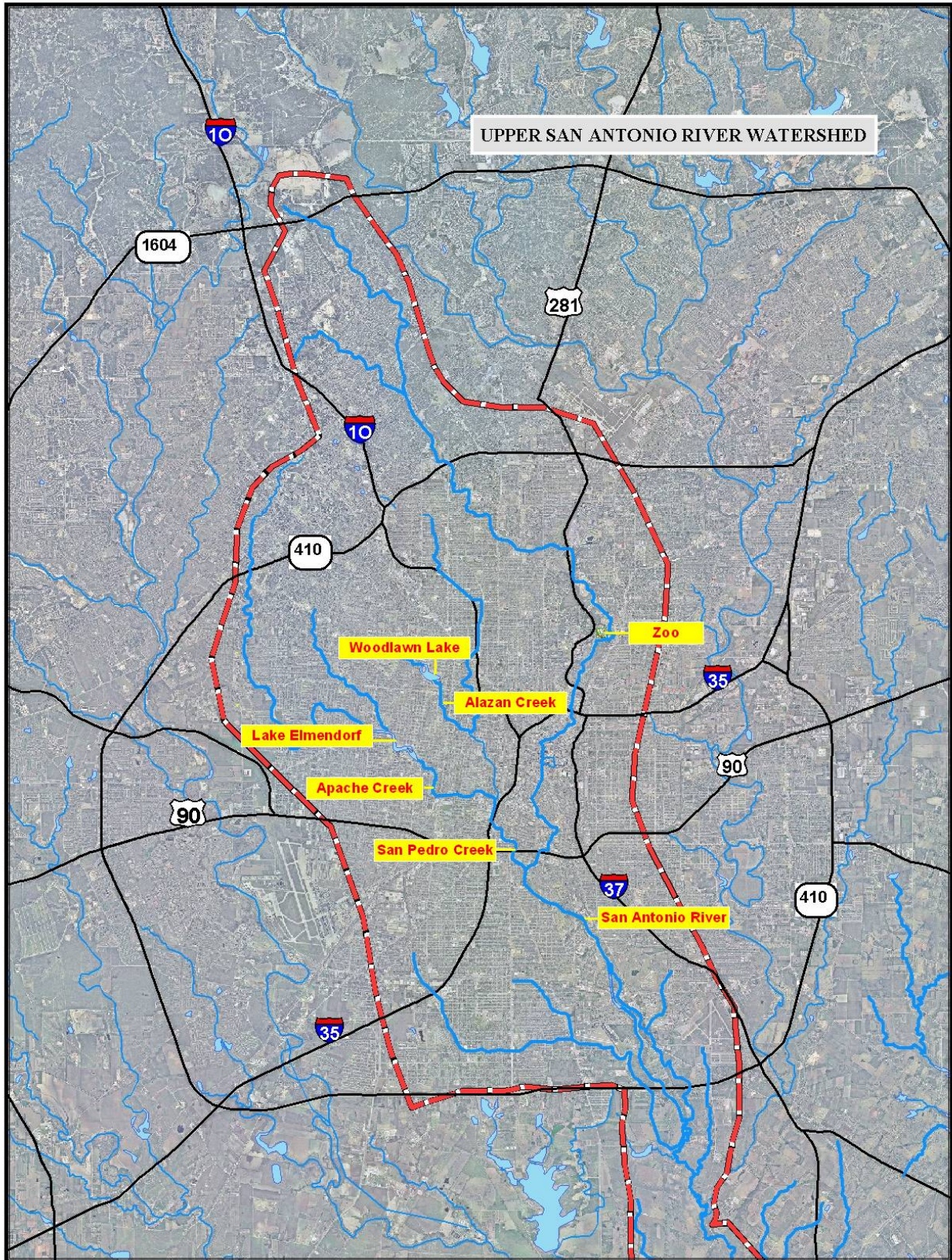


Appendix A. Area Location Map

Upper San Antonio River Watershed Protection Plan Study Area in Bexar County, Texas



Appendix B. Work Plan Scope of Work

The Grantee shall perform the tasks described in this Scope of Work as well as comply with all deadlines as they are more fully set out in this Scope of Work.

Introduction

As the lead water resource planning agency for the San Antonio River Basin, the San Antonio River Authority (SARA) is working in conjunction with the City of San Antonio, Bexar County and other partners to develop a basin wide Watershed Protection Plan (WPP). The first phase of the WPP will focus on the upper third of segment 1911 of the San Antonio River (Planning Area), upstream of South Loop 410 in San Antonio, Texas, with a concentration in the reach identified on the 303(d) list. The Planning Area is an urbanized sub-watershed of the San Antonio River, wholly within the city of San Antonio. The Draft 2000 303(d) List identifies the upper 8 miles of the Upper San Antonio River (segment 1911) as exceeding the contact recreation criterion for coliform bacteria.

The origin of the non-point sources, and their relative contributions, are currently being investigated under Total Maximum Daily Load (TMDL) activities being conducted by James Miertschin and Associates, under contract to the Texas Commission on Environmental Quality (TCEQ). The TMDL is a requirement of the federal Clean Water Act to identify sources of bacteria, determine the capacity of the Upper San Antonio River to assimilate bacterial loadings, and allocating the allowable bacterial loading to contributing sources in the watershed. The on going TMDL will identify the sources and causes of water quality impairments and utilize a project model to establish respective loads. TMDL activities will also develop an Implementation Plan (IP). This Watershed Protection Plan will provide substantial input to the nonpoint source component, also known as the “load allocation” component, of the TMDL IP for the study reach of the Upper San Antonio River. TCEQ TMDL staff will serve as part of the management team for this project to assure that this project is effectively integrated into the development of the overall TMDL IP.

Currently within the Planning Area, SARA is administering the San Antonio River Improvements Project (SARIP). The project is a 10 year, \$173 million investment by the City of San Antonio (COSA), Bexar County, the United States Army Corps of Engineers and SARA, in flood control, amenities, ecosystem restoration and recreational improvements to a portion of the Upper San Antonio River. Improvements will focus on aquatic ecosystem restoration. The SARIP focus is to maintain flood control protection, reduce potential erosion, address non-point source pollution concerns, improve water quality, and create an environment more suitable for recreation and aquatic species. Funding sources for all of the amenities and pollution management features to the SARIP have yet to be identified and implementation is dependent on funding. In the future, SARA and partners are intending to leverage available resources with 319 Grant funds in order to implement BMPs to the SARIP.

In an effort to enhance the SARIP and improve and protect water quality through out the Planning Reach, a Watershed Protection Plan (WPP) would serve as a guide to address non-point source pollution. The overall water quality goal of the implemented WPP is to reduce bacteria levels so that the uppermost reach of the Upper San Antonio River is compliant with State Water Quality Stream Standards. Phase 1 of the WPP will compliment the TMDL by establishing the framework needed for implementation through public outreach, awareness, and input efforts, as well as collaboration with partners and stakeholders. SARA, Bexar County and the City of San Antonio are working together under an inter-local agreement to create an integrated management system to most effectively address storm water, flood control, and water quality issues in the watersheds in Bexar County and between multiple local government jurisdictions.

Coordinated management of flood control and storm water issues in Bexar County promotes a better understanding of the pollutant contributions from the watershed to the San Antonio River during rain events. This multi-government effort is known as the Bexar Regional Watershed Management program (BRWM). Development of a WPP and implementation of BMP's will also include coordination and input from the BRWM.

During the development of the WPP, SARA will import existing Planning Area data and information into the SARA enterprise GIS system to serve as an aid to identify and design the types of Best Management Practices (BMP's) best suited to reduce non-point source pollution. This will determine locations where installation and / or implementation would be most effective, and economical, and to help integrate data concerning the SARIP and other projects into this BMP evaluation and planning task. Installation and implementation will be coordinated and phased with Planning area projects, structures, features and amenities. In advance of and concurrent with the implementation of the BMP's (the planned Phase II of the WPP), a water quality monitoring program, coordinated with existing Clean Rivers Program monitoring, will be established to assess and evaluate the effectiveness of the planned BMP's.

The finalized WPP will provide substantial input to the nonpoint source component of the TMDL Implementation Plan.

Objectives 1, 2, and 4 are not directly pertaining to environmental data collection.

OBJECTIVE 3: DETERMINE THE BEST NPS BMPs TO ACHIEVE THE LOAD REDUCTION ALLOCATIONS ESTABLISHED BY THE TMDL AND DEVELOP A STRATEGY AND QAPP FOR MONITORING THEIR EFFECTIVENESS

Goal: To develop options for consideration of management measures and implementation strategies to accomplish the needed load reductions.

- Task 3.1: Initial identification of appropriate management measures to achieve desired reductions in pollutant loads.
- Task 3.2: Development of criteria to determine the effectiveness of management measures in achieving the desired pollutant loading reductions.
- Task 3.3: Modeling and evaluation of planned BMP measures and their projected effectiveness.
- Task 3.4: Prepare a QAPP for effectiveness monitoring of recommended BMPs (including both pre-implementation and post-implementation monitoring) and conduct a pre-implementation phase of this monitoring.
- Task 3.5: Prepare a section of a Phase I Summary Report that identifies load reduction requirements, pollutant management measures and their projected effectiveness, and includes detailed site assessment information, maps and associated data, taking into account the proposed SARIP modifications of the river system.

Measure of Success:

The success of this objective will be measured by the accuracy and comprehensiveness of the data used to estimate pollutant source loading reductions, and the effectiveness of the modeling for the determination, design, and implementation of appropriate BMP's.

Objective 3 Deliverables:

A draft BMP effectiveness monitoring QAPP January 31, 2006

A final BMP effectiveness monitoring QAPP April 30, 2006

A draft Summary Phase I Report section that estimates the load reduction potential of selected pollutant management measures, and includes detailed site assessment information, results of pre-implementation BMP effectiveness monitoring, maps and associated data. –June 30, 2006.

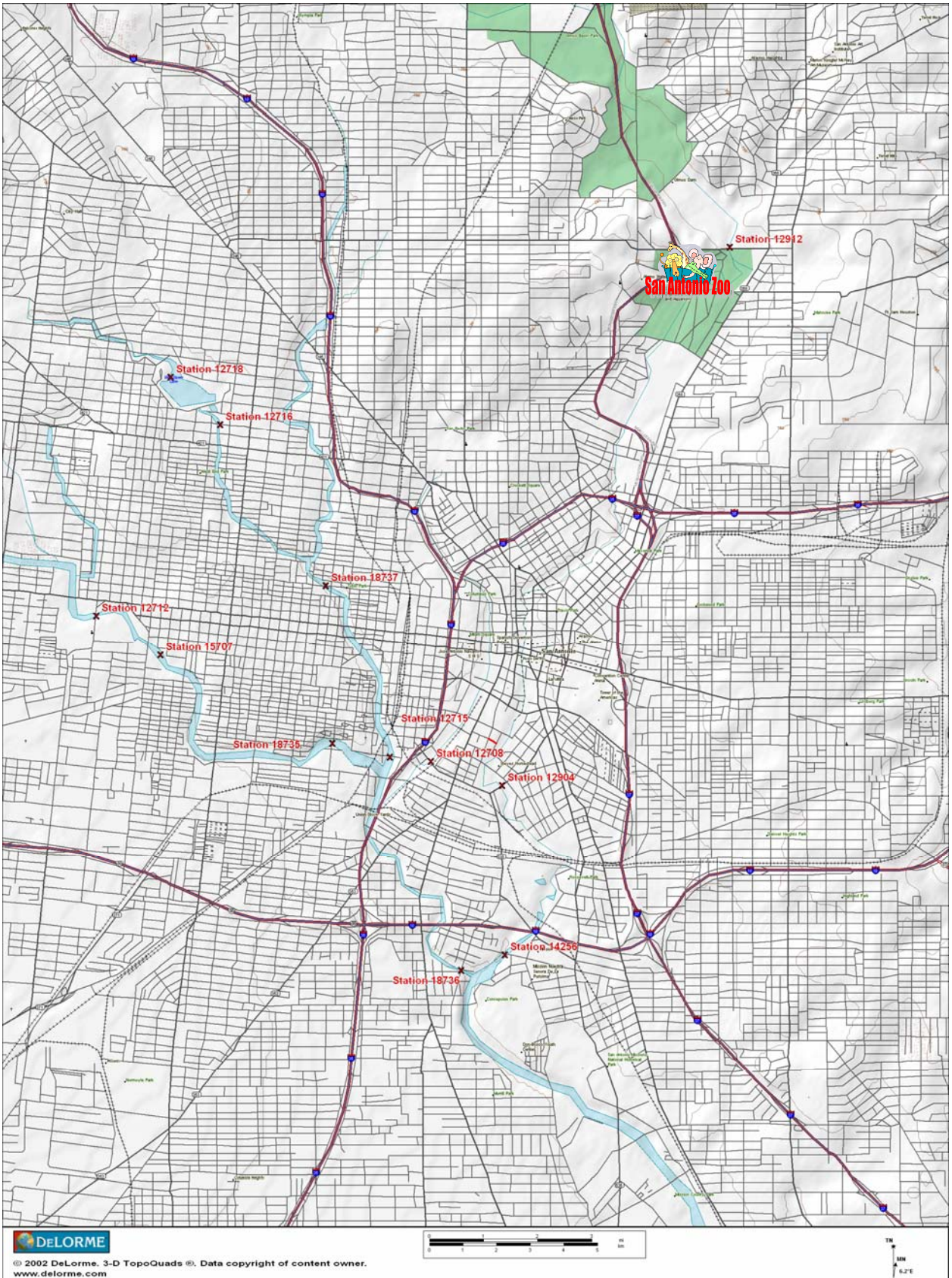
A final Summary Phase I Report section that estimates the load reduction potential of selected pollutant management measures, and includes detailed site assessment information, maps and associated data – August 31, 2006.

Appendix D. Detailed Site Location Map

BMP Sample Sites within and near the San Antonio Zoo.



Instream Sample Sites



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Appendix E. Field Data Reporting Form and Chain-of-Custody-Form

SAN ANTONIO RIVER AUTHORITY
Field Data Sheet

100 E. Guenther Street
 San Antonio, TX 78283
 Ph (210) 227-1373 Fax (210) 302-9694

Sample No.(s): _____ Tag Id: _____ Matrix: Aqueous QC Sediment

Station Id: (TCEQ_#####) _____ Station Location: _____

Program Code: CRP SARA_SM TXDOT_Storm PC Adhoc_SM Goliad Runge Wiatrek Falls_City

Sample Type: RT IS Storm Water Pollution Complaint SS (Specify Requestor in Comments) Effluent

Collection Method: Grab Composite

Collection Date: _____ Collection Time: _____ End Depth: _____

Collector(s) Signature(s): _____

of Containers/Container Type

- ____ 5G - 5 Gallon Plastic
- ____ GC - Gallon Cubitainer
- ____ QC - Quart Cubitainer
- ____ AB - Amber Glass Bottle
- ____ CB - Clear Glass Bottle
- ____ LW - Large Whirlpak
- ____ PB - Plastic Bottle
- ____ Field Parameters Only
- ____ Other (Specify in Comments)

Type of Field Preservation

- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃
- Ice H₂SO₄ HNO₃

Fill for Pollution Complaints Only

PC Id (PCAA###): _____

Event: Major Minor Follow-up

Datum: WGS84 NAD83 Other: _____

Latitude & Longitude in Decimal Degrees

Latitude: _____

Longitude: _____

See back for requested analysis on PC and Adhoc_SM Program Codes. For remaining Program Codes, analyses are defaulted in LIMS application and are defined in QAPPs, Contracts, and/or Written or Verbal Agreements.

Associated Required Data: Flow Water Nekton Benthic Habitat 24Hr DO Metals Other (Specify in Comments)

FIELD PARAMETERS

Parameter	Code	Value
Dissolved Oxygen	00300	mg/L
Temperature	00010	°C
pH	00400	S.U.
CL ₂	50060	mg/L
*Conductivity (YSI (600 XLM) temperature compensated value to 25 °C)	00094	/adj. μS/cm
Secchi Depth	00078	m
Calculated TDS	70294	mg/L
Days Since Last Precipitation Event	72053	days

FIELD OBSERVATIONS

Parameter	Code	
Flow Severity	01351	<input type="checkbox"/> 1 – No Flow <input type="checkbox"/> 3 – Normal <input type="checkbox"/> 5 – High <input type="checkbox"/> 2 – Low <input type="checkbox"/> 4 – Flood <input type="checkbox"/> 6 – Dry
Water Color	89969	<input type="checkbox"/> 1 – Brown <input type="checkbox"/> 3 – Green <input type="checkbox"/> 5 – Clear <input type="checkbox"/> 2 – Reddish <input type="checkbox"/> 4 – Black <input type="checkbox"/> 6 – Other (Specify in Comments)
Water Clarity	SA300	<input type="checkbox"/> 1 – Excellent <input type="checkbox"/> 3 – Fair <input type="checkbox"/> 2 – Good <input type="checkbox"/> 4 – Poor
Water Odor	89971	<input type="checkbox"/> 1 – Sewage <input type="checkbox"/> 3 – H ₂ S <input type="checkbox"/> 5 – Fishy <input type="checkbox"/> 7 – Other (Specify in Comments) <input type="checkbox"/> 2 – Oily / Chemical <input type="checkbox"/> 4 – Musky <input type="checkbox"/> 6 – None
Present Weather	89966	<input type="checkbox"/> 1 – Clear <input type="checkbox"/> 3 – Cloudy <input type="checkbox"/> 2 – Partly Cloudy <input type="checkbox"/> 4 – Rain

COMMENTS: _____

CHAIN OF CUSTODY

Relinquished By: _____ Date: _____ Time: _____

Received By: _____ Date: _____ Time: _____

Requested Analysis - PC and Adhoc_SM Program Codes only

Please check requested analyses:

- | | |
|-----------------------------------------------------|--------------------------------|
| <input type="checkbox"/> Fecal Coliform | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Total Coliform Presumptive | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Chlorine Residual | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Ammonia Non-Distilled | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Nitrite as N | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Nitrate as N | <input type="checkbox"/> _____ |

LABELS

\$Field, \$Flow

#CRP_Nonpreserved

#CRP_Bact

#CRP_TOC

#CRP_Preserved

Additional Label if applicable

