

**Cypress Creek (Segment 1815) Watershed Protection Plan Implementation (Years 4-6)
Data Acquisition
Quality Assurance Project Plan (QAPP)**

Texas State University
The Meadows Center for Water and the Environment
San Marcos, Texas 78666

Nonpoint Source (NPS) Program CWA § 319(h)
Prepared in cooperation with the Texas Commission on Environmental Quality and the U.S.
Environmental Protection Agency
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Effective Period: Three years from date of final approval

Questions concerning this QAPP should be directed to:

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A1 Approval Page

By signing this document, signatories acknowledge their respective organizations' awareness of and adherence to requirements contained in this QAPP in accordance with roles and responsibilities as described in Section A4 Project/Task Organization and throughout.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Monitoring Division

Laboratory and Quality Assurance Section

Sharon R. Coleman, Date
TCEQ Quality Assurance (QA) Manager

Sharon R. Coleman Date
Acting Lead NPS QA Specialist

Water Quality Planning Division

Faith Hambleton, Team Leader Date
NPS Program

Jessica Uramkin, NPS QA Coordinator Date

Jessica Johnstone, TCEQ NPS, Project Manager Date
NPS Program

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List of Acronyms

BMP	Best Management Practice
CAP	Corrective Action Plan
CCWPP	Cypress Creek Watershed Protection Plan
CCSC	Cypress Creek Stakeholder Committee
CRP	Clean Rivers Program
CWA	Clean Water Act
DQO	Data Quality of Objective
GBRA Lab	Guadalupe-Blanco River Authority Laboratory
EPA	Environmental Protection Agency
GBRA	Guadalupe-Blanco River Authority
HTGCD	Hays Trinity Groundwater Conservation District
LID	Low Impact Development
NCEI	National Centers for Environmental Information
NELAC	National Environmental Laboratory Accreditation Conference
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
QA/QC	Quality Assurance/ Quality Control
QAM	Quality Assurance Manual
QAO	Quality Assurance Officer
QAPP	Quality Assurance Project Plan
QAS	Quality Assurance Specialist
SWQM	Surface Water Quality Monitoring
SWQMIS	Surface Water Quality Monitoring Information System
TCEQ	Texas Commission on Environmental Quality
TST	Texas Stream Team
TXSTATE	Texas State University
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service

A3 Distribution List

The Acting Lead NPS QA Specialist will provide approved versions of this QAPP and any amendments or revisions to the TCEQ NPS Project Manager and the TXSTATE Project Manager.

The TCEQ NPS Project Manager will provide approved copies to the EPA Project Officer (listed below) within two weeks of approval. The TCEQ NPS Project Manager will document transmittal of the plan and maintain this documentation as part of the project's quality assurance records.

**U.S. Environmental Protection Agency Region 6
Water Quality Protection Division
Assistance Program Branch
1445 Ross Avenue
Suite # 1200
Dallas, TX 75202-2733**

Anthony Suttice, Project Office
(214) 665-8590

TXSTATE will provide copies of this project plan and any amendments or revisions of this plan to each project participant defined in the list below. TXSTATE will document receipt of the plan by each participant and maintain this documentation as part of the project's quality assurance records. This documentation will be available for review.

**Texas State University (TXSTATE)
The Meadows Center
601 University Drive
San Marcos, TX 78666**

Nick Dornak, Project Manager
(512)-245-4476

Sandra Arismendez, QA Officer
(512)-245-1346

A4 Project/Task Organization

TCEQ

Monitoring Division

Sharon Coleman

Acting Lead NPS QA Specialist

Assists the TCEQ NPS Project Manager in QA related issues. Participates in the planning, development, approval, implementation, and maintenance of the QAPP. Determines conformance with program quality system requirements. Coordinates or performs audits, as deemed necessary and using a wide variety of assessment guidelines and tools. Concurs with proposed corrective actions and verifications. Provides technical expertise and/or consultation on quality services. Recommends to TCEQ management that work be stopped to safe guard project and programmatic objectives, worker safety, public health, or environmental protection.

Water Quality Planning Division

Faith Hambleton, Team Leader

NPS Program

Responsible for management and oversight of the TCEQ NPS Program. Oversees the development of QA guidance for the NPS program to be sure it is within pertinent frameworks of the TCEQ. Monitors the effectiveness of the program quality system. Reviews and approves all NPS projects, internal QA audits, program corrective actions, work plans, and contracts. Enforces program corrective action, as required. Ensures NPS personnel are fully trained and adequately staffed.

Jessica Johnstone

TCEQ NPS Project Manager

Maintains a thorough knowledge of work activities, commitments, deliverables, and time frames associated with projects. Develops lines of communication and working relationships between the contractor, the TCEQ, and the EPA. Tracks deliverables to ensure that tasks are completed as specified in the contract. Responsible for ensuring that the project deliverables are submitted on time and are of acceptable quality and quantity to achieve project objectives. Serves on planning team for NPS projects. Provides contractor with most recent version of QAPP shell document. Participates in the development, approval, implementation, and maintenance of the QAPP. Conducts independent technical review of the QAPP to ensure compliance with project needs/requirements. Responsible for verifying that the approved QAPP is implemented by the contractor. Notifies the Lead NPS QA Specialist of particular circumstances which may adversely affect the quality of data derived from the collection and analysis of samples. Monitors and enforces corrective action.

Jessica Uramkin

NPS Quality Assurance Coordinator

Assists Lead NPS QA Specialist with NPS QA management. Serves as liaison between NPS management and Agency QA management. Responsible for NPS guidance development related to program quality assurance. Assists with development and maintenance of data management-related standard operating procedures (SOP) for NPS data management. Participates in the

development, approval, implementation, and maintenance of the QAPP. Provides input and oversight regarding corrective actions. Maintains record of corrective actions.

**(TXSTATE) TEXAS STATE UNIVERSITY – San Marcos
The Meadows Center for Water and the Environment**

Nick Dornak

TXSTATE Project Manager

Responsible for ensuring tasks and other requirements in the contract are executed on time and are of acceptable quality. Monitors and assesses the quality of work. Coordinates attendance at conference calls, training, meetings, and related project activities with the TCEQ. Responsible for verifying the QAPP is followed and the project is producing deliverables of known and acceptable quality. Ensures adequate training and supervision of all project participant activities. Complies with corrective action requirements.

Sandra Arismendez

TXSTATE QAO

Responsible for coordinating development and implementation of the QA program. Responsible for ensuring the most recent version of the NPS QAPP shell document is acquired from the TCEQ NPS Project Manager and used for writing and maintaining the QAPP. Responsible for maintaining records of QAPP distribution, including appendices and amendments. Responsible for maintaining written records of sub-tier commitment as appropriate to requirements specified in this QAPP. Responsible for identifying, receiving, and maintaining project quality assurance records. Responsible for coordinating with the TCEQ NPS Manager to resolve QA- related issues. Notifies the TXSTATE Project Manager and TCEQ NPS Project Manager and documents particular circumstances which may adversely affect the quality of contract deliverables. Responsible for validation and verification of all data acquired. Coordinates the research and review of technical QA materials and acquired data related to water quality monitoring system design and analytical techniques. Facilitates, conducts, and documents readiness reviews, monitoring, and/or technical systems audits.

Sandra Arismendez

TXSTATE Data Manager

Responsible for the acquisition, verification, and transfer of acquired data to the TCEQ NPS Project Manager. Oversees data management for the QAPP. Performs data quality assurances prior to transfer of data to the TCEQ NPS Project Manager. Ensures data are submitted according to QAPP and workplan specifications. Provides the point of contact for the TCEQ NPS Project Manager to resolve issues related to the acquired data.

U.S. EPA Region 6

**Anthony Suttice
EPA Project Officer**

Responsible for managing the CWA Section 319 funded grant on behalf of EPA. Assists the TCEQ in approving projects that are consistent with the management goals designated under the State's NPS management plan and meet federal guidance. Coordinates the review of project workplans, draft deliverables, and works with the State in making these items approvable. Meets with the State at least annually to evaluate the progress of each project and, when conditions permit, participates in project site visits. Fosters communication within EPA by updating management and others, both verbally and in writing, on the progress of the State's program and on other issues as they arise. Assists in grant close-out procedures ensuring all deliverables have been satisfied prior to closing a grant.

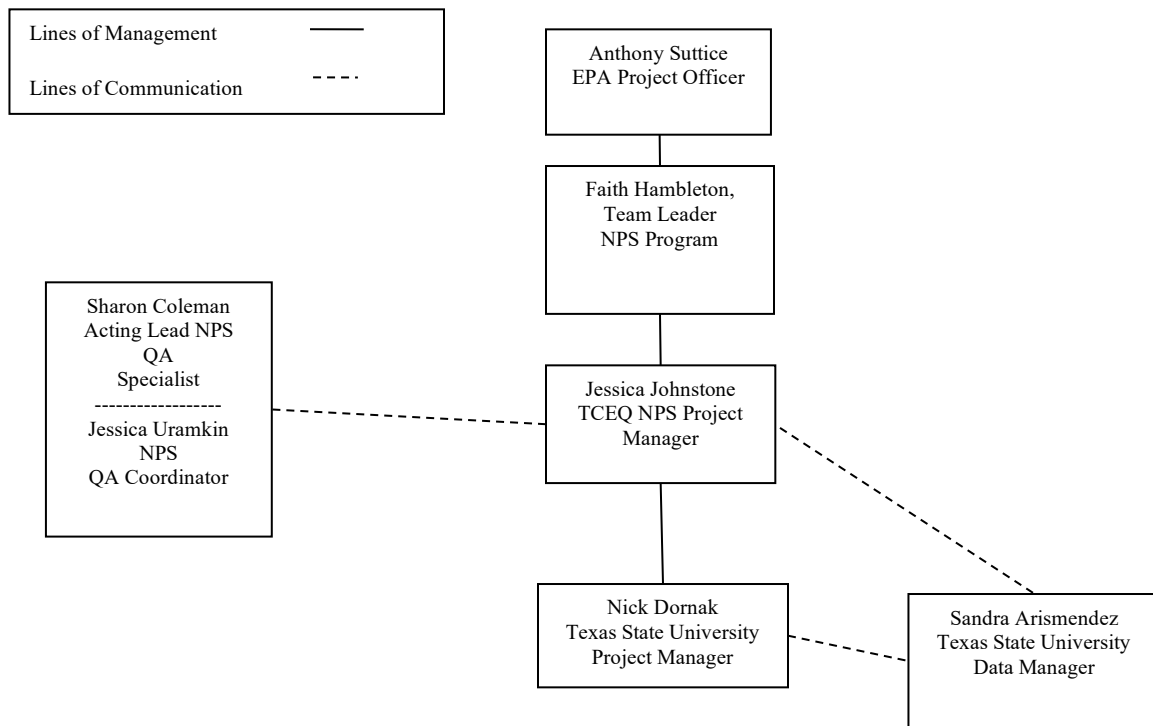


Figure A4.1. Organization Chart – Lines of Communication

A5 Problem Definition/Background

Adverse effects on water quality resulting from on-going development within the Cypress Creek watershed have been observed. The Cypress Creek Watershed Protection Plan (CCWPP) Stakeholder Committee selected a suite of BMPs to mitigate current, as well as potential water quality impairments in the watershed. A subset of the BMPs was prioritized for immediate implementation, while others will be implemented over a number of years, as required to mitigate nonpoint source pollution from future development and other activities in the watershed. This project will implement the CCWPP through the support of a Watershed Coordinator as outlined in the project Scope of Work (Appendix B). The project will also produce a Sustainability Plan, implement an education and outreach program and acquire surface and groundwater data collected outside the scope of this project.

The data collected outside the scope of this project that will be acquired includes routine, quarterly Clean Rivers Program (CRP) surface water quality monitoring to be performed at six sites on Cypress Creek, groundwater data from two wells in the watershed, surface water quality data collected by Texas Stream Team Citizen Scientists, aquifer water level data from the Hays Trinity Groundwater Conservation District (HTGCD), and biomonitoring data, collected by Guadalupe Blanco River Authority (GBRA) and United States Fish and Wildlife Service (USFWS) under existing GBRA QAPPs (and USFWS guidelines). These data will be used to track water quality, WPP progress, and to better understand current and trending nonpoint source contributions to Cypress Creek.

This QAPP is reviewed and approved by the TCEQ to help ensure that environmental data generated for the purposes described above are of known and documented quality, deemed acceptable for their intended use.

A6 Project/Task Description

The purpose of this project is to evaluate the effectiveness of the CCWPP implementation activities through a multifaceted approach. Further, the goal is to better understand current and trending NPS pollution contributions in the Cypress Creek watershed.

The GBRA collects surface water quality monitoring data for the CRP under an approved quality assurance project plan (QAPP). Data collected under the GBRA's QAPP in Cypress Creek (Segment 1815) will be acquired from the Texas Commission on Environmental Quality's (TCEQ) Surface Water Quality Information System (SWQMIS) state-wide database. Routine, conventionals, bacteria and flow measurements will be requested from TCEQ by submitting a [Standard Data Request Form](#).

Groundwater well monitoring data is being collected by The Meadows Center for Water and the Environment (MCWE) at two private wells, HCP3 (State well #5764718) and Old Hundred (State well #5764721), as part of their internal groundwater quality monitoring program. The MCWE has established a cooperative agreement with the Hays Trinity County Groundwater

Conservation District, a partner and stakeholder of the CCWPP, to collaborate on monitoring groundwater quality. This groundwater well monitoring is being funded by the HCGCD and is being collected under an internal MCWE QAPP using previously approved monitoring protocol for groundwater (See FY19 Cypress Creek WPP Implementation Water Quality Monitoring and Data Acquisition QAPP, Approved November 26, 2018). The laboratory analyses for the groundwater samples are being conducted by the NELAP-accredited GBRA laboratory.

Hays Trinity Groundwater Conservation District monitors groundwater well levels in the Cypress Creek watershed. As a partner and stakeholder, the HCGCD will provide those monitoring data to MCWE for inclusion in the final report of this project.

Texas Stream Team citizen scientist core and bacteria water quality monitoring data are collected on a monthly basis at multiple locations on Cypress Creek. These data are collected under a TCEQ-approved QAPP and are collectively housed in the [Waterways Dataviewer](#) at the MCWE. Only data that have passed the QA/QC requirements will be downloaded for use in this project.

Biomonitoring data from GBRA/USFWS will be acquired from the SWQMIS data base using the Standard Data Request Form mentioned above. Macroinvertebrate and fish monitoring data will be requested for use in the final report of this project.

Annual precipitation data will be acquired from the National Centers for Environmental Information (NCEI). The range of flow measurement data at Jacob's Well will be acquired from United States Geological Survey (USGS).

Additional information on acquired data is addressed in Section B9 of this document. See Section B1 for more in depth information about monitoring to be conducted under this QAPP, including groundwater sampling locations.

This project started March 1, 2020 and is estimated to be completed February 28, 2023. All task, deliverable, and monitoring dates are estimates. No environmental data operations associated with this project will commence until this QAPP has been approved.

See Appendix A for a project location map.

See Appendix B for the contract scope of work and schedule of deliverables for a description of work defined in this QAPP.

A summary of data to be acquired is available in Table B9.1.

Amendments

Amendments to the QAPP must be approved to reflect changes in project organization, tasks, schedules, objectives, and methods; address deficiencies and nonconformances; improve operational efficiency; and/or accommodate unique or unanticipated circumstances. Requests for amendments are directed from the TXSTATE Project Manager to the TCEQ NPS Project

Manager in writing using the QAPP Amendment shell. The changes are effective immediately upon approval by the TCEQ QA Manager, TCEQ NPS Project Manager, and TCEQ Acting NPS Quality Assurance Specialist, or their designees.

Amendments to the QAPP and the reasons for the changes will be documented, and full copies of amendments will be forwarded to all persons on the QAPP distribution list by the TXSTATE QAO. Amendments shall be reviewed, approved, and incorporated into a revised QAPP during the annual revision process or within 120 days of the initial approval in cases of significant changes.

Annual QAPP Reviews and Revisions

This QAPP shall be reviewed in its entirety and certified annually by the TXSTATE Project Manager and the NPS Project Manager. A letter certifying this annual review must be submitted to the TCEQ NPS Project Manager no later than 90 days prior to the QAPP anniversary date to prevent QAPP expiration and interruption in work due to issuance of a stop work order.

Amendments approved since QAPP approval (or most recent annual review, if applicable) should be included as an attachment along with the letter. Only nonsubstantive changes not affecting the project design or quality or quantity of work to be performed can be included in the annual certification letter. This includes organizational changes or schedule changes based on a contract amendment that do not impact data deliverables. If changes beyond these are necessary, a QAPP amendment must be submitted and approved before the changes are implemented and before the annual review may be certified. The TCEQ NPS Project Manager is required to review the QAPP and provide certification of annual reviews to the TCEQ QA Manager and EPA Region 6 Project Officer no later than 30 days before the QAPP anniversary date. If the QAPP expires, work described within this document must be halted.

If the project will extend beyond the third QAPP anniversary date, a full QAPP revision is required.

A7 Quality Objectives and Criteria

No new data will be collected for this project. All data used for this project currently exists and will be acquired from other reputable sources. A more detailed description of the acquired data are provided in Section B9. The acquired data for this project may be used to support decisions related to the Cypress Creek WPP implementation.

A8 Special Training/Certification

Work conducted for this project is covered under a documented quality management system. Personnel conducting work associated with this project are deemed qualified to perform their work through educational credentials, specific job/task training, required demonstrations of competency, and internal and external assessments. Records of educational credentials, training,

demonstrations of competency, assessments, and corrective actions are retained by project management and are available for review.

A9 Documents and Records

The documents and records that describe, specify, report, or certify activities, requirements, procedures, or results for this project and the items and materials that furnish objective evidence of the quality of items or activities are listed in Table A9.1.

Table A9.1 Project Documents and Records

Document/Record	Location	Retention (yrs)	Format
QAPPs, amendments, annual certifications, and appendices	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
QAPP distribution documentation	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
QAPP commitment letters	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Meeting notes (post-award, conference call, etc.)	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Education and Outreach materials	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Staff training records	TXSTATE	Five Years/Indefinitely	Electronic
Corrective Action Documentation	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Quarterly Progress Reports	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Draft/Final Sustainability Plan	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Draft/Final Update to WPP	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic
Draft/Final project reports	TCEQ/TXSTATE	Five Years/Indefinitely	Electronic

B1 Sampling Process Design (Experimental Design)

Section B1-B8 address the design and procedures for collecting, handling, and analyzing new, field environmental data collections. Since this project uses existing data sources, these sections do not apply to the project described in this QAPP.

B2 Sampling Methods

Does not apply since no sample collection activities will take place for this project.

B3 Sample Handling and Custody

Does not apply since no sample collection activities will take place for this project.

B4 Analytical Methods

Does not apply since no sample collection activities will take place for this project.

B5 Quality Control

Does not apply since no sample collection activities will take place for this project.

B6 Instrument/Equipment Testing, Inspection, and Maintenance

Does not apply since no sample collection activities will take place for this project.

B7 Instrument/Equipment Calibration and Frequency

Does not apply since no sample collection activities will take place for this project.

B8 Inspection/Acceptance of Supplies and Consumables

Does not apply since no sample collection activities will take place for this project.

B9 Non-Direct Measurements

No new data will be collected or this project or submitted for inclusion in the surface water quality monitoring information system (SWQMIS). Data that will be analysed for this project are summarized in Table B9.1.

Acquisition of existing environmental data from multiple sources (outlined in this document) will be used to build a comprehensive dataset of data of known quality. This data includes surface water quality, flow, groundwater levels, biological, and other relevant information that can be used to track water quality and WPP progress and to better understand current and trending nonpoint source contributions to Cypress Creek. Data will also identify historical changes over time that may be attributed to development and other human centered activities in the watershed. Further, this data may improve understanding of the relationship between pollutants in surface and sourcewaters.

Acquired data will be used in multiple ways: it will be shared with the public as part of a comprehensive education and outreach campaign to engage the community and key stakeholders in both the implementation WPP activities and the expansion of pollution reduction strategies; it will be used to support stakeholders in implementing management measures and developing additional proposals for stormwater BMPs; to support development of the Sustainability Plan for

future implementation of the Cypress Creek WPP; to track water quality and WPP progress; and to better understand current and trending nonpoint source contributions to Cypress Creek.

Volunteer collected data acquired from the Texas Stream Team program will be collected under the Texas Stream Team QAPP. The QAPP is the guidance document that ensures the information volunteers collect is comparable state-wide and of the highest quality. Field data measurements, sampling and calibration techniques, quality control, and reporting requirements are all addressed by the plan. The Texas Stream Team QAPP provides the framework for citizen scientists to collect data that can augment professional monitoring. However, Texas Stream Team citizen science monitoring data are not paired with CRP data due to differences in methods and degree of quality assurance. These data will be summarized and reported separately from CRP/GBRA surface water quality data.

Non-direct data that will be used for this project are included in Table B9.1. Data will be acquired via web portal or manually requested and the period of record available will depend on data type.

Table B9.1 Non-Direct Monitoring Data Sources

Data Type	Monitoring Project/Program	Collecting Entity	Dates of Collection	QA Information	Data Use(s)
Climatic Data	LCRA Hydrologic Data	LCRA	Period of record for rain gauges near and within the watershed	Individual organization QA procedures	Characterization of historical and recent climatic conditions associated with routine and storm monitoring events
Climatic Data	NCEI	NOAA	Period of record for rain gauges near and within the watershed	Individual organization QA procedures	Characterization of historical and recent climatic conditions associated with routine and storm monitoring events
Wells	HTGCD	HGTCDD	Period of record for all project stations	HTGCD QA Procedures	Well location, owner, driller, & data
Wells	TWDB	TWDB	Period of record for all project stations	TWDB QA procedures	Well location, owner, driller, and data
Monitoring data	TCEQ SWQM	TCEQ	Period of record for all project stations	TCEQ CRP, SWQMIS database	Summary statistics and trend analysis
Hydrology	USGS Flow Data	USGS	Available data for period of record for stations 08171000 (near Wimberley) and 08170990 (near Jacob's Well)	USGS database	Loading calculations, flow-adjustment of water quality data. Characterization of long-term flow conditions
Land Cover	MRLC National Land Cover Database 2011 (NLCD)	MRLC	Period of record for all project stations	MRLC	GIS mapping/analysis
Hydrography	USGS NHD	USGS	Period of record for all project stations	USGS	GIS mapping/analysis
Soils	USDA NRCS	USDA	Period of record for all project stations	USDA NRCS	GIS mapping/analysis
Roadways	TXDOT	TXDOT	Period of record for all project stations	Individual organization QA procedures	GIS mapping/analysis

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Data Type	Monitoring Project/Program	Collecting Entity	Dates of Collection	QA Information	Data Use(s)
Hydrologic Unit Code (HUC)	USGS NHD	USGS	Period of record for all project stations	USGS	GIS mapping/analysis
Petroleum Storage Tanks	TCEQ	TCEQ	Period of record for all project stations	TCEQ QA Procedures	GIS mapping/analysis
Geology	USGS/UT-BEG	USGS	Period of record for all project stations	USGS TNRS	GIS mapping/analysis
Groundwater Levels	Monthly GW Level Monitoring	HTGCD	Period of Record for all stations	HTGCD QA Procedures	Analysis of recharge, Desired Future Conditions, Trend analysis of groundwater level fluctuations
Groundwater Levels	Transducer	HTGCD	Period of Record for all stations	HTGCD QA Procedures	Analysis of recharge, Desired Future Conditions, Trend analysis of groundwater level fluctuations
Groundwater Levels	TWDB Statewide Program (Lost Springs SW# 5763705, Mt. Baldy SW# 5764705)	TWDB	Period of Record for all stations	TWDB QAPP	Analysis of recharge, Desired Future Conditions, Trend analysis of groundwater level fluctuations
Spring Discharge	USGS Stream Gauging-Jacobs Well (USGS 08170990)	USGS	Ongoing continuous monitoring, initiated 2005	USGS QAPP	Trends in groundwater pumpage
Groundwater Pumping	Monitoring required by permit	Aqua TX, WWSC, Wimberley Springs Partners	Monthly monitoring	Individual organization QA procedures	Trends in groundwater pumpage
Groundwater and Surface Water Quality	USGS Stream Gauging-Jacobs Well (USGS 08170990)	USGS/GBRA	Ongoing continuous monitoring of water quality parameters	USGS QAPP	Temporal trends water quality parameters
Groundwater Quality	Various Studies	MCWE, BSEACD, HTGCD, TWDB	Various	Individual organization QA procedures	Spatial and temporal trends
Surface water quality	CRP Data	GBRA, TXSTATE, WVWA	Quarterly monitoring	GBRA QAPP	Temporal trends, state Clean Rivers Program
Surface water quality	Texas Stream Team Volunteer Monitoring	TXSTATE	Monthly monitoring	TST QAPP	Spatial and temporal trends, water quality parameters
Riparian corridor assessments	Texas Stream Team Volunteer Monitoring	TXSTATE	Monthly monitoring	TST QAPP	Spatial and temporal trends, water quality parameters
Drinking Water Data	City of Wimberley	City of Wimberley	Annual	Individual organization QA procedure	Temporal water quality trends
Groundwater Levels	Monthly monitoring required by permit	Aqua TX, WWSC	Monthly monitoring, initiated in 2006	Individual organization QA procedures	Analysis of recharge, Desired Future Conditions, Trend analysis of groundwater level fluctuations
Land Use	CAPCOG	CAPCOG	Period of record for all project stations	Individual organization QA procedures	GIS mapping/analysis
Soil and Water Assessment Tool (SWAT) modeling outputs	TXSTATE – CCP WPP	TXSTATE	2009-2012	CCP QAPP	Assess up to at least three watershed wide ordinance scenarios and the resulting pollutant load benefits from each option

Geospatial data from these sources are accepted for use in project maps based on the reputability of these data sources and the fact that there are no known comparable sources for these data. Geospatial data will be cited in reports.

As the project progresses, additional data sources and/or data types may be identified as necessary to complete project tasks. Once identified, the TXSTATE Project Manager will notify the TCEQ NPS Project Manager and request approval prior to use. If data will be analyzed or used for any purposes beyond cartographic or illustrative purposes, the QAPP must be amended prior to use. All approved data sources will be clearly documented where such data sources are reported (e.g. technical documents, technical reports, and final reports).

B10 Data Management

At TXSTATE, the data processing and management equipment are DELL computers with standard TXSTATE software/security configuration and use the Windows 10 operating system (Table B10.1).

All project data are stored in a unique shared directory established for the project on the TXSTATE server with additional subdirectories as needed for organization of data and files. Document control is provided by all project staff in using only data and files in the project directory and providing different file names when editing or manipulating the files. Staff keep older versions of the documents and workbooks in the project directory in archived folders in the event errors are detected or there are other issues that would require access to older versions of files. Daily backups provide additional safeguards.

Personnel

Section A4 lists responsibilities and lines of communication for data management personnel.

The Data Manager will have primary responsibility for performing all tasks related to data management. The TXSTATE Data Manager/QAO will coordinate closely with the TXSTATE Project Manager and cooperating agencies to obtain data files needed for the project and to ensure that the data provided in the source files is accurate and unambiguous. The Data Manager/QAO will be assisted, on an as-needed basis, by other TXSTATE personnel.

Archives/Data Retention

All TXSTATE/Texas Stream Team volunteer surface water quality data are kept on an external backup hard drive as well as a TXSTATE-provided shared hard drive throughout the university network. All monitoring data related to this project will be kept within the TST shared drive on TXSTATE servers as well as on backup within the external hard drive. More information about TST's data management and storage procedures can be located within the Texas Stream Team Program's 2019 QAPP.

Complete original data sets are archived on permanent electronic media and retained on-site by TXSTATE for a retention period specific in Section A9.

Data Verification/Validation

The control mechanisms for detecting and correcting errors and for preventing loss of data during data reduction, data reporting, and data entry are contained in Sections D1, D2, and D3.

Table B10.1 Listing of Project Hardware and Software

Equipment & software name	Type	Specification	Use
Dell PC desktop/laptop computers	Hardware	Intel Core 2 DUO, CPU 3.00 GHz 4.0 GB RAM, Windows 10	Support data storage and uploading activities
ArcGIS 10.4.5	Software	Windows interface	View and compile data
Microsoft Office Software 2013 (Excel, Word, Powerpoint, Access)	Software	Windows platform	Data preparation, report writing, presentations

Quality Assurance/Control

See Sections D1 and D2 of this QAPP.

C1 Assessments and Response Actions

The following table presents types of assessment and response activities associated with all data acquisition activities for this project.

Table C1.1 Assessments and Response Requirements

Assessment Activity	Approximate Schedule	Responsible Party	Scope	Response Requirements
Status Monitoring Oversight, etc.	Continuous	TXSTATE PM	Monitoring of the project status and records to ensure QAPP requirements are being fulfilled. Monitor and review performance and data quality.	Report to TCEQ PM in Quarterly Reports. Ensure project requirements are being fulfilled.
Technical Systems Audit	Dates to be determined by TCEQ	TCEQ QAS	The assessment will be tailored in accordance with objectives needed to assure compliance with the QAPP.	30 days to respond in writing to the TCEQ to address corrective actions
Site Visit	Dates to be determined by TCEQ	TCEQ PM	Status of activities. Overall compliance with work plan and QAPP	As needed

Corrective Action Process for Deficiencies and Nonconformances

Deficiencies are any unauthorized deviations from the approved QAPP and procedures referenced in the QAPP. Deficiencies may invalidate resulting data. All deficiencies from the QAPP require documentation of the nonconformance and corrective action. Deficiencies must be documented in a corrective action plan and corrected in a timely manner. Corrective action may include samples be discarded and re-collected. It is the responsibility of the TXSTATE Project Manager, in consultation with the TXSTATE Project QAO, to ensure that the actions and resolutions to the problems are documented and that records are maintained in accordance with this QAPP.

The TXSTATE Project Manager is responsible for implementing and tracking corrective actions. All Corrective Action Plans will be documented on the Corrective Action Status Table, which will be submitted to the TCEQ NPS Project Manager with the Quarterly Progress Report for review and approval. Records of TCEQ audit findings and corrective actions are maintained by both the TCEQ and the TXSTATE QAO. Documentation of corrective action to address audit findings will be submitted to the TCEQ within 30 days of receipt of audit report.

If audit findings and corrective actions cannot be resolved, then the authority and responsibility for terminating work are specified in the TCEQ QMP and in agreements in contracts between participating organizations.

Corrective Action Plans

Corrective Action Plans should:

- Identify and describe the deficiency, problem, nonconformity, or undesirable situation
- Identify the underlying cause(s) of the problem
- Identify programmatic impact is likely of the deficiency
- Identify whether the problem is likely to recur, or occur in other areas
- Identify immediate remedial actions if possible
- Include a description of the need for Corrective Action
- Include a description of cause(s), determine solution, and propose an action plan
- Establish timelines and provide a schedule
- Identify personnel responsible for action
- Document the corrective action

To facilitate the process a flow chart has been developed (see Figure Cl.1: Corrective Action Process for Deviations).

Status of CAPs will be documented on the Corrective Action Status Table (See Appendix G) and included with Quarterly Progress Reports. In addition, significant conditions (i.e., situations which, if uncorrected, could have a serious effect on safety or on the validity or integrity of data) will be reported to the TCEQ immediately.

Corrective Action for Deviations

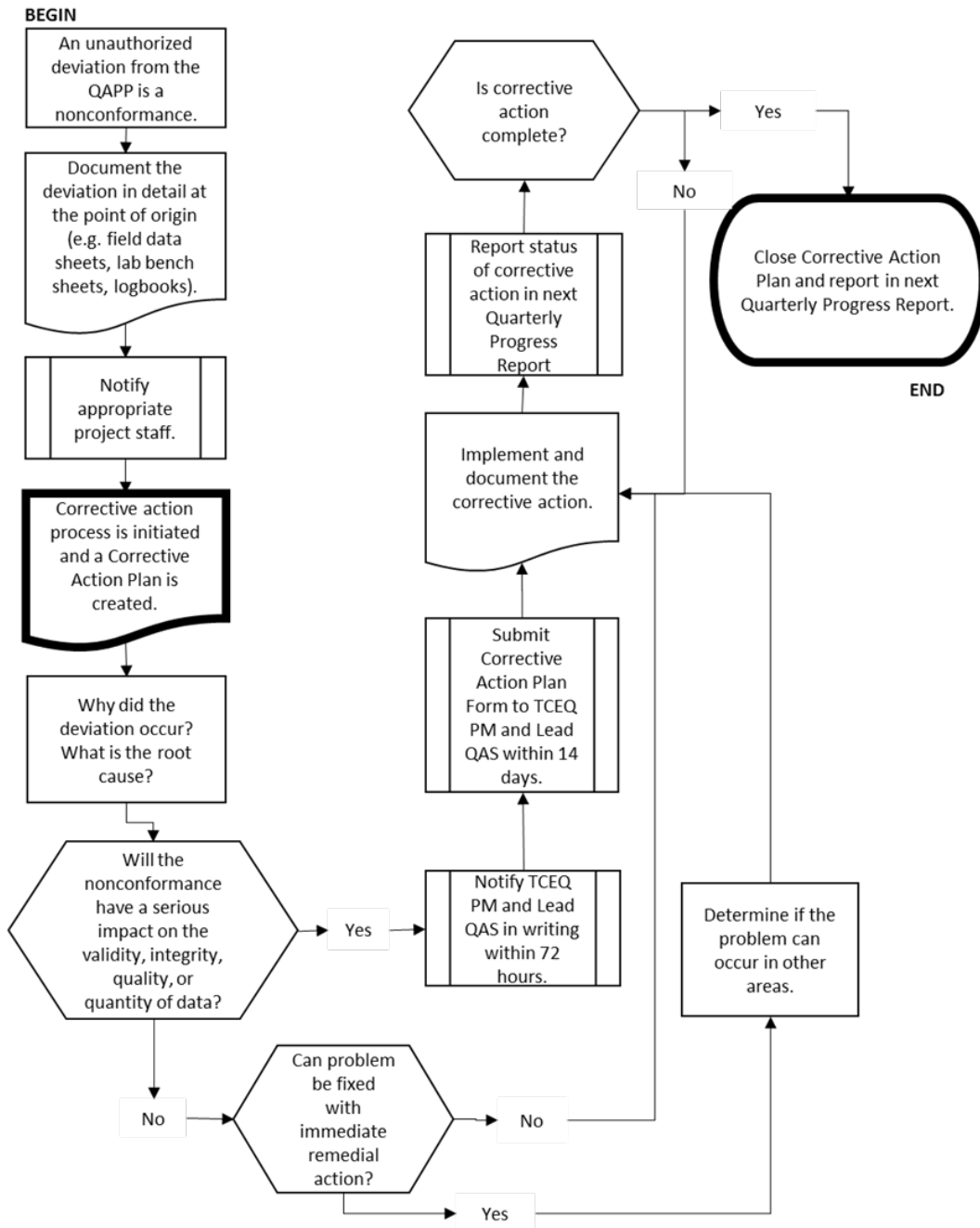


Figure C1.1 Corrective Action Process for Deviations

C2 Reports to Management

Reports to TCEQ Project Management

All reports detailed in this section are contract deliverables and are transferred to the TCEQ in accordance with contract requirements and the contract schedule of deliverables.

Quarterly Progress Report – Summarizes the TXSTATE’s activities for each task; reports monitoring status, problems, delays, and corrective actions; and outlines the status of each task’s deliverables.

Technical Systems Audit Response – The TXSTATE will respond in writing to the TCEQ within 30 days upon receipt of a technical system audit report to address corrective actions.

Draft and Final Task Report – The TXSTATE will produce a report summarizing all outreach and education activities conducted under Task 3: Education and Outreach.

Draft and Final Sustainability Plan – The TXSTATE will complete a sustainability plan with stakeholder input to determine the technical and financial needs to ensure long-term implementation of the Cypress Creek WPP.

Draft and Final Project Report – The TXSTATE will produce a final report that summarizes all activities completed and conclusions reached during the project.

Reports to TXSTATE Project Management

Progress report – Summarizes the TXSTATE activities for each task; reports monitoring status, problems, delays, and corrective actions; and outlines the status of each task’s deliverables.

Technical Systems Audit Report and Response – Following any audit performed by the TXSTATE QAO, a report of findings, recommendations and response is sent to the TCEQ in the Quarterly Progress Report.

Reports by TCEQ Project Management

Contractor Evaluation - The contractor participates in a Contractor Evaluation by the TCEQ annually for compliance with administrative and programmatic standards. Results of the evaluation are submitted to the TCEQ Financial Administration Division, Procurement and Contracts Section.

D1 Data Review, Verification, and Validation

For the purposes of this document, data verification is a systematic process for evaluating performance and compliance of a set of data to ascertain its completeness, correctness, and consistency using the methods and criteria defined in the QAPP. Validation means those processes taken independently of the data-generation processes to evaluate the technical usability of the verified data with respect to the planned objectives or intention of the project. Additionally, validation can provide a level of overall confidence in the reporting of the data based on the methods used.

All existing data acquired from field and laboratory measurements will be reviewed and verified by the TXSTATE QAO for conformance to project requirements. Only those data that are supported by appropriate quality control data and meet the measurement performance specification defined by the source of the data will be considered acceptable and submitted to the TCEQ in the draft/final project reports.

The TXSTATE Project Data Manager is responsible for ensuring that all acquired data are properly reviewed and verified. Finally, the TXSTATE Project Manager, with the concurrence of the TXSTATE Project QAO, is responsible for validating that all data to be reported meet the objectives of the project and are suitable for reporting to TCEQ.

D2 Verification and Validation Methods

All acquired data will be verified to ensure they are representative of the samples analyzed and locations where measurements were made, and that the data and associated quality control data conform to project specifications.

Verification, validation and integrity review of data will be performed using self-assessments and peer review, as appropriate to the project task, followed by technical review by the manager of the task. Data compilations created for this project will be visually screened for errors. All data obtained from the various sources will be reviewed and verified for conformance to project requirements.

The data to be verified are evaluated against project performance specifications as defined by the data source and are checked for errors, especially errors in transcription, calculations, and data input. If a question arises or an error is identified, the manager of the source generating the data is contacted to resolve the issue. Issues that can be corrected are corrected and documented electronically or by initialing and dating the associated paperwork. If an issue cannot be corrected, the task manager consults with the higher level project management to establish the appropriate course of action, or the data associated with the issue are rejected and not reported to the TCEQ.

D3 Reconciliation with User Requirements

Data acquired from third parties as described in this QAPP will be used for education and outreach, tracking changes in water quality, and draft/final reports. Third party data will be analyzed and reconciled with project data quality objectives and QA/QC activities that ensure data of known and acceptable quality are used in and generated by this project. Data meeting project requirements will be used for monitoring, and mapping activities undertaken to improve community decision maker's abilities to identify sources of, as well as, prevent and mitigate NPS pollution from urbanization and development.

The Cypress Creek Stakeholder Committee (CCSC) has set screening levels for pollutant targets that will serve as benchmarks of progress and indicators for future adaptive management activities. Table D3.1 identifies the targets and standards for pollution parameters of primary concern. The CCSC determined a goal of meeting state standards where applicable in the early years of implementation and will strive for CCSC established targets by the later years of the implementation process. Routine monitoring is required to determine if implemented BMPs are reducing pollutants. The results of acquired monitoring data will be compared with the water quality targets below to track implementation progress.

Table D3.1: Target Levels for Pollutant Constituents and Parameters of Concern

Pollutant*	State Standard or Screening Level if Applicable***	Target at Minimum Cypress Creek Stakeholder Committee**	Source of Information
Nitrogen (N)	---	Target- 1.65 mg/L	Cypress Creek Stakeholder Committee
	Nitrate screening level- 1.95 mg/L	---	TCEQ
Total Phosphorus	---	Target- 0.1 mg/L	Cypress Creek Stakeholder Committee
Total Suspended Solids (TSS)	---	---	Cypress Creek Stakeholder Committee
	Screening level- 0.5 mg/L	---	TCEQ
<i>Escherichia coli</i> (<i>E. coli</i>)	Single sample- 394 #/100 mL Geometric mean- 126 #/100 mL	Single sample- 394 #/100 mL Geometric mean- 126 #/100 mL	TCEQ
Dissolved Oxygen (DO)	24-hr mean values above 6.0 mg/L Grab sample values above 4.0 mg/L	24-hr mean values above 6.0 mg/L Grab sample values above 4.0 mg/L	TCEQ
Flow	---	Jacob's Well- 3.8 to 6.4 cfs Blanco Confluence- 4.11 to 5.1 cfs Cypress Creek-4 to 6 cfs	Cypress Creek Stakeholder Committee
Impervious Cover	---	15-20%	Cypress Creek Stakeholder Committee
Oil & Grease	---	No more than a 300-500% increase from current conditions	Cypress Creek Stakeholder Committee

*Unless otherwise noted, targets are for all CCWPP and CRP monitoring sites, including confluence with the Blanco River.

**Targets are reported in annual averages, which allow for exceedances on individual sampling events, provided that the average of all events in a one year period do not exceed the specified target levels.

***State water quality standards have not been established for N, Total P, TSS, Flow, Impervious Cover, and Oil & Grease. N and TSS have a state screening level established.

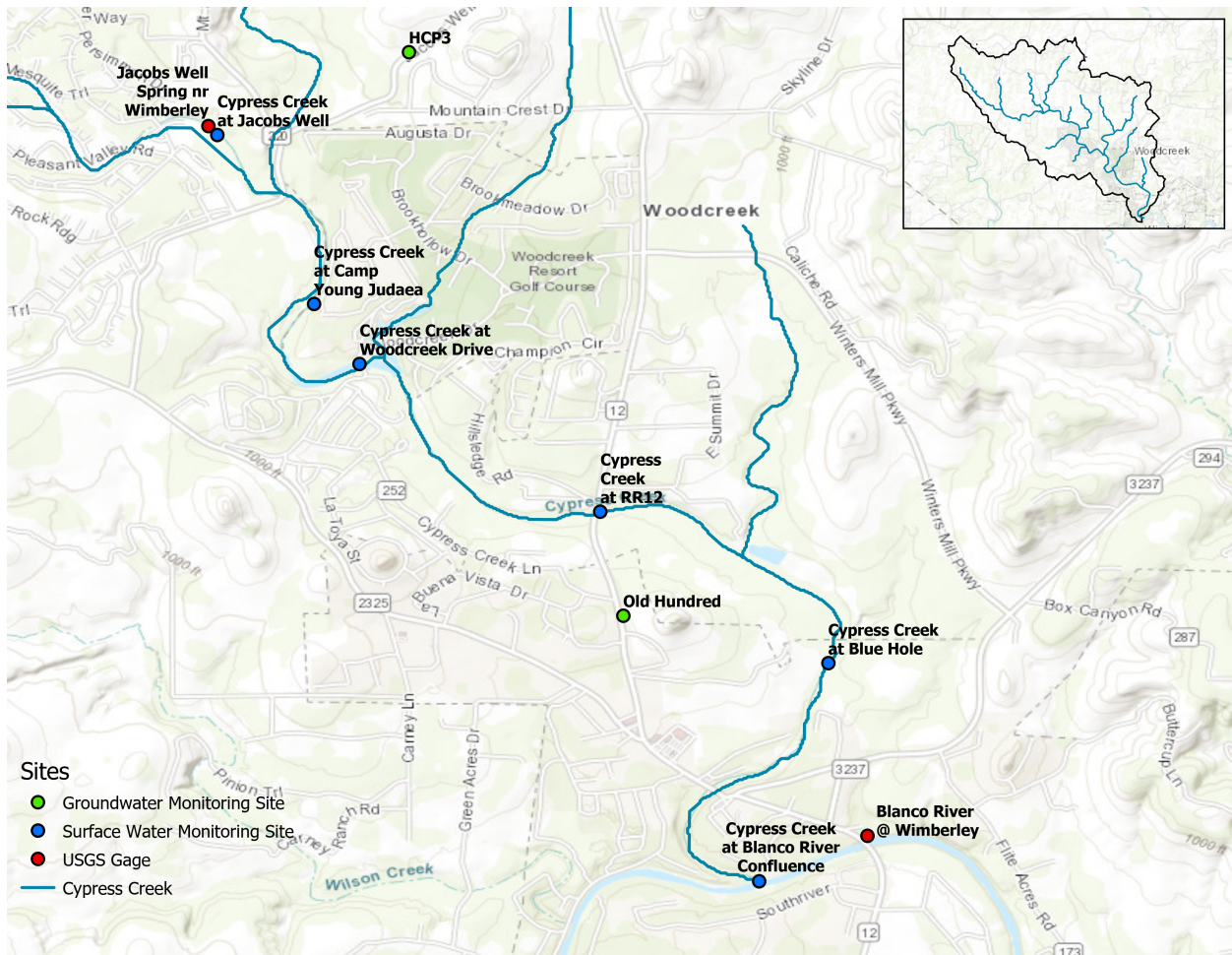
Data will be shared with the public as part of a comprehensive education and outreach campaign and used to determine possible priority locations for additional BMPs and areas of focus for the project's low impact design green infrastructure permitting fast track process. Acquired data will also be used to characterize existing conditions, detect longitudinal increases of pollution, and evaluate the effectiveness of the project. Multivariate linear regression analysis will be performed by TXSTATE using JMP (SAS, inc., Version 3.0) to identify trends in routine quarterly CRP data from SWQMIS. Box and whisker plots showing pollutant concentrations of concern will provide

a visual depiction of the variability in the data under a given flow condition. Annual median concentrations are compared to their respective stakeholder targets or TCEQ screening levels.

Data resulting from this project that do not meet requirements contained in this QAPP will not be included in the draft/final reports due to compromised data quality.

TXSTATE and the CCSC will annually review the project's progress, consider adaptive management measures, and recommend any changes or updates to the WPP.

Appendix A: Cypress Creek Site Map



Appendix B. Contract and Scope of Work

1. Title:	Cypress Creek (Segment 1815) Watershed Protection Plan Implementation (Years 4-6)
2. Lead Organization:	Texas State University, The Meadows Center for Water and the Environment (TXSTATE)
3. Project Leader and Title:	Nick Dornak, Watershed Services Program Director
4. Federal ID No.:	746002248
5. E-mail and Telephone No.:	nickdornak@txstate.edu , 512-245-6697
6. Mailing Address:	Texas State University The Meadows Center for Water and the Environment 601 University Dr. San Marcos, TX, 78666
7. Project Type:	<input checked="" type="checkbox"/> Watershed Protection Plan (WPP)* Implementation <input type="checkbox"/> Full WPP Development <input type="checkbox"/> Partial WPP Development: <input type="checkbox"/> WPP Update <input type="checkbox"/> Other: *WPP = EPA's Nine Key Element Plan developed in conformance with the Nonpoint Source Program and Grants Guidelines for States and Territories .
8. Tasks:	1. Project Administration 2. Quality Assurance 3. Education and Outreach 4. Community Support 5. Final Report
9. Project Description:	Cypress Creek Watershed Protection Plan (WPP) implementation will encourage stakeholders to holistically address potential impacts to both surface and groundwater resources within the watershed. The watershed coordinator will address technical and financial assistance to support implementation projects, including:

	<p>Data collection undertaken during this project will be used to track water quality, WPP progress, and to better understand current and trending nonpoint source contributions to Cypress Creek.</p> <p>A multifaceted approach to education and outreach will serve to engage the community and key stakeholders in both the implementation of WPP activities and the expansion of pollution reduction strategies across the basin.</p> <p>Engaging the watershed community in opportunities for continued investment in the implementation of best management practices (BMPs) and the development of an interlocal agreement and a sustainability plan for the WPP as critical components to achieving long-term water quality/quantity goals.</p>
10. Estimated Cost:	Total \$585,168; Federal \$351,101; Match \$234,067
11. Project Cities:	Wimberley and Woodcreek, TX
12. Project Counties:	Hays County
13. Segment ID Number:	Segment 1815, Cypress Creek

14. Applicant Signature:

Name	Title	Date

15. Project Map:

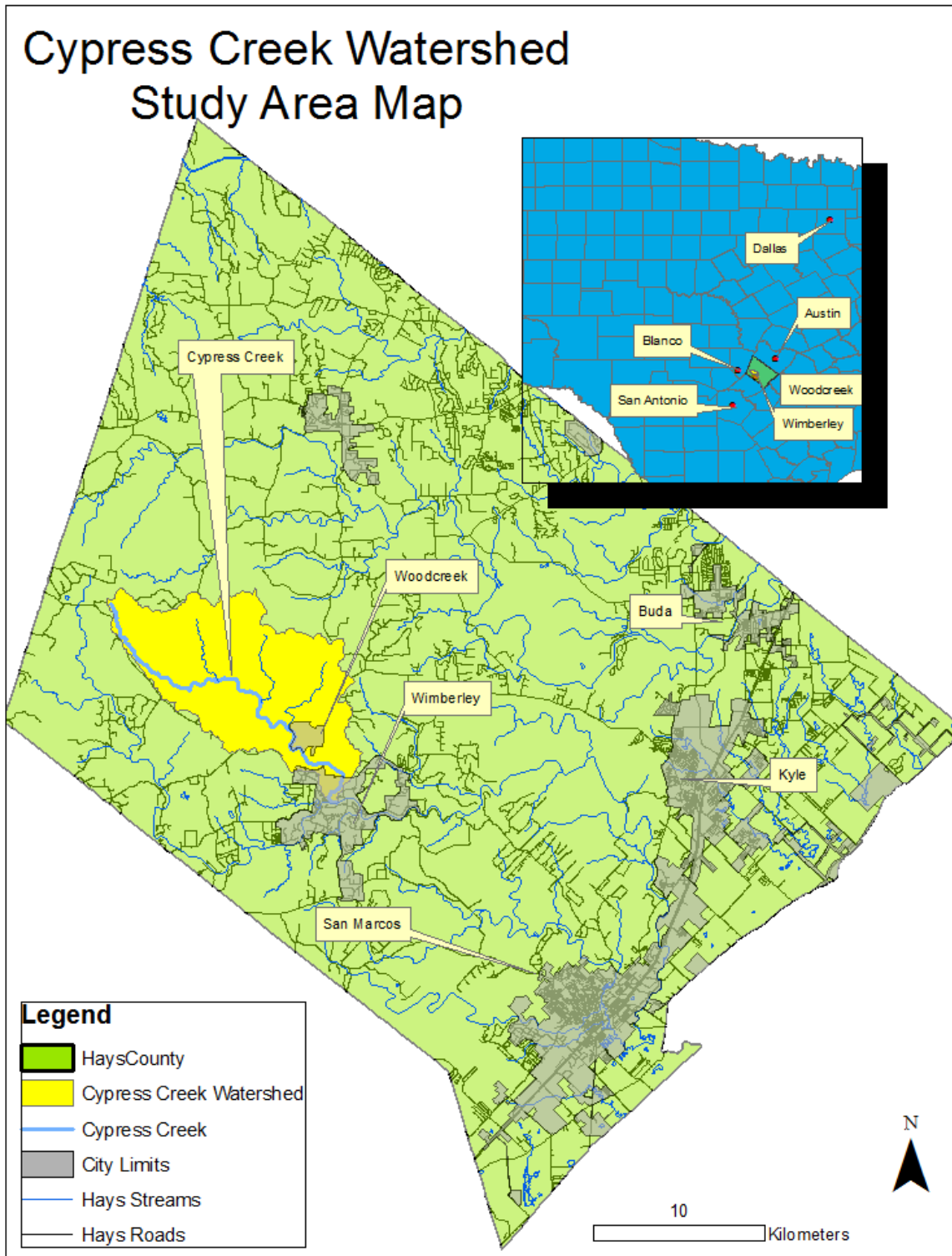


Figure 1. Cypress Creek Watershed.

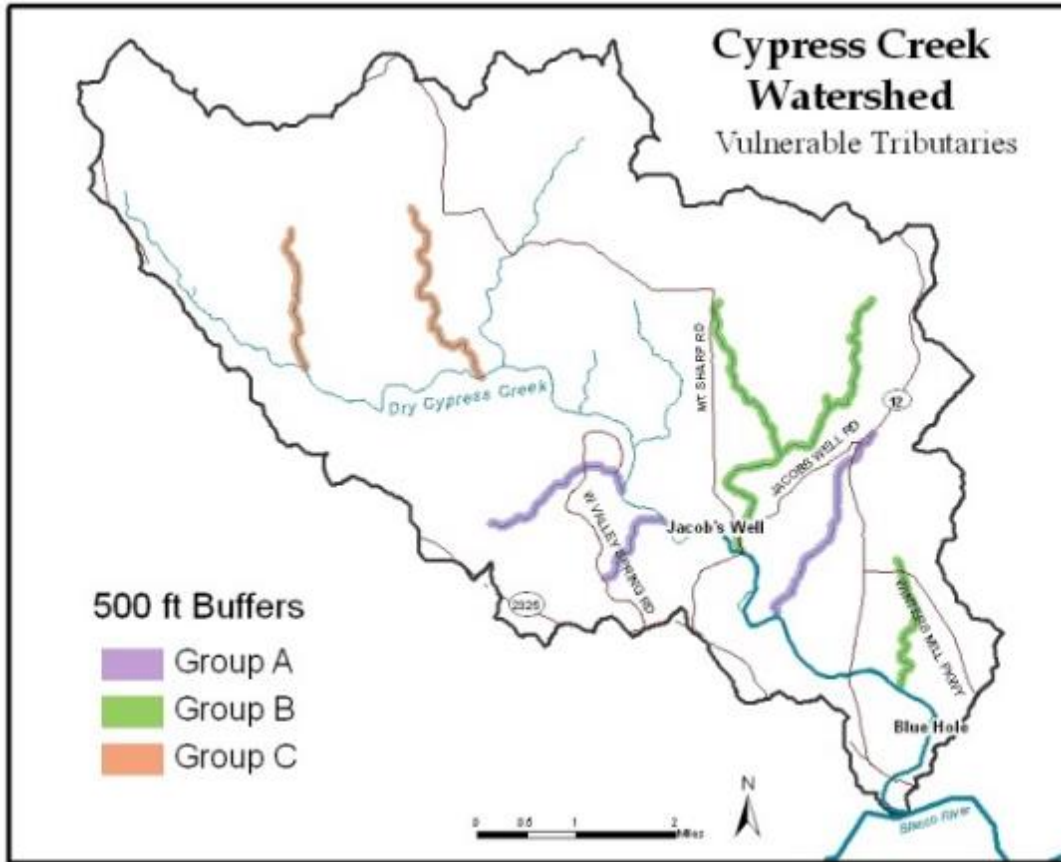


Figure 2. Tributaries Vulnerable to Nonpoint Source Pollution in Cypress Creek Watershed.

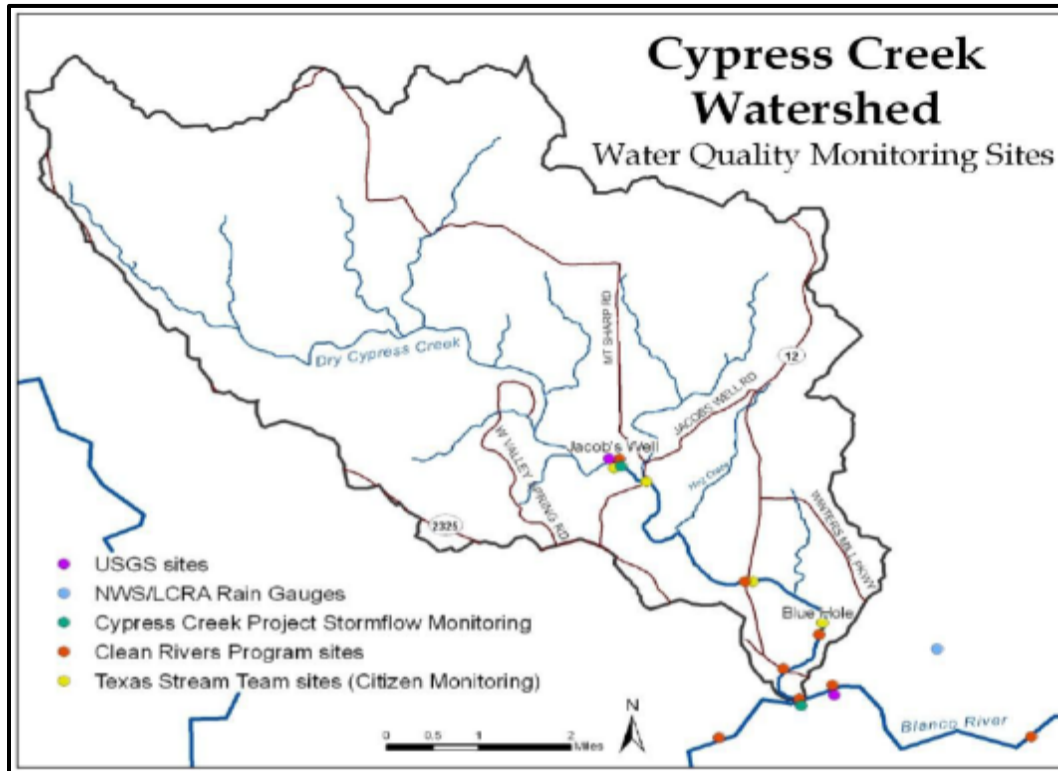


Figure 3. Existing Water Quality Monitoring Sites in Cypress Creek Watershed.

16. Activities:	
<input type="checkbox"/> Routine Monitoring <input type="checkbox"/> Storm Event Monitoring <input type="checkbox"/> Best Management Practice (BMP) Effectiveness Monitoring <input type="checkbox"/> Specialized Monitoring <input type="checkbox"/> Modeling <input checked="" type="checkbox"/> Data Analysis <input checked="" type="checkbox"/> Geospatial Database and/or Analysis <input type="checkbox"/> Load Calculations <input checked="" type="checkbox"/> Stakeholder Group Coordination and Meetings	<input type="checkbox"/> Implement Structural Management Measures <input checked="" type="checkbox"/> Implement Non-Structural Management Measures <input type="checkbox"/> Implement Low Impact Development (LID) Management Measures <input checked="" type="checkbox"/> Social Marketing <input checked="" type="checkbox"/> Education/Technical Workshops <input checked="" type="checkbox"/> Outreach and Education <input checked="" type="checkbox"/> Other: Continue developing CCWPP Partnership and interlocal agreements to further WPP implementation activities and oversight analyzing cost-benefit results for selected BMPs, engineering support for structural controls, alternatives, and existing ordinances.
17. Project Period:	Upon signature approval of both parties - August 31, 2022.

18. Project Partners and Roles:

a. Project Partners (Organizations)	b. Roles and Responsibilities
Texas Commission on Environmental Quality (TCEQ) - NPS Program	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and the Texas State Soil and Water Conservation Board (TSSWCB).
Texas State University (TXSTATE)	Provide oversight of all fiscal and contract management; provide match contributions; provide university technical resources and subject matter expertise

Texas Stream Team (TST)	Provide education and outreach support and materials; training and support of citizen science-based water quality and environmental monitoring; technical support and assistance with water quality analyses
Wimberley Valley Watershed Association	Community leadership; routine water quality monitoring through the Clean Rivers Program (CRP); in-kind and match funding assistance; technical assistance; participation in stakeholder committee activities
City of Woodcreek	Community leadership; in-kind and match support; technical assistance; participation in stakeholder committee activities and land/facilities for installed BMPs
City of Wimberley	Community leadership; in-kind and match support; technical assistance; participation in stakeholder committee activities; land and facilities for installed BMPs
Hays County	Community leadership; in-kind and match support; technical assistance; participation in stakeholder committee activities; land and facilities for installed BMPs
Guadalupe-Blanco River Authority (GBRA)	Provide technical assistance regarding water quality data collection, interpretation and analyses; provide subject matter expertise regarding pollution estimation/reduction and best management practice implementation; participation in stakeholder committee activities; water quality analyses services
Hill Country Alliance	Support of stakeholder directed programs and outreach and staff time contributed to technical committees

Hays Trinity Groundwater Conservation District	Support data acquisition for this project and groundwater monitoring efforts in support of WPP but not covered under this project.
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<p>19. Implements a WPP:</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Document Title: Cypress Creek Watershed Protection Plan</p> <p>Developing Organization: Texas State University (The Meadows Center for Water and the Environment) and project stakeholders</p> <p>State Agency Overseeing Plan: TCEQ</p> <p>Year Finalized: 2014</p> <p>Measures to Implement: Management Measures are described in Section 6 of the Cypress Creek WPP, pp.72-85 and in Section 11. Milestones and Measures of Success, pp.109-117.</p> <p>Education and Outreach Strategy is described in Section 8 of the Cypress Creek WPP, pp.88-96</p> <ul style="list-style-type: none"> • Website/social media • Newsletter • Workshops • Road signs • Events • Stakeholder meetings <p>Monitoring and Adaptive Management is described in Section 9 of the Cypress WPP, pp.97-106</p> <ul style="list-style-type: none"> • CRP Monitoring • Volunteer Monitoring • Groundwater Monitoring <p>Table 26. Measurable Milestones for Implementation Phase – Surface Water Protection Strategy (pp.110-113) identifies key management measures for years 4-6 of implementation</p> <ul style="list-style-type: none"> • Riparian buffers
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	<ul style="list-style-type: none">• Green Stormwater Infrastructure (GSI) / Low-impact Development (LID)• Karst feature protection• Pet waste management• Ordinances <p>Table 27. Potential Ground/Source Water Protection Strategy Benchmarks (pp.114-115) identifies key management measures for years 4-6 of implementation</p> <ul style="list-style-type: none">• Water conservation pricing strategies• Monitoring water use changes• Seek funding and technical assistance for source water protection• Karst feature protection
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<p>20. Assessment Unit (AU) Water Quality Status on the 2014 Texas Integrated Report:</p>	<p>Parameter(s) of Impairment: n/a Category: n/a Parameter(s) of Concern: Dissolved Oxygen (DO) Grab, Habitat</p>
<p>21. Implements the Texas Coastal NPS Pollution Control Program (See Boundary Map)</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Measures to Implement: Will the project address any of the following outstanding management measures in the Coastal Zone?</p> <p><input type="checkbox"/>II.A. New Development (pg. 5-60) <input type="checkbox"/>II.B. Watershed Protection (pg. 5-62) <input type="checkbox"/>II.C. Site Development (pg. 5-64) <input type="checkbox"/>IV.A. Existing Development (pg. 5-70) <input type="checkbox"/>V.B. Operating Onsite Disposal Systems (pg. 5-75) <input type="checkbox"/>VII. Roads, Highways, and Bridges (pg. 5-84)</p>

<p>22. Implements the <u>Texas NPS Management Program</u>:</p>	<p>Check the appropriate boxes correlating to the Program Components, Objectives, and Milestones of the <u>Texas NPS Management Program</u>. The Components are described in Chapter 1. The Long- and Short-Term Objectives are in Chapter 2. The Milestones are found in Chapter 2 and Appendix E of the <u>Texas NPS Management Program</u>.</p> <p>Long-Term Objectives (Ch. 2, pg. 24): 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input checked="" type="checkbox"/> 7 <input checked="" type="checkbox"/> 8 <input checked="" type="checkbox"/></p> <p>Short-Term Objectives (Ch. 2, pg. 25): Data Collection and Assessment: A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> Implementation: A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D <input checked="" type="checkbox"/> Education: A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D <input checked="" type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input checked="" type="checkbox"/></p> <p>Milestones: Priority Watershed Milestones (Ch. 2, pg. 27): Stakeholder Participation <input checked="" type="checkbox"/> Water Quality Monitoring <input checked="" type="checkbox"/> Modeling <input type="checkbox"/> Plan Development <input type="checkbox"/> Implementation <input checked="" type="checkbox"/></p> <p>Priority Watersheds (Appendix C):</p> <p>NPS Program Milestones (Appendix E): <input checked="" type="checkbox"/> Milestone/Measurement:</p> <ul style="list-style-type: none"> • Section 319(h) Grant Program Application • Watershed Coordination • Implement WPPs • Load Reductions • Effectiveness Monitoring
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<p>23. Project is in an area covered under a Municipal Separate Storm Sewer System (MS4) Permit:</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>MS4 Permit Holder:</p>
<p>24. National Historic Preservation Act:</p>	<p>Will this project require review under the National Historic Preservation Act?</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>If yes, describe what steps have already been taken in the process:</p>

25. Water Body Information:

Watershed or Aquifer Name	Segment ID(s)	HUC (12-Digit only)	Size
Cypress Creek Watershed	1815	121002030202	38 sq. miles

26. Background Information:

The Cypress Creek watershed is home to a unique set of rural and urban communities, ecosystems, and has a long-standing reliance on groundwater for both drinking supply and recreational uses. Cypress Creek flows through unincorporated portions of Hays County and the cities of Wimberley and Woodcreek. It meets the Blanco River near the Wimberley town center. Nearly five and a half miles upstream of the confluence, near the City of Woodcreek, is Jacob's Well, the headwaters of the perennial Cypress Creek. Jacob's Well is an expression of underground water stored in the Trinity Aquifer that discharges at the land surface. The artesian spring perennially feeds water to the lower third of the creek. Above the artesian headwaters, flows in the Cypress Creek (Dry Cypress) are driven by rain events. Once the water is in the creek bed, part of it flows back underground into the aquifer. Flow between land surface and the subsurface creates a complex interaction between groundwater and surface water in Cypress Creek.

Although water quality in Cypress Creek is meeting water quality standards, data reveal both spatial and temporal trends that may be due to climate variability, nonpoint source pollution, and changes in land use and management in the watershed. Water quality parameters vary considerably from site to site throughout the perennial part of the stream. In general, the the water chemistry at the three upper most water quality monitoring sites (Jacob's Well, RR12 north, and Blue Hole) tends to be highly influenced by inflow of groundwater, while the lower two sites (RR12 downtown and the Blanco confluence) tend to show the influence of local stream conditions and runoff from contributing watersheds. Issues of concern include excess sediment in the creek, high bacteria concentrations, and occasionally very high nutrient levels which are exacerbated by low flows.

27. General Project Description:

Adverse effects on water quality resulting from on-going development within the Cypress Creek watershed have been observed. The Cypress Creek Watershed Protection Plan (CCWPP) Stakeholder Committee selected a suite of BMPs to mitigate current, as well as potential water quality impairments in the watershed. A subset of the BMPs was prioritized for immediate implementation, while others will be implemented over a number of years, as required to mitigate nonpoint source pollution from future development and other activities in the watershed. This project will implement select management measures from the CCWPP.

Data collected outside the scope of this project will be acquired, including routine, quarterly surface water quality monitoring to be performed at six sites on Cypress Creek and two wells located within the watershed under a Texas State QAPP to be developed; surface water quality data collected under TST's

QAPP; a partnership with Hays Trinity Groundwater Conservation District (HTGCD) to acquire water level data in wells; and biomonitoring data, provided by GBRA and USFWS under existing GBRA QAPPs (and USFWS guidelines). These data will be used to track water quality, WPP progress, and to better understand current and trending nonpoint source contributions to Cypress Creek.

The Meadows Center will contract with a professional engineer to provide technical support for BMP implementation (installation of the BMPs will not occur under this project) and will seek local investment in site-specific structural BMPs to serve as highly visible projects highlighting to developers and citizens the effectiveness of BMPs.

Due to the unique hydrogeologic composition of the Cypress Creek watershed and its established connection to streamflow and water quality, the CCWPP also identifies management measures for karst feature protections. Under a sustainability plan developed for this project, properties identified as beneficial to protecting surface water or source water will be targeted for karst feature protection measures along with the adoption of protection measures in city and county codes.

An existing self-guided tour of LID and GSI infrastructure throughout the watershed will be updated.

Project partners and stakeholders agreed to examine opportunities to incorporate LID management practices into updated development and redevelopment standards, to develop new code language and rules, and to examine proposed engineered alternatives that enhance water quality and mitigate stormwater impacts. Engineers and technical resources will deliver technical information in workshop settings for evaluation, recommendations on preferred alternatives, and references for new standards.

A multifaceted approach to education and outreach will serve to engage the community and key stakeholders in both the implementation of WPP activities and the expansion of pollution reduction strategies across the basin. Specific activities include public service announcements, community workshops, speaker series, newsletters, watershed tours, and other outreach efforts.

WPP implementation will encourage stakeholders to holistically address each of the sources and causes of threats to both surface and groundwater resources within the watershed. The watershed coordinator will address technical and financial assistance to support implementation projects. The role of the coordinator will be to support and facilitate stakeholders and partners in implementing management measures, developing additional proposals to acquire funding, tracking projects, and encouraging adoption of BMPs. This

position will also provide support for deploying highly visible BMPs, as well as coordinating site-specific community education projects at these locations.

28. Additional Information:

a. Project environmental data operations

Data acquisition of surface water and groundwater during this project will be used to track water quality, WPP progress, and to better understand current and trending nonpoint source contributions to Cypress Creek. All of these data will be compiled and utilized according to the project's Data Acquisition QAPP.

b. Sustainability

The CCWPP steering committee, in collaboration with the Meadows Center, will ensure that the goals of the project continue to be met through activities that are consistent with the current conditions and resources that are available. Regular meetings of the steering committee, project newsletters, website updates, educational opportunities, and technical/financial support commitments of project partners will ensure best practices for information transfer and stakeholder engagement.

Memoranda of Understanding (MOUs) already in place with project partners including Hays County and the cities of Wimberley and Woodcreek will ensure continued operation and maintenance of structural BMPs installed under previous projects. Additional agreements will be obtained to ensure projects and activities implemented during this project are maintained.

Educational programs and workshops coordinated by the Meadows Center and other partners such as WVWA, GBRA, and others continue to receive strong attendance and community support. Pre and post-workshop evaluations are utilized to ensure communication goals and stakeholder outcomes are achieved. The watershed coordinator will work with stakeholders to identify and acquire resources, seek and pursue funding opportunities, and develop additional grant proposals.

A significant level of effort on the part of the watershed coordinator, The Meadows Center staff, the stakeholder committee and the stakeholder chair will be directed toward the formation of a permanent partnership in the watershed, complete with external sources of funding. To this end, this project will develop a formalized sustainability plan with key stakeholder input.

c. Project readiness

The project team is in place with considerable community and institutional support. Project partners and sub-contractors have committed to assisting with implementation activities and have been involved in development of scopes of work and budget parameters. Key stakeholders understand their responsibilities and the schedule is consistent with expectations established during the WPP finalization meetings and years 1-3 of WPP implementation. Further, the stakeholder committee, project partners, and watershed coordinator will continue to meet and move forward with securing additional sources of funding and support for implementation activities.

29. Project Goals and Measures of Success:

Goal	Measure of Success
Ensure partner commitments to long-term WPP implementation and achievement of WPP goals to reduce nonpoint source pollution and protect flow in Cypress Creek and its tributaries	Development of an interlocal agreement and/or sustainability plan for the CCWPP approved by project partners and other key stakeholders.
To implement activities which prevent increases in nonpoint source pollution in Cypress Creek and its tributaries	<ul style="list-style-type: none"> • Nature trail educational signage (1 sign) • “Inside Cypress Creek Watershed...” road sign installation (3 signs)
To encourage citizen participation through continued stakeholder meetings, progress updates, and solicitation of stakeholder input and recommendations on needed activities	Steering Committee, Technical Advisory Committee, and Topical Work Group meetings are held as needed to maintain interest among stakeholders. At least 6 general stakeholder meetings held during the project period.
To support stakeholders in implementing management measures to improve water quality, develop proposals to acquire funding for implementation, and to manage and track implementation projects	<ul style="list-style-type: none"> • Technical assistance is provided to the stakeholders through identification and acquisition of resources, seeking and pursuing funding opportunities, and development of grant proposals

Goal	Measure of Success
	<ul style="list-style-type: none"> • Progress toward achieving milestones in the WPP is evaluated and an addendum to the Cypress Creek WPP is published that describes modifications and updates to goals and milestones, and documents success in achieving goals and milestones and success in achieving water quality improvement and load reductions • External funding is secured for additional implementation efforts
<p>To acquire needed water quality monitoring data for tracking water quality trends, WPP implementation, and determination of future management measures</p>	<ul style="list-style-type: none"> • Data of known and acceptable quality are acquired for decision-making activities; data is used to track changes in water quality • Groundwater data and information is acquired to support future groundwater modeling and/or source water protection efforts
<p>To coordinate and conduct water resources and related environmental outreach and education efforts across the watershed</p>	<p>Expansion of local education and outreach activities aimed at preventing pollution throughout the watershed. The watershed coordinator will keep records of the estimated number of individuals reached by education and outreach activities. TXSTATE will provide reports of outreach activities with QPRs.</p> <ul style="list-style-type: none"> • Riparian education workshop (1) • OSSF workshop (1) • Groundwater/source water protection workshops (2) • Ecotourism/ecosystem services workshops (2) • Rural landowner workshop (1)

Water Quality Targets Measures of Success

The Cypress Creek WPP is a preventative plan that will first address immediate water quality threats from nitrogen while implementing the integrated ground/source water protection strategy. After the first 3 years of implementation the stakeholder committee will conduct an adaptive management review to see how well water quality and water quantity goals are being met. Interim water quality milestones are designated in-stream concentrations between current conditions and future conditions. The stakeholder committee decided that between 2014 and 2050, nitrogen concentrations should remain constant, while *E. coli* levels could increase in 2020 and TSS would be reduced between 2020 and 2050; therefore, *E. coli* reduction is not a goal of this project. The stakeholder committee will also review monitoring data to determine when action is needed to mitigate parameters of concern.

30. Estimated Load Reductions and Method(s) (if applicable):

N/A

31. Tasks:

Task 1: Project Administration

Objective: *To effectively administer, coordinate, and monitor all work performed under this project including technical and financial supervision and preparation of status reports.*

Subtask 1.1: Project Oversight — *The Performing Party will provide technical and fiscal oversight of the staff and/or subgrantee(s)/subcontractor(s) to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget. With the Texas Commission on Environmental Quality (TCEQ) Project Manager's authorization, the Performing Party may secure the services of subgrantee(s)/subcontractor(s). Project oversight status will be provided to the TCEQ Project Manager with the Quarterly Progress Reports (QPRs).*

Subtask 1.2: QPRs — *The Performing Party will submit QPRs to the TCEQ Project Manager by the 15th of the month following each state fiscal quarter (Sept - Nov, Dec - Feb, March - May, June - August) for review by the TCEQ Project Manager and incorporation into the United States Environmental Protection Agency's (EPA) Grant Reporting and Tracking System. QPRs will include reporting on status of Deliverables and proposed revisions to due dates, narrative description of progress by Task, and status of nonconformances, and corrective actions. A template for the QPR will be provided to the Performing Party by the TCEQ Project Manager.*

Subtask 1.3: Reimbursement Forms — *The Performing Party will submit invoices and Financial Status Reports (FSR)s to the TCEQ Contract Manager within 30 days after the close of each state fiscal quarter. For the final quarter of the Contract period, Reimbursement Forms are required monthly and are to be submitted within 15 days after the close of the month. The final reimbursement is to be submitted within 45 days after the close of the Contract.*

Subtask 1.4: Contract Communication — *The Performing Party will participate in a post-award meeting with the TCEQ within 30 days of Contract execution.*

The Performing Party will maintain regular telephone and/or e-mail communication with the TCEQ Project Manager regarding the status and progress of the project in regard to any matters that require attention between QPRs. This will include a quarterly conference call to discuss Project Tasks, financial status, Quality Assurance Project Plan (QAPP), corrective actions and any other matters that require attention. The TCEQ Project Manager may request additional information from the Performing Party prior to the call or meeting. The Performing Party will submit meeting notes (action items at a minimum) to the TCEQ Project Manager within seven days of the meeting or call.

The quarterly conference call held the first quarter of each fiscal year of the project will be used to discuss, at a minimum, any staff changes, the previous year's performance, budget estimates, invoicing issues, quality assurance issues, overall project progress, and a plan for the current fiscal year. The Performing Party will submit meeting notes (action items at a minimum) to the TCEQ Project Manager within seven days of the meeting or call.

Subtask 1.5: Coordination Meeting with the EPA — The Performing Party will attend a project update and coordination meeting with the EPA upon request by the TCEQ and the EPA to share progress on goals, measures of success, challenges, and opportunities.

Subtask 1.6: Annual Report Article — The Performing Party will provide an article for the NPS Annual Report upon request by the TCEQ. The article will include a summary of the project, photos, and describe the activities of the past fiscal year.

Subtask 1.7: Contract Budget Updates — The Performing Party will discuss annual fiscal year budgets with the TCEQ Project Manager on a quarterly basis. Starting in the second year of the project, the Performing Party will provide an Annual Budget Update that details state fiscal year spending projections as associated with planned project activities. Updates will be revised when fiscal year spending projections change by ten percent or more, or upon request by the TCEQ Project Manager. The update in the final year of the project will include a budget for all remaining project activities. The template for the Annual Budget Update will be provided by the TCEQ Project Manager.

Deliverables:

- *QPRs*
- *Reimbursement forms*
- *Post-Award Meeting and notes*
- *Conference call notes and action items*
- *Coordination meeting with the EPA (upon request)*
- *Annual Report article and pictures (upon request)*
- *Contract budget updates*
- *Annual budget updates*

Task 2: Quality Assurance

Objective: To refine, document, and implement data quality objectives (DQOs) and quality assurance/quality control (QA/QC) activities that ensure data of known and acceptable quality are generated by this project.

Subtask 2.1: QAPP Planning Meetings — The Performing Party will schedule a QAPP planning meeting with the TCEQ Project Manager, QA staff, technical staff, and contractors within 30 days of Contract execution, to implement a systematic planning process based on the elements in the TCEQ NPS QAPP Shell. The information developed during this meeting will be incorporated into an Acquired Data QAPP. The storage location of data records, and how data should be coded, will also be determined during these meetings. The Performing Party may conduct additional meetings to determine whether changes to an existing QAPP are needed.

Subtask 2.2: QAPP — The Performing Party will develop and submit to the TCEQ an Acquired Data QAPP with project-specific DQOs and other components consistent with the following documents:

- [TCEQ NPS QAPP Shell\(s\)](#)
- [EPA Requirements for QAPPs \(QA/R5\)](#)
- [EPA Guidance for Geospatial Data QAPPs \(QA/G-5G\)](#)
- [EPA QAPP Requirements for Secondary Data Research Projects](#)
- [TCEQ Surface Water Quality Monitoring \(SWQM\) Procedures](#)

The Performing Party will develop the Acquired Data QAPP in consultation with the TCEQ Project Manager, QA staff, and contractors. The Performing Party will submit the QAPP to the TCEQ at least 120 days prior to the scheduled initiation of environmental data operations. The QAPP must be signed/fully approved by the TCEQ and before any environmental data operations begin.

Activities covered under this QAPP:

- Surface water quality data acquisition and analysis
- Groundwater data acquisition and analysis
- Geospatial data acquisition
- Field data acquisition and analysis

Tasks covered under this QAPP:

- Tasks 2, 3, 4, and 5.

Tasks NOT covered under this QAPP:

- Task 1

Subtask 2.3: QAPP Annual Reviews and Revisions — The Performing Party will submit documentation certifying its annual review of QAPPs no less than 90 days prior to the QAPP anniversary date. Amendments approved since the initial QAPP approval or a subsequent certified annual review (if applicable) must be submitted along with the certification. If extensive changes to a QAPP are necessary, a full revision is required. Once the TCEQ certifies the annual review or approves the full revision, the QAPP effective period is extended an additional year. No work described in a QAPP will be conducted outside the effective period of the QAPP.

Subtask 2.4: QAPP Amendments — The Performing Party will submit Amendments when changes to QAPPs are necessary. Amendments should be submitted no less than 90 days prior to the scheduled initiation of changes. A justification, summary of changes, and detail of changes must be provided with the Amendment. The Performing Party will ensure that changes conveyed within Amendments are not implemented until the Amendment is fully approved by the TCEQ.

Deliverables:

- QAPP planning meeting notes
- Draft and Final Acquired Data QAPP
- QAPP annual reviews and revisions
- Draft and Final QAPP Amendments

Task 3: Education and Outreach

Objective: *To enhance the implementation of the WPP through the engagement of the community in education and outreach activities, including meetings, events, workshops, print materials, website, and signage.*

Subtask 3.1: Education and Outreach Website, Print Materials, and Signage — *The Performing Party will use existing outreach materials and resources adapted to local circumstances (to the extent necessary) and will develop new content to execute the following (documentation to be included in QPRs):*

- *At least two meetings per year for the Executive Committee;*
- *At least two meetings per year of the full stakeholder committee*
- *Quarterly email updates;*

- *Announcements, agendas, attendance, presentation materials, and notes from all community/stakeholder meetings will be included with QPRs;*
- *Website updated and maintained, including: clearing house of information, agendas, meeting announcements, water quality data and dashboard, etc.;*
- *Develop an online application enabling watershed stakeholders to receive periodic online/text messages for important watershed news and updates;*
- *Annual digital newsletter. All newsletters will be standardized and included in quarterly reports;*
- *Three “Inside Cypress Creek Watershed Environmentally Sensitive Area” signs installed on county roads within the watershed.*
- *One nature trail educational sign; and*
- *Updates to materials produced under previous workplan regarding the self-guided tour of structural BMPs in the watershed.*

Subtask 3.2: Events and workshops — *The Performing Party will execute the following:*

- *Seven targeted community workshops:*
 - *One Workshop: Homeowner septic system workshop;;*
 - *One Workshop: Riparian design, restoration and management.*
 - *One Workshop: Rural Landowner;*
 - *Two Workshops: Ground/Source Water Protection - Keeping it flowing;*
 - *Two Workshops: Ecotourism and Ecosystem Services. The performing party will work with project partners and industry professionals to deliver this workshop series that focuses on the economic value of conservation and watershed protection; and*
 - *Pre and post-workshop evaluations will be utilized to ensure communication goals and stakeholder outcomes are achieved.*
- *Speaker Series on water related topics will be hosted by the Performing Party. Speaker topics range from preventing nonpoint source pollution to understanding related ordinances. At least three events will be held.*

Deliverables:

- *Documentation of biannual steering committee meetings, including announcements, agendas, attendance, presentation materials, and minutes*
- *Documentation of biannual stakeholder meetings, including announcements, agendas, attendance, presentation materials, and minutes*

- *Documentation of website maintenance, in QPRs*
- *Online media application*
- *Draft and Final annual newsletters*
- *Photo documentation of three installed “Inside Cypress Creek Watershed Environmentally Sensitive Area” signs*
- *Photo documentation of one nature trail educational sign*
- *Update to the self-guided public tour*
- *Documentation of hosted workshops, including announcements, presentation materials, and pre and post-workshop evaluations*
- *Documentation of speaker series on water related topics, including agendas, minimum of three*

Task 4: Community Support

Objective: *To support the Cypress Creek community in efforts to protect water quality and streamflow with current and long-term solutions.*

Subtask 4.1: Sustainability Plan — *The Performing Party will complete a sustainability study with stakeholder input to determine the technical and financial needs to ensure long-term implementation of the Cypress Creek WPP.*

The Performing Party will seek funding for structural BMPs as well as long-term funding and participation commitments from project partners and other key stakeholders in the form of an Interlocal Agreement to ensure coordination of the Cypress Creek project and implementation of BMPs for up to 10 years. The Performing party will secure a contract with a professional engineer to provide technical advice and assistance in BMP siting and design.

Subtask 4.2: Refined WPP — *Develop an update or addendum to the WPP, approved by stakeholders. The Performing Party will, in coordination with the Stakeholder Committee, review progress toward the milestones established in the WPP, consider adaptive management measures as necessary, and recommend changes, alterations and updates to the WPP. The Watershed Coordinator the*

Stakeholder Committee, the TCEQ, and other parties will formulate a refined WPP for review at least six months prior to the end of the implementation period.

Deliverables:

- *Draft and Final Sustainability Plan*
- *Interlocal Agreement to complement the Sustainability Plan*
- *Subcontract for providing technical support and advise in the siting and design of stakeholder-funded BMPs*
- *Update or addendum to the WPP*

Task 5: Final Report

Objective: *To produce a Final Report that summarizes all activities completed and conclusions reached during the project. The report will describe project activities, identify and discuss the extent to which project goals and purposes have been achieved, and state the amount of funds spent on the project. The report will emphasize successes, failures, lessons learned, and should include analyses estimating the project's water quality improvements and/or load reductions. The Final Report will summarize all the Task Reports in either the text or as appendices.*

Subtask 5.1: Draft Final Report — At least 30 days prior to submitting the Final Report, the Performing Party will provide a Draft Final Report summarizing all project activities, findings, and the contents of all previous Deliverables, referencing and/or attaching them as web links or appendices. This comprehensive report should document all Deliverables under this Scope of Work. The Draft Final Report should be structured per the following outline:

- Title and contract number
- Table of Contents
- Project Purpose and Background
- Study Area (maps)
- Summary of all Task Reports and final approved QPR
- Amount of project funding and amount spent
- Discussion; include deliverables not completed, lessons learned, recommendations for future work
- Water quality results achieved and estimated load reductions
- Appendices (if needed)

Subtask 5.2: Final Report — The Performing Party will revise the Draft Final Report to address comments provided by the TCEQ Project Manager. At least two weeks before the expiration of the Contract, the Performing Party will submit the Final Report to the TCEQ Project Manager, who will subsequently submit it to the EPA.

Deliverables:

- Draft Final Report
- Address TCEQ/EPA comments
- Final Report

32. Schedule of Deliverables:

Task No.	Task Deliverable	Due Date
1 Project Administration		
1.2	QPRs	The 15 th of the month following each state fiscal quarter
1.3	Reimbursement forms	30 days after the close of each quarter for quarterly invoicing, or 15 days after the close of each month for monthly invoicing; 45 days after the close of the Contract for the final reimbursement
1.4	Post-Award Meeting and notes	Meeting within 30 days of Contract execution; meeting notes within two days of meeting
1.4	Conference call notes and action items	Quarterly, notes within seven days of meeting
1.5	Coordination meeting with EPA	Upon request
1.6	Annual Report article and pictures	Upon request
1.7	Contract budget updates	Discussed quarterly and updated as needed

Task No.	Task Deliverable	Due Date
1.7	Annual budget updates	Quarters 5 and 9
2 Quality Assurance		
2.1	QAPP planning meeting notes	Meeting within 30 days of Contract execution
2.2	Draft Acquired Data QAPP	At least 120 days prior to the scheduled initiation of environmental data operations
2.2	Final Acquired Data QAPP	30 days prior to the scheduled initiation of environmental data operations
2.3	QAPP annual reviews and revisions	No less than 90 days prior to the QAPP approval anniversary
2.4	Draft QAPP Amendments	No less than 90 days prior to the scheduled initiation of changes or additions to activities listed in the current QAPP
2.4	Final QAPP Amendments	Within 30 days of receipt of TCEQ comments
3 Education and Outreach		
3.1	<i>Documentation of biannual steering committee meetings including announcements, agendas, attendance, presentation materials, and minutes</i>	Quarters 1, 3, 5, 7, 9, 11
3.1	<i>Documentation of biannual stakeholder meetings including announcements, agendas, attendance, presentation materials, and minutes</i>	Quarters 2, 4, 6, 8, 10, 12

Task No.	Task Deliverable	Due Date
3.1	<i>Documentation of website maintenance</i>	Quarters 2-12, in QPRs
3.1	<i>Online media application</i>	Quarter 4
3.1	<i>Draft and Final Annual Newsletters</i>	Quarter 2, 6, 10
3.1	<i>Photo documentation of three installed "Inside Cypress Creek Watershed Environmentally Sensitive Area" signs</i>	Quarter 4
3.1	<i>Photo documentation of one nature trail educational sign</i>	Quarter 4
3.1	<i>Update to the self-guided public tour</i>	Quarter 10
3.2	<i>Documentation of hosted workshops, including announcements, presentation materials, and pre and post-workshop evaluations (minimum of seven)</i>	Quarter 12
3.2	<i>Documentation of Speaker Series on water related topics, including agendas (minimum of three)</i>	Quarter 4, 8, 12
4 Community Support		
4.1	<i>Draft Sustainability Plan</i>	Quarter 6
4.1	<i>Final Sustainability Plan</i>	Quarter 7
4.1	<i>Interlocal Agreement to complement the Sustainability Plan</i>	Quarter 8
4.1	<i>Subcontract for providing technical support and advise in the siting and design of stakeholder-funded BMPs</i>	Quarter 3

Task No.	Task Deliverable	Due Date
4.2	<i>Update or addendum to the WPP</i>	Quarter 12
5 Final Report		
5.1	Draft Final Report	Last quarter, month 1
5.2	Address TCEQ/EPA comments	Within 30 days of TCEQ comments
5.2	Final Report	At least two weeks prior to the end of the Contract.

Appendix C: Corrective Action Plan Form

TCEQ Nonconformance Report and Corrective Action Plan	
QAPP Title: _____	
QAPP Contractor: _____	
Issued by: _____	Date of Occurrence: _____
Report No.: _____	Date Issued: _____
Description of deficiency	
Root Cause of deficiency	
Programmatic Impact of deficiency	
Does the seriousness of the deficiency require immediate reporting to the TCEQ? If so, when was it reported?	
Corrective Action to address the deficiency and prevent its recurrence	
Proposed Completion Date for Each Action	
Individual(s) Responsible for Each Action	
Method of Verification	

Date Corrective Action Plan Closed?
--

Example Corrective Action Plan Form

Nonconformance Report and Corrective Action Plan	
QAPP Title: Watershed Protection Plan Implementation – LID BMP Monitoring QAPP	
QAPP Contractor: River Authority	
Issued by: Jane Doe	Date of Occurrence: 7/15/2014
Report No.: 1	Date Issued: 7/25/2014
Description of deficiency	
<p>The pavement monitoring station at the university is measuring a larger runoff volume than is estimated possible. Runoff measured is higher than the total precipitation volume calculated by multiplying the catchment area by the precipitation measured at the site.</p>	
Root Cause of deficiency	
<ol style="list-style-type: none"> (1) It is possible that the drainage area was not measured accurately, it may be larger. (2) The outfall of the monitoring station might not adequately allow runoff to flow through causing pooling around the flow-measuring point. The accumulation of non-flowing water could be confounding the flow meter since its physical principal of measurement is hydrostatic pressure caused by water depth. 	
Programmatic Impact of deficiency	
<p>The illogical results of the pavement runoff measurement indicate that further calibration of the equipment is necessary. Data collected at this event are not able to be used in analysis or results.</p>	
Does the seriousness of the deficiency require immediate reporting to the TCEQ? If so, when was it?	

Yes, it was reported to the TCEQ NPS Project Manager via email on 7/18/2014.

Corrective Action to address the deficiency and prevent its recurrence

A survey will be conducted on the site to determine the ridge of the catchment area. A wider and deeper channel will be dug out at the monitoring point outfall to ensure all the flow drains away from the measuring point. Storm event runoff will not be measured at this site until this work has been completed.

Proposed Completion Date for Each Action

8/15/2014

Individual(s) Responsible for Each Action

David Lopez, Contractor Project Manager

Method of Verification

Results of the catchment area survey will be emailed to the TCEQ NPS Project Manager.

Photos of the modified measurement site will be emailed to the TCEQ NPS Project Manager.

Date Corrective Action Plan Closed?

The TCEQ NPS Project Manager will provide a closed date once the corrective action has been verified.

Appendix D: Corrective Action Status Table

Corrective Action #	Date Issued	Description of Deficiency	Action Taken	Date Closed

Corrective Action Status Table Example

Corrective Action #	Date Issued	Description of Deficiency	Action Taken	Date Closed
1	7/25/2014	Runoff measured at pavement was greater than total area runoff.	The area is being surveyed to ensure the catchment area size is correct. The monitoring station location is being modified to ensure runoff flows through properly.	
2	8/1/2014	Sample residual insufficient for analysis of TSS.	Data estimated but questionable, not will not be submitted to TCEQ.	8/8/2014

Attachment 1: Example Letter to Document Adherence to the QAPP

TO: (name)
(organization)

FROM: (name)
(organization)

RE: Contractor Name, QAPP Title

Please sign and return this form by (date) to:

(address)

I acknowledge receipt of the "QAPP Title, Revision Date". I understand that the document describes quality assurance, quality control, data management and reporting, and other technical activities that must be implemented to ensure the results of work performed will satisfy stated performance criteria.

My signature on this document signifies that I have read and approved the document contents. Furthermore, I will ensure that all staff members participating in activities covered in this QAPP will be required to familiarize themselves with the document contents and adhere to the contents as well.

Signature Date

Note: Copies of the signed letter should be sent by the Lead Organization to the TCEQ NPS Project Manager within 30 days of the final TCEQ approval the QAPP. This letter should be submitted for all subcontractors that did not sign the QAPP (under section A1 of this QAPP).