



**Texas State Soil and Water Conservation Board
 Clean Water Act §319(h) Nonpoint Source Grant Program
 FY 2006 Project 06-15**

NONPOINT SOURCE SUMMARY PAGE for the CWA §319(h) Agricultural/Silvicultural Nonpoint Source Grant Program						
Title of Project:	Surface Water Quality Monitoring to Support Development and Implementation of Bacteria TMDLs in the Copano Bay Watershed [Short Title: SWQM for Copano Bay TMDL]					
Project Goals/Objectives:	Provide quality assured surface water quality monitoring data to support development of bacteria TMDLs for Copano Bay and Mission and Aransas Rivers in Aransas, Bee, Goliad, Karnes, Refugio, and San Patricio Counties.					
Project Tasks:	1) Project Administration and Coordination 2) Routine Ambient Surface Water Quality Monitoring 3) Targeted Watershed Surface Water Quality Monitoring 4) Effluent Surface Water Quality Monitoring 5) Quality Assurance 6) Data Management and Final Report					
Measures of Success:	Data of known and acceptable quality are generated for surface water quality monitoring (routine ambient, targeted watershed, and effluent) of the Copano Bay (Segment 2472) watershed, including Segments 2001 and 2002 (Mission River Tidal and Non-tidal) and Segments 2003 and 2004 (Aransas River Tidal and Non-tidal) for field, conventional, flow (non-tidal river segments), and bacteria parameters.					
Project Type:	Statewide (); Watershed Implementation/Education (); Watershed Planning/Assessment (X); Watershed Protection ()					
Status of Waterbody: 2008 Water Quality Inventory and 303(d) List	<u>Segment ID:</u>	<u>Parameter:</u>	<u>Category:</u>			
	2472	bacteria (oyster waters)	5a			
	2001	bacteria (contact recreation)	5a			
	2002	---	2			
	2003	bacteria (contact recreation)	5a			
	2004	---	2			
	2004A	bacteria (contact recreation)	5c			
Project Location:	Copano Bay (Segment 2472) Watershed (including Mission and Aransas Rivers) in Aransas, Bee, Goliad, Karnes, Refugio, and San Patricio Counties					
Key Project Activities:	Hire Staff (X); Monitoring (X); Regulatory Assistance (); Technical Assistance (); Education (); Implementation (); Demonstration (); Other ()					
NPS Management Program Elements:	<ul style="list-style-type: none"> • Element One (STG 1A; STG 1B; STG 1C; STG 1D; STG 1E) • Element Two • Element Five 					
Project Costs:	Federal:	\$214,388	Non-Federal:	\$218,178	Total:	\$432,566
			TSSWCB State GR	\$ 75,253		
			Cooperator Match	\$ 142,925		
Project Management:	Nueces River Authority					
Project Period:	December 1, 2006 – May 31, 2011					

Part I – Applicant Information

Applicant							
Project Lead	Rocky Freund						
Title	Deputy Executive Director						
Organization	Nueces River Authority						
E-mail Address	rfreund@nueces-ra.org						
Street Address	1201 N. Shoreline Blvd.						
City	Corpus Christi	County	Nueces	State	TX	Zip Code	78401
Telephone	361-653-2110			Fax	361-653-2115		

Project Partners	
Names	Roles & Responsibilities
Nueces River Authority (NRA)	Perform and supervise all work described in tasks. Provide non-federal match.
Texas Commission on Environmental Quality (TCEQ)	Provide non-federal match through Clean Rivers Program and Surface Water Quality Monitoring Program funds. Provide coordination of TMDL activities with TSSWCB.
Texas State Soil and Water Conservation Board (TSSWCB)	Provide state oversight and management of all project activities. Ensure coordination of activities with TCEQ. Provide federal and state funding.
University of Texas at Austin – Center for Research in Water Resources (CRWR)	TCEQ contractor conducting watershed modeling for TMDL project; will utilize data collected through this project.
Texas A&M University – Corpus Christi (TAMU-CC)	Conduct bacteria sample laboratory analysis.

Part II – Project Information

Project Type									
Surface Water	<input checked="" type="checkbox"/>	Groundwater	<input type="checkbox"/>						
Does the project implement recommendations made in a completed Watershed Protection Plan or approved TMDL Report or Implementation Plan?						Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
If yes, identify the document.									
If yes, identify the agency/group that developed and/or approved the document.						Year Developed	<input type="checkbox"/>		

Watershed Information				
Watershed Name(s)	Hydrologic Unit Code (8 Digit)	Segment ID	305(b) Category (2008)	Size (Acres)
Copano Bay	12100405	2472	5a	48,090 (Bay only) 223,594 (entire HUC)
Mission River	12100406	2001, 2002	5a	664,218
Aransas River	12100407	2003, 2004	5a	546,245

Project Narrative

Problem/Need Statement

Copano Bay is located in the San Antonio–Nueces Coastal Basin. The bay covers parts of Aransas and Refugio counties, while the watershed also encompasses Bee, Goliad, Karnes and San Patricio counties. Mission Bay and Port Bay are sub-bays of Copano Bay and are included in Segment 2472. Segment 2472 is the receiving body of the Mission and Aransas Rivers. Mission River Above Tidal (Segment 2002) begins at the confluence of Blanco and Medio Creeks in Refugio County and is 9 miles in length. Mission River Tidal (Segment 2001) begins at a point 4.6 miles downstream of US 77 in Refugio County, is 19 miles in length, and flows into Mission Bay. Aransas River Above Tidal (Segment 2004) begins at the confluence of Poesta and Aransas Creeks in Bee County and is 35 miles in length. Aransas River Tidal (Segment 2003) begins at a point one mile upstream of US 77 in Refugio/San Patricio County, is 6 miles in length, and flows into Copano Bay. The Aransas River forms a portion of the boundary between Refugio and San Patricio Counties, from the Bee County line to the bay.

According to the *2008 Texas Water Quality Inventory and 303(d) List*, Copano Bay (Segment 2472) is impaired for bacteria in oyster waters (category 5c) in the area along the southern shore including Port Bay and the area near Bayside.

Mission River Tidal (Segment 2001), is impaired for bacteria for contact recreation. Aransas River Tidal (Segment 2003) is impaired for bacteria for contact recreation and has a concern for orthophosphorus. Aransas River Above Tidal (Segment 2004) has concerns for low dissolved oxygen, nitrate, orthophosphorus, and total phosphorus. Aransas Creek (Segment 2004A) is impaired for bacteria for contact recreation and has a concern for low dissolved oxygen.

A Total Maximum Daily Load (TMDL) study to address the bacteria in oyster waters in Copano Bay was initiated in 2003 by TCEQ. There are two major components to the study. The first is the development of a Bacteria Loadings Model for the Mission and Aransas Rivers sub-basins of the San Antonio–Nueces Coastal Basin. Nonpoint source contributions were based primarily on land use/land cover information and estimated livestock densities of each county. Point source contributions include wastewater treatment facilities (WWTFs), septic systems, and direct deposition by water birds.

The second component of the study is Bacterial Source Tracking for the area around and in Copano Bay. This is a technique to determine sources of fecal contamination in a waterbody. TAMU-CC conducted antibiotic resistance analysis and found contributions from humans/sewage and livestock under high river flow and rainfall events, and ducks. Other wildlife and gulls contributed relatively little contamination.

The Texas Department of State Health Services (DSHS) uses fecal coliform as the indicator bacteria to assess bacteria contamination in oyster waters. TCEQ uses *E. coli* and enterococcus as the indicator bacteria to assess bacteria contamination in fresh and marine waters, respectively, for contact recreation use. This *SWQM for Copano Bay TMDL* project will collect fecal coliform, *E. coli*, and enterococcus samples at all locations.

TCEQ has hosted several public meetings regarding the TMDL project for Copano Bay. Stakeholders at those meetings have expressed concern regarding the limited dataset, both in number of samples used in the analysis and in the geographic extent of samples. SWQM data collected through this project may be utilized to better understand fate and transport mechanisms of bacteria in the Copano Bay watershed. SWQM data collected through this project may be utilized to enhance the TMDL model, as well as, to clarify the 5a impairments in the tidal portions of Mission and Aransas Rivers. Additionally, SWQM data collected through this project may be utilized to monitor water quality improvement and implementation progress of any TMDLs adopted for the Copano Bay watershed.

Project Narrative

General Project Description

Currently, routine ambient water quality data is collected quarterly at 4 river stations and 3 bay stations by NRA (12943, 12944, 12947, 12952, 12945, 13404, and 13405); and at two bay stations by TCEQ (14783 and 17724).

This project will generate data of known and acceptable quality for surface water quality monitoring of river stations on Segments 2472 (Copano Bay), 2001/2002 (Mission River), and 2003/2004 (Aransas River) for field, conventional (TSS and turbidity), flow (non-tidal river segments), and bacteria parameters to support the TMDL for bacteria in oyster waters in Copano Bay in Aransas and Refugio Counties. This *SWQM for Copano Bay TMDL* project will provide for surface water quality monitoring for 44 months. Three types of surface water quality monitoring will be conducted: routine ambient, targeted watershed, and effluent.

This *SWQM for Copano Bay TMDL* project will provide for up to 33 surface water quality monitoring events through May 31, 2011 at up to 26 sites. From October 2007 through October 2009, the project collected data during 6 dry weather events and 4 wet weather events. Beginning November 2009, monthly sampling will be conducted. Specific sampling sites will be re-evaluated each year. WWTFs will be sampled during each of the sampling events if feasible. There are 16 permitted WWTFs in the Copano Bay watershed, 12 that discharge into the watershed. Coordination with TPDES permittees and TCEQ will be required. TCEQ will collect fecal coliform samples for NRA during their routine quarterly sampling, and NRA will add *E. coli*, enterococcus, and fecal coliform to its samples (when not already included) during routine quarterly sampling.

NRA will conduct most of the work performed under this project including technical and financial supervision, preparation of status reports, surface water quality monitoring sample collection, and data management. Bacteria analysis will be conducted by the TAMU-CC Microbiology Laboratory and conventional data analysis will be performed by the Lower Colorado River Authority (LCRA) Environmental Services Laboratory under NRA's current agreements for Clean Rivers Program (CRP) data analysis. NRA will participate in the Copano Bay TMDL stakeholder meetings in order to efficiently and effectively achieve project goals and to summarize activities and achievements made throughout the course of this project.

The sampling period extends for 44 months through May 2011. The specific sites are identified in the QAPP but at least 37 potential sites have been identified, beyond the 9 sites currently being sampled quarterly. Most of the sites are located on unclassified tributaries of the Mission and Aransas Rivers.

NRA will develop and implement a QAPP to ensure water quality data of known and acceptable quality are generated through this project. See table on page 5 and map on page 6 for all monitoring sites. Existing NRA and TCEQ sites and WWTF discharge locations are included on the map. NRA will manage monitoring data for use in support of the TMDL for bacteria in oyster waters in Copano Bay. NRA will submit monitoring data to TSSWCB for inclusion in the TCEQ SWQM database (SWQMIS).

NRA will post monitoring data to the NRA website in a timely manner. NRA will summarize the results and activities of this project through inclusion in NRA's Clean Rivers Program Basin Highlights Report and/or Basin Summary Report. Additionally, the results and activities of this project will be summarized in the TMDL for bacteria in oyster waters in Copano Bay.

Federal funds will provide for water quality sample collection and analysis of water quality samples. TSSWCB will provide funds sourced from state general revenue to support additional analysis of samples. NRA and TCEQ CRP (through NRA) will each provide portions of the non-federal (cooperator) match.

Potential Monitoring Locations				
Station ID	Lat_dd	Long_dd	Task	Short Description
12943	28.183332	- 97.212502	2 – ROUTINE 3 – TARGETED	MISSION RIVER AT FM 2678
12944	28.088333	- 97.278893	2 – ROUTINE 3 – TARGETED	MISSION RIVER ABOVE TIDAL AT US 77
12945	28.077999	- 97.221161	2 – ROUTINE	COPANO BAY AT FM 136
12947	28.121666	- 97.309723	2 – ROUTINE 3 – TARGETED	ARANSAS RIVER TIDAL AT FM 629
12952	28.282639	- 97.622139	2 – ROUTINE 3 – TARGETED	ARANSAS RIVER NEAR SKIDMORE
13404	28.113611	- 97.025002	2 – ROUTINE	COPANO BAY ALONGSIDE SH 35
13405	27.995001	- 97.167946	2 – ROUTINE	PORT BAY AT FM 188
14783	28.087500	- 97.209167	2 – ROUTINE	COPANO BAY E BAYSIDE
17724	28.116112	- 97.081390	2 – ROUTINE	COPANO BAY SW OUTER LAP BANK
12932	28.392944	- 97.725166	3 – TARGETED	POESTA CREEK AT US 181 BYPASS
12937	28.378334	- 97.683334	3 – TARGETED	POESTA CREEK AT SH 202
12948	28.127899	- 97.427902	3 – TARGETED	ARANSAS RIVER TIDAL AT US 77
17592	28.777000	- 97.691833	3 – TARGETED	ARANSAS CREEK AT US 181
20066	28.308083	- 97.770050	3 – TARGETED	ARANSAS CREEK AT FM 888
CWS02	28.258633	- 97.750450	3 – TARGETED	OLMOS CREEK AT FM 888
CWS03	28.297950	- 97.770133	3 – TARGETED	ELM CREEK AT FM 888
20065	28.161150	- 97.592000	3 – TARGETED	PAPALOTE CREEK AT US 181
20064	28.482967	- 97.656983	3 – TARGETED	MEDIO CREEK AT US 59
CWS06	28.381217	- 97.595367	3 – TARGETED	MEDIO CREEK AT SH 202
20063	28.315983	- 97.339700	3 – TARGETED	MEDIO CREEK AT KELLY RD
CWS08	28.386817	- 97.560583	3 – TARGETED	NEDDY CREEK AT SH 202
20062	28.548508	- 97.411728	3 – TARGETED	SARCO CREEK AT FM 2441
CWS10	28.460239	- 97.413225	3 – TARGETED	SALT CREEK AT FM 2441
20061	28.523075	- 97.607719	3 – TARGETED	BLANCO CREEK AT US 59
CWS12	28.406967	- 97.408833	3 – TARGETED	BLANCO CREEK AT FM 2441
20060	28.411450	- 97.402300	3 – TARGETED	SARCO CREEK AT FM 3410
CWS14	28.345067	- 97.333933	3 – TARGETED	BLANCO CREEK AT SH 202
CWS15	28.331167	- 97.247033	3 – TARGETED	MELON CREEK AT US 77
CWS16	28.288100	- 97.222000	3 – TARGETED	MELON CREEK AT FM 774
CWS17	28.414783	-	3 – TARGETED	COPANO CREEK AT US 77

		97.164033		
13660	28.303617	-	3 – TARGETED	COPANO CREEK AT FM 774
CWS19	28.300600	97.112630	3 – TARGETED	ALAMEDA CREEK AT FM 774
CWS20	28.203908	-	3 – TARGETED	SAUS CREEK AT FM 136
CWS21	28.213358	97.245644	3 – TARGETED	CHOCOLATE CREEK AT FM 136
CWS22	28.524936	-	3 – TARGETED	DOMINGO CREEK AT COUNTY RD WEST OF NORMANNA
CWS23	28.575172	97.796308	3 – TARGETED	TORO CREEK AT FM 623
CWS24	28.616644	-	3 – TARGETED	MEDIO CREEK AT FM 623
20059	28.603647	97.803750	3 – TARGETED	DRY MEDIO CREEK AT FM 623
CWS26	28.643411	-	3 – TARGETED	BLANCO CREEK AT FM 883
CWS27	28.564358	97.830517	3 – TARGETED	MUCORRERA CREEK AT US 59
CWS28	28.361400	-	3 – TARGETED	MEDIO CREEK AT FM 2441
CWS29	28.371572	97.411367	3 – TARGETED	NEDDY CREEK AT FM 2441
CWS30	28.216814	-	3 – TARGETED	DEVLIS RUN AT US 77
CWS31	28.210433	97.351181	3 – TARGETED	SAUS CREEK AT US 77
20058	28.046900	-	3 – TARGETED	CHILTIPIIN CREEK AT BUS 77
20663	28.04772	97.504117	3 – TARGETED	CHILTIPIIN CREEK AT US HWY 89
		-97.488898	3 – TARGETED	

Existing WWTF Outfalls

Map #	WWTF Permit #	Description
1	WQ0004290-000	Holiday Beach WSC (not sampled)
2	WQ0003487-000	Town of Bayside (not operational)
3	WQ0013892-001	Town of Bayside
4	WQ0010705-001	City of Taft
5	WQ0013412-001	TxDOT (evaporation)
6	WQ0010055-001	City of Sinton
7	WQ0013641-001	City of Sinton – Rob and Bessie Welder Park (evaporation)
8	WQ0014119-001	St. Paul WSC
9	WQ0010237-001	City of Odem
10	WQ0014123-001	Tynan WSC
11	WQ0014112-001	Skidmore WSC
12	WQ0010255-001	Town of Refugio
13	WQ0010124-002	City of Beeville
14	WQ0010748-001	Pettus MUD
15	WQ0010156-001	Town of Woodsboro
16	WQ0010124-004	City of Beeville – Chase Field

Water Quality Impairment

Describe all known causes (pollutants of concern) of water quality impairments from any of the following sources: 2008 Water Quality Inventory and 303(d) List, 2008 Summary of Waterbodies with Water Quality Concerns (Secondary Concerns List) or Other Documented Sources (ex. Clean Rivers Program Basin Summary or Basin Highlights Reports).

- 2002 TWQI – Segment 2472 – oyster waters use impairment, nutrient enrichment concern (total phosphorus), and aquatic life use concern
- 2004 TWQI – Segment 2472 – oyster waters use impairment, nutrient enrichment concern (total phosphorus), and aquatic life use concern
- 2006 TWQI – Segment 2472 – oyster waters use impairment
- 2008 TWQI – Segment 2472 – oyster waters use impairment

- 2002 TWQI – Segment 2001 – contact recreation use concern
- 2004 TWQI – Segment 2001 – contact recreation use impairment
- 2006 TWQI – Segment 2001 – contact recreation use impairment
- 2008 TWQI – Segment 2001 – contact recreation use impairment

- 2002 TWQI – Segment 2002 – contact recreation use concern and aquatic life use concern
- 2004 TWQI – Segment 2002 – aquatic life use concern

- 2002 TWQI – Segment 2003 – contact recreation use concern and nutrient enrichment concern (orthophosphorus)
- 2004 TWQI – Segment 2003 – contact recreation use impairment and nutrient enrichment concern (orthophosphorus)
- 2006 TWQI – Segment 2003 – contact recreation use impairment and nutrient enrichment concern (orthophosphorus and nitrate)
- 2008 TWQI – Segment 2003 – contact recreation use impairment and nutrient enrichment concern (orthophosphorus)

- 2002 TWQI – Segment 2004 – aquatic life use concern
- 2004 TWQI – Segment 2004 – aquatic life use concern
- 2006 TWQI – Segment 2004 – aquatic life use concern and nutrient enrichment concern (orthophosphorus, total phosphorus, and nitrate)
- 2008 TWQI – Segment 2004 – aquatic life use concern and nutrient enrichment concern (orthophosphorus, total phosphorus, and nitrate)

- 2006 TWQI – Segment 2004A – contact recreation use impairment and aquatic life use concern
- 2008 TWQI – Segment 2004A – contact recreation use impairment and aquatic life use concern

Project Goals

Data of known and acceptable quality are generated for surface water quality monitoring (routine ambient, targeted watershed, and effluent) of the Copano Bay (Segment 2472) watershed, including the two rivers that flow into it, Segments 2001 and 2002 (Mission River Tidal and Non-tidal) and Segments 2003 and 2004 (Aransas River Tidal and Non-tidal) for field, conventional (TSS and turbidity), flow (non-tidal river segments), and bacteria parameters.

Tasks, Objectives and Schedules						
Task 1:	Project Administration and Coordination					
Costs:	Federal:	\$10,000	Non-Federal:	\$72,000	Total:	\$82,000
Objective:	To effectively coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports.					
Subtask 1.1:	NRA will prepare electronic quarterly progress reports (QPRs) for submission to TSSWCB. Progress reports shall document all activities performed within a quarter and shall be submitted by the 15 th of January, April, July, and October. All progress reports will also be provided to TCEQ.					
	Start Date:	December 1, 2006		Completion Date:	May 31, 2011	
Subtask 1.2:	NRA will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.					
	Start Date:	December 1, 2006		Completion Date:	May 31, 2011	
Subtask 1.3:	NRA will participate in the Copano Bay TMDL stakeholder meetings in order to efficiently and effectively achieve project goals and to summarize activities and achievements made throughout the course of this project.					
	Start Date:	December 1, 2006		Completion Date:	May 31, 2011	
Deliverables	<ul style="list-style-type: none"> Quarterly Progress Reports in electronic format. Reimbursement Forms in either electronic or hard copy format. 					

Tasks, Objectives and Schedules						
Task 2:	Routine Ambient Surface Water Quality Monitoring					
Costs:	Federal:	\$6,689	Non-Federal:	\$49,725	Total:	\$56,414
Objective:	To provide water quality data to support the on-going TMDL for bacteria in oyster ways in Copano Bay by enhancing current routine ambient monitoring regimes.					
Subtask 2.1:	Currently, routine ambient monitoring is conducted quarterly at 7 stations by NRA (12943, 12944, 12945, 12947, 12952, 13404, and 13405) and quarterly at 2 stations by TCEQ (14783 and 17724). NRA and TCEQ will add <i>E. coli</i> , enterococcus, and fecal coliform samples to their routine sampling (when not already included) in support of the project.					
	TAMU-CC Environmental Microbiology Laboratory will conduct the bacteria analysis.					
	Start Date:	September 1, 2007		Completion Date:	May 31, 2011	
Deliverables	<ul style="list-style-type: none"> Water quality data from routine ambient monitoring as reported through Tasks 1 and 6. 					

Tasks, Objectives and Schedules						
Task 3:	Targeted Watershed Surface Water Quality Monitoring					
Costs:	Federal:	\$143000	Non-Federal:	\$77,253	Total:	\$220,253
Objective:	To provide water quality data to support the on-going TMDL for bacteria in oyster ways in Copano Bay by enhancing current routine ambient monitoring regimes through targeted watershed monitoring.					
Subtask 3.1:	Prior to any wet weather sampling events, NRA will conduct field surveys to document stream bed profiles at sites without USGS flow gages. This will allow for flow estimates to be used during times when high flow prohibits actual measurements.					
	Start Date:	September 1, 2007	Completion Date:	May 31, 2011		
Subtask 3.2:	<p>NRA is expecting to conduct targeted sampling at up to 26 sites to support the modeling effort. The specific sites have yet to be determined. These sites may vary for each year of the project and will most likely be located on unclassified tributaries of the Mission and Aransas Rivers. See table on page 5 and map on page 6 for potential sites. The QAPP, as detailed in Task 5, precisely identify sites.</p> <p>Sampling period extends through 44months. Total number of sample events scheduled for collection through this subtask is 33 events. It is anticipated that some of the sites will be dry during some of the events.</p> <p>LCRA's Environmental Services Laboratory will conduct sample analysis for conventional parameters and the TAMU-CC Microbiology Laboratory will conduct bacteria analysis.</p> <p>Field parameters are pH, temperature, specific conductance (conductivity), dissolved oxygen, physical water qualities, current weather conditions, and flow severity. Conventional parameters are TSS and turbidity. Flow parameters (non-tidal segments) are flow collected by gage, electric, mechanical, Doppler, or flow estimates. Bacteria parameters are <i>E. coli</i>, enterococcus, and fecal coliform.</p>					
	Start Date:	September 1, 2007	Completion Date:	May 31, 2011		
Deliverables	<ul style="list-style-type: none"> Water quality data from targeted watershed monitoring as reported through Tasks 1 and 6. 					

Tasks, Objectives and Schedules						
Task 4:	Effluent Surface Water Quality Monitoring					
Costs:	Federal:	\$44,699	Non-Federal:	\$0	Total:	\$44,699
Objective:	To provide water quality data to support the on-going TMDL for bacteria in oyster waters in Copano Bay by enhancing current routine ambient monitoring regimes through effluent monitoring.					
Subtask 4.1:	<p>WWTF end-of-pipe samples will be collected by TCEQ personnel on the days of the targeted monitoring events, if possible. There are 16 permitted WWTFs in the Copano Bay watershed, 12 of which discharge into the watershed. Coordination with TCEQ will be required.</p> <p>LCRA's Environmental Services Laboratory will conduct sample analysis for conventional parameters and the TAMU-CC Microbiology Laboratory will conduct bacteria analysis.</p> <p>Conventional parameters are TSS and turbidity. Bacteria parameters are <i>E. coli</i>, enterococcus, and fecal coliform.</p>					
	Start Date:	September 1, 2007	Completion Date:	May 31, 2011		
Deliverables	<ul style="list-style-type: none"> Water quality data from effluent monitoring as reported through Tasks 1 and 6. 					

Tasks, Objectives and Schedules						
Task 5:	Quality Assurance					
Costs:	Federal:	\$0	Non-Federal:	\$4,800	Total:	\$4,800
Objective:	To develop and implement DQOs and QA/QC activities to ensure water quality data of known and acceptable quality are generated through this project.					
Subtask 5.1:	NRA will develop a QAPP for activities in Tasks 2-4 consistent with <i>EPA Requirements for Quality Assurance Project Plans (QA/R-5)</i> and the <i>TSSWCB Environmental Quality Management Plan</i> .					
	Consistency with Title 30, Chapter 25 of the Texas Administrative Code, <i>Environmental Testing Laboratory Accreditation and Certification</i> , which describes Texas' approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) standards, shall be required.					
	All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the <i>TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)</i> (December 2003) and <i>Volume 2: Methods for Collecting and Analyzing Biological Community and Habitat Data (RG-416)</i> (August 2005).					
	Start Date:	December 1, 2006	Completion Date:	August 31, 2007		
Subtask 5.2:	NRA will implement approved QAPP and submit revisions and amendments to the QAPP as needed.					
	Start Date:	September 1, 2007	Completion Date:	May 31, 2011		
Deliverables	<ul style="list-style-type: none"> QAPP for Tasks 2-4 approved by TSSWCB and USEPA in both electronic and hard copy formats. Data of known and acceptable quality as reported through Tasks 1 and 6. 					

Tasks, Objectives and Schedules						
Task 6:	Data Management and Final Report					
Costs:	Federal:	\$10,000	Non-Federal:	\$14,400	Total:	\$24,400
Objective:	To manage and transfer monitoring data for use in the TMDL for bacteria in oyster waters in Copano Bay and for inclusion in the TCEQ SWQMIS and to develop a final report summarizing the results and activities of the project.					
Subtask 6.1:	NRA will submit Station Location Requests as needed to obtain TCEQ stations numbers for new monitoring sites from activities in Tasks 3-4.					
	Start Date:	December 1, 2006	Completion Date:	May 31, 2011		
Subtask 6.2:	NRA will submit monitoring data from activities in Tasks 2-4 to TSSWCB for inclusion in the TCEQ SWQMIS. Data will be transferred in the correct format using the TCEQ file structure, along with a completed Data Summary.					
	Data Correction Request Forms will be submitted to TSSWCB whenever errors are discovered in data already reported.					
	Start Date:	September 1, 2007	Completion Date:	May 31, 2011		
Subtask 6.3	NRA will post monitoring data from activities in Tasks 2-4 to the NRA website in a timely manner.					
	Start Date:	September 1, 2007	Completion Date:	May 31, 2011		
Subtask 6.4	No independent final report will be prepared for this project.					
	Rather, NRA will summarize the results and activities of this project through inclusion in NRA's Clean Rivers Program Basin Highlights Report and/or Basin Summary Report.					
	Additionally, the results and activities of this project may be summarized in the TMDL for bacteria in oyster waters in Copano Bay.					
	Start Date:	December 1, 2006	Completion Date:	May 31, 2011		

Deliverables	<ul style="list-style-type: none"> • Station Location Request Forms (as needed) in electronic format. • Monitoring data files and Data Summary in electronic format. • Data Correction Request Forms (as needed) in electronic format. • Monitoring data updates posted to the NRA website. • Final report (NRA CRP BHR and/or BSR) at culmination of project in both electronic and hard copy formats.
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Measures of Success
<ul style="list-style-type: none"> • Data of known and acceptable quality are generated for surface water quality monitoring (routine ambient, targeted watershed, and effluent) of Segment 2472 (Copano Bay) and the two rivers that flow into it, Segments 2001 and 2002 (Mission River Tidal and Non-tidal) and Segments 2003 and 2004 (Aransas River Tidal and Non-tidal) and for field, conventional (TSS and turbidity), flow (non-tidal river segments), bacteria and effluent parameters.

2005 Texas Nonpoint Source Management Program Document Reference
Goals &/or Milestone(s)
NPS Management Program - Element One – Explicit short- and long-term goals, objectives and strategies that protect surface and groundwater.
Short-Term Goal One – Data Collection and Assessment – Objective A - Identify surface waterbodies...from the <i>Texas Water Quality Inventory and 303(d) List</i> ...that need additional information to characterize non-attainment of designated uses and quality standards.
Short-Term Goal One – Data Collection and Assessment – Objective B - Ensure that monitoring procedures meet quality assurance requirements and are in compliance with EPA-approved TCEQ and/or TSSWCB Quality Management Plans.
Short-Term Goal One – Data Collection and Assessment – Objective C - Conduct special studies to determine sources of NPS pollution and gain information to target...BMP implementation.
Short-Term Goal One – Data Collection and Assessment – Objective D – Develop and adopt, at the state level, TMDLs, Implementation Plans, and Watershed Protection Plans to maintain and restore water quality in waterbodies identified as impacted by NPS pollution.
Short-Term Goal One – Data Collection and Assessment – Objective E – Conduct monitoring to determine effectiveness of TMDL Implementation Plans, Watershed Protection Plans, and BMP implementation as appropriate.
NPS Management Program - Element Two – Working partnerships and linkages to appropriate state, interstate, tribal, regional, and local entities, private sector groups, and Federal agencies.
NPS Management Program - Element Five – The state program identifies waters and their watersheds impaired by nonpoint source pollution and identifies important unimpaired waters that are threatened or otherwise at risk. Further, the state establishes a process to progressively address these identified waters by conducting more detailed watershed assessments and developing watershed implementation plans, and then by implementing the plans.

Part III – Financial Information

Budget Summary				
Federal 319(h)	\$ 214,388	% of total project (≤ 60%)	50%	
TSSWCB State GR	\$ 75,253	% of total project	17%	
Cooperator Match	\$ 142,925	% of total project	33%	
Total Project Cost	\$ 432,566	Total project %	100%	
Category	Federal 319(h)	TSSWCB State GR	Cooperator Match	Total Project Cost
Personnel	\$ 56,964	\$ -	\$ 72,181	\$ 129,145
Fringe Benefits	\$ 14,221	\$ -	\$ 16,601	\$ 30,822
Travel	\$ 14,254	\$ -	\$ -	\$ 14,254
Equipment	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 1,355	\$ -	\$ 2,000	\$ 3,355
Contractual	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -
Other (Analysis)	\$ 122,286	\$ 75,253	\$ 44,925	\$ 242,464
Total Direct Costs	\$ 209,080	\$ 75,253	\$ 135,707	\$ 420,040
Indirect Costs (≤ 15%)	\$ 5,308	\$ -	\$ 7,218	\$ 12,526
Total Project Costs	\$ 214,388	\$ 75,253	\$ 142,925	\$ 432,566

Budget Justification (Federal)		
Category	Total Amount	Justification
Personnel	\$ 56,964	Will cover salary costs of all NRA and TAMU-CC lab personnel during sampling events. Will also cover portion of salary for contract administration, data analysis, and data management.
Fringe Benefits	\$ 14,221	Will cover costs of Social Security, Medicare, Worker's Compensation, Retirement Employer Match, and Employee Health Insurance benefits for NRA personnel based on percentage of time charged to project.
Travel	\$ 14,254	Will cover cost of all travel expenses for project including rental cars, fuel for rental cars, personal mileage, hotels, and meals.
Equipment	\$ -	
Supplies	\$ 1,355	Will partially cover cost of sampling supplies, e.g. DO membranes, calibrating solutions, etc.
Contractual	\$ -	
Construction	\$ -	
Other (Analysis)	\$ 122,286	Will partially cover cost of lab analysis performed by LCRA and TAMU-CC.
Indirect	\$ 5,308	10% of NRA personnel salaries.

Budget Justification (State GR)		
Category	Total Amount	Justification
Personnel	\$ -	
Fringe Benefits	\$ -	
Travel	\$ -	
Equipment	\$ -	
Supplies	\$ -	
Contractual	\$ -	
Construction	\$ -	
Other (Analysis)	\$ 75,253	Will partially cover cost of lab analysis performed by LCRA and TAMU-CC.
Indirect	\$ -	
SOURCE	TSSWCB will provide \$75,253 in non-federal funds sourced from state appropriations (FY2009 General Revenue) through a TMDL Program Grant to NRA. Funds must be expended between October 1, 2008 and September 30, 2010.	

Budget Justification (Cooperator Match)		
Category	Total Amount	Justification
Personnel	\$ 72,181	Will cover portion of salary for contract administration, data analysis, and data management.
Fringe Benefits	\$ 16,601	Will cover costs of Social Security, Medicare, Worker's Compensation, Retirement Employer Match, and Employee Health Insurance benefits for NRA personnel based on percentage of time contributed to project.
Travel	\$ -	
Equipment	\$ -	
Supplies	\$ 2,000	Will partially cover cost of sampling supplies, e.g. DO membranes, calibrating solutions, etc.
Contractual	\$ -	
Construction	\$ -	
Other (Analysis)	\$ 44,925	Will partially cover cost of lab analysis performed by LCRA and TAMU-CC.
Indirect	\$ 7,218	10% of NRA personnel salaries.