TASK 1: PROJECT ADMINISTRATION

Objective: To manage all administrative functions required to support the Clean Rivers Program (CRP) contract, including:

- informative and timely Progress Reports
- participation in Conference Calls
- participation at CRP meetings
- timely and accurate reimbursement forms with adequate documentation
- efficient cost control to ensure expenses are allowable and applicable
- responsibility for procurement and oversight of subcontractors
- participation in fiscal monitoring reviews
- timely and accurate deliverables that meet the intent of the FY 2008-09 CRP Guidance
- adherence to TCEQ contract provisions
- detailed and reasonable Work Plan development
- financial reporting and budget monitoring
- training to ensure personnel are properly prepared to conduct work under the contract

Task Description: H-GAC project staff will work with the TCEQ's Clean Rivers Program Project Manager and H-GAC's Finance, Internal Audit, Office Services and Program Operations departments to meet all new TCEQ administrative requirements for this contract. The Grants Administration Specialist for H-GAC's Community & Environmental Planning Department will assist with the tracking and documentation requirements for this contract in coordination with TCEQ's Clean Rivers Program contract monitoring staff. H-GAC also will handle all subcontract administration and fiscal monitoring under this task. Equipment purchases will also be reported under this task. All equipment purchases will be updated in the Equipment Inventory Database.

H-GAC intends to meet the Clean Rivers Program voluntary goal of keeping Task 1 administrative costs at or below 10% of the total contract amount. Project staff will keep H-GAC's Clean Rivers Program Steering Committee apprised of project administration issues.

Progress Reports - Progress reports will contain a level of detail sufficient to document the activities which occurred during the appropriate quarter. Progress reports will contain a general description of activities, a detailed tracking of deliverables, and the amount of water quality monitoring which occurred during the quarter. The Progress Report will be in the format provided in Exhibit 1D of the FY08-09 CRP Guidance.

Reimbursement Requests - A Financial Status Report and related forms, and the HUB PAR form will be submitted along with appropriate additional documentation (including updated PEL, Equipment Inventory List, and Budget Revision Request form, when changes occur during the quarter).

Contractor and Subcontractor Evaluations - An annual self-evaluation as well as evaluations of subcontractors will be submitted at the end of each fiscal year.

Procurement Procedures Documentation - Documentation of the procurement process used to solicit, evaluate, pay, and oversee subcontractors, as specified in the FY2008-2009 CRP Guidance, will be developed. This documentation will be maintained in-house and will be made available for review by TCEQ fiscal monitoring staff upon request. For each subcontract, a letter listing the procurement method used and a copy of the executed subcontract will be submitted to the CRP Project Manager. In addition, a Procurement System Certification (Exhibit 1K) will be submitted with the supporting

documentation required with the work plan.

Conference Calls – H-GAC will participate in all scheduled conference calls unless arrangements are made with the TCEQ Project Manager.

Conferences and Training Events – H-GAC will participate in meetings and training events as scheduled by the CRP. All non-CRP conferences and training events need to be pre-approved by the TCEQ prior to incurring costs associated with such events. H-GAC staff, as appropriate, will also continue to attend appropriate conferences and serve on advisory groups related to Clean Rivers Program priorities and objectives. Priority activities include the biennial Texas Water Monitoring Congress, the Annual Texas Water conference co-sponsored by WEAT and AWWA, the Annual EPA Region 6 nonpoint source and watershed management conference, and periodic Texas Water Conservation Association meetings and technical conferences. Some conferences also provide opportunities for Clean Rivers Program outreach activities by project staff, such as the biennial State of the Bay (Galveston Bay) Symposium, ESRI Annual GIS Conference, the annual NALMS conference, and the National Water Quality Monitoring Conference. Quality Assurance staff would also benefit from available NELAC and other Quality Systems Training events as appropriate. H-GAC staff also currently serve on the Texas Water Monitoring Council, the Texas Watch Advisory Council, the Monitoring and Research Subcommittee, and the Water & Sediment Quality Subcommittee of the Galveston Bay Estuary Program. All non-CRP conferences and training events will be pre-approved by the TCEQ prior to incurring costs associated with such events.

Annual Documentation for Desk Review or On-Site Visit - Detailed supporting documentation, in addition to the traditional quarterly documentation, will be made available upon request. The additional supporting documentation will include those items outlined in Exhibit 1B of the FY2008-2009 CRP Guidance. In the case of on an on-site visit, the appropriate Planning Agency personnel will be available during the visit.

FY 2010 - 2011 Work Plan and Supporting Documentation - The Work Plan and supporting documentation will be prepared and submitted as specified in the FY2010-2011 CRP Guidance. Supporting documentation will include, at a minimum: budget by category, budget by task, Personnel Eligibility List, fringe rate methodology, indirect rate methodology, shared supplies cost documentation, equipment purchase request list, equipment inventory, list of tasks that will be sub-contracted, a list of known training events/conferences, and a signed Procurement System Certification. The Work Plan will include the tasks and deliverables outlined in the FY 2010-2011 Guidance and will be negotiated with the CRP Project Manager. A list of all deliverables in due date order will be submitted with the final Work Plan.

Equipment: 1 computer

Deliverables & Due Dates: **September 1, 2007 through August 31, 2008**

A. Progress Reports - December 15, 2007; March 15 and June 15, 2008
B. Reimbursement Forms - December 30, 2007; March 30 and June 30, 2008
C. Annual Self-Evaluation - August 31, 2008
D. Annual Subcontract Evaluations - August 31, 2008
E. Procurement Procedures Documentation - upon execution of the subcontract
F. Participation in CRP Planning Meeting(s) - TBA
G. Additional Submission Documentation for Desk Review or Site Visit - upon request
H. Attendance at CRP training events - TBA
I. Letter indicating that the financial audit report was submitted to the TCEQ Utilities and Districts section - within 270 days of the end of H-GAC's fiscal year (*insert date*)

September 1, 2008 through August 31, 2009

A. Progress Reports - September 15 and December 15, 2008; March 15, June 15, and August 31, 2009
B. Reimbursement Forms - September 30 and December 30, 2008; March 30, June 30, and August 31, 2009
C. Proposed FY 2010 - 2011 Work Plan and Supporting Documentation - May 1, 2009
D. Final FY 2010 - 2011 Work Plan and Supporting Documentation - June 15, 2009
E. Annual Self Evaluation - August 31, 2009
F. Annual Subcontract Evaluations - August 31, 2009
G. Procurement Procedures Documentation - upon execution of the subcontract
H. Participation in CRP Planning Meeting(s) - TBA
I. Additional Submission Documentation for Desk Review or Site Visit - upon request
J. Attendance at CRP training events – TBA
K. Letter indicating that the financial audit report was submitted to the TCEQ Utilities and Districts section - within 270 days of the end of H-GAC's fiscal year *(insert date)*

TASK 2: QUALITY ASSURANCE

Objective: To conduct data collection activities in accordance with an integrated system of quality management activities involving planning, assessment, implementation, training, and quality improvement. This task addresses objectives and processes for:

- Planning and coordination of Basin-wide Monitoring
- QAPP development and implementation
- laboratory quality assurance
- data review, verification, and validation
- oversight of project specifications
- special studies project planning
- Provide training to local Partners

Task Description: H-GAC will continue to assign the Clean Rivers Program Monitoring Coordinator the responsibility of staffing the Regional Monitoring Workgroup (RMW) and maintaining the Regional QAPP. This team member will work closely with the staff member responsible for H-GAC's data management activities.

Regional Monitoring Workgroup - H-GAC will continue to coordinate and develop water quality monitoring strategies through the Regional Monitoring Workgroup (RMW). The workgroup will meet every two months to discuss monitoring needs, problems, successes and changes. Additionally, H-GAC's Monitoring Coordinator is a member of the Galveston Bay Estuary Program (GBEP) Monitoring and Research Subcommittee. Participation will help ensure coordination of effort between the Clean Rivers Program and GBEP.

The Regional Monitoring Workgroup (RMW) is composed of H-GAC CRP staff and representatives from TCEQ Austin, TCEQ Region 12, Texas Parks and Wildlife, Texas Department of Health, GBEP, local Universities, and six local agencies which include Harris County Pollution Control, Environmental Institute of Houston, City of Houston-Health and Human Services, City of Houston-Water Quality Control, City of Pearland and the San Jacinto River Authority. Each agency routinely shall send representatives from their field investigation staff and laboratory staff. The RMW discusses CRP monitoring tasks and deliverables, basin monitoring priorities, training, and upcoming projects. The workgroup serves as the point of contact for H-GAC to provide Quality Assurance (QA) materials to local agencies and subcontractors. This workgroup is also the mechanism through which data management needs and priorities are discussed.

RMW meeting results will be presented to the Technical Advisory Group (TAG) and/or the Clean Rivers Program Steering Committee for review and concurrence with various basin interests. This review process will be used to assess the current monitoring plan and adjust regional monitoring strategies as needed.

Training for Local Agencies - The H-GAC monitoring coordinator will arrange training sessions for local field personnel and sub-contractors as necessary. The TCEQ SWQM staff, H-GAC staff, local agency staff or vendors will conduct training sessions. Training may cover sampling techniques for field parameters, bacteria, dissolved metals, and biological monitoring or the use of new field equipment, e.g.., multi-probe meters or flow meters. All training sessions will be coordinated with the TCEQ Project Manager.

NELAC Accreditation Activities - The ability of laboratories to demonstrate their competence will become more important as TCEQ moves toward a Performance Based Measurement System, in which the burden of proof of the applicability and quality of testing lies primarily with the laboratory. The National Environmental Laboratory Accreditation Conference (NELAC) Standard provides uniform requirements for

accreditation of environmental laboratories. H-GAC will insure the review, update and verification of a laboratory's NELAC specified standard operating procedures, standardized quality systems, including requirements for management qualifications; documentation of policies and procedures; calibration and maintenance of equipment; quality control; qualifications and training of personnel; sample integrity procedures; management of audit findings and corrective actions; and provide comprehensive oversight of the entire system to ensure performance. Accreditation minimizes the risk of making decisions based on data of doubtful authenticity.

As per TCEQ requirements, all laboratories submitting data to the Clean Rivers Program must be NELAP certified. This cost estimate presents the required TCEQ annual accreditation fees as well as semi-annual verification checks from a TCEQ accredited third party vendor.

The costs associated with NELAC activities are shown in the table below:

	HHS (North)	HHS (South)	WQC	HC
Accreditation / Renewal (TCEQ)	1,450	1,450	1,450	1,450
PT Samples (semi annual)	1,300	1,300	1,289	1,306
Annual Total	**4,051**	**4,051**	**4,029**	**4,061**

Basin-wide QAPP - H-GAC staff will develop a Regional Quality Assurance Project Plan (QAPP) with input from the RMW and the TAG. The Basin-wide QAPP will be submitted to the TCEQ in the TCEQ-approved shell format. Only those sites and NELAC accredited parameters (NOTE: as of September 1, 2007 all labs should be compliant with the NELAC standards, labs must be accredited by July 1, 2008) covered by the QAPP will be included in the document. H-GAC will address all TCEQ comments and submit the revised QAPP to the TCEQ within 30 days after receiving comments from the TCEQ.

H-GAC will secure written documentation from participants under the QAPP stating their awareness of and commitment to requirements contained in the QAPP and any appendices and amendments. This documentation will be maintained as part of H-GAC's quality assurance records. Copies of all QAPP Receipt and Commitment letters will be forwarded to the TCEQ within 60 days of TCEQ approval. H-GAC will distribute the QAPP to all participants (including the laboratory). Documentation of distribution will be maintained H-GAC and be available for review during a TCEQ monitoring systems audit.

Sections of the Basin-wide QAPP will be posted to the H-GAC's CRP Web page. These sections include the monitoring program or project objectives, measurement performance specifications (i.e., Table A7), appendices, and either post the monitoring schedule and maps of sampling sites, or provide a link to the coordinated monitoring schedule (CMS) website with disclaimer that states the CMS includes stations monitored by other entities.

QAPP Amendment to Appendix B - The monitoring schedule in Appendix B of the Basin-wide QAPP will be updated for the second year of the contract biennium after the annual coordinated monitoring meeting. This special type of QAPP amendment will be submitted using the TCEQ-approved shell format. Only the sites covered by the H-GAC's QAPP will be included in Appendix B of the QAPP.

Planning for Special Studies or Permit Support Monitoring - Special studies and monitoring projects to support permits will be systematically planned in consultation with TCEQ staff, H-GAC and any Subcontractors to address the elements of the QAPP. Due to the length of time necessary for project planning and QAPP development, more than one planning meeting may be needed before a final QAPP can be submitted for approval.

The H-GAC Agency Project Manager will coordinate with the TCEQ to establish the planning team, schedule the meeting, distribute meeting materials in advance of the meeting, facilitate the meeting, and prepare meeting minutes. H-GAC will submit planning material for the meeting to all participants one week prior to the meeting. Meeting materials will include, as appropriate, a problem definition, as currently understood, a description of budget, personnel and schedule issues, maps, information on past or on-going studies, historical water quality data, water quality inventory results, wastewater discharge information, known or expected sources of contamination, existing monitoring sites, landuse information, etc. The information developed during the planning meeting will be incorporated into a QAPP appendix. The QAPP appendix will be submitted to the TCEQ using the TCEQ-approved shell format.

QAPP Appendices - Special studies and permit support monitoring projects that have different objectives than those described in the Basin-wide QAPP will be incorporated into the QAPP as appendices after they are thoroughly planned in consultation with the TCEQ. The QAPP appendices will be written in the TCEQ prescribed format and reference sections of the Basin-wide QAPP as appropriate, and otherwise address information that is unique to the project. Unique aspects of special projects will include the problem definition, the task description, measurement performance specifications, sample design rationale, sampling methods requirements, and so on. QAPP appendices will be sent to the TCEQ through the CRP Project Manager. TCEQ comments will be addressed and the document will be modified and resubmitted within 30 days of receipt.

QAPP Amendments & Revisions to Appendices - Changes in parameters, sampling or analytical procedures, project organization, and other items of an existing project necessitates an amendment to the QAPP and/or Revisions to Appendices. Amendments and revisions will be submitted electronically to the CRP Project Manager on an "as needed" basis in the TCEQ shell format for agency review. QAPP Amendments and Revisions to Appendices will be distributed, upon approval, to all personnel on the distribution list maintained by H-GAC. On-going systematic projects and/or special studies started in the previous biennium will be amended to update the start and end dates for monitoring.

Project oversight - H-GAC will participate in the data portion of the monitoring systems audits and laboratory inspections by the TCEQ.

H-GAC will conduct audits of the regional monitoring systems in two ways. First, the ambient monitoring program participants will be audited once during the contract cycle. This audit will be conducted as either a group effort whereby all agencies/organizations participating in the coordinated monitoring program assemble at one central location on one day, or individually per partner, whichever is deemed most appropriate This audit shall be conducted to assess procedures used by field personnel and to give recommendations for corrective actions. A “monitoring systems audit checklist” will be completed and a follow-up letter will be sent to each audited agency within 30 days. If no non-conformances are identified, then the report will state as such. If non-conformances are identified during the audit, they will be reported as findings in the audit report. Audit reports will contain references to written specifications, as defined in the QAPP or in a standard operating procedure (SOP). The audited organization will be asked to respond in writing to the report within 30 days. A copy of the audit reports and responses will be submitted as a deliverable to the CRP Project Manager with the progress report no later than the quarter following the one in which the audit was conducted. Audits of local monitoring agencies may be conducted more frequently if necessary. Additional audits may occur if there is a significant staff turnover at a specific agency or if data screening reveals problems with data collection.

Second, H-GAC will complete at least one onsite assessment of all systematic, or special study monitoring performed by subcontractors during each contract period. The audit

may be a readiness review if the contractor has not performed this type of study before and/or it may be a field audit to assess field sampling and data collection techniques. The exact nature of those site visits will be determined during a project planning meeting.

Corrective Action Reports - Issues that may affect data quality and availability will be tracked, addressed, and reported to the TCEQ using the definitions and corrective action strategy laid out in the CRP Guidance. Deficiencies and nonconformances will be addressed in response to deviations associated with sampling activities, chain-of-custody, analytical method requirements, quality control, and data management.

Equipment: 1 computer

Deliverables & Due Dates: **September 1, 2007 through August 31, 2008**

A. Basin-wide QAPP Receipt and Commitment Letters - October 15, 2007
B. Specified sections of the Basin-wide QAPP posted to the Web - October 31, 2007
C. QAPP Appendix B amendment for FY 2009 monitoring - July 31, 2008
D. Planning meetings for Special Studies or Permit Support Monitoring - as needed
E. Planning meeting notes for Special Studies or Permit Support Monitoring- as applicable with progress report
F. QAPP Appendices for Special Studies or Permit Support Monitoring - as needed
G. QAPP Amendments & Revisions to Appendices - as needed
H. Appendix and Amendment QAPP Receipt and Commitment Letters - as needed
I. Participate in TCEQ monitoring systems audit and respond to comments - as needed
J. Conduct on-site oversight assessment of sub-participants, once during each project or once during contract cycle - as applicable
K. On-site project oversight report and response - as applicable with progress report
L. Corrective action report - as needed with progress report

September 1, 2008 through August 31, 2009

A. Draft FY 2010/2011 Basin-wide QAPP - June 15, 2009
B. Final FY 2010/2011 QAPP - August 15, 2009
C. Planning meetings for Special Studies or Permit Support Monitoring - as needed
D. Planning meeting notes for Special Studies or Permit Support Monitoring- as applicable with progress report
E. QAPP Appendices for Special Studies or Permit Support Monitoring - as needed
F. QAPP Amendments & Revisions to Appendices - as needed
G. Appendix and Amendment QAPP Receipt and Commitment Letters - as needed
H. Participate in TCEQ monitoring systems audit and respond to comments - as needed
I. Conduct on-site oversight assessment of sub-participants, once during each project or once during contract cycle - as applicable
J. On-site project oversight report and response - with progress report
K. Corrective action report, as needed - with progress report

TASK 3: WATER QUALITY MONITORING

Objectives: Water quality monitoring will focus on collecting information to characterize water quality in a variety of locations and conditions. These efforts will include a combination of:

- planning and coordinating basin-wide monitoring
- routine, regularly-scheduled monitoring to collect long-term information and support statewide assessment of water quality
- systematic, regularly-scheduled short-term monitoring to screen water bodies for issues
- permit support monitoring to provide information for setting permit effluent limits
- special study, intensive monitoring targeted to:
  - identify sources and causes
  - assess priority water quality issues
  - obtain background water quality information
  - provide information for setting site-specific permit effluent limits
  - evaluate & develop statewide, regional, and site-specific water quality standards

Task Description: In the absence of a single, regional entity that comprehensively monitors water quality across the San Jacinto River Basin and the various coastal basins in the Houston metropolitan area, the regional monitoring approach which H-GAC is pursuing through the Clean Rivers Program involves coordinating efforts among those local agencies which monitor water quality in some portion of the area for their own specialized purposes and with their own organizational approaches. H-GAC's regional Quality Assurance Project Plan (QAPP) is the mechanism for bringing this existing data into the statewide water quality database. The participation of local monitoring agencies in this regional coordination effort has been largely voluntary as these agencies have not received significant Clean Rivers Program funding for their activities.

During FY2008, H-GAC will continue to refine current monitoring efforts in the basins in partnership with the agencies participating voluntarily in H-GAC's Regional Monitoring Workgroup. In addition to the Regional QAPP developed by H-GAC, the main accomplishments to date under this Clean Rivers Program task have been to document the existing monitoring programs that various agencies already have in place in the basins and to improve inter-agency communication through H-GAC's Regional Monitoring Workgroup. The challenge now is to continue to build on these existing programs and determine ways to integrate monitoring activities between agencies to address basin-level and statewide information needs in an even more cooperative and effective manner. The goal is to "institutionalize" a truly regional monitoring strategy under the Clean Rivers Program by working toward cooperative inter-agency agreements through which H-GAC can target funds to supplement and leverage existing monitoring resources in the basins and thereby generate more quality-assured data to support water quality assessment activities, water quality standards refinement as well as current and future Total Maximum Daily Load (TMDL) studies. Project staff will take the Regional Monitoring Workgroup results and recommendations to H-GAC's Clean Rivers Program Steering Committee for concurrence and to enable additional review and comment by various basin interests. The details of the new cooperative monitoring approach for the basins will then be documented in H-GAC's FY2008/2009 QAPP update. Initial funding agreements will be in place during FY2008 based on the results of the regional monitoring evaluation in FY2007.

The key players in the evaluation process will be the Regional Monitoring Workgroup participants that are most directly involved in routine, baseline monitoring (as opposed to agencies with more specialized or mandated monitoring functions): TCEQ Region 12, the U.S. Geological Survey, the Environmental Institute of Houston, the Harris County Pollution Control Department, the San Jacinto River Authority, the City of Pearland, and

all appropriate City of Houston divisions. This core group will define common goals and objectives and also consider goals of the environmental and regulatory communities in the basins. Using the evaluation processes and tools provided in the FY2008-2009 Clean Rivers Program guidance, the group will then set priorities and consider potential scenarios for cooperative monitoring based on the available resources of each agency.

Pending final QAPP approval by the TCEQ, H-GAC and the participating monitoring agencies will begin to implement the regional QAPP in FY2008 and then the updated FY2009 QAPP. Field data and sample analyses completed by the agencies will be transmitted to H-GAC, reviewed and re-formatted by H-GAC staff as needed, and then forwarded to the TCEQ as outlined in the QAPP. Working closely with the TCEQ's Clean Rivers Program Project Manager and Quality Assurance Specialist, H-GAC also will begin to implement the peer review process developed under the QAPP for the multi-agency cooperative monitoring effort in H-GAC's basins. H-GAC and the participating agencies will use the audit methods and tools provided in the Clean Rivers Program guidance to complete this evaluation.

Working with Galveston Bay Estuary Program (GBEP) staff, H-GAC will continue to coordinate all monitoring and data management efforts between the Regional Monitoring Workgroup and the Monitoring and Research Subcommittee. H-GAC also will continue to arrange regional training opportunities and workshops which support cooperative monitoring efforts (e.g., field methods, biological data collection, habitat assessment).

Monitoring Description

Local monitoring agencies participate voluntarily in H-GAC's monitoring program. Clean Rivers Program funds are used to augment their existing monitoring programs in order to further their own program objectives and have access to a much larger dataset. Special studies are developed as needed. Based on local stakeholder input and the results of TCEQ or H-GAC assessments. The seven local agencies involved in this regional monitoring effort are; the Environmental Institute of Houston, Harris County Environmental Public Health Division, San Jacinto River Authority, City of Houston Department of Health and Human Services, the City of Houston Department of Water Quality Control the City of Pearland and the Houston Galveston Area Council. The seven agencies have a combined total of over 310 monitoring sites in the region. Each of the agencies monitoring activities will be coordinated through the Regional Monitoring Workgroup. The coordination reduces monitoring duplication and allows all local agencies to see the data collection efforts of and data availability from other local agencies. Routine Monitoring is scheduled at varying frequencies, which are determined by the parameters of concern for individual streams and/or proximity to a monitoring agency's field office and lab. Frequencies vary from quarterly for some parameters to monthly in highly impacted urban areas (see coordinated monitoring schedule). Water bodies are selected for baseline monitoring if there is a high public interest; it has a high potential for impairment; or there is a need for continuous up-to-date water quality information.

Data collected through routine monitoring is designed to characterize water quality trends and monitor progress in protecting and restoring water quality. This monitoring will provide an overall view of water quality throughout the river and coastal basins. Baseline monitoring will include the collection of basic field parameters at all sites and the collection of bacteria, flow, and conventional chemical parameters at sites where indicated. All laboratories doing bacteriological analysis for this program will be using the IDEXX Method for *E. coli* and/or Enterococcus. Chlorophyll *a* will be sampled on a quarterly basis at stations located in reservoirs and bay segments and coastal bayous. Field filtered orthophosphate will be collected at all sites on a quarterly basis. All monitoring procedures and methods will follow the guidelines prescribed in H-GAC QAPP, the TCEQ *Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)* and the TCEQ

Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Community and Habitat Data (RG-416).

Coordinated Monitoring Meeting – H-GAC will hold an annual coordinated monitoring meeting on the fourth Tuesday of March, each year. Qualified monitoring organizations will be invited to attend the working meeting in which monitoring needs and purposes will be discussed segment by segment and station by station. Information from participants and stakeholders will be used to select stations and parameters that will enhance overall water quality monitoring coverage, eliminate duplication of effort, and address basin priorities. The changes to the monitoring schedule will be entered into the statewide database on the Internet (http://cms.lcra.org) and communicated to meeting attendees. Changes to monitoring that occur during the course of the year will be entered into the statewide database on the Internet and communicated to meeting attendees.

Progress Report
Each Progress Report will indicate the number of sampling events and the types of monitoring conducted in the quarter, to include all types of monitoring.

Special Studies
Status reports of each special study will describe activities during the quarter. The status reports will be submitted along with the Progress Report. To help keep the public and basin stakeholders informed, the Web site will be updated in a timely manner to include key elements of Special Studies' Reports or Summaries (e.g., status reports, executive summary, maps, data analysis).

Continuing Special Studies:

Highland and Marchand Bayou
During the FY2006-2007 biennium, H-GAC and the USGS initiated a systematic monitoring study in the Marchand Bayou and Highland Bayou watersheds. The objective was to improve our understanding of physical and chemical characteristics of Highland and Marchand Bayous by collecting sufficient water quality data in the fresh water and brackish water portions to determine I a dissolved oxygen problem exists and how often it occurs, to determine the aquatic life use throughout the bayous, and to identify the frequency and distribution of the bacterial contamination in these bayous. Data collection consisted of a combination of continuous monitoring and basic parameters, routine sampling for selected water quality constituents, and assessment of various biological metrics.

A data summary was provided to H-GAC in August 2007. The draft and final report for the study will be complete in FY08-09.

Cotton and West Fork Double Bayou
During the FY2006-2007 biennium, H-GAC and the USGS initiated a systematic monitoring study in the Cotton Bayou and West Fork Double Bayou watersheds. The objective was to improve our understanding of physical and chemical characteristics of Cotton and West Fork Double Bayous by colleting sufficient water quality data in the fresh water and brackish water portions to determine if a dissolved oxygen problem exists and how often it occurs, and to determine the aquatic life use in the freshwater portion of the bayous. Data collection consisted of a combination of continuous monitoring and basic parameters, routine sampling for select water quality constituents, and assessment of various biological metrics.

A data summary was provided to H-GAC in August 2007. The draft and final report for the study will be complete in FY08-09.

New Special Studies under consideration at this time are:

San Jacinto River TSS Study

A growing concern that is being identified locally and throughout the State is the impact of sand and gravel mining operations on water quality and aquatic habitat. Routine water quality monitoring rarely identifies high levels of Total Suspended Solids (TSS) because sediments fall out of the water column very rapidly. Therefore, unless field staff are present during a sediment release, high TSS levels may not be detected.

A recent investigation into the status and trends of selected contaminants in Lake Houston as well as in the in-flows suggests that both the eastern and western portions of the San Jacinto River Basin above Lake Houston have differing water quality characteristics including suspended sediment concentrations. Understanding the short-term and long-term temporal changes in the suspended sediment concentrations of inflows into Lake Houston will assist in evaluating the effectiveness of watershed management plans and best management practices utilized to protect downstream drinking water reservoirs and fisheries.

The purpose of this study is (1) to compliment current and past studies conducted by the City of Houston, San Jacinto River Authority, and the US Army Corps of Engineers in the San Jacinto River basin to develop a real-time water quality monitoring network to track changes in water quality on a daily basis. The proposed study will benefit the area by improving understanding of the relationship between sediment and turbidity and possibly other real-time data, and the influence land use and management practices have on stream chemistry.

The existing USGS stream flow gages to be used for this study are above Lake Houston in the San Jacinto River Basin. Real-time specific conductance and turbidity data will be available to the collaborative partners and the public on the USGS world-wide web home page. Mean daily values and results of chemical analysis will be made available upon peer review and approval of results. The redefined or newly developed surrogate relations and load estimates will be published in a USGS Scientific Investigations Report (SIR) sometime in FY2010.

Equipment: None

Deliverables & Dues Dates: **September 1, 2007 through August 31, 2008**

A. Conduct water quality monitoring, summarize activities, and submit with Progress Report - December 15, 2007; March 15 and June 15, 2008
B. Coordinated Monitoring Meeting - March 25, 2008
C. Email notification with summary of changes that Coordinated Monitoring Schedule updates are complete and the link is provided on the agency web site - May 31, 2008
D. Biological Data Report - coordinate due date(s) with TCEQ Project Manager
E. Highland and Marchand Bayous Special Study – Draft Report – February 28, 2008
F. Highland and Marchand Bayous Special Study – Final Report – July 15, 2008
Cotton and West Fork Double Bayous Special Study – Draft Report – January 31, 2008
G. Cotton and West Fork Double Bayous Special Study – Final Report – July 15, 2008
H. TSS Special Study - Status Reports - December 15, 2007; March 15 and June 15, 2008

September 1, 2008 through August 31, 2009

A. Conduct water quality monitoring, summarize activities, and submit with Progress Report - September 15 and December 15, 2008; March 15 and June 15 and August 31, 2009
B. Coordinated Monitoring Meeting - March 24, 2009
C. Email notification with summary of changes that Coordinated Monitoring Schedule

updates are complete and the link is provided on the agency web site - May 31, 2009

D. Biological Data Report - coordinate due date(s) with TCEQ Project Manager

E. TSS Special Study - Status Reports - September 15 and December 15, 2008; March 15 and June 15, 2009

F. TSS Special Study – Data Summary Report – August 31, 2009 (Draft and Final Reports will be completed in FY10-11)

TASK 4: DATA MANAGEMENT

Objectives: To manage a quality-assured water quality monitoring database and transfer data to the TCEQ Surface Water Quality Monitoring (SWQM) database in the required format.

Task Description: H-GAC will continue to work with local monitoring agencies and organizations represented on its Clean Rivers Program Regional Monitoring Workgroup to accomplish the transfer and delivery of basin monitoring data to the TCEQ via H-GAC (under a TCEQ-approved Quality Assurance Project Plan and Data Management Plan). H-GAC will provide verification and validation of all data submitted by local monitoring agencies per requirements of current CRP Guidance. The local agency Data Manager and QAO will be responsible for filling out a Data Summary and submitting it with the data for validation purposes.

Surface water quality monitoring data files, including biological, and special studies data, will be transferred to the TCEQ in the correct format using the TCEQ file structure, along with a completed Data Summary. Electronic Data Correction Request Forms will be submitted to the TCEQ whenever errors are discovered in data already reported to the statewide water quality database. Water quality data approved by the TCEQ will be posted on H-GAC's Web site at least two times per year. H-GAC will continue to upgrade its Data Clearinghouse functionality on its website and investigate options for ease of use by the public. Site characterization information collected by local monitoring agencies, including habitat and factors that affect water quality, will be linked to the water quality database. Water quality data will be provided via a link to the TCEQ's Surface Water Quality Web Reporting Tool (http://ww8/tceq.state.tx.us/SqmisWeb/public/index.faces)

H-GAC will continue to upgrade GIS data management and analysis capabilities, including the incorporation of analysis of water quality information, land cover characteristics, site characterization information, and other factors that affect water quality for each watershed into digital form for use with existing spatial data.

H-GAC will work with its Clean Rivers Program advisory groups to set priorities for ongoing verification of locational data using Global Positioning System (GPS) technology.

Station Location Requests will be submitted as needed to obtain TCEQ station numbers for new monitoring sites.

Equipment: None

Deliverables & Due Dates: **September 1, 2007 through August 31, 2008**

A. Link to the TCEQ's Surface Water Quality Web Reporting Tool – November 31, 2007

B. Surface water quality monitoring data files and Data Summary - December 1, 2007; March 1 and August 1, 2008

September 1, 2008 through August 31, 2009

A. Link to the TCEQ's Surface Water Quality Web Reporting Tool – November 31, 2008

B. Surface water quality monitoring data files and Data Summary - December 1, 2008; March 1 and August 1, 2009

TASK 5: DATA ANALYSIS AND REPORTING

Objectives: Conduct data analysis and develop reports that provide information to describe water quality and identify priority water quality issues for further investigation or action. This work will:

- correlate watershed characteristics with water quality conditions
- highlight areas where water quality appears to be improving
- identify areas where water quality appears to be declining
- support and/or validate the findings of the TCEQ Water Quality Inventory
- support planning of monitoring efforts
- identify areas where nonpoint source management efforts may be applied through the Texas Nonpoint Source Management Program
- provide information for stakeholders to discuss at Steering Committee meetings

Task Description:

Basin Highlights Report

The Basin Highlights Report will follow the outline described in the FY 2008-09 CRP Guidance. The report will include:

- information describing the status of water quality for priority water quality issues
- a summary of water quality monitoring activities for the past year
- maps showing the location of sampling sites and water quality issues
- information on the Steering Committee and H-GAC's CRP Web page

Five copies of the draft and final report will be provided to the TCEQ. The TCEQ will provide comments on the draft report and final approval will rest with the TCEQ. The reports will be made available to Steering Committee members and all basin stakeholders and on H-GAC's Web page.

In odd numbered years, when no Basin Summary Report is due, the Basin Highlights Report will be a one or two page hand-out highlighting the past year's activities and an overview of priority water quality issues for the year. A table of *Impairments* and *Concerns* will accompany the report that includes information to characterize water quality conditions such as sources and causes (see Exhibit 5B of the CRP Guidance).

Equipment: 1 computer

Deliverables & Due Dates:

September 1, 2007 through August 31, 2008

A. Draft Basin Highlights Report - February 15, 2008
B. Final Basin Highlights Report - May 15, 2008
C. Post to Internet - Basin Highlights Report - July 15, 2008

September 1, 2008 through August 31, 2009

A. Draft Basin Highlights Report (hand-out and table of impairments and concerns) - February 15, 2009
B. Final Basin Highlights Report (hand-out and table of impairments and concerns) - May 15, 2009
C. Post to Internet - Basin Highlights Report - July 15, 2009

TASK 6: STAKEHOLDER PARTICIPATION & PUBLIC OUTREACH

Objectives: Enhance and support participation of "stakeholders" (including the general public and other interested parties) in development of water quality objectives and priorities for the basin, and CRP as a whole. Stakeholder involvement in helping determine the direction of each basin's activities is crucial and should be accomplished through both the Steering Committee process, and other public participation, outreach, and education activities. To accomplish this Planning Agencies should follow the FY 2008-09 CRP Guidance to:

Coordinate and lead a basin-wide Steering Committee that serves as the focus of public input. To support this, the Steering Committee shall meet publicly and assist with:

- Development and review of basin priorities and objectives that address water quality problems and pollutant sources
- Review, modification, and approval of the Basin Summary Report.
- Development, review, and determining effectiveness of the CRP work plan, and the use, and allocation of the program's costs and funds
- Development, review, and determining effectiveness of the basin's watershed monitoring and assessment program (including the coordinated monitoring schedule)
- Development and review of strategies for increasing involvement of private citizens/organizations and providing a forum for stakeholder ideas and concerns

Engage the public through public participation, outreach, and education activities that support CRP program goals and priorities. To support this, Planning Agencies should:

- Provide forums for citizens to contribute their ideas and concerns to the process
- Participate in public information and education activities to increase public awareness about basin water quality issues
- Communicate information on water quality issues so that priorities may be set considering local, regional, state, and federal needs
- Support stakeholders and other programs in addressing water quality issues
- Provide and disseminate information via the Internet
- Expand the role of the public in water quality management issues whenever possible

Task Description: To ensure a comprehensive watershed assessment program, H-GAC will provide opportunities for the participation of "stakeholders" and other interested parties in development of water quality objectives and priorities for the basin, and CRP as a whole. Stakeholder involvement will be accomplished through both the Steering Committee process, and other public participation, outreach, and education activities following the FY 2008-09 CRP Guidance.

Basin Steering Committee & Meetings - So that the different interests, concerns, and priorities of each watershed are addressed, H-GAC will work to ensure that it's Basin Steering Committee includes stakeholder volunteers from across the basin that the represent the groups identified in the FY 2008-09 CRP Guidance.

At the beginning of the biennium H-GAC will contact the Steering Committee members to promote and confirm continued participation. If specified groups are not represented, efforts will be made to recruit replacements before the next scheduled meeting. To engage new members and increase participation, H-GAC will take every opportunity to promote the CRP and involvement in the Steering Committee, including use of H-GAC's Web.

Basin Steering Committees will meet publicly and stakeholder should be involved in development of the meeting agenda. To meet goals and coordination requirements of

CRP Guidance, H-GAC will conduct at least one Steering Committee Meetings during the latter half of the first contract year and two meetings during the later half of the second contract year. Additional sub-committees, or other public meetings may also be held to help complete the requirements. Besides designated meetings, efforts will be made to include additional stakeholder participation to ensure the various interests of each basin and watershed are represented.

H-GAC will design and distribute a pre-meeting questionnaire (following FY 2008-09 CRP Guidance) to all Steering Committee members and other interested stakeholders to solicit input/feedback towards meeting agenda development. Along with the priority agenda topics identified in the CRP Guidance, Steering Committee Meetings will also include additional topics that have been identified to be of significant interest to stakeholders. A final meeting announcement and agenda will be made available at least 30 days prior to the meeting by:

- written invitations/announcements (including mail, e-mail, or fax)
- announcement placed on H-GAC's Web site
- public posting notification and/or press releases provided to local newspapers
- C&E Department Newsletter

After each Steering Committee or Subcommittee Meeting, H-GAC will ensure all stakeholder input and comments, decisions, and any other meeting accomplishments reached are incorporated and/or addressed. For all Steering Committee, subcommittee, or other CRP public meetings a copy of the meeting agenda; a meeting summary and/or copy of meeting minutes; and a list of attendees will be included in the Progress Report.

Public Participation & Outreach - Enhancement of CRP public participation, outreach, and education in is a primary program goal. H-GAC, with Steering Committee input, will achieve this by:

1.) Expanding the role of the public in water quality management issues by promoting CRP and the Steering Committee as a forum for citizen input. To accomplish this, H-GAC will:

- Continue to support the monthly *Community & Environmental Planning Department Newsletter* that contains articles about relevant issues and distribute it via the Environmental Concerns & Issues Mailing list maintained by H-GAC.

- Sponsor booths at local events such as the State of the Bay Symposium, where the public and stakeholders have the opportunity to talk with staff and pick up literature.

- Post information regarding meetings, brochures, and reports on the H-GAC web site.

2.) Providing information necessary to balance basin priorities and increase public awareness of local water quality, and water resource issues. To accomplish this, H-GAC will:

- Participate fully in content development and promotion of the Region's Envirocast program. Water quality related news pieces will be developed and aired during the weather segment on a local network's evening broadcast. Frequency of broadcasts will be determined by the local news station.

- Continue to produce and distribute maps and brochures from the "What Watershed Do You Live In?" series. Continue to contract the production and installation of watershed signs for selected watersheds.

- Continue to produce and distribute its Watershed Brochure Series. The two brochures highlighted during this contract period include one for the Spring Creek watershed and one addressing the Brays Bayou watershed.

- Assist farmers and ranchers in developing watershed plans through the National Resource and Conservation Service. H-GAC will identify areas of watersheds that meet the criteria of the NRCS, then contact and support eligible parties.

- Focus outreach, particularly concerning bacteria issues, in the watersheds involved in the Houston Metro Bacteria TMDL

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3) Promoting volunteer monitoring of local water bodies, rivers, creeks.

- H-GAC will consider ways to integrate volunteer environmental monitoring efforts under the Texas Watch Program into the regional monitoring strategy. The emphasis will be on targeting volunteer resources to fill gaps and augment agency monitoring programs. Volunteers also can help to address high-priority information needs in coordination with monitoring agencies. All Texas Watch activities will continue to be conducted in accordance with the state-wide Texas Watch Quality Assurance Project Plan, although H-GAC's regional QAPP also will need to document any volunteer data collection efforts expected to support the regional monitoring strategy.

- Continue to fulfill its responsibilities and objectives as a Texas Watch Partner by working with local groups and industries to build partnerships H-GAC staff will continue to work with these partners to set annual priorities and develop a coordinated activities schedule. H-GAC also will continue to evaluate the maximum number of volunteers that the cooperating partners can support in the area with current staff and resources.

- H-GAC will distribute at least 12 "seed" kits and miscellaneous supplies in FY2008 and 15 "seed kits" and miscellaneous supplies in FY2009, in support of local volunteers.

- H-GAC staff will continue to participate in the annual Texas Watch Meeting of the Monitors and the state-wide Partners Meeting and will assist in conducting an annual regional symposium to encourage networking among area volunteers and interaction between volunteer and professional monitors.

- All Texas Watch activities will be handled by H-GAC's Texas Watch Volunteer Coordinator H-GAC will convene and support a Volunteer Monitoring Workgroup. Representatives from the region will be asked to attend meetings at least three times per year.

For any public participation, outreach, or volunteer monitoring activities, a copy of the activities summary, materials produced/distributed by H-GAC, and a list of participants will be included in the Progress Report.

Because the internet is a very important tool for providing information, increasing stakeholder and public awareness, and improving involvement in the CRP, H-GAC will develop, maintain, and update, and report on their Web site as specified in the FY 2008-09 CRP Guidance.

H-GAC will also attend the CRP Stakeholder's Workgroup Meetings.

Equipment: 1 Computer

Deliverables & Due Dates: **September 1, 2007 through August 31, 2008**

A. Contact Steering Committee members to promote/confirm participation and review response against Membership Guidelines - November 30, 2007
B. Document that Web site meets outlined Web Site Requirements - November 30, 2007
C. Maintain Web site and provide summary of updates and/or copies of revised pages - with Progress Reports
D. Hold Basin Steering Committee Meeting(s) as necessary to meet CRP requirements – *number and dates as negotiated with CRP Project Manager*
E Distribute Pre-meeting Questionnaire to Steering Committee and interested stakeholders - *60 days prior to meeting dates negotiated with CRP Project Manager*
F. Distribute final announcements and agendas of Steering Committee and other public meetings - *30 days prior to meeting dates negotiated with CRP Project Manager*
G. Meeting Materials - as applicable, with Progress Report
H. Steering Committee Meeting minutes posted to the Web - *45-60 days after meeting*
I. Public Participation & Outreach Activities - with Progress Report
J. Summary of Volunteer Monitoring Activities - with Progress Report
K. Attend CRP Stakeholders Workgroup Meeting - TBA

September 1, 2008 through August 31, 2009

A. Maintain Web site and provide summary of updates and/or copies of revised pages – with Progress Reports
C. Hold Basin Steering Committee Meeting(s) as necessary to meet CRP requirements - *number and dates as negotiated with CRP Project Manager*
C. Distribute Pre-meeting Questionnaire to Steering Committee and interested stakeholders - *60 days prior to meeting dates negotiated with CRP Project Manager*
D. Distribute final announcements and agendas of Steering Committee and other public meetings - *30 days prior to meeting dates as negotiated with CRP Project Manager*
E. Meeting Materials - as applicable, with Progress Report
F. Steering Committee Meeting minutes posted to the Web - *45-60 days after meeting date*
G. Public Participation & Outreach Activities - with Progress Report
H. Summary of Volunteer Monitoring Activities - with Progress Report
I. Attend CRP Stakeholders Workgroup Meeting - TBA

TASK 7: SPECIAL PROJECTS

Objectives: Special projects may be developed to address watershed-specific concerns that may influence water quality as identified by H-GAC and Steering Committee as priority issues for the basin. If more than one project is planned, each one should be defined as a sub-task (Task 7.1, Task 7.2, etc.) with separate plans, deliverables, and budgets. Basin Planning Agencies should work closely with their CRP Project Manager since most of these projects will require meetings to discuss and scope out project plans. Objectives for this task will depend on the project to be addressed.

Task Description:

Regional Land Cover Classification

Classification of the landscape is an integral part of watershed awareness, water quality modeling, as well as an important component in the analysis of water quality data. It also helps to focus in on potential areas of concern for specific parameters (i.e., herbicides and pesticides in agricultural areas, metals or toxics in highly industrialized areas). A land cover classification also aids in developing rates of run-off in areas where there are non-point source concerns.

H-GAC staff will obtain current LANDSAT Thematic Mapper Imagery (30 meter resolution) for the 13 County Region and will complete a conduct land cover classification based on the NOAA Coastal Change Analysis Program Classification Scheme. Identical to the 2002 classification effort, this scheme will consist of six to ten land cover categories. Field verification will be an important part of the classification process and will consist of the manual checking of approximately 60-100 points throughout the region. All field work will be facilitated with GPS technology. An Accuracy Assessment and thorough metadata resources will be completed and made available for the end user.

Classification will be done through a combination of unsupervised and supervised techniques. All techniques and methods employed during the study will be approved by the Technical Advisory Group. Classification will be completed using IDRISI or equivalent image processing software. It is estimated that the land cover classification for the entire region will be concluded at the end of the first year of The FY2008-2009 contract.

Equipment: None

Deliverables & Due Dates:

September 1, 2007 through August 31, 2008

Draft Methodology to TCEQ – November 30, 2007
Final Methodology to TCEQ – January 31, 2008

September 1, 2008 through August 31, 2009

Land Cover Analysis to TCEQ – November 30, 2008