

**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