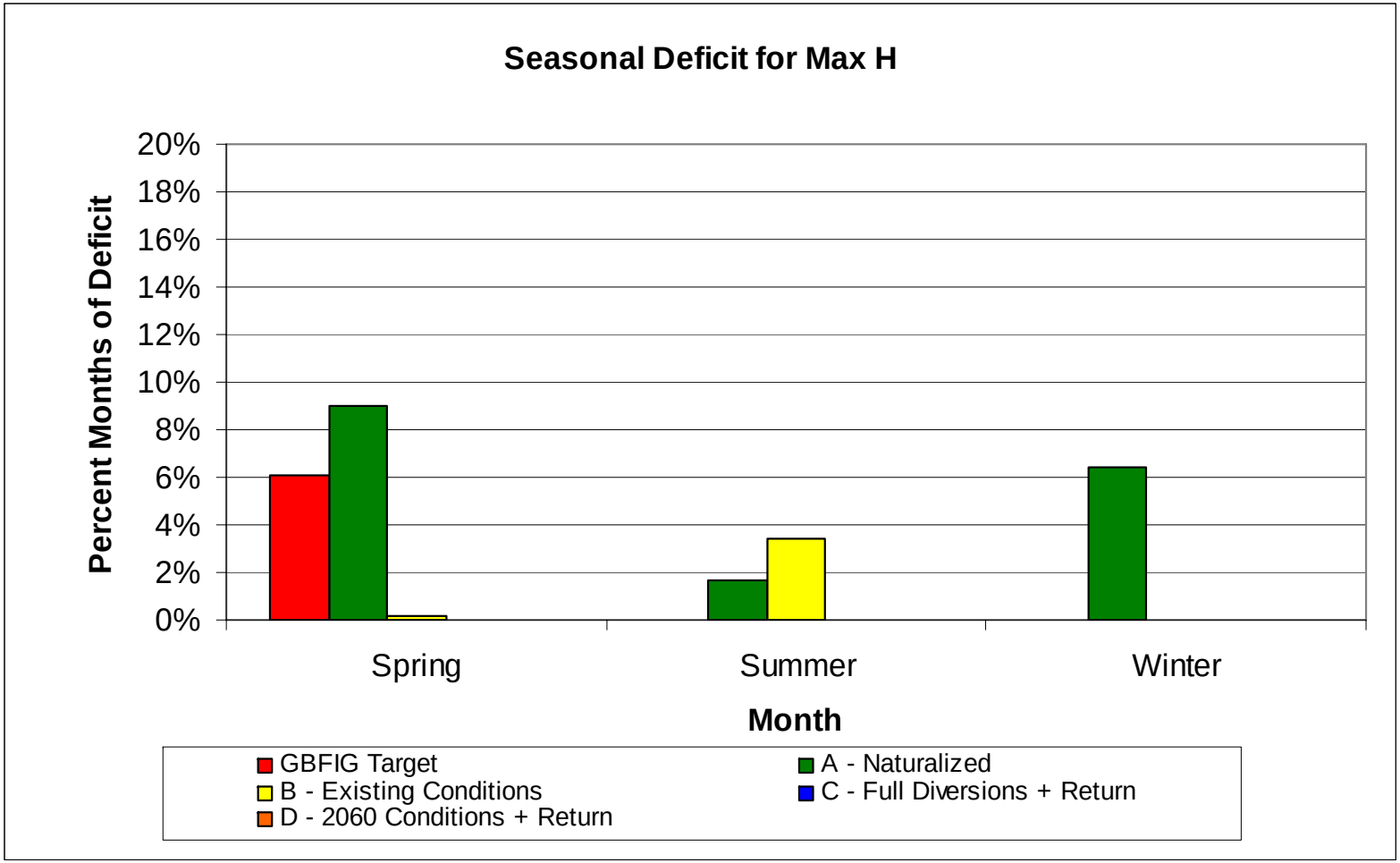
Annual Inflow Deficits

Deficit between All Strategies Model (E) and Base Models

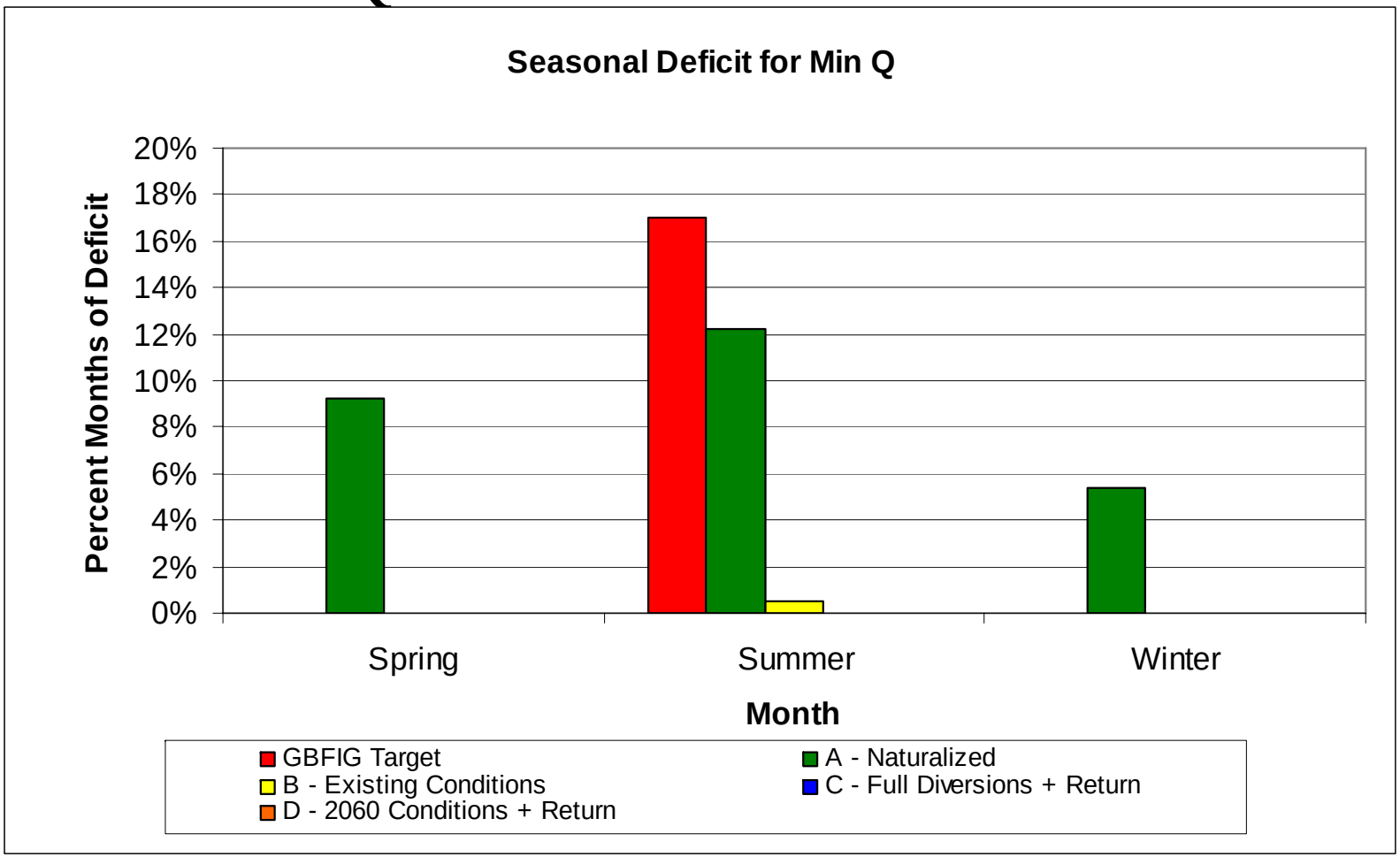
Scenario	Max H	Min Q	Min Q-Sal
GBFIG Recommendation	0%	1%	0%
A - Naturalized	6%	8%	6%
B – Current Conditions	1%	0%	2%
C – Full Diversion	0%	0%	0%
D – 2060 Conditions	0%	0%	0%

B&E Inflow Targets

Seasonal Max H Deficits

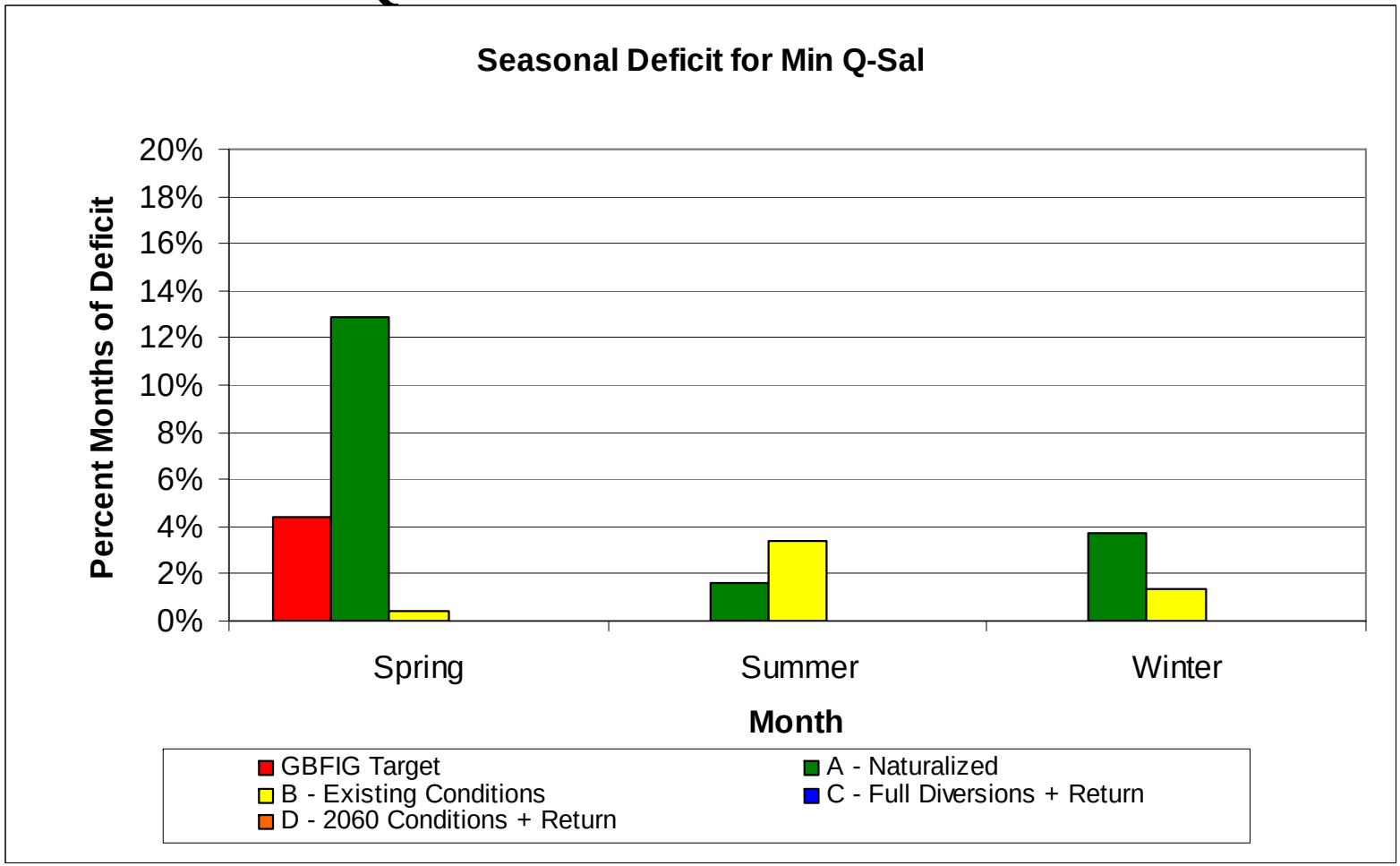


Seasonal Min Q Deficits

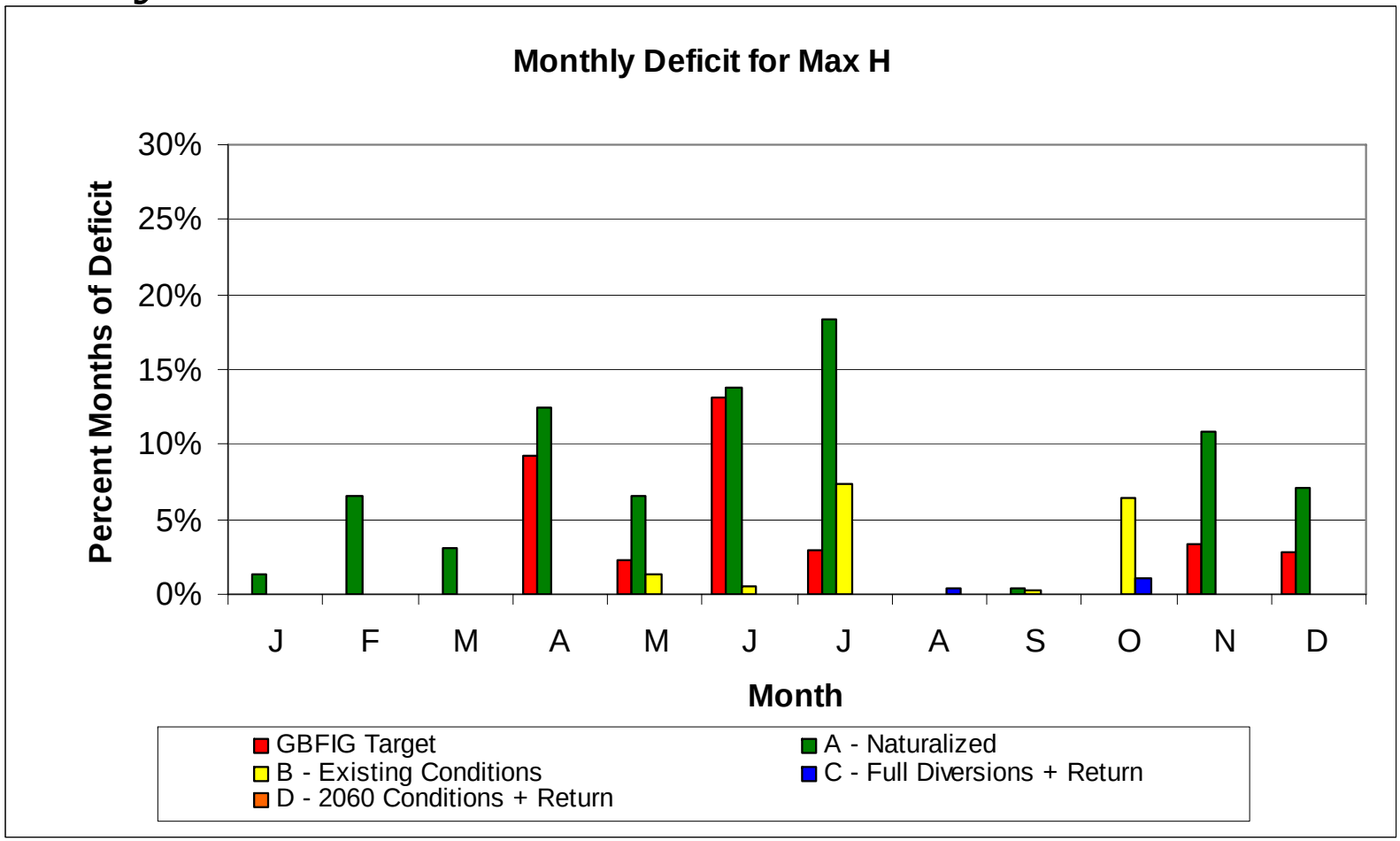


B&E Inflow Targets

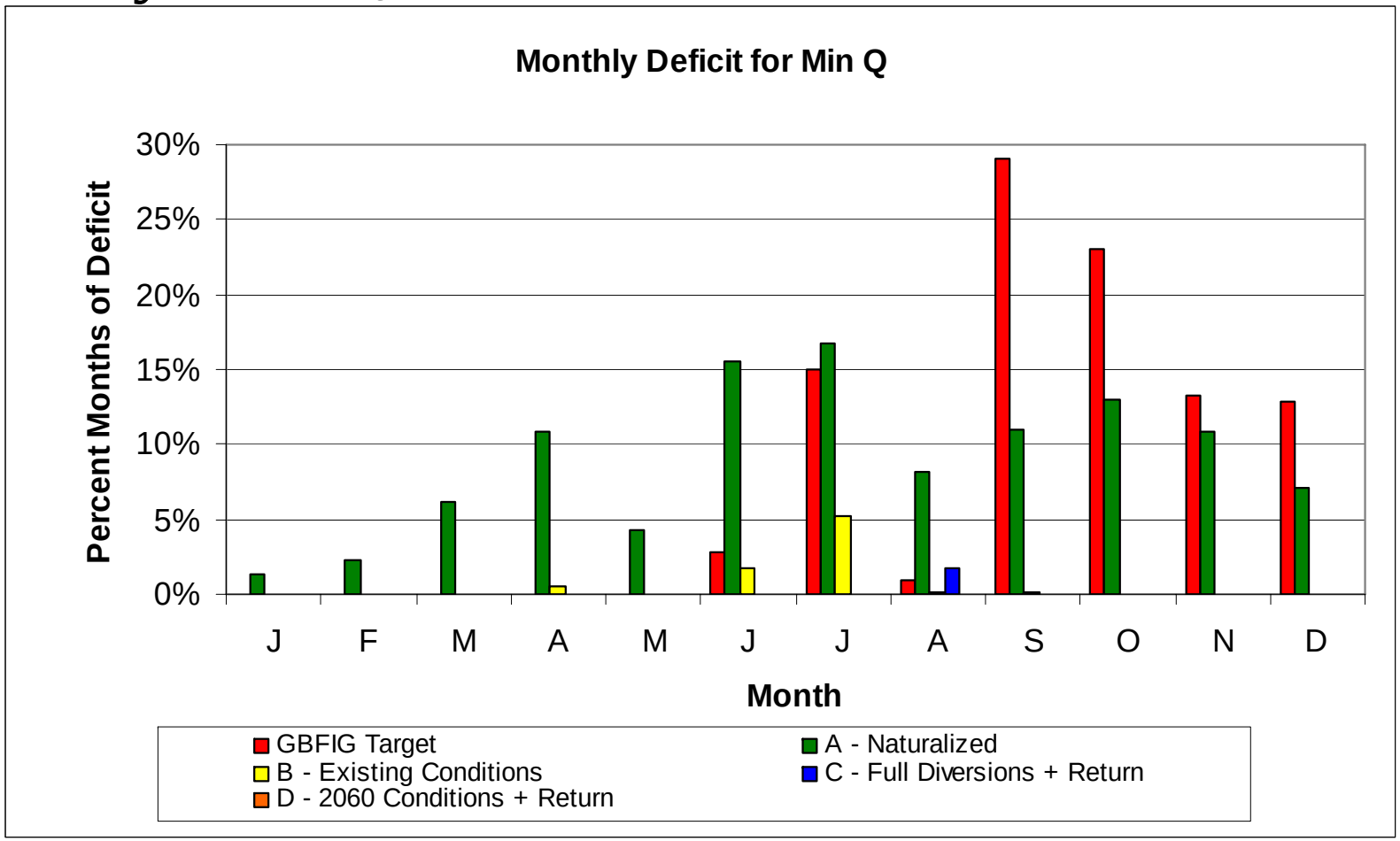
Seasonal Min Q-Sal Deficits



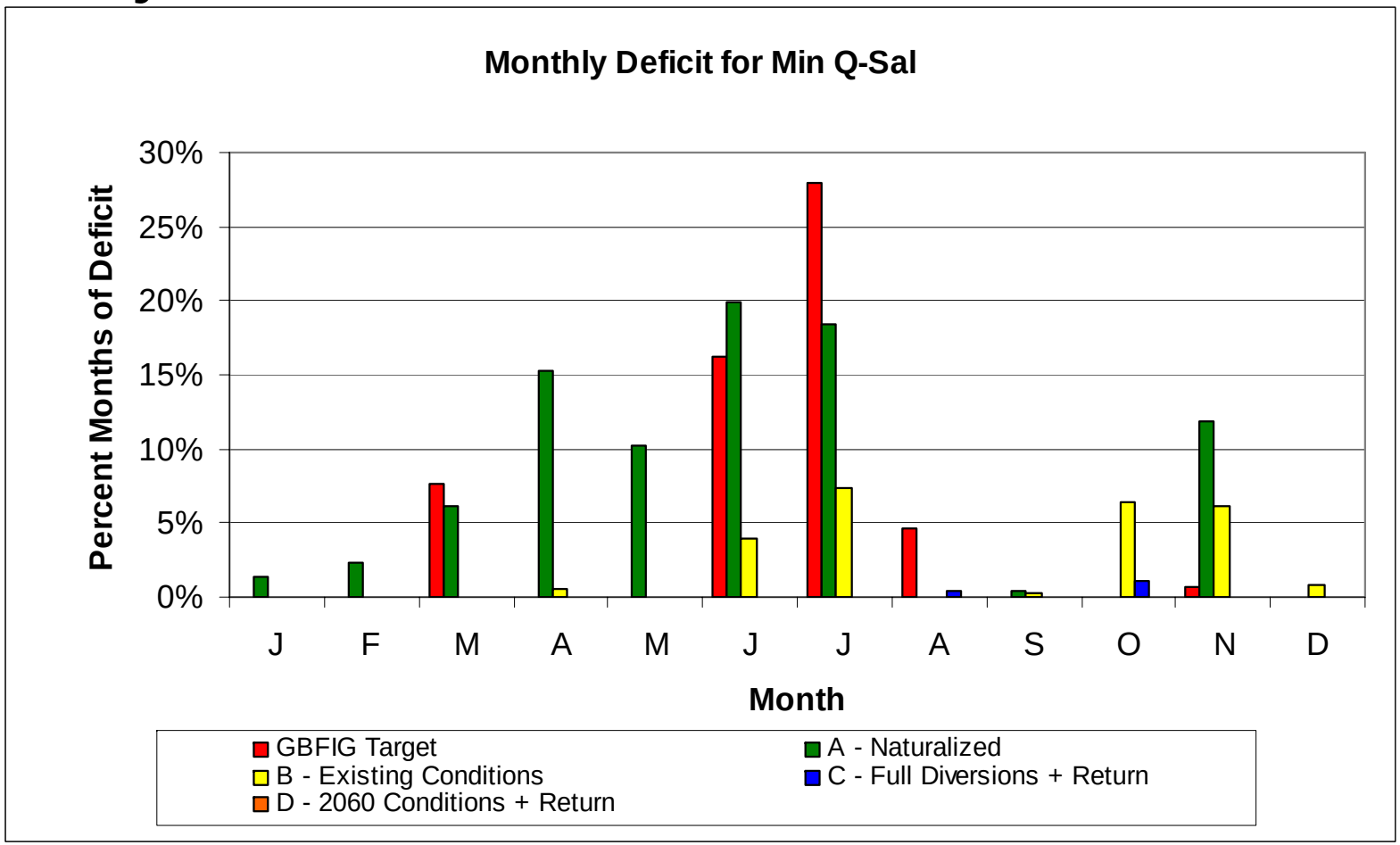
Monthly Max H Deficits



Monthly Min Q Deficits

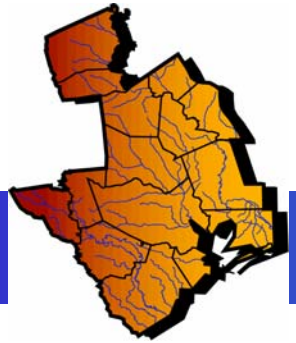


Monthly Min Q-Sal Deficits



Examination of Selected Strategies

- All modeled strategies were modeled separately to determine individual impacts
- The impacts of each strategy contributed only a minor variation to the base model (Scenario D)
- The largest individual strategy modeled was TRA to Houston Contract (Scenario D_{12}) at 153,000 Ac-Ft/Yr



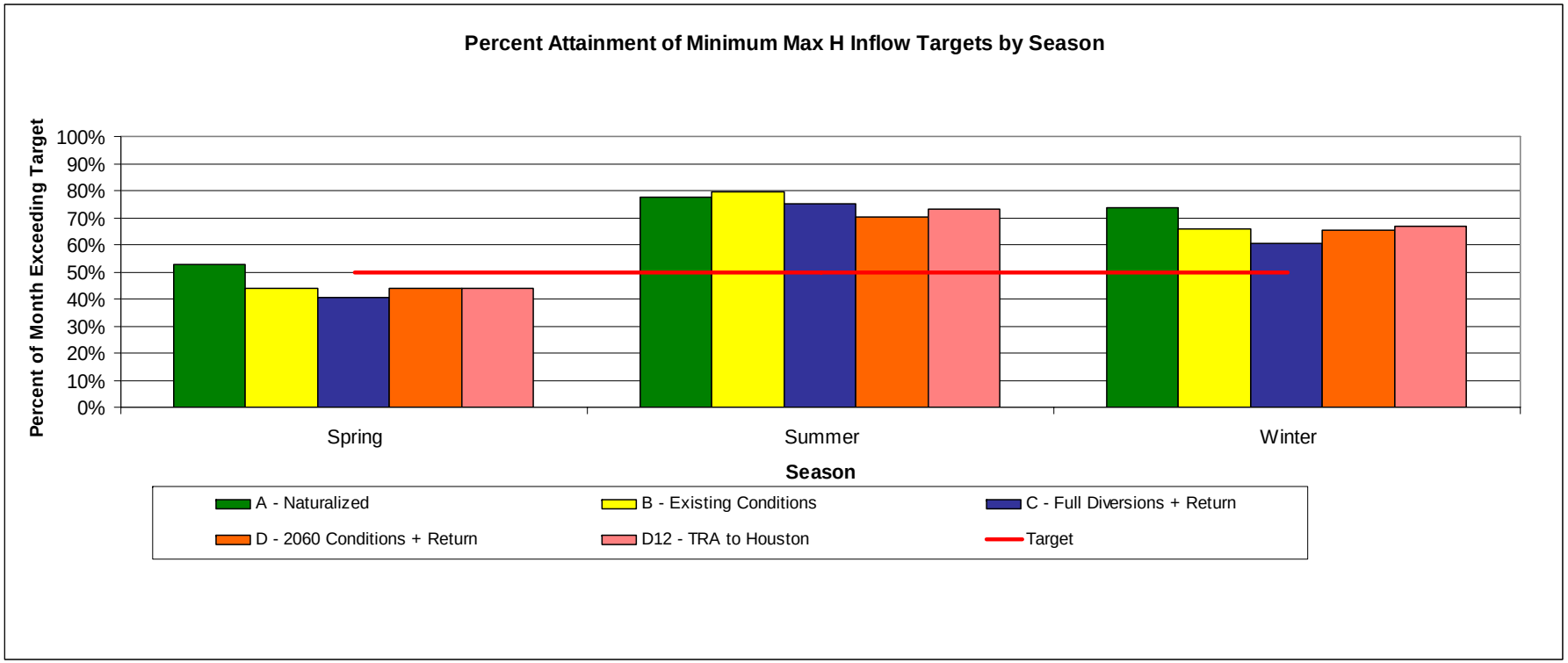
Region H
Water Planning Group

Annual Inflow Frequencies – Selected Strategies

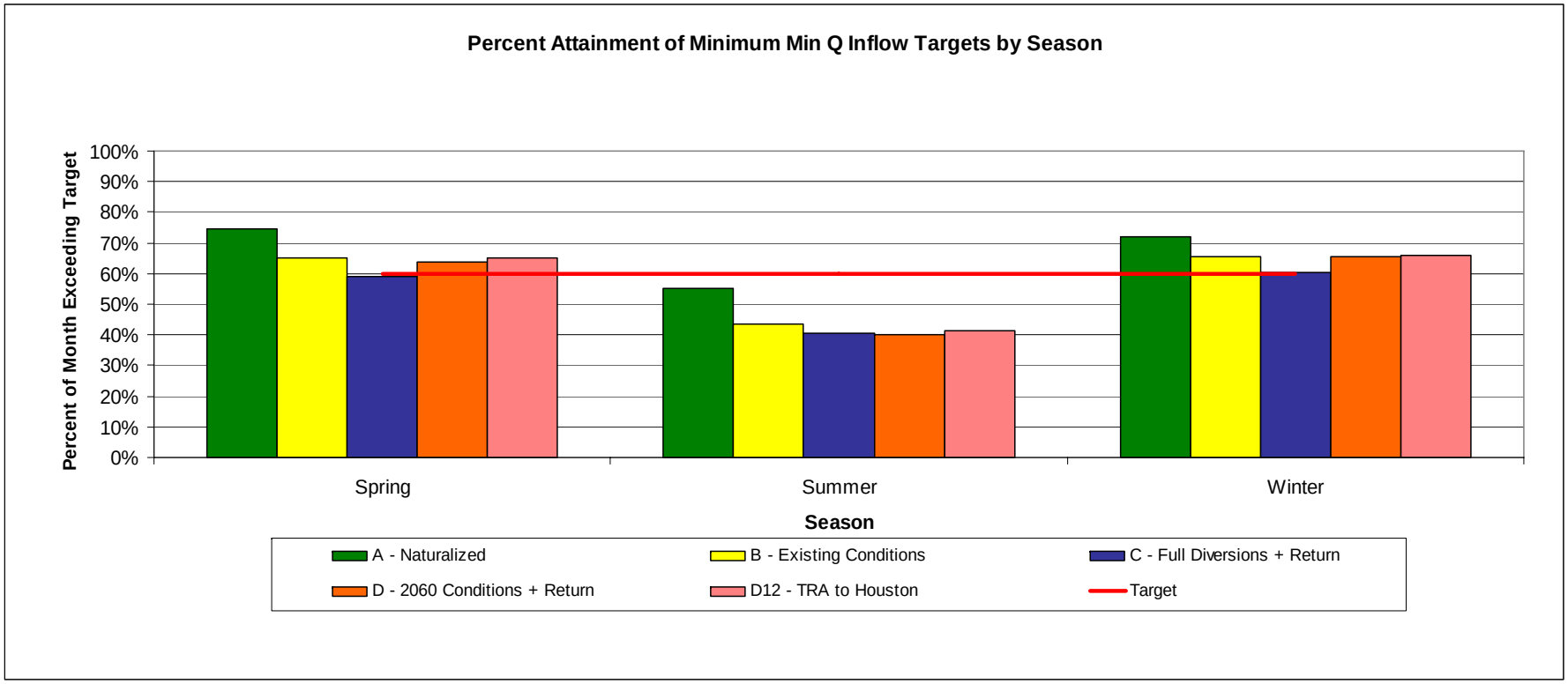
Scenario	Max H	Min Q	Min Q-Sal
GBFIG Recommendation	50%	60%	75%
A - Naturalized	68%	67%	83%
B – Current Conditions	63%	58%	79%
*C – Full Diversion	59%	53%	75%
*D – 2060 Conditions	60%	56%	74%
*D_{12} – TRA to Houston	61%	58%	76%

*C and D scenarios include return flows.

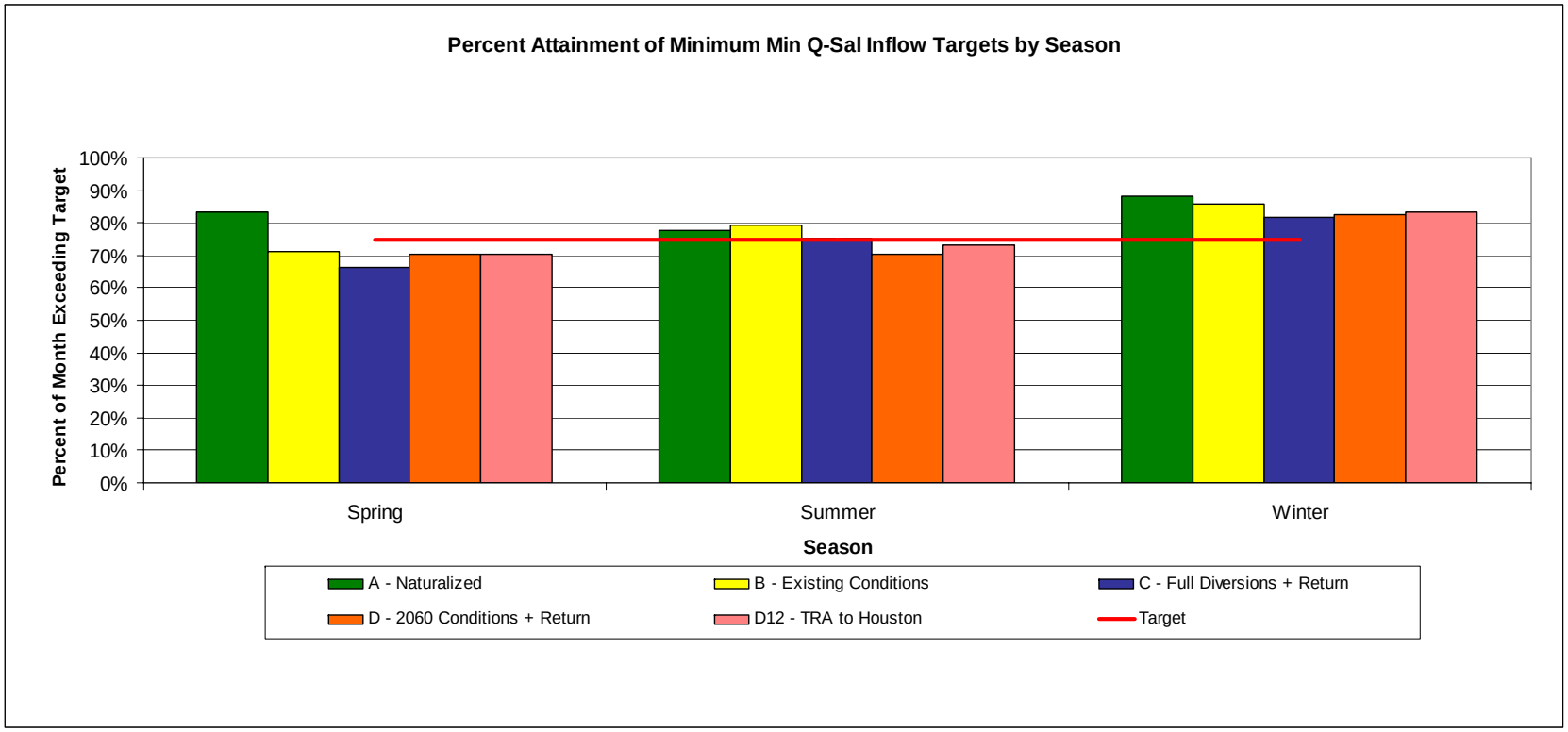
Seasonal Max H – Selected Strategies



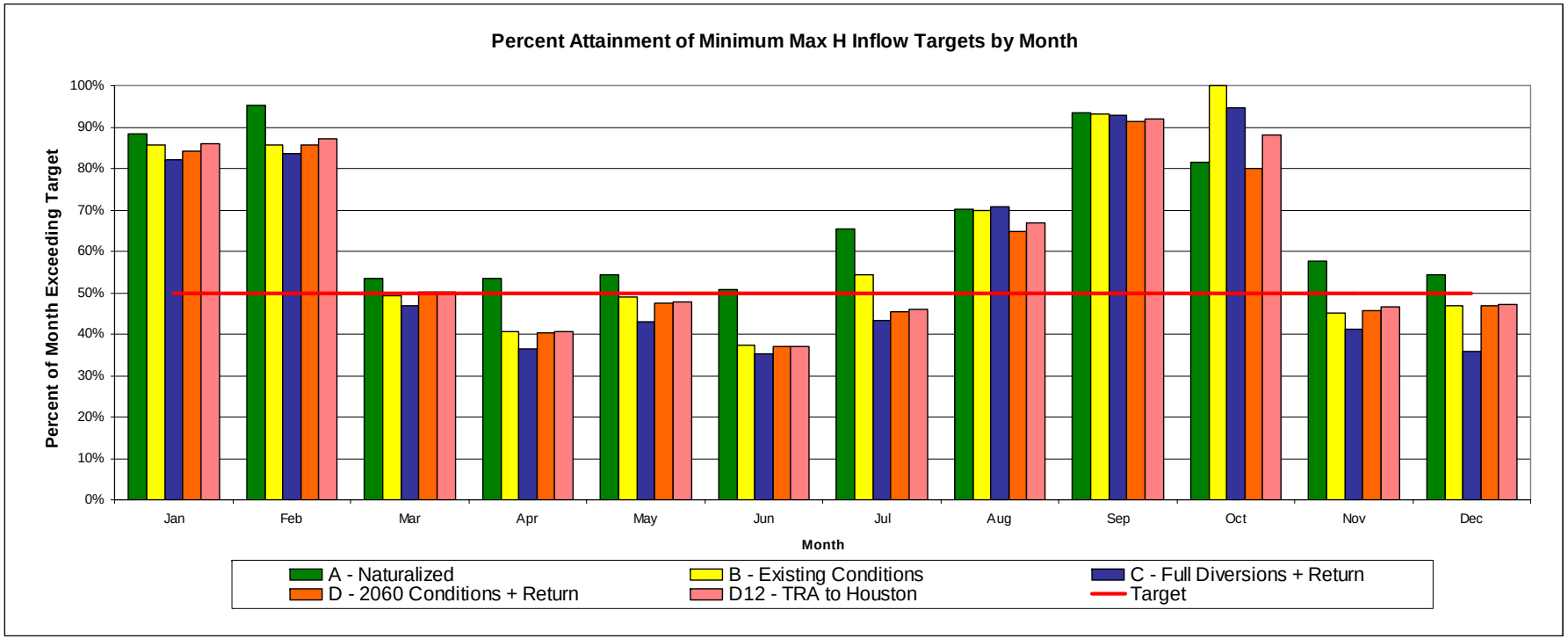
Seasonal Min Q – Selected Strategies



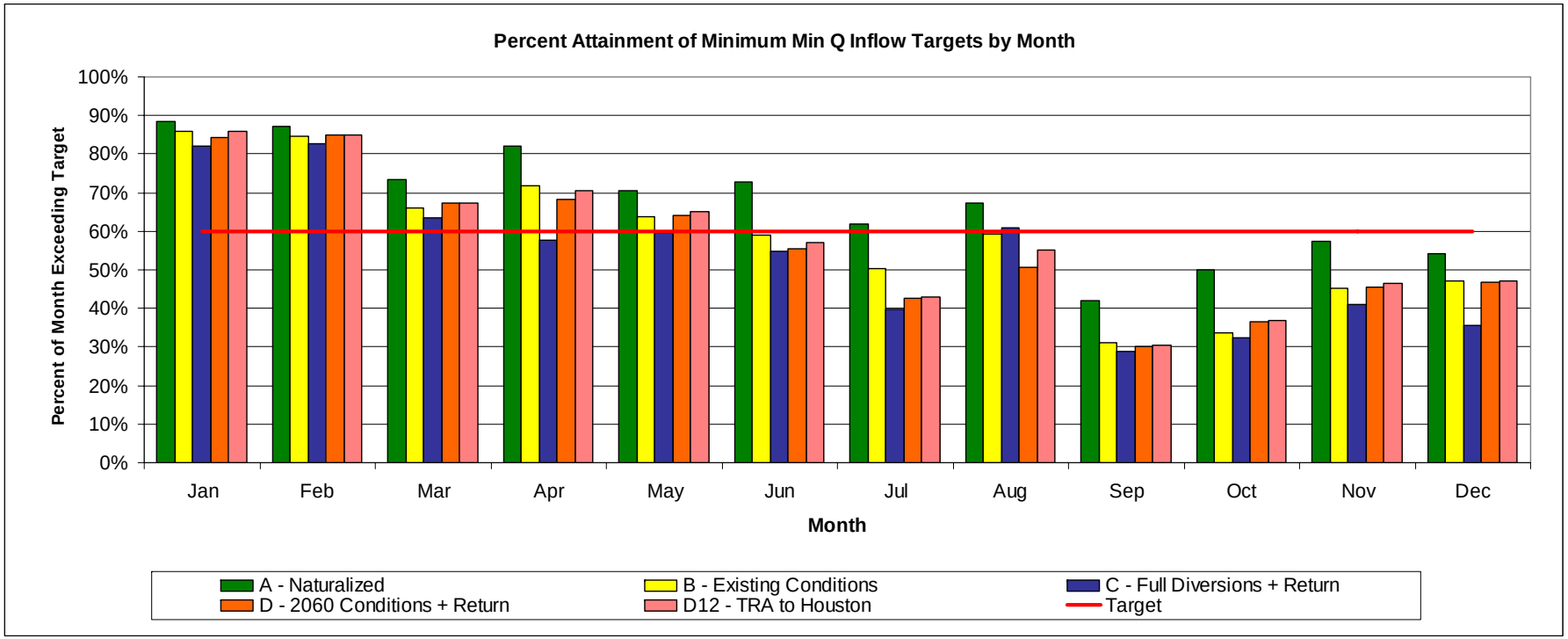
Seasonal Min Q-Sal – Selected Strategies



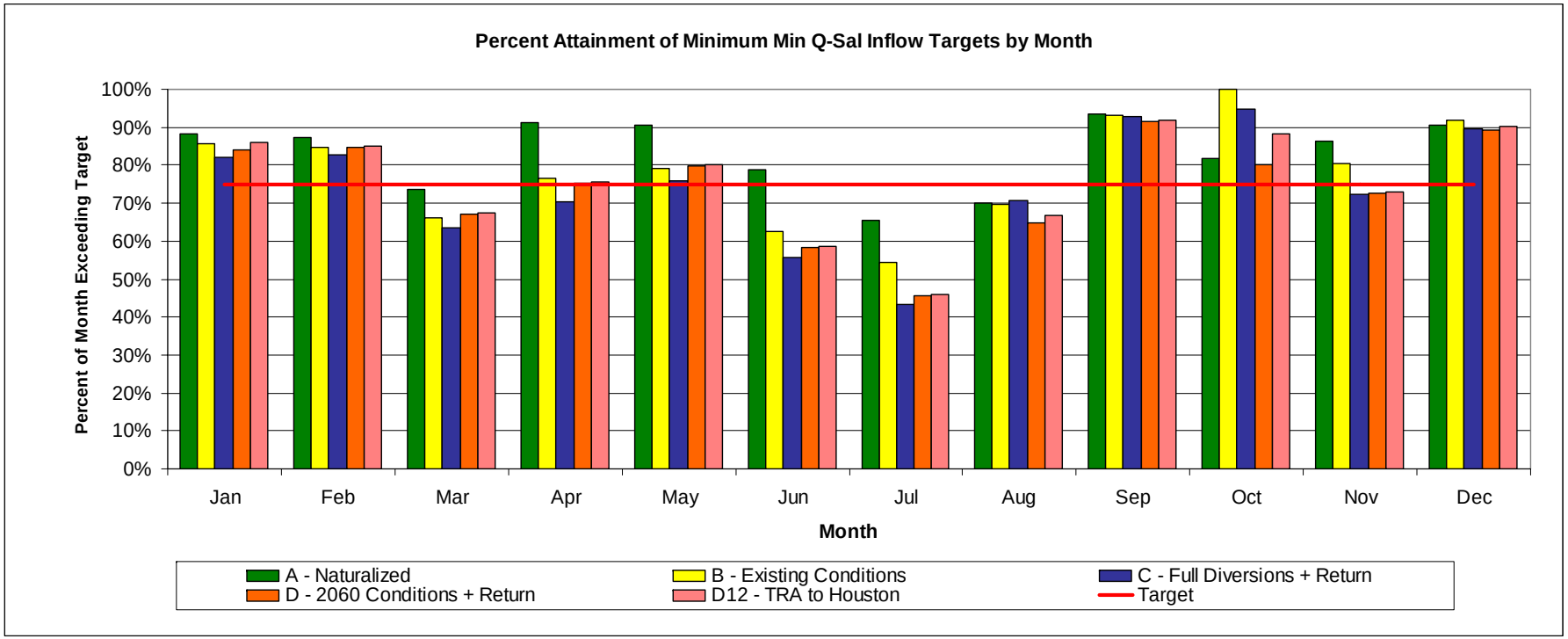
Monthly Max H – Selected Strategies



Monthly Min Q – Selected Strategies

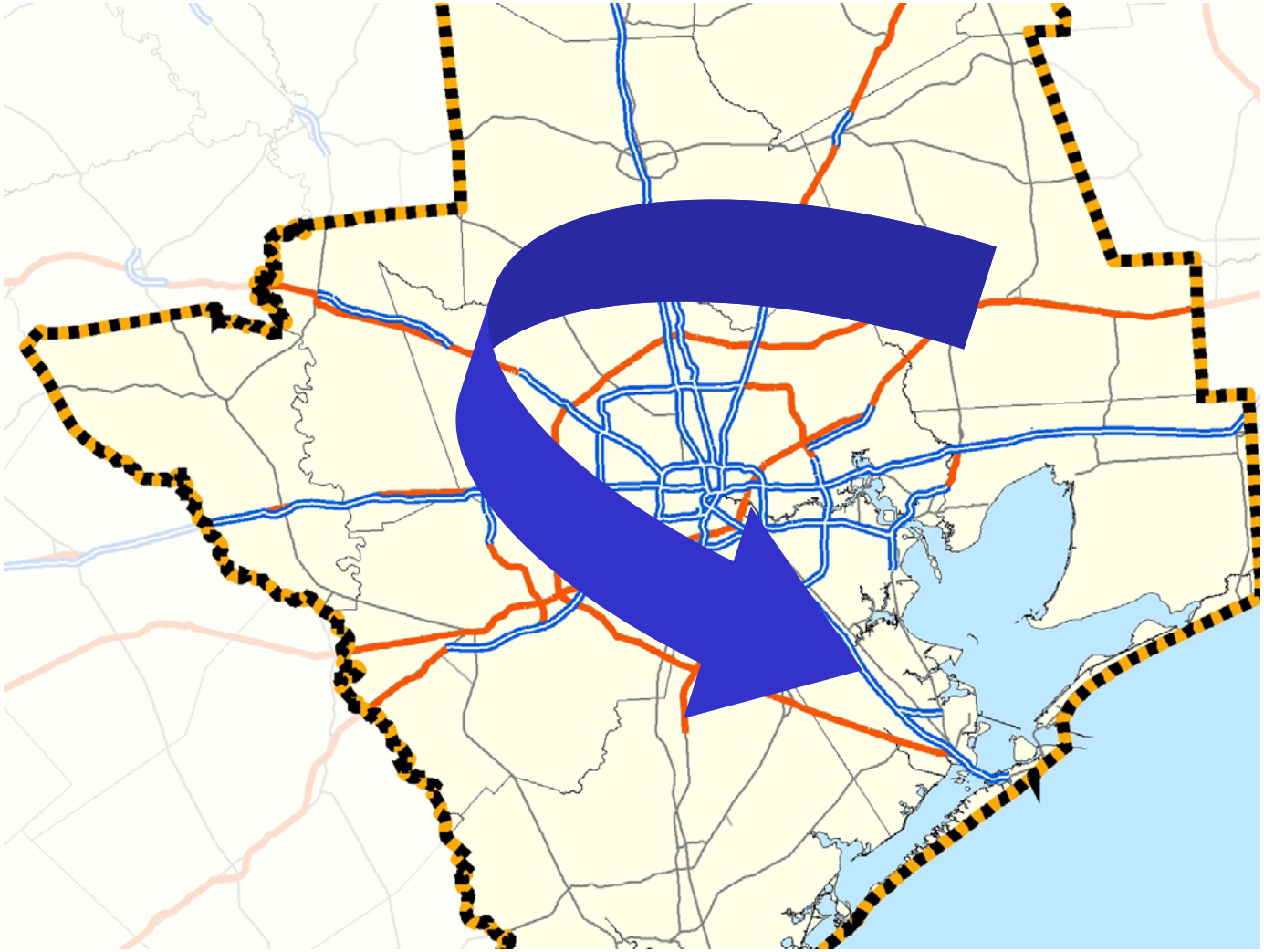


Monthly Min Q-Sal – Selected Strategies



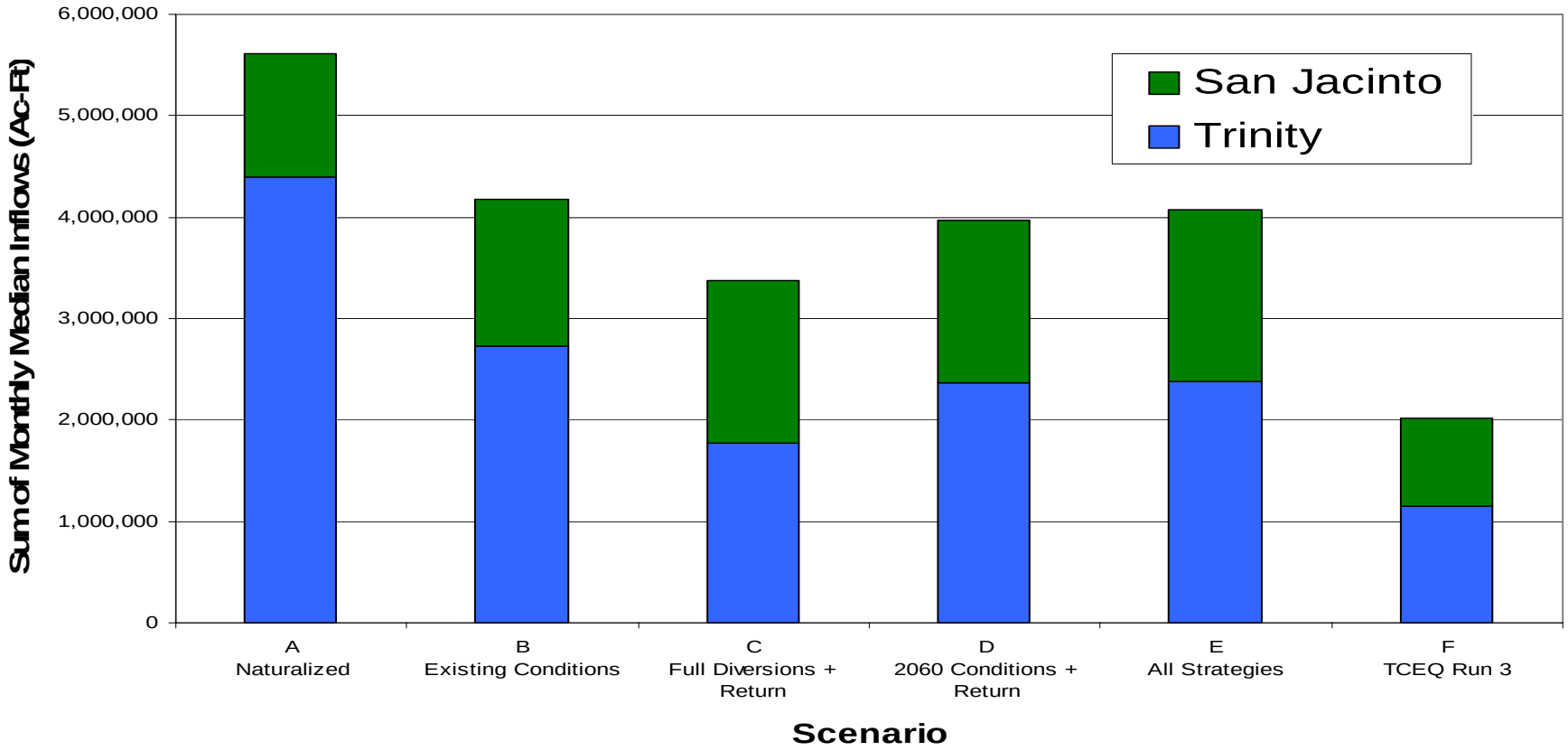
Region H
Water Planning Group

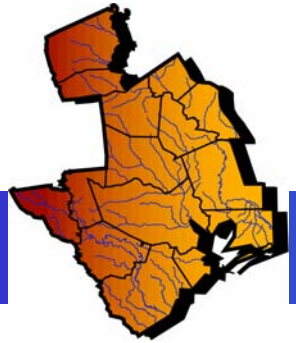
B&E Inflow Location



B&E Inflow Location

Location of Galveston Bay Inflows



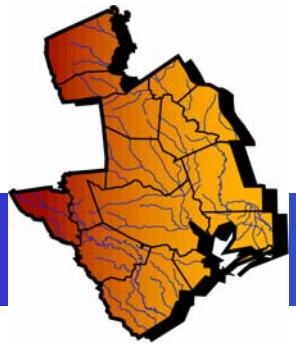


Summary

- Upstream strategies and Region H strategies have unique impacts on inflows at different times of the year.

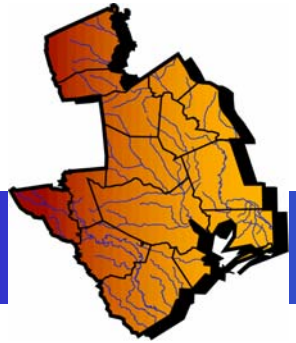
- How should frequency targets be evaluated? Annually? Seasonally? Monthly? On a multi-year basis?

- The impacts for any single individual Region H management strategy appear to be negligible in comparison to other conditions.



Region H
Water Planning Group

Interruptible Supplies



Region H
Water Planning Group

Task 3 - Interruptible Supplies

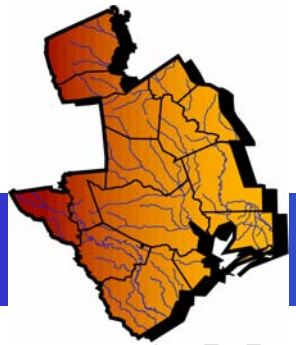
Key Question *- Can a strategy of substituting permitted or un-permitted interruptible (a.k.a. non-firm) surface water supplies for use in irrigated agricultural (or other appropriate uses) for permitted firm surface water supplies that are currently allocated to irrigated agricultural be employed to increase the availability of firm surface water supplies for municipal or industrial use?*

Interruptible Water Supply *– 75% of the water must be available 75% of the time measured as:*

- *75% of the water must be available in 75% of the years over the period of record; or*
- *100% of the water must be available 75% of the months over the period of record*

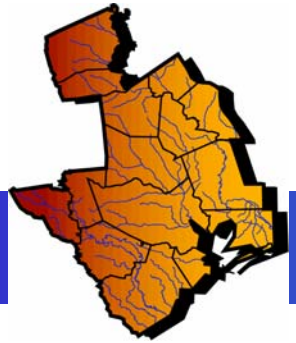
Hydrologic Viability Analysis

- Available interruptible water supply in proximity to irrigation demands:
  - Un-permitted supplies
  - Existing permitted interruptible water to “trade”
- Firm irrigation supplies in proximity to or otherwise reasonably accessible by M&I users



Viable Interruptible Supply Strategy Requires:

- Available interruptible water supply in proximity to irrigation demands:
  - Quantify ***existing permitted*** supplies
  - Quantify ***new un-permitted interruptible supplies*** – with and without environmental flows
  - Evaluate ***potential uses*** for interruptible water supplies
  - Compare ***amounts and locations*** of interruptible supplies and demands to evaluate viability of interruptible supply use
- Firm irrigation supplies in proximity to or otherwise reasonably accessible by M&I users
  - Quantify ***additional firm yield supplies*** made available for M&I use



Region H
Water Planning Group

Task 3 Interruptible Supplies
Municipal and Industrial Demands

Summary of Surface Water M&I Demands (AFY)

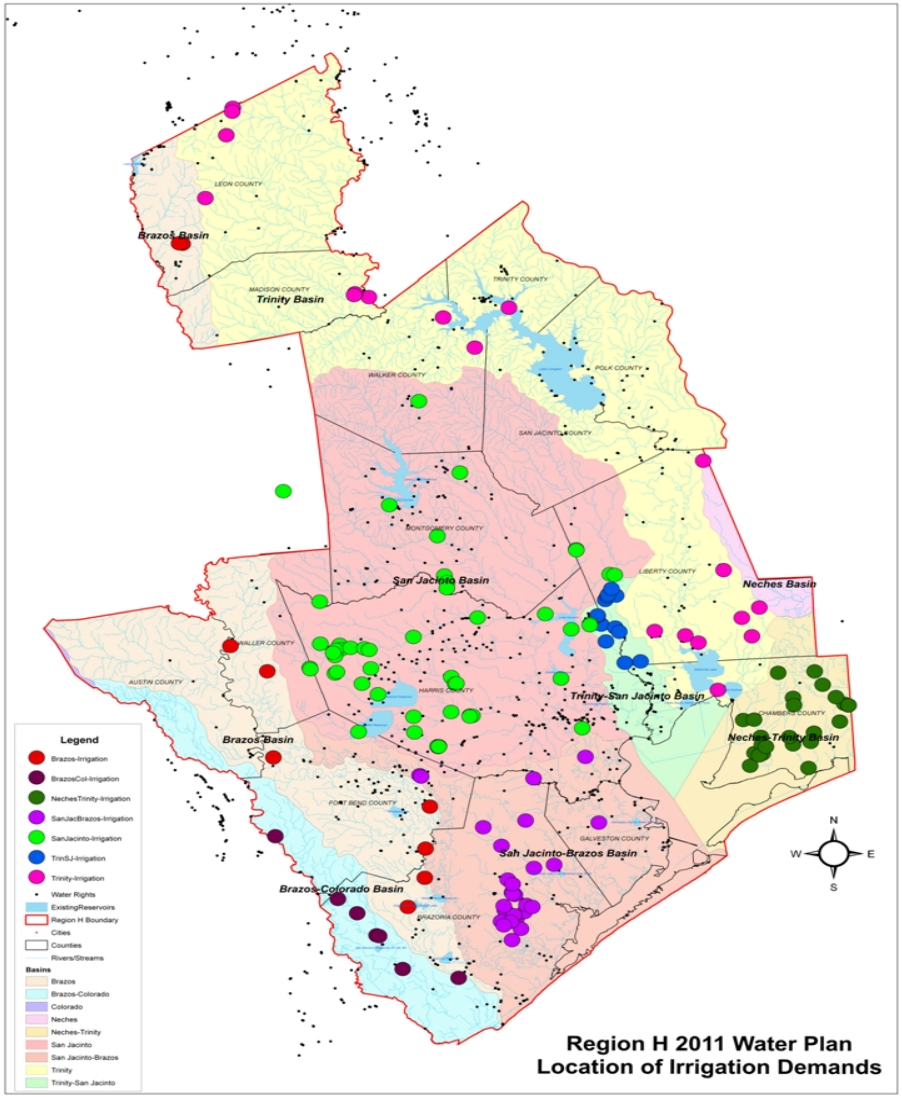
Basin	2010 WUG Demands Currently Supplied	2060 Unmet Demands with WMS's Applied	2060 Unmet Demands with NO WMS's Applied
Brazos	178,033	0	220,805
Brazos - Colorado	12,497	0	3,965
Neches - Trinity	8,153	0	0
San Jacinto	725,429	0	535,555
San Jacinto - Brazos	340,395	0	69,888
Trinity	24,644	0	3,490
Trinity - San Jacinto	56,176	0	58,725

Region H
Water Planning Group

Task 3 Interruptible Supplies: Existing Permits

"Quantify availability of existing permitted water"

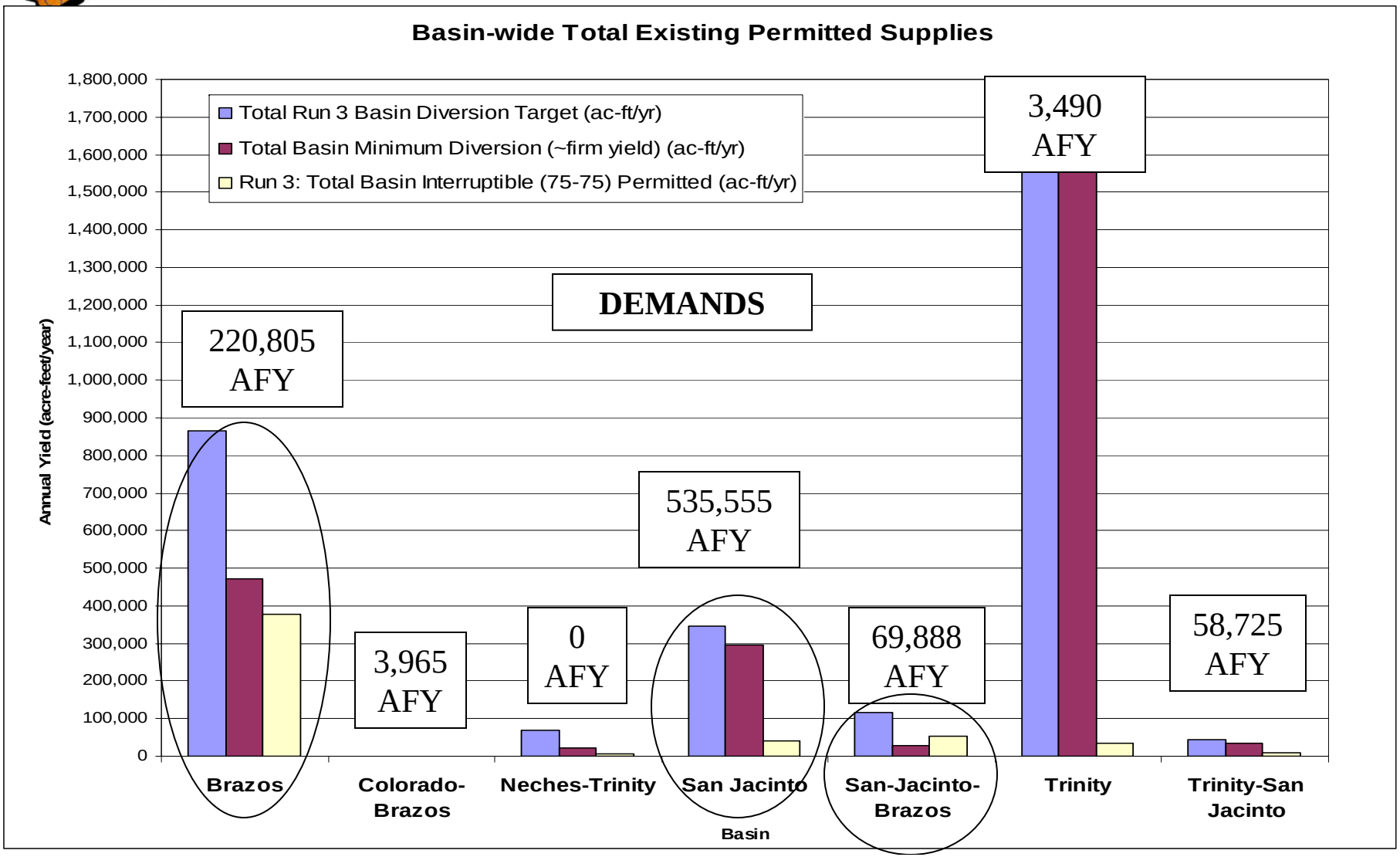
Shows locations of existing irrigation permits



Region H
Water Planning Group

Task 3 Interruptible Supplies
Permitted Supplies

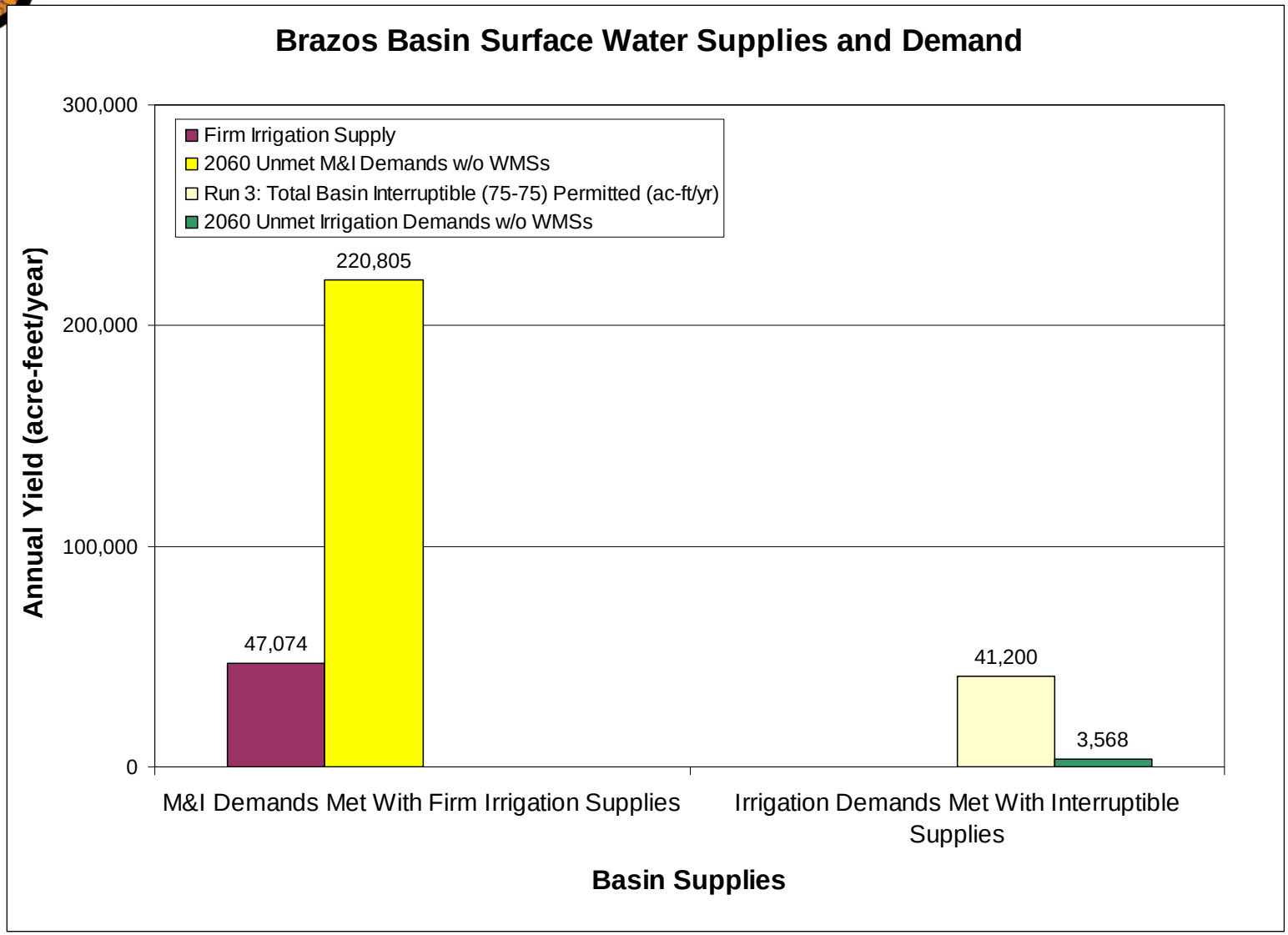
"Quantify availability of existing permitted water"



Region H
Water Planning Group

Task 3 Interruptible Supplies: Permitted Supplies

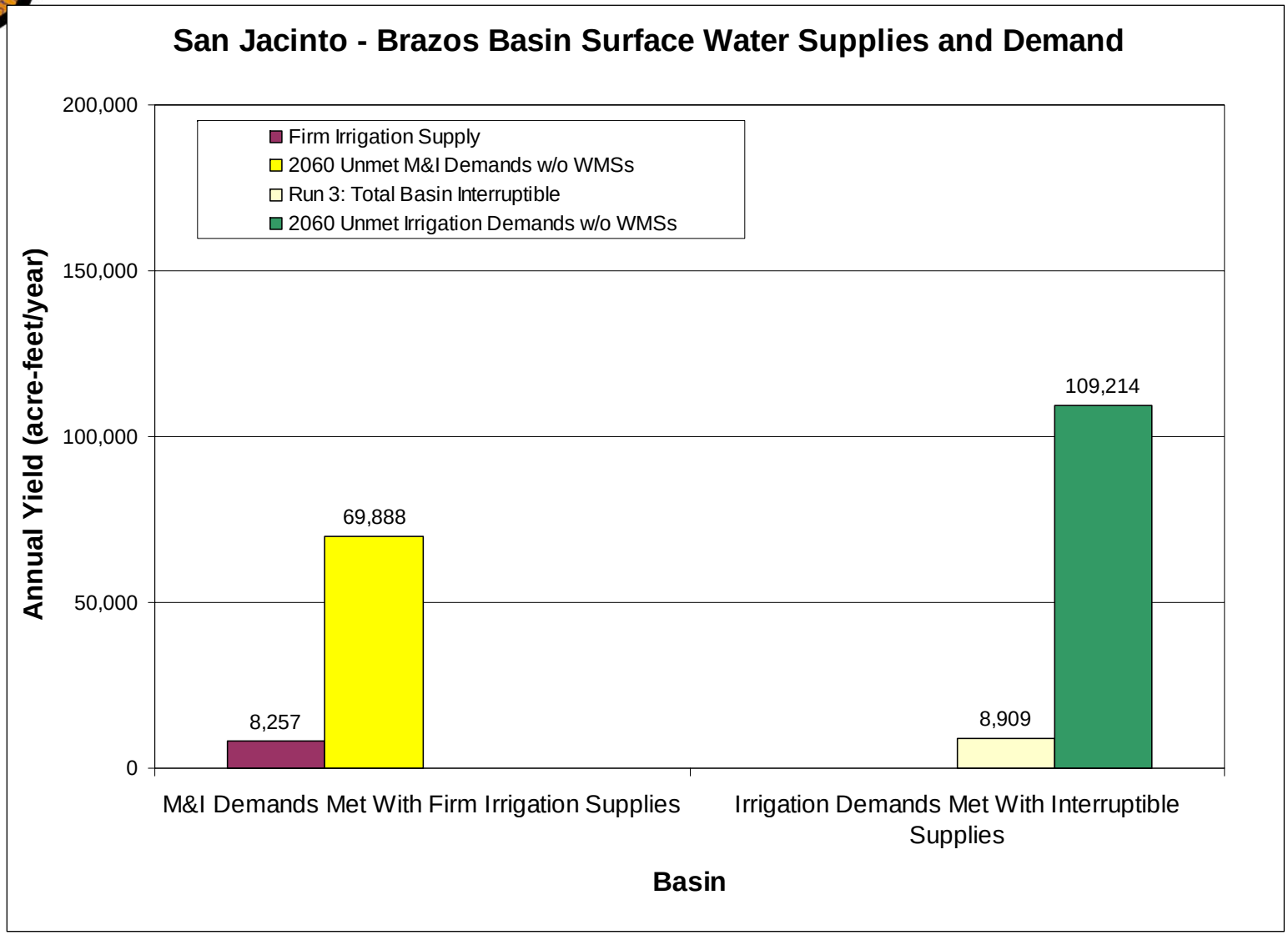
"Quantify availability of existing permitted water"



Region H
Water Planning Group

Task 3 Interruptible Supplies: Permitted Supplies

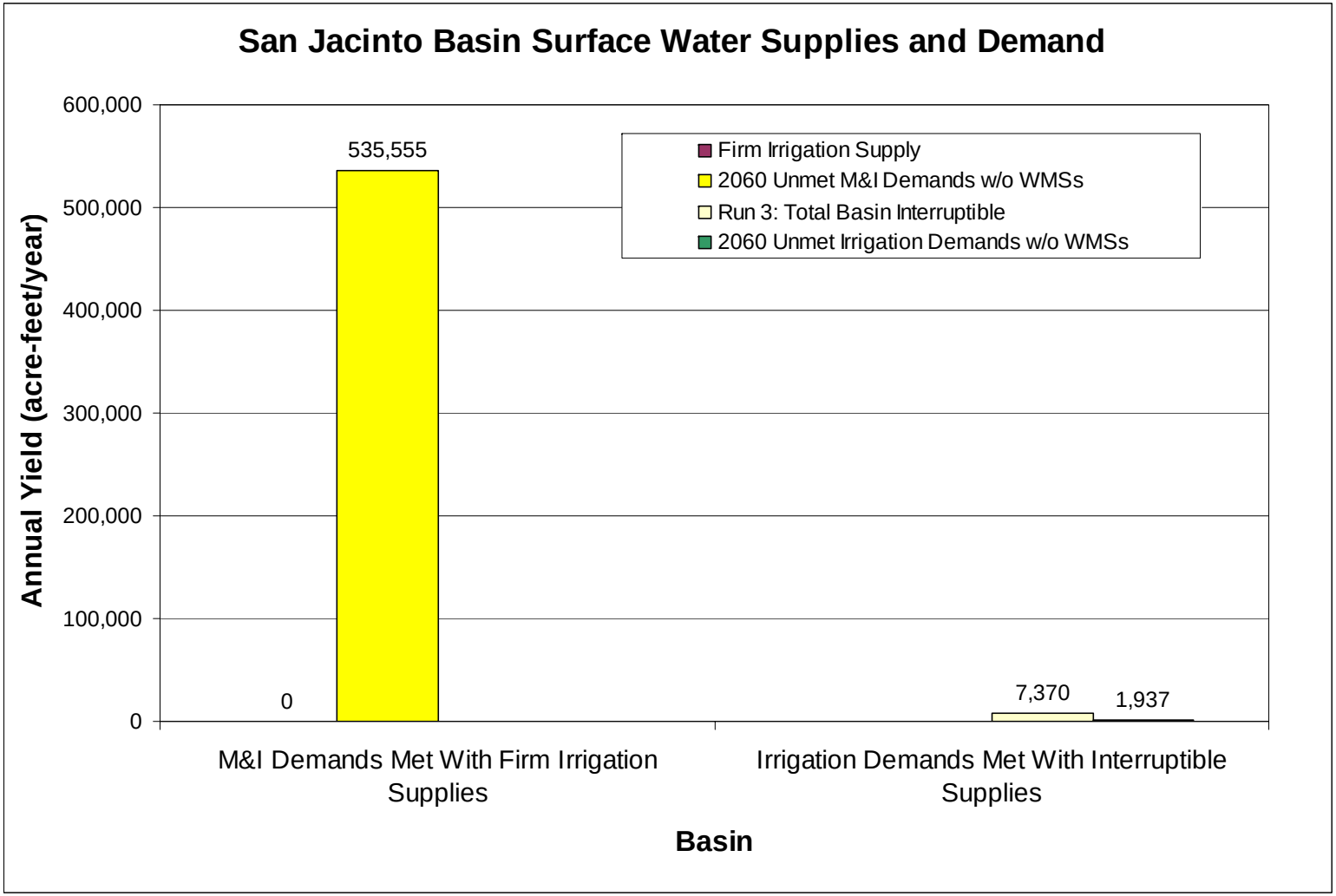
"Quantify availability of existing permitted water"



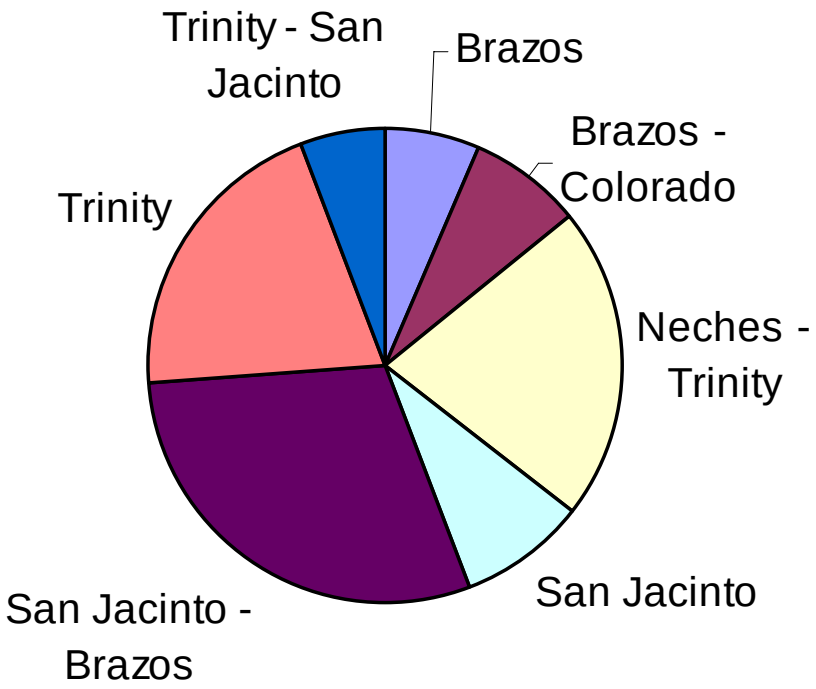
Region H
Water Planning Group

Task 3 Interruptible Supplies: Permitted Supplies

"Quantify availability of existing permitted water"



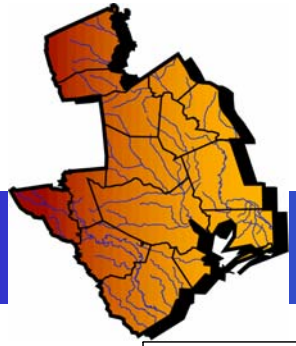
2060 Irrigation Demands by Basin



"Quantify potential uses for interruptible water supplies"

Regional Crop Types:

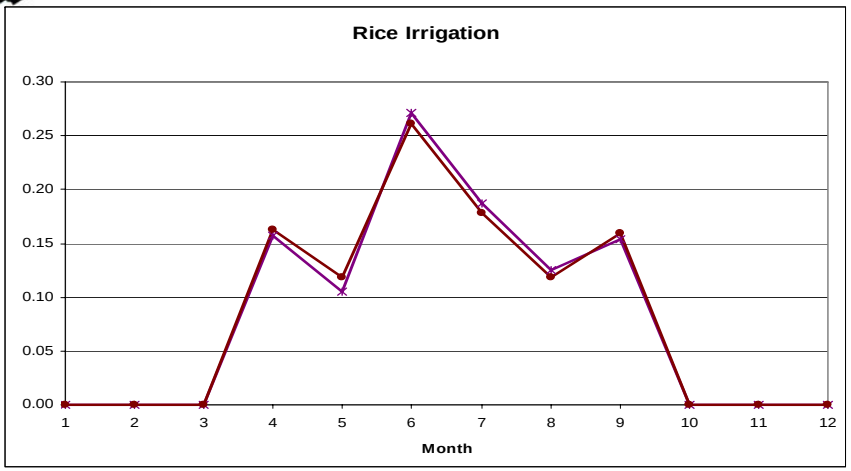
- In 2002, rice production accounted for approximately 72% of irrigated acreage in Region H counties
- Relatively small amount of irrigated acreage in corn, sorghum, cotton, hay
- In 2002 approximately 21% of irrigation was supplied from groundwater (Region H weighted average)
- Total irrigation demand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

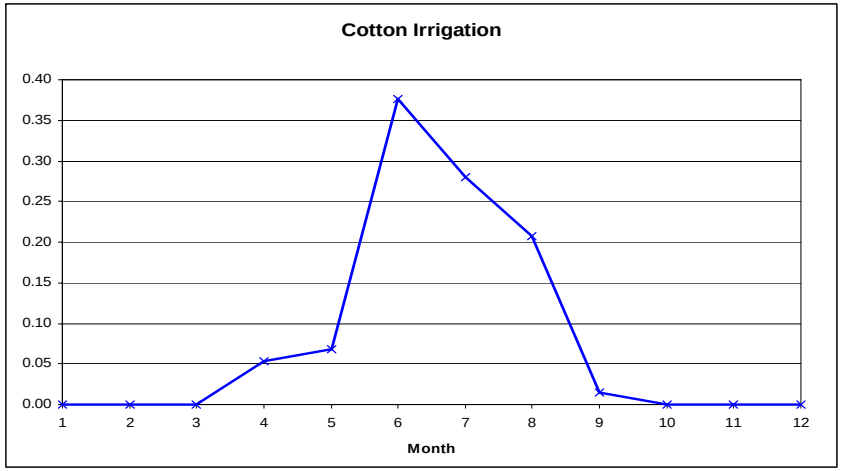


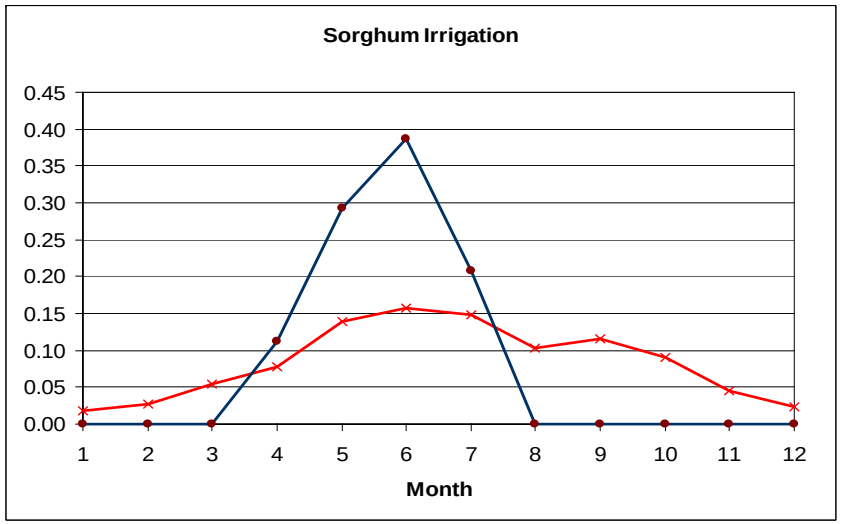
Region H
Water Planning Group

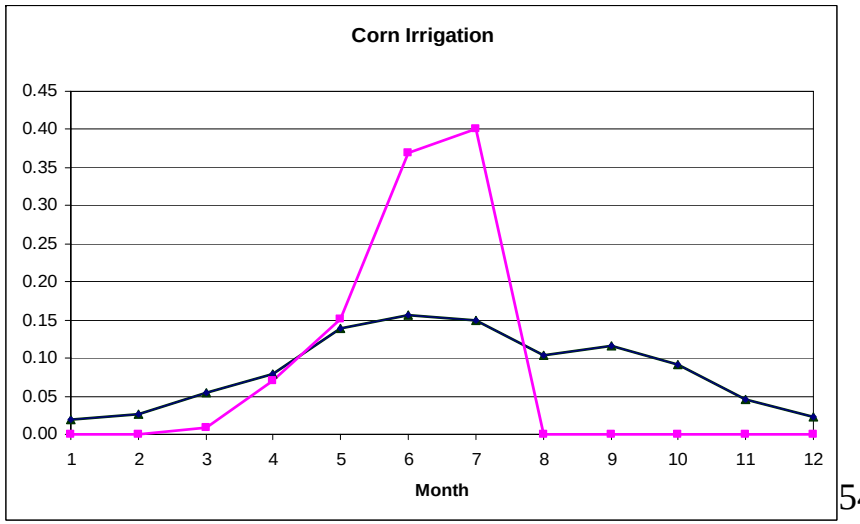
Task 3 Interruptible Supplies
Irrigation Demands

"Quantify potential uses for interruptible water supplies"









Region H
Water Planning Group

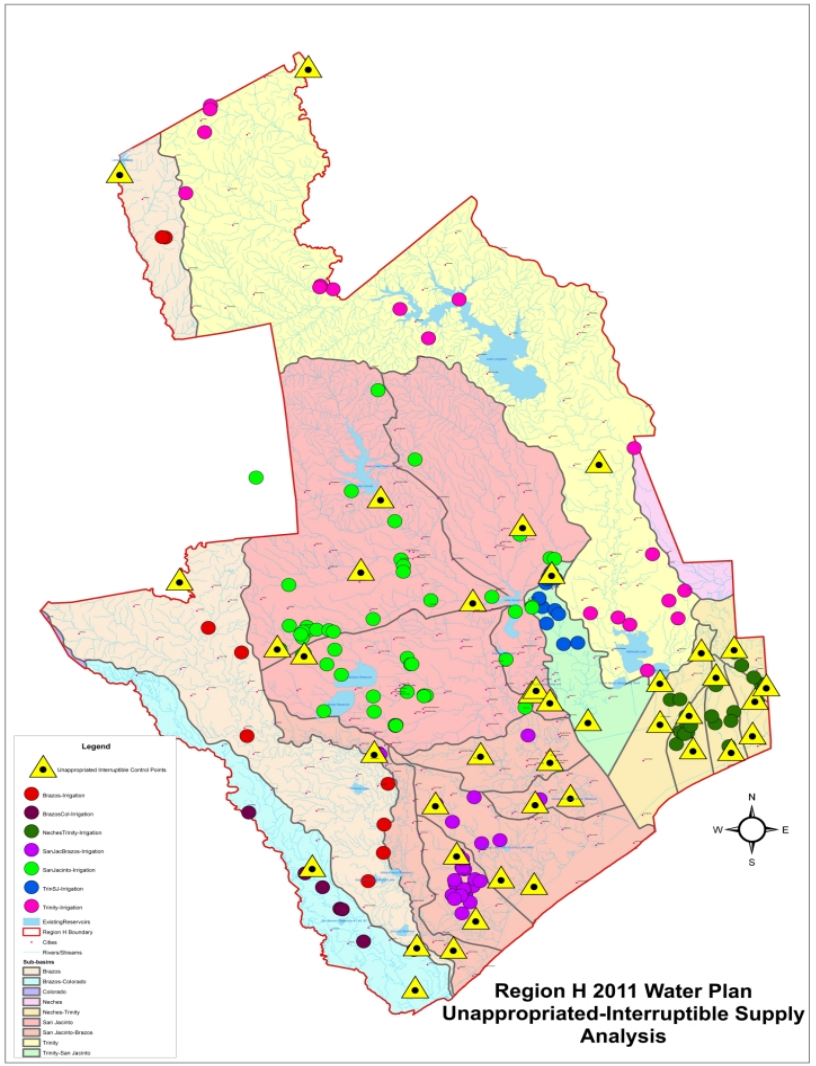
Task 3 Interruptible Supplies
Un-Permitted Calculations

"Quantify new un-permitted interruptible supplies"

Locations selected (yellow triangles) where amount of un-permitted interruptible flow would be quantified.

Both an upstream and downstream location were selected to bracket results (max and min).

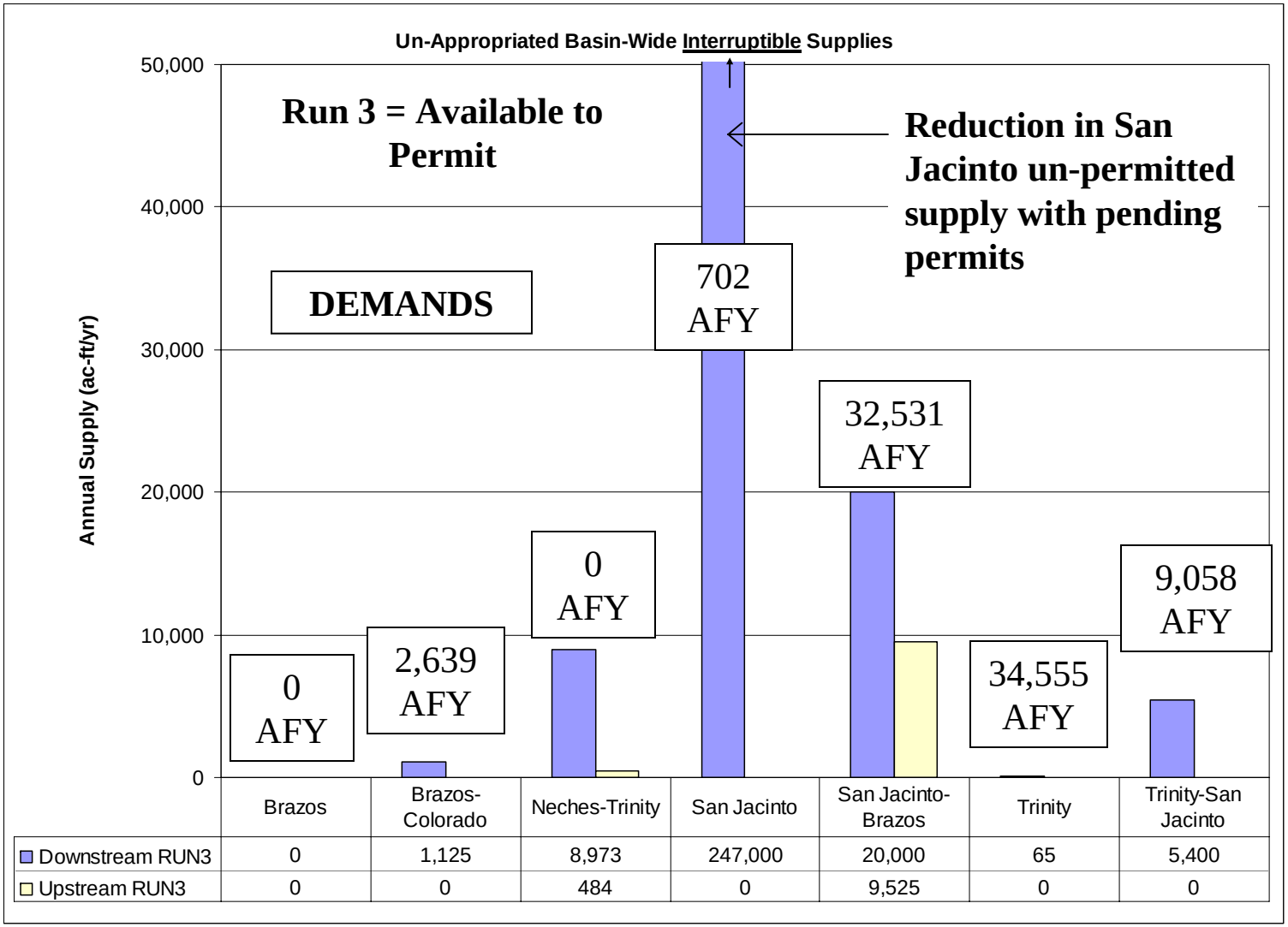
These flows could meet irrigation demands.



Region H
Water Planning Group

Task 3 Interruptible Supplies: Un-Permitted Calculations

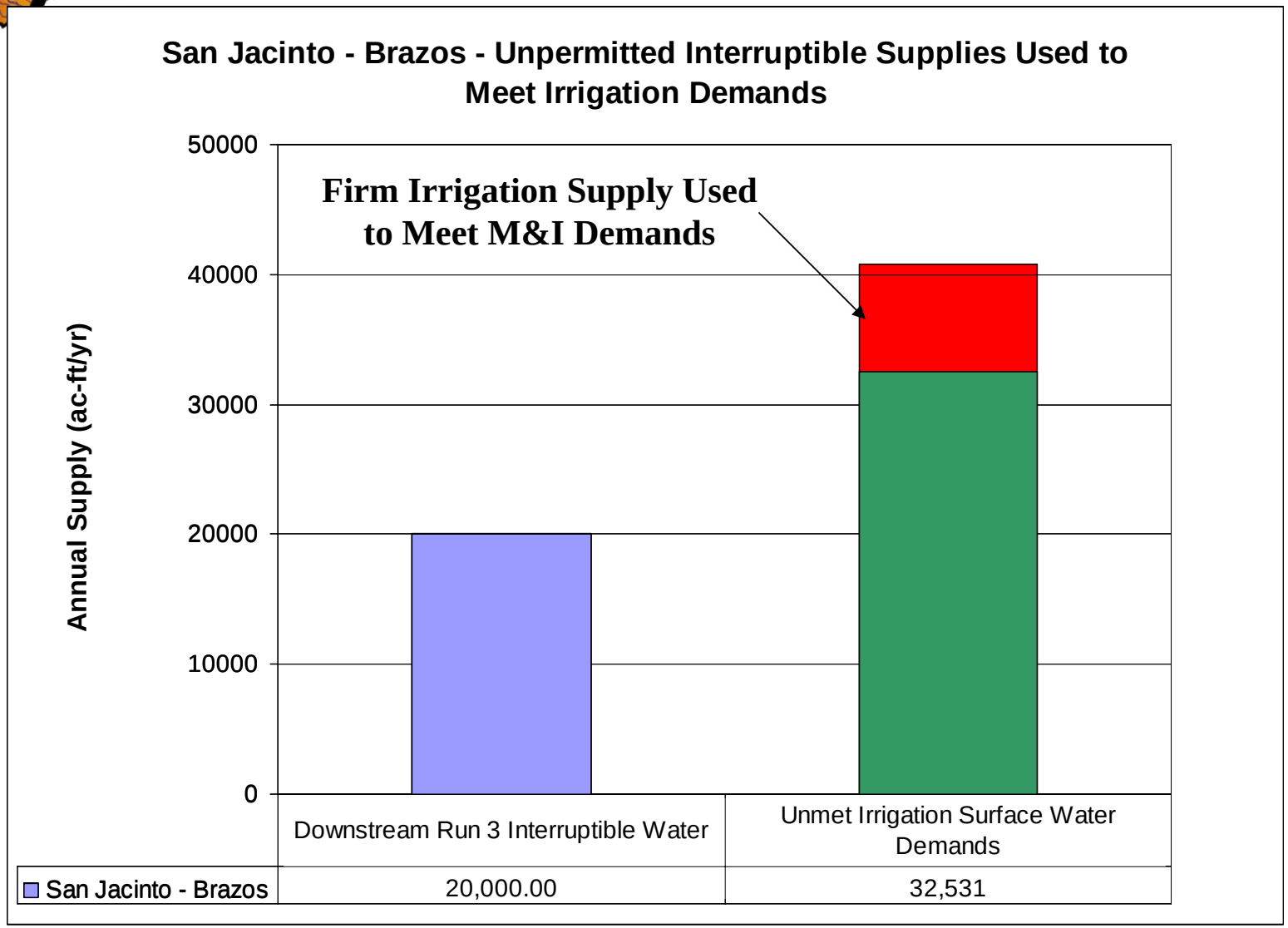
"Quantify new un-permitted interruptible supplies"



Region H
Water Planning Group

Task 3 Interruptible Supplies
Un-Permitted Calculations

"Quantify new un-permitted interruptible supplies"



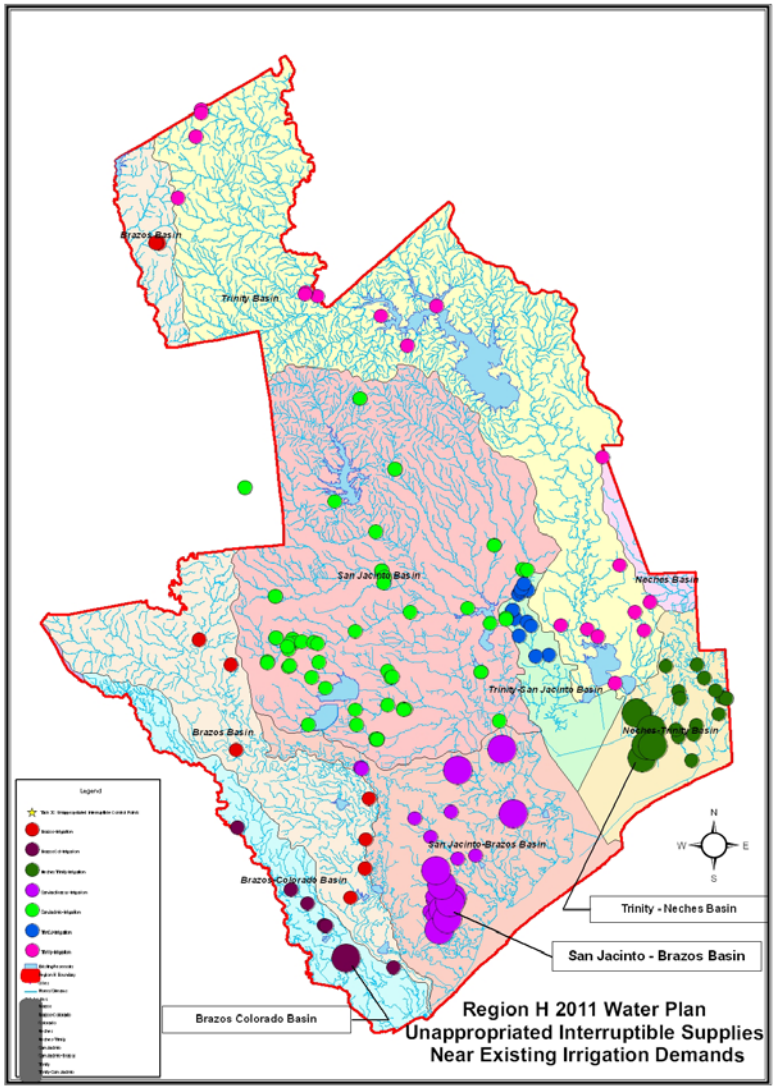
Region H
Water Planning Group

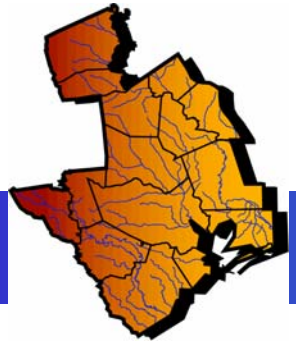
Task 3 Interruptible Supplies Un-Permitted Calculations

"Compare amounts and locations of interruptible supplies and demands"

Existing irrigation demand points where amounts and locations of interruptible supplies and demands were compared

Available un-permitted interruptible supplies are restricted to downstream segments of Coastal Basins





Region H
Water Planning Group

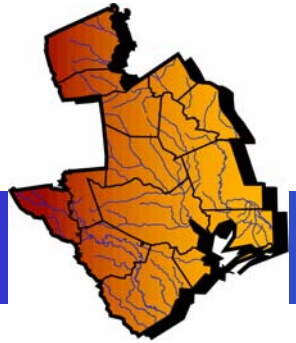
Task 3 Interruptible Supplies Un-Permitted Calculations

"Compare amounts and locations of interruptible supplies and demands"

Basin	Un-Permitted Interruptible Supply Near Existing Irrigation Demands (ac-ft/yr)
Brazos	–
Colorado - Brazos	<700, one location only
Neches - Trinity	75 to 530 in four locations
San Jacinto	–
San Jacinto - Brazos	2,200 to 15,000 in 11 locations
Trinity	–
Trinity - San Jacinto	–

Impacts of Instream Flow Requirements:

- Instream flow requirements added with priority senior to new permits, junior to existing permits
- Instream flows based on Lyons Method



Region H
Water Planning Group

Task 3 Interruptible Supplies Un-Permitted Calculations

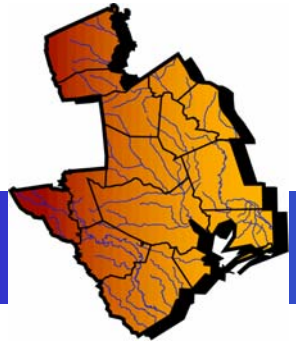
"Compare amounts and locations of interruptible supplies and demands"

Availability of Un-Permitted Interruptible Supply With and Without Environmental Flow Requirements

Basin	Without Environmental Flow Requirement	With Environmental Flow Requirement
Brazos	–	–
Colorado - Brazos	<700 ac-ft/yr in one location	TBD
Neches - Trinity	75 to 530 ac-ft/yr in four locations	TBD
San Jacinto	–	–
San Jacinto - Brazos	2,200 to 15,000 ac-ft/yr in 11 locations (max 20,000 total)	TBD
Trinity	–	–
Trinity - San Jacinto	–	–

Hydrologic Viability Analysis Summary

- Available interruptible water supply in proximity to irrigation demands:
  - Un-permitted supplies
  - Existing permitted interruptible water to “trade”
- Firm irrigation supplies in proximity to or otherwise reasonably accessible by M&I users



Region H
Water Planning Group

Task 3 Interruptible Supplies: Summary

Available interruptible water near irrigation demands

- San Jacinto - Brazos has some (between 2,200 and 15,000 ac-ft/yr) water available on interruptible basis at 11 existing demand locations.
  - Maximum potential total water WITHOUT environmental flow constraints is 20,000 acre-ft/yr
  - Maximum potential total water WITH environmental flow constraints is (TBD) acre-ft/yr
- San Jacinto Basin has 0 acre-ft interruptible supply at existing irrigation demands – all of the 247,000 supply is at the downstream extreme of the basin and subject to pending permit applications
- In the Brazos Basin, existing permitted supplies have large interruptible component and there are no un-permitted supplies
- In other basins, existing demand locations do not match location of un-permitted flows.

Task 3 Interruptible Supplies: Summary

Firm irrigation supplies in proximity to or otherwise reasonably accessible by M&I users

- Majority of permitted firm irrigation supply is in Trinity Basin – but very little M&I demand and no un-permitted replacement supplies
- Brazos basin has 47,000 ac-ft/yr firm irrigation supply but no un-permitted replacement supplies
- San Jacinto has large un-permitted replacement supply (pending permits) but zero firm irrigation supplies
- San Jacinto – Brazos basin has 8,200 ac-ft/yr firm irrigation supply and a total 20,000 ac-ft/yr un-permitted replacement supplies

Conclusions

- Hydrologic viability only in San Jacinto – Brazos
- Interbasin transfers not practical for interruptible supplies
- Imposing environmental flow constraints would further reduce viability of strategy

Next Phase of Analysis: Policy Implications

- Survey of major irrigation interests?
- Identify and assess regulatory and institutional issues and constraints?
- Evaluate the impacts and timing of the use of interruptible supplies on the size and timing of other water management strategies?
- Determine if impacts are reasonable?
- Evaluate and quantify the economic impacts of this strategy?

Regular Meeting

Agenda Item 12

Agency communications.

REGION C WATER PLANNING GROUP

Senate Bill One Third Round of Regional Water Planning - Texas Water Development Board

TO: Mayors, County Judges, Regional Water Planning Groups, Water Districts, Water Suppliers and Water Rights Holders

FROM: Region C Water Planning Group

RE: Public Notice of Public Meeting to Receive Input on the Scope of Work for the Second Phase of the Third Round of Regional Water Planning and Application for Water Planning Grant (2009-2011)

DATE: May 2, 2008

PUBLIC NOTICE

To All Interested Parties:

Notice is hereby given that the Region C Water Planning Group (RCWPG) is seeking input on the scope of work for the second phase of the third round of regional water planning. Notice is also given that the North Texas Municipal Water District (NTMWD) will submit on or before June 13, 2008, a grant application for financial assistance to the Texas Water Development Board (TWDB) on behalf of the RCWPG to carry out the scope of work. The RCWPG area includes all or part of the following counties: Collin, Cooke, Dallas, Denton, Ellis, Fannin, Freestone, Grayson, Henderson, Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise.

The public meeting regarding the scope of work will be held on **Monday, June 2, 2008, at 1:00 p.m.** at the Trinity River Authority's Central Wastewater Treatment Plant located at 6500 W. Singleton Boulevard, Grand Prairie, Texas 75212.

Written and oral comments regarding the scope of work will be accepted at the public meeting. Written comments must be received by the RCWPG by 1:00 p.m. on Monday, June 2, 2008. Comments may be submitted to the RCWPG at the following address:

RCWPG
Attention: Jim Parks
North Texas Municipal Water District
P.O. Box 2408
Wylie, TX 75098

Copies of the grant application may be obtained from the RCWPG when it becomes available. Written comments regarding the grant application must be submitted to the RCWPG by 1:00 p.m. on July 2, 2008, and to J. Kevin Ward, Executive Administrator, TWDB, P.O. Box 13231, Austin, TX 78711-3231 by the TWDB August Board meeting.

For additional information, please contact Jim Parks, telephone number (972) 442-5405, NTMWD, P.O. Box 2408, Wylie, TX 75098. The NTMWD is the Administrator for the RCWPG.

c/o NTMWD
505 E. Brown Street
P. O. Box 2408
Wylie, Texas 75098-2408
972/442-5405
972/442-5405/Fax
jparks@ntmwd.com
www.regioncwater.org

BRAZOS G
WATER PLANNING GROUP

BRAZOS RIVER AUTHORITY, Administrative Agent
P.O. Box 7555 ◊ Waco, Texas 76714-7555
(254) 761-3100 ◊ Fax (254) 761-3204

TO: All Interested Parties

FROM: Brazos G Regional Water Planning Group (Region G)

DATE: March 12, 2008

SUBJECT: Notice of Public Meeting to Receive Input on Scope of Work for Phase II of the Third Round of Regional Water Planning (2011 Planning Cycle), and Application for Water Planning Grant

NOTICE OF PUBLIC MEETING
REGIONAL WATER PLANNING

The Brazos G Regional Water Planning Group (Region G) will receive suggestions and recommendations from the public on the issues that should be addressed or provisions that should be included in the scope of work for Phase II of the Third Round of Regional Water Planning (2011 Planning Cycle). Region G consists of a 37-County planning area, which extends generally along the Brazos River from Kent, Stonewall and Knox Counties in the Northwest to Washington and Lee Counties in the Southeast.

The opportunity to submit written and oral comments (not to exceed five (5) minutes per speaker) on the proposed scope of work will be provided during the Brazos G Scope of Work Committee meeting at the Brazos River Authority Central Office, 4600 Cobbs Drive, Waco, Texas, on Wednesday, April 16, 2008 at 1:00 p.m.

Notice is also given that the Brazos River Authority (BRA) will submit a water planning grant application for financial assistance for Phase II of the Third Round of Regional Water Planning (2011 Planning Cycle) to the Texas Water Development Board by June 13, 2008.

Copies of the grant application may be obtained from the BRA when it becomes available. Written comments on the grant application must be filed by July 31, 2008, with both the applicant (BRA) and the TWDB as follows:

Trey Buzbee
Administrative Agent for Brazos G
Brazos River Authority
P.O. Box 7555
Waco, Texas 76714-7555

J. Kevin Ward
Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

For additional information, please contact Trey Buzbee, Administrative Agent for Brazos G; Phone: (254) 761-3168; Email: tbuzbee@brazos.org or submit questions to the address listed above. Also visit the Brazos G website at www.brazosgwater.org.

April 23, 2008

Mr. Mike Reedy
Turner Collie & Braden
5757 Woodway, Suite 101W
Houston, Texas 77057-1599

Re: Public Supplier Water Loss Report and Audit Manual for Utilities

Dear Mr. Reedy: Mike

Enclosed is a copy of the 2007 final report entitled "An Analysis of Water Loss as Reported by Public Water Suppliers in Texas" and the 2008 report "Water Loss Audit Manual for Texas Utilities". The water loss report was prepared under a grant from the Research and Planning Fund of the Texas Water Development Board (TWDB). The research provides information necessary for the TWDB, regional water planning groups, and retail public utilities to direct planning and funding resources, to recover lost revenues, and to achieve water savings through reduction of system water loss. The audit manual was prepared in response to legislation passed in 2003 that requires retail public water suppliers to file a standardized water audit with the TWDB once every five years. It provides a methodology to measure system water loss and standardizes reporting across the state. Please consider using these reports in preparing your regional water plan [31 TAC 357.5 (k)(1)(C)], or for any other appropriate use in your regional planning area.

We hope that you find these publications useful. If you have any questions concerning the report, please contact Mr. Comer Tuck, Conservation Division Director, at (512) 936-2343, or your TWDB project manager.

Sincerely,

Carolyn L. Brittin
Deputy Executive Administrator
Water Resources Planning and Information

c: Mr. Comer Tuck, TWDB

Enclosure

March 20, 2008

Mr. Jeff Taylor, P.E.
Region H Water Planning Group
Dept. of Public Works & Engineering
611 Walker, 25th Floor
Houston, TX 77002

Dear Mr. Taylor:

The Texas Water Development Board (TWDB) has contracted with INTERA, Inc. to develop a groundwater availability model of the Yegua-Jackson Aquifer (see attached Figure 1). The contract was signed in January 2008, and the project is scheduled to be completed around January 2010. The TWDB designated the Eocene-age Yegua–Jackson interval as a minor aquifer in the 2002 State Water Plan. The Yegua-Jackson Aquifer groundwater availability model will incorporate regional hydrologic and hydrogeology data and will serve as a tool for groundwater planning purposes.

Please feel free to contact me at kan.tu@twdb.state.tx.us if you have any questions about the Yegua-Jackson Aquifer groundwater availability model. My phone number is (512) 475-2132, or you may contact the Groundwater Availability Modeling Team Leader, Cindy Ridgeway at cindy.ridgeway@twdb.state.tx.us or at (512)936-2386.

Sincerely,

Kan Tu

Kan Tu, Geologist
Groundwater Availability Modeling
Groundwater Resources Division

Attachment

C: Mr. Van Kelley, Project Manager, INTERA
Ms. Cindy Ridgeway, Team Lead, GAM, TWDB
Ms. Temple McKinnon, Team Lead, RWP, TWDB

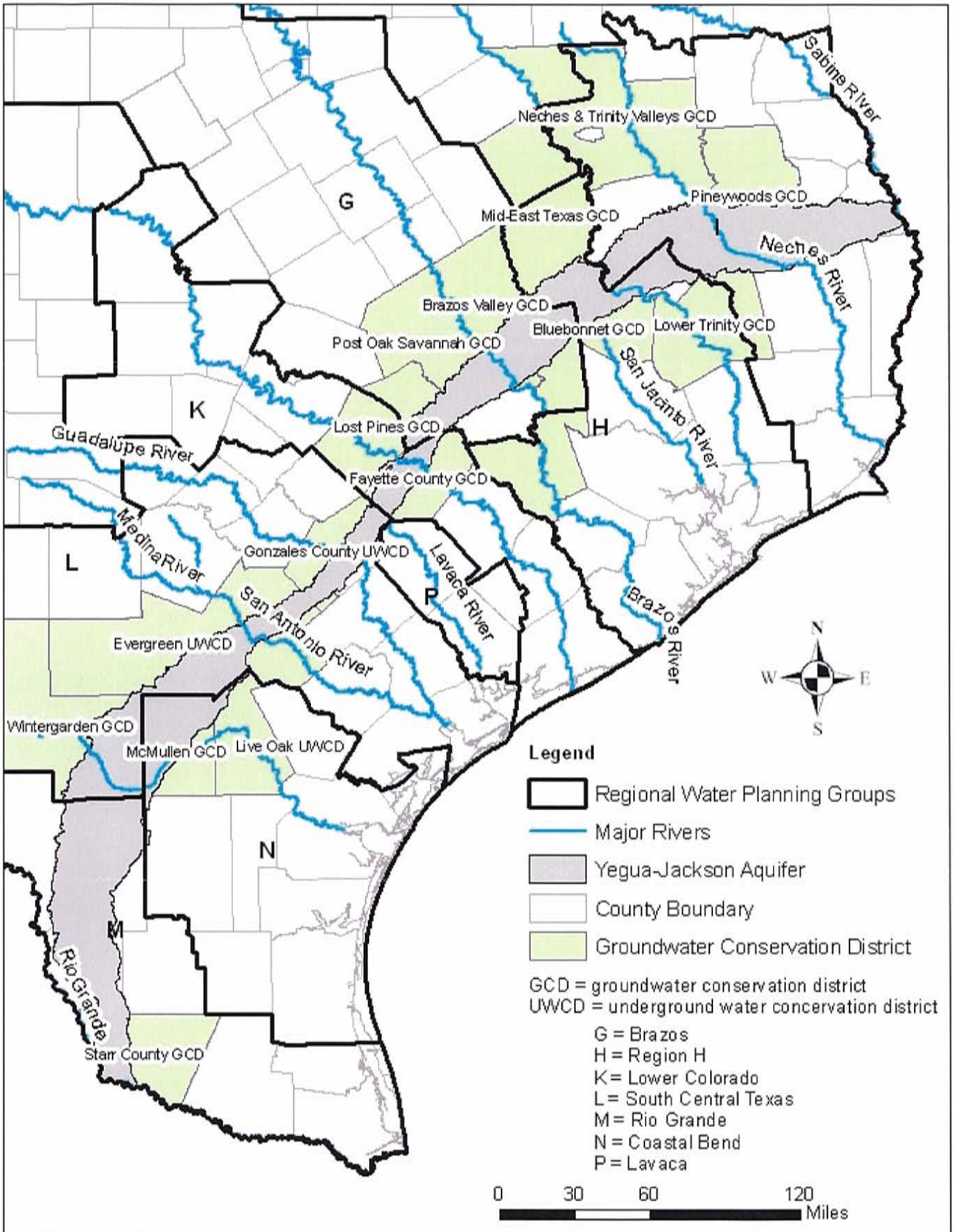


Figure 1 Study area for the Yegua-Jackson Aquifer Groundwater Availability Model.

TEXAS WATER DEVELOPMENT BOARD

TO: Board Members

THROUGH: Carolyn L. Brittin, Deputy Executive Administrator, Water Resources Planning and Information

FROM: Temple McKinnon, Project Manager, Regional Water Planning

DATE: April 21, 2008

SUBJECT: Briefing and discussion of anticipated regional and state water plan amendments to qualify projects for state water plan funding.

ACTION REQUESTED

Briefing and discussion on amending regional water plans for the purpose of qualifying projects for state water plan funding; and, procedures for Board approval of regional water plan amendments and making associated amendments, as necessary, to the State Water Plan.

The purpose of this briefing is to inform members of the Board of regional water plan amendments currently being pursued that will be presented in the near future for the Board's consideration. Staff welcomes input from the Board on the processes discussed below.

BACKGROUND

During the 80th Legislative Session, the Texas Legislature appropriated funding to enable the issuance of $769.2 million in bonds for the Water Infrastructure Fund (WIF) and State Participation Program (SP) to finance recommended State Water Plan projects through the current biennium. Although WIF has existed since 2001, money had never been appropriated by the Texas Legislature until the 80th session. These funds were provided by the Legislature for the implementation of water projects that were recommended in the 2007 State Water Plan. The terms of WIF and SP make these programs a very economical way to finance necessary water supply projects.

At the February 25, 2008 Texas Water Development Board (TWDB) Finance Committee meeting, staff provided a briefing on the state water plan implementation funding and the criteria used for ranking qualified applicants for funding (Attachment A), including an initial ranking of applicants. At the March 24, 2008 TWDB Finance Committee meeting, staff returned to the Board with a revised ranking of funding recommendations for the first set of applications for WIF funds (Attachment B).

At the March 24, 2008 regular TWDB meeting, staff requested and the Board approved authorizing commitments for the first loans from WIF to finance several water plan projects.

There are two submission deadlines per year to apply for WIF funds – January 1 and July 1 of each year. The submission deadline for the next round of WIF applications is July 1, 2008. Staff expects to brief the Board in August on the initial applicant rankings for applications received by July 1, 2008 and to make recommendations on WIF loan commitments at the September 23, 2008 Board meeting. Staff anticipates receiving a large volume of state water plan funding applications during the next three application rounds for state water plan funding.

KEY ISSUES

For an applicant to qualify to apply for state water plan funding, the water project's components must be a recommended water management strategy in both the regional and state water plans.

It has become apparent during recent regional water planning group meetings and at loan pre-application meetings, that there is a growing number of water projects that would like to qualify for state water plan funding but cannot yet qualify because the specific projects or project elements are not identified as recommended water management strategies in the associated regional water plans and, consequently, are not in the State Water Plan.

Regional water plans can be amended through one of three revision processes (see Attachment C for additional details);

1. **Substitution** of an alternative water management strategy provided for by 31 TAC Ch. 357.7(a)(7)(H).
2. **Minor amendment** to a regional water plan for those strategies that meet the designated criteria set forth in 31 TAC Ch. 357.16.
3. **Full plan amendment** with an associated regional water planning group public hearing as set forth in 31 TAC Ch. 357.11(f).

As a final step, once included as a recommended strategy in a regional plan, these projects must also be incorporated into the State Water Plan. To amend the State Water Plan, TWDB rules require a 30-day Texas Register notice and a mailed notice to each regional water planning group and requires that "The board shall hold a hearing, after which it may adopt a water plan or amendments thereto." The board could either hold a public comment hearing prior to, and separate from, the board meeting, or hold the public comment hearing at the board meeting and adopt the amendment at the same meeting. Historically, the Board has done this both ways, for example, holding a separate public comment hearing for the adoption of the state water plan,

while using board a meeting as the public comment hearing for the adoption of a state water plan amendment.

However, the 'minor amendment' and 'substitution' processes were created in order to streamline the process for modifying regional plans. Rules regarding minor amendments explicitly state that the Board shall approve the [regional plan] amendment at its next regularly scheduled meeting unless the amendment contradicts or is in substantial conflict with statutes and rules relating to regional water planning. 31 TAC 357.16(e)

Staff has determined that the Board does not have to provide 30-day notice for public hearings to incorporate a minor regional water plan amendment or substitution into the State Water Plan. Therefore, staff anticipates that minor amendments and substitutions to regional water plans will be considered for approval at the next regularly scheduled and noticed Board meetings along with an associated amendment to the State Water Plan during the same meeting.

The following projects are being considered at the planning group level and are at various stages of seeking amendments in order to qualify for state water plan funding. Note that the list is subject to regional planning group approval and is not comprehensive as there are additional projects that may yet be brought for consideration to regional water planning groups.

Region G

- Somervell County Water Improvement District - for transmission pipelines and a water treatment plant associated with a currently recommended water management strategy (minor amendment to be requested).

- Palo Pinto County Municipal Water District #1 - To substitute on-channel Turkey Peak reservoir for the recommended Wilson Hollow off-channel reservoir. (alternate water management strategy substitution to be requested).

Region I

- City of Diboll – To reclassify an alternative groundwater development strategy as a recommended strategy (minor amendment to be requested).

These recommendations have been reviewed by legal counsel and are in compliance with applicable statutes and TWDB rules.

Jim Bateman
Staff Attorney

Attachments: A: February 19, 2008 Memo to the Board
B: March 17, 2008 Memo to the Board
C: Summary of Regional and State Water Plan Amendment Processes

ATTACHMENT A

TEXAS WATER DEVELOPMENT BOARD

TO: Board Members

THROUGH: J. Kevin Ward, Executive Administrator
Amanda Lavin, Acting Deputy Executive Administrator, Project Finance and Construction Assistance
Carolyn Brittin, Deputy Executive Administrator, Regional Water and Flood Planning and Natural Resources Information System
Bill Mullican, Deputy Executive Administrator, Water Science and Conservation

FROM: Jeff Walker, Financial Analyst, Project Finance and Construction Assistance
Dan Hardin, Manager, Water Planning Research and Analysis
Comer Tuck, Director Conservation
John Sutton, Team Lead, Municipal Water Conservation

DATE: February 19, 2008

SUBJECT: Water Infrastructure Fund Projects and Requirements

ACTION REQUESTED

Briefing and discussion on the applications for the Water Infrastructure Fund and procedures necessary to commit funds.

BACKGROUND

The 80th legislative session was very successful for the Texas Water Development Board (Board) with respect to authorization and appropriations made available for the continuation of existing financial assistance programs. The primary focal point was to provide financial assistance for projects related to the implementation of the 2007 State Water Plan.

The Water Infrastructure Fund (WIF) was established in Senate Bill 2, 77th Legislature, to provide affordable financing for water conservation and development projects, particularly for implementation of recommended strategies in the state water plan. The intent of the program was to offer low interest financing for water plan projects and attractive financing for development costs on those projects. Basic rules were adopted in 2001, however, no funds were appropriated to allow for the various financing. House Bill 1, 80th Legislature, appropriated funds to the Board to implement the WIF. The rules implementing the program were adopted in December 2007. The rules allow low interest financing for construction costs and deferred

interest and principal payments for development costs. Additionally, the rules established a prioritization system for the funds and define those entities eligible for the funds, as per statute. House Bill 1 also appropriated funds to allow issuance of bonds for the State Participation (SP) program for regional water and wastewater projects and for projects that implement the state water plan. The rules for SP were also modified in December 2007 to correspond to the prioritization system in WIF, distinguish between water plan funding and traditional SP projects, and to incorporate water conservation priority as per Senate Bill 3, 80th Legislature.

The statutory requirements for prioritization of WIF and SP projects relating to water conservation efforts are included in Texas Water Code, §15.9751 and §16.1311, respectively, and read as follows:

> PRIORITY FOR WATER CONSERVATION. The board shall give priority to applications for funds for their implementation of water supply projects in the state water plan by entities that:
>
> (1) have already demonstrated significant water conservation savings; or
>
> (2) will achieve significant water conservation savings by implementing the proposed project for which financial assistance is sought.

KEY ISSUES

Applications for the first round of funding for state water plan projects were due on January 1, 2008. The Board received applications from seven entities for a total of nine projects. All the applications received requested funds from the WIF. No applications were received for funds from the SP program. The rules require that the executive administrator prioritize all applications not previously considered by the Board in February. The executive administrator shall prioritize the applications by the criteria identified in the rules (31 TAC §363.1208 (i)), provide to the Board a list of all completed applications, the amount of funds requested and the priority of each application received, and identify to the Board, the total amount of funds available in the WIF for new applications.

The following table represents the applications received, the funding requests, and the amount of funding available through the WIF for FY2008.

APPLICANT	PROJECT	WIF-DEFERRED	WIF-CONSTRUCTION
Dallas, City of	Lake Ray Hubbard Indirect Re-use	$ 8,300,000	
Dallas, City of	Cedar Crest Reuse pipeline		$ 15,100,000
Central Harris RWA	Pipeline for Houston Water		$ 22,050,000
Upper Trinity RWD	Lake Ralph Hall planning	$ 10,400,000	
Coastal Water Auth	Luce Bayou Project planning	$ 28,000,000	
Tarrant Regional WD	Richland Chambers Wetland	$ 3,630,000	
Tarrant Regional WD	Cedar Creek wetland planning	$ 6,260,000	
Lubbock, City of	Lake Alan Henry Pipeline and WTP		$ 27,226,000
	TOTAL REQUESTED	$ 56,590,000	$ 64,376,000
	TOTAL AVAILABLE FY 2008	$ 80,800,000	$ 69,600,000

PRIORITIZATION

Staff developed a prioritization process to rank the projects seeking WIF, based on 31 TAC §363.1208 prioritization criteria. WIF project applications received by the first business day of January 2008 were prioritized by staff relative to all other project applications received for the initial round.

Those projects recommended as water management strategies in the state and applicable regional water plan were deemed eligible for WIF funding. Of the nine applications received, the Big Creek Watershed Project, submitted by Falls County Water Control and Improvement District No. 1, was determined to be ineligible because it is a flood control project and not identified as a recommended water management strategy in the Brazos G Regional Water Plan or the 2007 State Water Plan. The remaining eight projects were scored and ranked by staff. The following prioritization criteria (31 TAC §363.1208(i)) and point systems were used when ranking the project applications:

(1) project results in a new, usable supply of water (1 point);
(2) date of need for the project, as identified in the state or regional water plan (5 points for identified need in 2010, 4 points for 2020, 3 for 2030, 2 for 2040, 1 for 2050); and
(3) entities that:
    a) have already demonstrated significant water conservation savings (maximum points = number of eligible projects, minimum points = 0); or
    b) will achieve significant water conservation savings by implementing the proposed project (maximum points = number of eligible applicants, minimum points = 0).

For the purposes of assessing already demonstrated water conservation savings by the applicant, staff scored and ranked the projects based on the average percent reduction in per capita water use by the applicants and their customers to be supplied by the project. Percent reduction was

calculated based on the difference between the average 2003-2005 gallons per capita per day (GPCD) relative to the 1999-2001 average GPCD. The project for which the applicant had achieved the greatest past reduction in GPCD was assigned points equal to the total number of projects being scored. Successive projects were assigned one point less, in declining order of GPCD reduction; however, projects for which the applicant had not achieved any reduction in GPCD were assigned no points. The Lake Ralph Hall project, sponsored by the Upper Trinity Regional Water District, received the highest score (8 points) under this criterion, as the district's service area showed the greatest reduction in average GPCD; from 191 in 1999-2001 to 154 in 2003-2005. Projects sponsored by the City of Dallas received the next highest score, based on a reduction in GPCD from 271 in 1999-2001 to 241 in 2003-2005.

To assess the potential for water savings by implementing the proposed project, projects were scored and ranked according to the project's potential to result in water savings, including a reduced dependence on a water source by implementation of a reuse project. This reduction was also calculated on a GPCD basis, with annual water savings divided by the projected service area population of the applicant, and the equivalent GPCD savings expressed as a percentage of the applicant's 2003-2005 average GPCD. The project with the highest percentage water savings received points equal to the total number of projects being scored, and each project with progressively less savings assigned one point less. Projects with no anticipated savings received zero points. The Lake Ralph Hall project, sponsored by the Upper Trinity Regional Water District, also received the highest score (8 points) under this criterion, as the project is designed to provide 16 thousand acre-feet of reuse annually to a projected service area population of 434,500, equivalent to 34.5 GPCD and a 22% reduction from the 2003-2005 GPCD of 154. The Richland Chambers project, sponsored by Tarrant Regional Water District, had the next greatest reduction, providing an annual reuse quantity of 63 thousand acre-feet to a projected service area population of 1.87 million, equivalent to 30.1 GPCD and 17.5% less than the 2003-2005 GPCD of 172.

For the overall score for (3) above, each project received the greater of the number of points earned under (a) or (b) as described above, with 8 points the maximum available. The Lake Ralph Hall project received 8 points total, having scored the maximum of 8 in each subsection. The Cedar Crest and Lake Ray Hubbard projects sponsored by the City of Dallas each received 7 points, as the City of Dallas had the second greatest already demonstrated reduction in GPCD (3)(a); the Richland Chambers project also received 7 points from having the second largest anticipated savings (3)(b).

In this round of funding, the projects ranked as follows:

Rank	Project	Applicant	Score
1	Lake Ralph Hall Planning	Upper Trinity Regional Water District	14
2	Cedar Crest Reuse Pipeline	City of Dallas	13
2	Lake Ray Hubbard Indirect Reuse	City of Dallas	13
4	Richland Chambers Wetland Design	Tarrant Regional Water District	12
5	Cedar Creek Wetland Planning	Tarrant Regional Water District	11
6	Luce Bayou Project Planning	Coastal Water Authority	10
7	Pipeline for Surface Water From Houston	Central Harris County Regional Water Authority	6
8	Lake Alan Henry Pipeline and Water Treatment Plant	City of Lubbock	2

Per 31 TAC §363.1208(i), if two projects receive the same priority ranking, priority will be given to the projects with the lowest annual median household income based on the most current data available from the U.S. Census Bureau. For this round of WIF funding, it was not necessary to break ties, as sufficient funding is available to fund all eligible projects. Had it been necessary to break the tie shown in the table above, the median household income criterion could not have been used, as both of the tied projects have the same sponsor. Staff proposes an additional tie-breaker to use between projects submitted by the same entity (where the lowest annual median household income cannot be used as a tie-breaker), if it becomes necessary to break such a tie in the future: Priority would be given to the project with the earliest available water supply. In this example, the Cedar Crest Reuse Pipeline and Lake Ray Hubbard Indirect Reuse project, both submitted by the City of Dallas, received the same priority ranking. The Cedar Crest Reuse Pipeline would have been given priority over the Lake Ray Hubbard Indirect Reuse project, if such a determination had been necessary, because the Cedar Crest water supply will be available two years before the Lake Ray Hubbard supply (2010 versus 2012).

PROJECTS

As mentioned, the Board received a total of eight eligible applications from six different entities. A summary of those projects, in order of prioritization, follows.

Upper Trinity Regional Water District

Upper Trinity Regional Water District (Upper Trinity) includes all of Denton County, plus limited portions of Tarrant, Collin and Dallas Counties. Upper Trinity is composed of 25 public entities, including twenty towns and cities, Denton County, one utility authority, and three special districts and constructs and operates regional treated water, non-potable water, and wastewater systems for its members.

1. Lake Ralph Hall Project – WIF Deferred - $10,400,000

Upper Trinity is requesting WIF-Deferred funds for planning and design costs, permitting costs, and other costs associated with state or federal regulatory activities with respect to the Lake

Ralph Hall project. Lake Ralph Hall is being proposed on the North Sulphur River in Fannin County. Water from the project is to be used to meet future demands of the Upper Trinity service area in the Trinity River Basin.

City of Dallas
The City of Dallas (Dallas) serves a population of approximately 1,280,500 people in Dallas County.

2. Cedar Crest Recycled Water Pipeline Extension – WIF Construction - $15,100,000
Dallas is seeking WIF-Construction funds for the construction of a wastewater re-use pipeline to serve additional Dallas Parks Department properties and potential industrial customers. The project will expand the Dallas' existing water recycling efforts. Construction of this project is scheduled to commence in September 2008. The proposed project consists of two phases and includes 33,000 linear feet of 20" water lines located mostly within existing right-of-way and an in-line booster pump station.

3. Lake Ray Hubbard Indirect Recycled Water Supply Augmentation – WIF Deferred - $8,300,000
Dallas is requesting WIF-Deferred funds for the Lake Ray Hubbard Indirect Recycled Water Supply Augmentation project. The project involves collaboration and cooperation between Dallas and North Texas Municipal Water District (District) to essentially trade water. The District will provide reuse water to Lake Ray Hubbard from the District's wastewater treatment facilities that discharge directly into Lake Ray Hubbard. In exchange, Dallas would provide indirect reuse water from the Dallas' wastewater treatment facilities along the main stem of the Trinity River to the District's East Fork Wetland which is located downstream of Lake Ray Hubbard. The project scope will include a Trinity River diversion structure, pump station, and a constructed wetland. Dallas expects to start construction of the project in April 2010 with construction complete by the end of 2011.

Tarrant Regional Water District
The Tarrant Regional Water District (Tarrant Regional) has a system of surface water reservoirs and raw water transmission facilities that provide water supply for the Cities of Fort Worth, Arlington, Mansfield, and the Trinity River Authority and to an eleven county service area.

4. Richland -Chambers Wetland Facility – WIF Deferred - $3,630,000
Tarrant Regional is requesting WIF-Deferred funds for planning and design costs, permitting costs, and other costs associated with state or federal regulatory activities with respect to the Richland Chambers Reservoir Wetland Facility project. The wetland reuse project will pump water from the Trinity River into constructed wetland facilities for treatment. After treatment in the wetlands, the water is then pumped into Richland Chambers Reservoir for storage. The additional stored water allows for an increase in safe yield for the reservoir. The project is expected to provide 63,000 acre-feet of new supply. Tarrant Regional has received water rights

from allowing diversion of the Trinity River flows. The 404 permit has been approved by the US Army Corps of Engineers although a modification to the permit will be submitted based on final design.

5. Cedar Creek Wetland Facility - WIF Deferred - $6,260,000

Tarrant Regional is requesting WIF-Deferred funds for planning and design costs, permitting costs, and other costs associated with state or federal regulatory activities with respect to the Cedar Creek Wetland Project. The wetland reuse project will pump water from the Trinity River into constructed wetland facilities for treatment. After treatment in the wetlands, the water is then pumped into Cedar Creek Reservoir for storage. The additional stored water allows for an increase in safe yield for the reservoir. The project is expected to provide 52,500 acre-feet of new supply. The additional stored water allows for an increase in safe yield for the reservoir. Tarrant Regional has received water rights from allowing diversion of the Trinity River flows.

Coastal Water Authority

Coastal Water Authority (Coastal) provides untreated surface water to the cities of Houston, Baytown, and Deer Park; all for municipal purposes. Coastal also provides untreated surface water to approximately 100 industries, and a few agricultural customers.

6. Luce Bayou Project – WIF Deferred - $28,000,000

Coastal's stakeholders for the project are the North Harris County Regional Water Authority, Central Harris County Regional Water Authority, West Harris County Regional Authority, the City of Houston, and Montgomery County.

Coastal is requesting WIF-Deferred funds for planning and design costs, permitting costs, and other costs associated with state or federal regulatory activities with respect development costs related to the Luce Bayou project. The project is the proposed construction of a raw water transmission line and canal to transmit raw water from the Trinity River to Lake Houston and provide water to the stakeholders by way of Lake Houston and the Northeast Water Purification Plant.

Central Harris County Regional Water Authority

The Central Harris County Regional Water Authority (Central Harris) is comprised of eleven conservation and reclamation districts located primarily north of the City of Houston. Central Harris' primary mission is to meet the groundwater reduction mandates of the Harris-Galveston County Subsidence District (HGCSD).

7. Groundwater Reduction Project - WIF Construction - $22,050,000

The Central Harris is requesting WIF-Construction funds to construct surface water transmission lines, participation in a re-pump station to be constructed by the North Harris County Regional Water Authority and construction of a secondary surface water transmission system to district

water plants. The purpose of this project is to attain compliance with the HGCSD mandated groundwater reduction regulations.

City of Lubbock

The City of Lubbock (Lubbock) serves a population of approximately 212,000. Their current water supply is from a conjunctive use of groundwater and surface water from Lake Meredith. Available capacity in Lake Meredith has been declining and the Lubbock must seek other sources of water supply.

8. Lake Alan Henry Project – WIF Construction - $27,226,000

Lubbock is requesting WIF-Construction funds for the development costs for the Lake Allen Henry project. The costs include engineering planning and design, environmental assessment, surveying and geotechnical studies. In addition, Lubbock is requesting funds to acquire land, easements and right-of-ways for the entire project.

Lubbock requested funding for the entire Lake Allen Henry project which includes the construction of a transmission line, pump station, water treatment facility, and terminal storage reservoir. The preliminary cost estimate for the entire project is $243,472,000. There are not sufficient funds in the FY 2008 appropriation to fund the construction of the entire Lake Alan Henry Water Infrastructure water project. The City anticipates submitting an application for funding for the remainder of the project in June 2008.

Attachment: Prioritization Table

TO: Board Members

THROUGH: J. Kevin Ward, Executive Administrator

Amanda Lavin, Acting Deputy Executive Administrator, Project Finance and Construction Assistance

Carolyn Brittin, Deputy Executive Administrator, Regional Water and Flood Planning and Natural Resources Information System

FROM: Jeff Walker, Director, Project Development, Project Finance and Construction Assistance

Dan Hardin, Manager, Water Planning Research and Analysis

DATE: March 17, 2008

SUBJECT: Potential applications and prioritization for water plan funding.

ACTION REQUESTED

Briefing and discussion of potential applications for water plan funding and revised prioritization of existing applications.

BACKGROUND

The Executive Administrator presented the Texas Water Development Board (Board) with a prioritization of the applications submitted for water plan funding at the February 2008 Finance Committee meeting. The Board memo focused on the types of projects that had applied, the funds requested and available, and the priority rating of those projects as per Board rules. The discussion that followed was concerned with the process for applications and the ability of the Board to fund projects that demonstrated the best and highest use. Additionally, there was discussion on potential projects in future rounds of funding and the availability of funds for those projects. This memo is intended to give additional information on some of those issues.

KEY ISSUES

The Board was authorized to issue up to $762.9 million for the FY 2008-2009 biennium for water plan projects. State Participation projects are allocated up to $276.1 million, the Water Infrastructure Fund (WIF) has an allocation of up to $439.8 million, and disadvantaged and rural projects can access up to $47 million. These allocations are estimations based on the amount of

appropriations authorized by the 80th legislature. Depending on demand and interest rates at the time of issuance, the total amount of funds made available could be less, but cannot exceed the authorization by category.

Applications for the first round of funding for state water plan projects were due on January 1, 2008. The prioritization for those projects was presented at the February 2008 Finance Committee meeting and the requests for funding of those projects deemed eligible are on the Board's March 2008 agenda. The Board received eligible applications from six entities for a total of eight projects. All the applications received requested funds from the WIF. No applications were received for funds from the State Participation program or the Rural and Disadvantaged. The rules require that the executive administrator prioritize all applications not previously considered by the Board in February.

The applications received and on the March Board agenda for consideration are for WIF and are requesting funds for construction and for development costs. The table below shows the amount available for this round of funding, the amount requested, and the estimated amount available in FY2009.

	WIF - Deferred	WIF Construction	Rural	Disadvantaged	State Participation
Amount Available FY08	$80,800,000	$69,600,000	$6,600,000	$9,800,000	$55,800,000
Amount Requested	$56,590,000	$59,765,000	$0	$0	$0
Estimated Available FY09	$80,800,000	$208,600,000	$12,400,000	$18,200,000	$220,300,000

FUTURE PROJECT FUNDING

Board staff has been in contact and had several meetings with potential applicants for water plan projects to be funded through WIF, State Participation, and Rural or Disadvantaged. Staff continues to market the programs and hold discussions on potential projects. While it is no way encompassing, the table below shows some of the potential projects with estimated costs that may be requesting water plan funding in the future. While it is unknown what projects will be submitted for application by the next deadline of July 1, 2008, a comparison of the amounts available in 2009 with the potential projects and their estimated costs illustrates that some of the categories for water plan funding may be oversubscribed.

FY2009 Potential Applicant	Project	WIF - Deferred	WIF - Construction	Disadvantaged /Rural	State Participation
Corsicana	Water Treatment		$30,000,000		
Somerville Co WD	Water Treatment		$25,000,000		
Angelina-Neches RA	Lake Columbia				$170,000,000
Brazos RA	Lake Granger Intake and Transmission		$22,000,000		
Palo Pinto WD	Lake Turkey Peak Acquisition			$7,000,000	
Lubbock	Lake Allen Henry Transmission and Treatment	$55,500,000	$220,000,000		
San Jacinto RA	Water Treatment				
Estimated Totals		$55,000,000	$297,000,000	$7,000,000	$170,000,000

The existing rules for prioritization rank the projects for Board consideration. The rules and current procedures prioritize based on decade of need, whether the project utilizes a new source of supply, and by a procedure designed to measure demonstrated conservation measures. The prioritization criteria do not consider cost efficiency measures such as cost per acre-foot or cost per total population served.

The Board rules on the prioritization system TAC §363.1207 state: "If there are funds in the WIF to fund all or part of any of the projects for which the executive administrator has received completed applications during the preceding six months, the Board will first consider any projects that the legislature has determined shall receive priority for financial assistance from the WIF. If, after considering projects with legislative priority, there are funds available for other eligible projects in the WIF, then the Board will consider such other applications received by the executive administrator during the preceding six month period in descending order of priority according to §363.1208 of this title. The Board will consider the next application on the list only if there are funds available in the account to fund all or, if acceptable to the applicant, a part of the application."

AMENDED PRIORITIZATION

The Board was presented a prioritization of projects at the February 2008 Finance Committee meeting. Subsequent to that presentation, additional information was discovered which changed the prioritization score of one of the applicants. The original scoring utilized the Region O plan

as it was written prior to a very late amendment to the City of Lubbock's (Lubbock) population and water demand. The amendment resulted in Lubbock having a need in 2010, rather than in

2050 as the plan originally stated and as Board staff mistakenly assumed in the original WIF scoring. While the total points received by Lubbock changed, the overall priority ranking was not affected. The revised table in Attachment No. 1 shows that the Lubbock project now ranks in priority with Central Harris County Regional Water Authority, instead of last all alone.

JOINT COMMITTEE ON STATE WATER FUNDING

As part of the 2007 state water plan, the Board surveyed water user groups throughout Texas to determine the extent of financial assistance that local and regional water providers need to implement water management strategies via Board financial assistance programs. Results of the survey indicated that approximately $1.7 billion will need to come from state assistance programs through 2020 and roughly $2.1 billion by 2060. At the time, the Texas legislature recognized that these funding gaps needed to be addressed if Texas is to ensure that it has adequate and dependable water supplies for the future. As a result, the 80th session of the legislature (2007) appropriated almost $47 million over and above the agency's $54.7 million baseline request to pay debt service on general obligation bonds that will help finance state water plan projects through the State Participation Program and the WIF.

The 80th Texas Legislature through the passage of Senate Bill 3 also established the Joint Committee on State Water Funding that will hold hearings beginning this spring. The presiding officers of the committee are the respective chairman of the House and Senate Natural Resources Committees -- State Representative Mike "Tuffy" Hamilton (Mauriceville) and State Senator Kip Averitt (Waco). Additional House members appointed by Speaker of the House Tom Craddick include: Representatives Brandon Creighton (Conroe), Will Hartnett (Dallas) and Dan Gattis (Georgetown). Additional Senate members appointed by Lieutenant Governor David Dewhurst include Senators Juan "Chuy" Hinojosa (McAllen) , Robert Duncan (Lubbock) and Kevin Eltife (Tyler).

One of the charges of the Committee is to review current financing mechanisms for water supply infrastructure in Texas including water management strategies recommended in the 2007 state water plan. As part of this charge, the Committee has requested that the Board reevaluate the amount of funding needed from the state to implement water management strategies. In response, the Board has proposed to conduct an infrastructure financing survey to meet the Committee's request. The Board's Water Resources Planning Division and Project Finance and Construction Assistance have developed a methodology to carry out the survey, and are currently executing the survey that will solicit required information from local and regional providers of municipal water throughout the state.

Attachment(s): Revised Priority Ranking Table

ATTACHMENT # 1

Reviced Water Infrastructure Funding Project Prioritization - First Round (Applications Received by January 1, 2008)

Rank	Project	Total Score	New, Usable Supply	Date of Need		Past Conservation		Project Conservation		Conservation Score
				Decade	Points	% GPCD Reduction	Points	% GPCD Reduction	Points	
1	Lake Ralph Hall Planning (Upper Trinity Regional Water District)	14	1	2010	5	19.4%	8	22.4%	8	8
2	Cedar Crest Reuse Pipeline (City of Dallas)	13	1	2010	5	11.1%	7	0.7%	4	7
2	Lake Ray Hubbard Indirect Reuse (City of Dallas)	13	1	2010	5	11.1%	7	14.6%	6	7
4	Richland Chambers Wetland Design (Tarrant Regional Water District)	12	1	2020	4	9.9%	6	17.5%	7	7
5	Cedar Creek Wetland Planning (Tarrant Regional Water District)	11	1	2020	4	9.9%	6	12.1%	5	6
6	Luce Bayou Project Planning (Coastal Water Authority)	10	1	2020	4	7.0%	5	0		5
7	Pipeline for Surface Water From Houston (Central Harris County Regional Water Authority)	6	1	2010	5	0.0%		0		0
8	Lake Alan Henry Pipeline and Water Treatment Plant (City of Lubbock)	6	1	2010	5	0.0%		0		0

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ATTACHMENT C

Summary of Regional and State Water Plan Amendment Processes

There are three ways a regional plan can be revised to accommodate the addition of a water management strategy:

1. Substitution of an alternative water management strategy provided for by 31 TAC Ch. 357.7(a)(7)(H).
2. Minor amendment to a regional water plan for those strategies that meet the designated criteria set forth in 31 TAC Ch. 357.16.
3. Full plan amendment with an associated regional water planning group public hearing as set forth in 31 TAC Ch. 357.11(f).

Rather than amending a plan, there is a provision for an entity to request a consistency waiver to obtain a loan for a project that is not contained in a the regional water or state water plans from the Board through the regional water planning group per 31 TAC Ch. 357.13(c).

1. Substitution of a fully-evaluated alternative strategy:
A fully-evaluated [per 357.7(a)(5)] water management strategy that was not recommended but was explicitly designated as an alternate strategy for a water user group (WUG) or wholesale water provider, can be substituted for a recommended strategy that is no longer recommended. The substitution may not result in a strategy that is in excess of 125% of the recognized needs for the WUG(s) for which the strategy is recommended unless granted by TWDB's Executive Administrator per 357.7(a)(7)(H). Steps in the process are as follows:

A. The entity proposing a revision to the regional water plan requests an agenda item on the RWPG's agenda for consideration of the strategy substitution. Such consideration would be a posted agenda item for group action at a regularly-posted public regional water planning group meeting.
B. If the RWPG supports the substitution, the RWPG will submit the substitution to the TWDB Executive Administrator for approval (required in all cases).
C. Materials to submit to the Executive Administrator (EA) include:
    - a cover letter stating the need for the substitution;
    - a summary of the RWPG action taken including whether or not the RWPG supports the substitution;
    - evidence that the strategy for substitution has been fully evaluated in accordance with statute, rule, and contractual technical guidelines;
    - indication of whether or not the proposed substitution strategy would exceed 125% of the recognized needs for the WUG(s) and, if requested, provide the basis or justification for such request; and,
    - all relevant data fields for the regional water planning database (DB07) that would require updating in the Source module, WMS module, WUG module, or WWP module, such as population, demands, source availability, water supplies (for a

WUG or a WWP) or WMS (for a WUG or a WWP). Data requirements vary on a case-by-case basis. The project manager shall coordinate with applicant and region to work with the Water Supply and Strategy Analysis Team (WSSA).

D. TWDB staff performs an internal analysis including but not limited to: a water supply over-allocation analysis; identification of potential inter-regional conflicts; confirmation that no new unmet needs result from the substitution.
E. TWDB staff prepares an internal memo considering the proposed change to a regional plan in the context of the associated rule requirements; draft memo to Executive Administrator to include recommendation for approval or denial.
F. If the Executive Administrator approves the substitution, written approval from Executive Administrator will be issued to the RWPG Chair, applicant, and political subdivision. The Board may approve an associated amendment to the state water plan upon the EA's determination (see step 4.)
G. If substitution is denied by the EA, the RWPG may decide to opt for either a minor amendment process (# 2 below) or a full amendment process (#3 below) as appropriate and necessary. Consideration to approve such an action would also require public notice as an agenda item at a regular RWPG meeting.

2. Minor Amendment:

The process for a minor amendment to a regional water plan is described in 357.16 and has significantly less notice requirements than a full regional plan amendment carried out under 31 TAC Ch. 357.11(f), however, certain criteria of the amendment must be met. These include:

(1) does not result in overallocation of an existing or planned source of water;
(2) does not relate to a new reservoir;
(3) does not have a significant effect on instream flows, environmental flows or freshwater flows to bays and estuaries;
(4) does not have a significant substantive impact on water planning or previously adopted management strategies; and
(5) does not delete or change any legal requirements of the plan.

Steps to conduct a minor amendment to the plan are as follows:

A. The entity proposing a revision to the regional water plan requests an agenda item on the RWPG's agenda for consideration of the minor amendment. Such consideration would be a posted agenda item for group action at a regularly-posted public regional water planning group meeting. If the RWPG supports the minor amendment, the RWPG will submit the minor amendment to the TWDB Executive Administrator for approval (required in all cases).
B. Materials to submit to the Executive Administrator include:
    - a cover letter stating the need for the amendment;
    - a summary of the RWPG action taken:
    - evidence that the strategy for the minor amendment meets the criteria listed in 31 TAC Ch. 357.16;
    - information to demonstrate that the strategy that has been fully evaluated in accordance with statute, rule, and contractual technical guidelines; and,

- all relevant data fields in the regional water planning database (DB07) that would require updates in the Source module, WMS module, WUG module, or WWP module, such as population, demands, source availability, water supplies (for a WUG or a WWP) or WMS (for a WUG or a WWP). Data requirements vary on a case-by-case basis. The project manager shall coordinate with applicant and region to work with the WSSA Team.

C. TWDB staff performs an internal analysis including but not limited to: a water supply over-allocation analysis; identification of potential inter-regional conflicts; confirmation that no new unmet needs result from the amendment.
D. TWDB staff prepares an internal memo considering the proposed change to a regional plan in the context of the associated rule requirements; draft memo to Executive Administrator to include recommendation for approval or denial.
E. If the EA determines that the proposed amendment is indeed minor, written EA approval will be issued to the RWPG Chair, applicant, and political subdivision.
F. After receipt of the EA's determination that the amendment qualifies as minor, the RWPG shall conduct a public meeting subject to the Open Meetings Act with at least two weeks notice prior to the public meeting. The public shall have an opportunity to comment at the meeting and the RWPG shall revise the proposed minor amendment, if necessary [31 TAC Ch. 357.16(d)].
G. After adoption of the minor amendment, the regional water planning group shall submit the amendment to the board which shall approve the amendment at its next regularly scheduled meeting per §357.16 (e).
H. The TWDB will then amend the state water plan as appropriate (see #4 below).
I. If the minor amendment is denied by the EA, the RWPG may choose to proceed with a full amendment process (#3 below) as appropriate. Consideration to approve such an action would need to be posted as an agenda item at a regular RWPG meeting.

3. Amendment with Public Hearing and TWDB Board Approval:

The process for a full amendment of a regional water plan is discussed in several portions of 31 TAC Ch. 357 as noted below. A full amendment of a regional water plan is to be conducted when alternative strategy substitution (Process 1 above) or a minor amendment (Process 2 above) are not appropriate. A full amendment is also to be conducted if revisions to projections are necessary. The steps to conduct a full amendment are as follows:

A. The entity requiring a revision to the regional water plan requests an agenda item on the RWPG's agenda for consideration of a full amendment to the plan. Such consideration would be a posted agenda item for group action at a regularly-posted public regional water planning group meeting.
B. The proposed amendment must be a strategy fully evaluated in accordance with statute, rule, and contractual technical guidelines.
C. Before requesting revisions to population and/or water demand projections, planning groups must discuss the issue at a public meeting, for which notice has been posted pursuant to the Open Meetings Act, in addition to being published on the internet and mailed at least 14 days before the meeting to every person or entity that has requested notice of regional water planning group activities. The public will be able to submit oral

or written comments at the meeting, and written comments for 14 days following the meeting.

After this process, the planning group should draft a letter addressed to the Executive Administrator containing the request and data justifying why the request is warranted, as addressed in the technical guidelines for regional water plan development. In addition, planning groups will summarize in the letter any public comments received in response to its request. They should also send an electronic copy of the letter along with a spreadsheet comparing their requested changes with TWDB Board approved projections to their respective project manager who will then forward the material to the director of the Water Resources Planning Division.

Within 45 days of receipt of a request from a planning group for any revisions, staff will consult with the planning group in question and respond to their request.

The directory: "V:\PlanShare\2007 Population Estimates" contains spreadsheets for each region comparing TWDB interpolated population projections for 2007 with current estimates and projections of the Texas State Data Center, which should serve as the primary data source for requests for population projection revisions.

D. The RWPG will need to hold a public hearing at a central location in the region to discuss the proposed amendment. This public hearing must have notice with a minimum of 30 days between the mailed and published notice of the hearing and the hearing date [31 TAC Ch. 357.12(a)(4)-(6) and Ch. 357.12(b)].
E. The RWPG must provide for a 30 days minimum public and agency (including TWDB) comment period following the public hearing and before adoption.
F. TWDB staff performs an internal analysis including but not limited to: a water supply over-allocation analysis; identification of potential inter-regional conflicts; confirmation that no new unmet needs result from the amendment.
G. The RWPG must make the proposed amendment and regional water plan available for public inspection at least one month before the public hearing in one of the designated public venues defined in 31 TAC Ch. 357.12(b).
H. The RWPG must adopt the amendment at a RWPG meeting posted under the Texas Open Meetings Act. Adoption must include response to public comment.
I. The RWPG will submit the plan amendment to the TWDB for Board approval. Materials to submit to the Executive Administrator include:
    - a cover letter requesting and stating the need for the amendment;
    - summary of the RWPG actions taken;
    - documentation of the notice and public hearing process;
    - evidence that the strategy has been fully evaluated in accordance with statute, rule, and contractual technical guidelines;
    - all relevant data fields in the regional water planning database (DB07) that require updates in the Source module, WMS module, WUG module, or WWP module, such as population, demands, source availability, water supplies (for a WUG or a WWP) or WMS (for a WUG or a WWP). Data requirements vary on a case-by-case basis. The project manager shall coordinate with applicant and region to work with the WSSA Team. The project manager must also work with the team manager or division director to place the item on a TWDB Board agenda and develop the associated Board item (e.g. memo).

J. Once approved by the TWDB Board, the Executive Administrator will notify the RWPG Chair, applicant, and political subdivision in writing.
K. The TWDB will then amend the state water plan as appropriate (see #4 below).

4. Amendment of State Water Plan:
According to 31 TAC Ch. 357.11(g)(3) and 357.16(e) and (f), the Board will determine and direct if amendments to the state water plan are necessary.

a. **Amending the SWP following substitution of an alternative strategy** – A Board item needs to be prepared following adoption of the substitution by the RWP.
b. **Amending the SWP following a minor amendment** – A Board item is prepared for the next scheduled Board meeting following the EA determination and after the RWPG adopts it's amendment.
c. **Amending the SWP following an amendment** with public hearing – The project manager will coordinate placing the item for approval on the Board agenda and developing the Board item.

ATTACHMENT C

Summary of Regional and State Water Plan Amendment Processes

There are three ways a regional plan can be revised to accommodate the addition of a water management strategy:

1. Substitution of an alternative water management strategy provided for by 31 TAC Ch. 357.7(a)(7)(H).
2. Minor amendment to a regional water plan for those strategies that meet the designated criteria set forth in 31 TAC Ch. 357.16.
3. Full plan amendment with an associated regional water planning group public hearing as set forth in 31 TAC Ch. 357.11(f).

Rather than amending a plan, there is a provision for an entity to request a consistency waiver to obtain a loan for a project that is not contained in a the regional water or state water plans from the Board through the regional water planning group per 31 TAC Ch. 357.13(c).

1. Substitution of a fully-evaluated alternative strategy:
A fully-evaluated [per 357.7(a)(5)] water management strategy that was not recommended but was explicitly designated as an alternate strategy for a water user group (WUG) or wholesale water provider, can be substituted for a recommended strategy that is no longer recommended. The substitution may not result in a strategy that is in excess of 125% of the recognized needs for the WUG(s) for which the strategy is recommended unless granted by TWDB's Executive Administrator per 357.7(a)(7)(H). Steps in the process are as follows:

A. The entity proposing a revision to the regional water plan requests an agenda item on the RWPG's agenda for consideration of the strategy substitution. Such consideration would be a posted agenda item for group action at a regularly-posted public regional water planning group meeting.
B. If the RWPG supports the substitution, the RWPG will submit the substitution to the TWDB Executive Administrator for approval (required in all cases).
C. Materials to submit to the Executive Administrator (EA) include:
    - a cover letter stating the need for the substitution;
    - a summary of the RWPG action taken including whether or not the RWPG supports the substitution;
    - evidence that the strategy for substitution has been fully evaluated in accordance with statute, rule, and contractual technical guidelines;
    - indication of whether or not the proposed substitution strategy would exceed 125% of the recognized needs for the WUG(s) and, if requested, provide the basis or justification for such request; and,
    - all relevant data fields for the regional water planning database (DB07) that would require updating in the Source module, WMS module, WUG module, or WWP module, such as population, demands, source availability, water supplies (for a

WUG or a WWP) or WMS (for a WUG or a WWP). Data requirements vary on a case-by-case basis. The project manager shall coordinate with applicant and region to work with the Water Supply and Strategy Analysis Team (WSSA).

D. TWDB staff performs an internal analysis including but not limited to: a water supply over-allocation analysis; identification of potential inter-regional conflicts; confirmation that no new unmet needs result from the substitution.
E. TWDB staff prepares an internal memo considering the proposed change to a regional plan in the context of the associated rule requirements; draft memo to Executive Administrator to include recommendation for approval or denial.
F. If the Executive Administrator approves the substitution, written approval from Executive Administrator will be issued to the RWPG Chair, applicant, and political subdivision. The Board may approve an associated amendment to the state water plan upon the EA's determination (see step 4.)
G. If substitution is denied by the EA, the RWPG may decide to opt for either a minor amendment process (# 2 below) or a full amendment process (#3 below) as appropriate and necessary. Consideration to approve such an action would also require public notice as an agenda item at a regular RWPG meeting.

2. Minor Amendment:

The process for a minor amendment to a regional water plan is described in 357.16 and has significantly less notice requirements than a full regional plan amendment carried out under 31 TAC Ch. 357.11(f), however, certain criteria of the amendment must be met. These include:

(1) does not result in overallocation of an existing or planned source of water;
(2) does not relate to a new reservoir;
(3) does not have a significant effect on instream flows, environmental flows or freshwater flows to bays and estuaries;
(4) does not have a significant substantive impact on water planning or previously adopted management strategies; and
(5) does not delete or change any legal requirements of the plan.

Steps to conduct a minor amendment to the plan are as follows:

A. The entity proposing a revision to the regional water plan requests an agenda item on the RWPG's agenda for consideration of the minor amendment. Such consideration would be a posted agenda item for group action at a regularly-posted public regional water planning group meeting. If the RWPG supports the minor amendment, the RWPG will submit the minor amendment to the TWDB Executive Administrator for approval (required in all cases).
B. Materials to submit to the Executive Administrator include:
    - a cover letter stating the need for the amendment;
    - a summary of the RWPG action taken:
    - evidence that the strategy for the minor amendment meets the criteria listed in 31 TAC Ch. 357.16;
    - information to demonstrate that the strategy that has been fully evaluated in accordance with statute, rule, and contractual technical guidelines; and,

- all relevant data fields in the regional water planning database (DB07) that would require updates in the Source module, WMS module, WUG module, or WWP module, such as population, demands, source availability, water supplies (for a WUG or a WWP) or WMS (for a WUG or a WWP). Data requirements vary on a case-by-case basis. The project manager shall coordinate with applicant and region to work with the WSSA Team.

C. TWDB staff performs an internal analysis including but not limited to: a water supply over-allocation analysis; identification of potential inter-regional conflicts; confirmation that no new unmet needs result from the amendment.
D. TWDB staff prepares an internal memo considering the proposed change to a regional plan in the context of the associated rule requirements; draft memo to Executive Administrator to include recommendation for approval or denial.
E. If the EA determines that the proposed amendment is indeed minor, written EA approval will be issued to the RWPG Chair, applicant, and political subdivision.
F. After receipt of the EA's determination that the amendment qualifies as minor, the RWPG shall conduct a public meeting subject to the Open Meetings Act with at least two weeks notice prior to the public meeting. The public shall have an opportunity to comment at the meeting and the RWPG shall revise the proposed minor amendment, if necessary [31 TAC Ch. 357.16(d)].
G. After adoption of the minor amendment, the regional water planning group shall submit the amendment to the board which shall approve the amendment at its next regularly scheduled meeting per §357.16 (e).
H. The TWDB will then amend the state water plan as appropriate (see #4 below).
I. If the minor amendment is denied by the EA, the RWPG may choose to proceed with a full amendment process (#3 below) as appropriate. Consideration to approve such an action would need to be posted as an agenda item at a regular RWPG meeting.

3. Amendment with Public Hearing and TWDB Board Approval:

The process for a full amendment of a regional water plan is discussed in several portions of 31 TAC Ch. 357 as noted below. A full amendment of a regional water plan is to be conducted when alternative strategy substitution (Process 1 above) or a minor amendment (Process 2 above) are not appropriate. A full amendment is also to be conducted if revisions to projections are necessary. The steps to conduct a full amendment are as follows:

A. The entity requiring a revision to the regional water plan requests an agenda item on the RWPG's agenda for consideration of a full amendment to the plan. Such consideration would be a posted agenda item for group action at a regularly-posted public regional water planning group meeting.
B. The proposed amendment must be a strategy fully evaluated in accordance with statute, rule, and contractual technical guidelines.
C. Before requesting revisions to population and/or water demand projections, planning groups must discuss the issue at a public meeting, for which notice has been posted pursuant to the Open Meetings Act, in addition to being published on the internet and mailed at least 14 days before the meeting to every person or entity that has requested notice of regional water planning group activities. The public will be able to submit oral

or written comments at the meeting, and written comments for 14 days following the meeting.

After this process, the planning group should draft a letter addressed to the Executive Administrator containing the request and data justifying why the request is warranted, as addressed in the technical guidelines for regional water plan development. In addition, planning groups will summarize in the letter any public comments received in response to its request. They should also send an electronic copy of the letter along with a spreadsheet comparing their requested changes with TWDB Board approved projections to their respective project manager who will then forward the material to the director of the Water Resources Planning Division.

Within 45 days of receipt of a request from a planning group for any revisions, staff will consult with the planning group in question and respond to their request.

The directory: "V:\PlanShare\2007 Population Estimates" contains spreadsheets for each region comparing TWDB interpolated population projections for 2007 with current estimates and projections of the Texas State Data Center, which should serve as the primary data source for requests for population projection revisions.

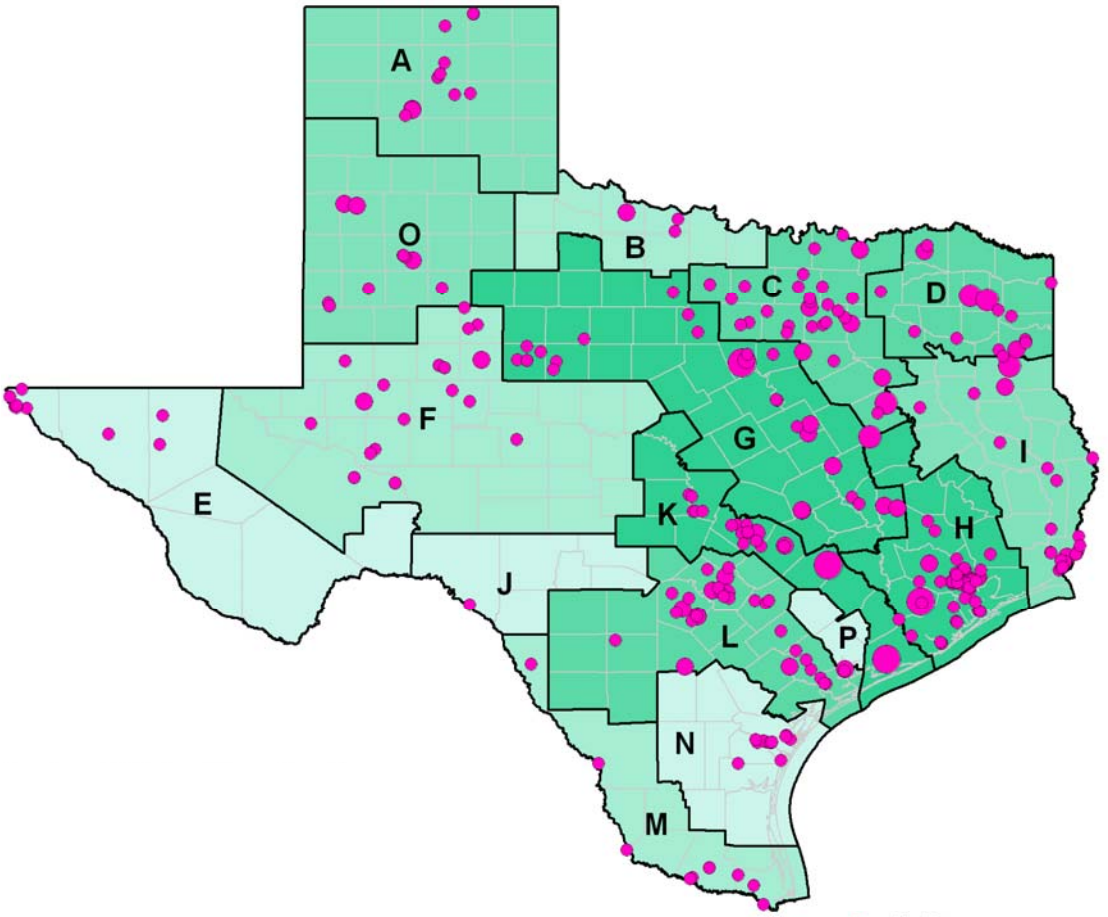
D. The RWPG will need to hold a public hearing at a central location in the region to discuss the proposed amendment. This public hearing must have notice with a minimum of 30 days between the mailed and published notice of the hearing and the hearing date [31 TAC Ch. 357.12(a)(4)-(6) and Ch. 357.12(b)].
E. The RWPG must provide for a 30 days minimum public and agency (including TWDB) comment period following the public hearing and before adoption.
F. TWDB staff performs an internal analysis including but not limited to: a water supply over-allocation analysis; identification of potential inter-regional conflicts; confirmation that no new unmet needs result from the amendment.
G. The RWPG must make the proposed amendment and regional water plan available for public inspection at least one month before the public hearing in one of the designated public venues defined in 31 TAC Ch. 357.12(b).
H. The RWPG must adopt the amendment at a RWPG meeting posted under the Texas Open Meetings Act. Adoption must include response to public comment.
I. The RWPG will submit the plan amendment to the TWDB for Board approval. Materials to submit to the Executive Administrator include:
    - a cover letter requesting and stating the need for the amendment;
    - summary of the RWPG actions taken;
    - documentation of the notice and public hearing process;
    - evidence that the strategy has been fully evaluated in accordance with statute, rule, and contractual technical guidelines;
    - all relevant data fields in the regional water planning database (DB07) that require updates in the Source module, WMS module, WUG module, or WWP module, such as population, demands, source availability, water supplies (for a WUG or a WWP) or WMS (for a WUG or a WWP). Data requirements vary on a case-by-case basis. The project manager shall coordinate with applicant and region to work with the WSSA Team. The project manager must also work with the team manager or division director to place the item on a TWDB Board agenda and develop the associated Board item (e.g. memo).

J. Once approved by the TWDB Board, the Executive Administrator will notify the RWPG Chair, applicant, and political subdivision in writing.
K. The TWDB will then amend the state water plan as appropriate (see #4 below).

4. Amendment of State Water Plan:
According to 31 TAC Ch. 357.11(g)(3) and 357.16(e) and (f), the Board will determine and direct if amendments to the state water plan are necessary.

a. **Amending the SWP following substitution of an alternative strategy** – A Board item needs to be prepared following adoption of the substitution by the RWP.
b. **Amending the SWP following a minor amendment** – A Board item is prepared for the next scheduled Board meeting following the EA determination and after the RWPG adopts it's amendment.
c. **Amending the SWP following an amendment** with public hearing – The project manager will coordinate placing the item for approval on the Board agenda and developing the Board item.

Water Demand Projections for Power Generation in Texas - DRAFT



Prepared for

Texas Water Development Board

Bureau of Economic Geology
Scott W. Tinker, Director
John A and Katherine G. Jackson School of Geosciences
The University of Texas at Austin
Austin, Texas 78713-8924

Water Demand Projections for Power Generation in Texas - DRAFT

Prepared for
Texas Water Development Board

under
Contract No.: 0704830756

Carey King, Ian Duncan, Michael Webber[1]

April 30, 2008

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The University of Texas at Austin

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Request for Statements of Interest for Federal Funding under the Texas Environmental Infrastructure Program

The Texas Water Development Board (board) is requesting Statements of Interest (SOIs) from interested political subdivisions. These SOIs will be used to provide the U.S. Congress with a list of projects for funding consideration under the Texas Environmental Infrastructure Program, authorized through the U.S. Army Corps of Engineers (USACE) under Public Law 110-114, the Water Resources Development Act of 2007 (WRDA).

The Texas Environmental Infrastructure Program (Program) provision in WRDA authorizes a $40,000,000 program for water resources projects, "as identified by the Texas Water Development Board." The board will forward a list of eligible SOIs to the U.S. Congress. An SOI is eligible if the project is listed in the State Water Plan and the Regional Water Plan, and if the project has not received funding under WRDA or been previously listed under WRDA. In the event sufficient funds are appropriated, the funds will be distributed directly from the federal government to the political subdivision. The funding will cover 75% of the cost of the project. The funding is also available for discrete portions of an identified project.

Intent and Purpose of Program

The intent of the Program is to provide federal support for the implementation of water management strategies recommended in "Water for Texas – 2007," the Texas State Water Plan and not otherwise authorized under WRDA. The Program will allow the USACE to directly support projects implementing the water management strategies. The funding is also available for discrete portions of an identified project.

The Program offers assistance "in the form of planning, design and construction assistance for water-related environmental infrastructure and resource protection and development projects in Texas, including projects for water supply, storage, treatment and related facilities, environmental restoration, and surface water resource protection and development, as identified by the Texas Water Development Board." The board will categorize the eligible SOIs based on the activity to be funded. The board's objective is to facilitate construction of projects or discrete increments of projects that are being implemented to meet near term water supplies. Near term water supplies means those that will meet project needs for 2020 as identified in the State Water Plan.

Funding Limitations

The $40,000,000 authorized in WRDA is dedicated to a cost-sharing program wherein the federal share of the cost of the project shall be 75%, which may be provided in the form of grants or reimbursements of project costs. The non-federal share of 25% may be provided in the form of materials and in-kind services, including planning, design, construction and management services, as determined to be compatible with, and necessary for, the project. Therefore, design work carried out before the date of the project funded under WRDA may be credited toward the non-federal share. Additionally, the non-federal share may be in the form of a credit for land, easements, rights-of-way, and relocations. Fuller details on eligibility for the non-federal cost-

share will be available upon the release of USACE implementation guidance for the Program. Finally, the eligible applicant may apply for funding of the non-federal 25% share through one of the board's loan funding programs.

General Requirements

Political subdivisions otherwise eligible for funding from the board should submit an SOI to the address below no later than 5:00 p.m. on Friday, April 25, 2008. Responses should be limited to ten pages, excluding necessary maps.

The SOI shall contain the following information:

1. Name and address and geographical jurisdiction of the project sponsor(s);
2. Name, phone number and email address of main points of contact for the sponsor;
3. Name of project as identified in the State Water Plan, "Water for Texas – 2007," and in the applicable Regional Water Plan identified by page number references to the project proposed for funding; and the project shall meet a need for 2020.
4. Description of the physical boundaries of the project and the geographic area and region to be served by the project; the congressional district in which the project is located;
5. Brief description of overall project and estimated total cost of entire project;
6. Brief description of the portion of the project for which federal funding is requested under the Program, and estimated cost, date of the cost estimate, and estimated time to completion of the project;
7. A resolution from the governing body of the political subdivision approving the SOI for federal funds.
   If, due to the schedule for governing body meetings, the applicant cannot provide a resolution by the April 25, 2008 deadline for SOI, then the board will accept:
   (a) a letter from the chair of the governing body or
   (b) a letter from the chief executive of the governing body stating the intent to request a resolution at the next regularly scheduled meeting of the governing body.

Submission of SOI

The SOI shall be submitted by U.S. Mail to:

Mr. Dave Mitamura
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231
(512) 463-7965

The SOI must be received at the above address by 5:00pm, Friday, April 25, 2008.

This Request for Statements of Interest has been reviewed by the TWDB's legal counsel and is in compliance with applicable state and federal laws.

Nominations Process for the
Texas Environmental Flows Science Advisory Committee and
Basin and Bay Area Stakeholders Committees

Persons wishing to volunteer to serve, or to nominate persons to serve on the Texas Environmental Flows Science Advisory Committee, or a Basin and Bay Area Stakeholders Committee may do so by submitting a letter to:

Environmental Flows Advisory Group
c/o Kathleen Ramirez MC-154
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

In the letter each person should state whether they are nominating themselves or someone else to serve on the Texas Environmental Flows Science Advisory Committee or on a basin and bay area stakeholder committee. For each nomination for a basin and bay area stakeholder committee identify the specific basin and bay area stakeholder committee that the nominee wishes to serve on, for example: Trinity, San Jacinto rivers and Galveston Bay; Sabine and Neches Rivers and Sabine Lake Bay; etc.

For each nominee, the letter should include their name and address, phone number(s) and if available a fax number and e-mail address. The letter should also indicate if the individual is willing to serve.

For each individual nominated to serve on a basin and bay area stakeholder committee, the letter must indicate which interest group listed in Water Code §11.02362(f) the person would represent.

The letter should also include a very brief statement of each nominee's background and qualifications.

Nominations will be accepted until the Environmental Flows Advisory Group makes its appointments.

Sam Houston State University

A Member of The Texas State University System

DEPARTMENT OF SOCIOLOGY

April 2008

Dear Texas Resident,

The purpose of this letter is to inform you and members of your household of an upcoming survey regarding water conservation in Texas that will be conducted by researchers from Sam Houston State University. As you may be aware, areas throughout the State of Texas have been experiencing water shortages. This has prompted many municipalities to mandate water conservation practices.

Your household is one of a randomly selected sample that will be asked for opinions on water use and water conservation. In a few weeks your household will receive a questionnaire in the mail. Detailed instructions for completing and returning the questionnaire will be provided.

I recognize that many people feel uncertain about providing details about their household and personal behaviors to strangers. Please note that participation in this study is entirely voluntary. At the same time, the success of this research depends upon getting responses and comments from each of the households in the sample. **All responses and comments will be treated with complete confidentiality.** In no way will respondents' answers be linked with their names at the conclusion of the study. If you have any questions about the upcoming study, please feel free to call me at 936/294-4143.

Thank you in advance for your participation in this study. The results of this study will be used to write a series of reports that will be shared with the Texas Water Development Board, as well as state legislators, local government officials, university scientists, news media, and the general public.

Sincerely,

Gene L. Theodori, PhD
Associate Professor
Sam Houston State University

Si Ud. preferiría recibir esta carta (y el cuestionario adjunto también) en Español, llame gratuitamente a este número: 1-866-232-7528, o mande una carta a la siguiente dirección.

Un saludo cordial,
Gene L. Theodori

Regular Meeting

Agenda Item 13

Next Meeting: TBD

July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

2008

August

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

2008

September

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

2008