


**Texas Commission on Environmental Quality (TCEQ)
Clean Water Act (CWA) Section 319(h) Nonpoint Source (NPS) Grant Program**

**Fiscal Year (FY) 2019 CWA § 319(h)
Grant Application Form**

1. Title:	Cypress Creek 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 Coordinator
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 <u>Nonpoint Source Program and Grants Guidelines for States and Territories</u> .
8. Tasks:	1. Project Administration 2. Quality Assurance 3. Monitoring 4. Installation of Best Management Practices at Highly Visible Locations 5. Education, Outreach and Community Support 6. Final Report

<p>9. Project Description:</p>	<p>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> <p>Monitoring and data collection undertaken during the course of 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>Site specific structural BMPs installed during years 4-6 of implementation will serve as highly visible projects highlighting to developers and citizens the effectiveness of BMPs, including preventative, storm-water and low impact development (LID) measures.</p> <p>Because this is an increasingly urban watershed, continued evaluation of existing ordinances will assist the cities and county encompassed within the watershed to quantify the effectiveness of ordinances pertaining to water quality.</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>10. Estimated Cost:</p>	<p>Total \$1,329,063; Federal \$797,438; Match \$531,625</p>
<p>11. Project Cities:</p>	<p>Wimberley and Woodcreek, TX</p>
<p>12. Project Counties:</p>	<p>Hays County</p>
<p>13. Segment ID Number:</p>	<p>Segment 1815, Cypress Creek</p>

14. Applicant Signature:

 Name	Director, PreAward Support Services Title	7/30/2018 Date
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15. Project Map:

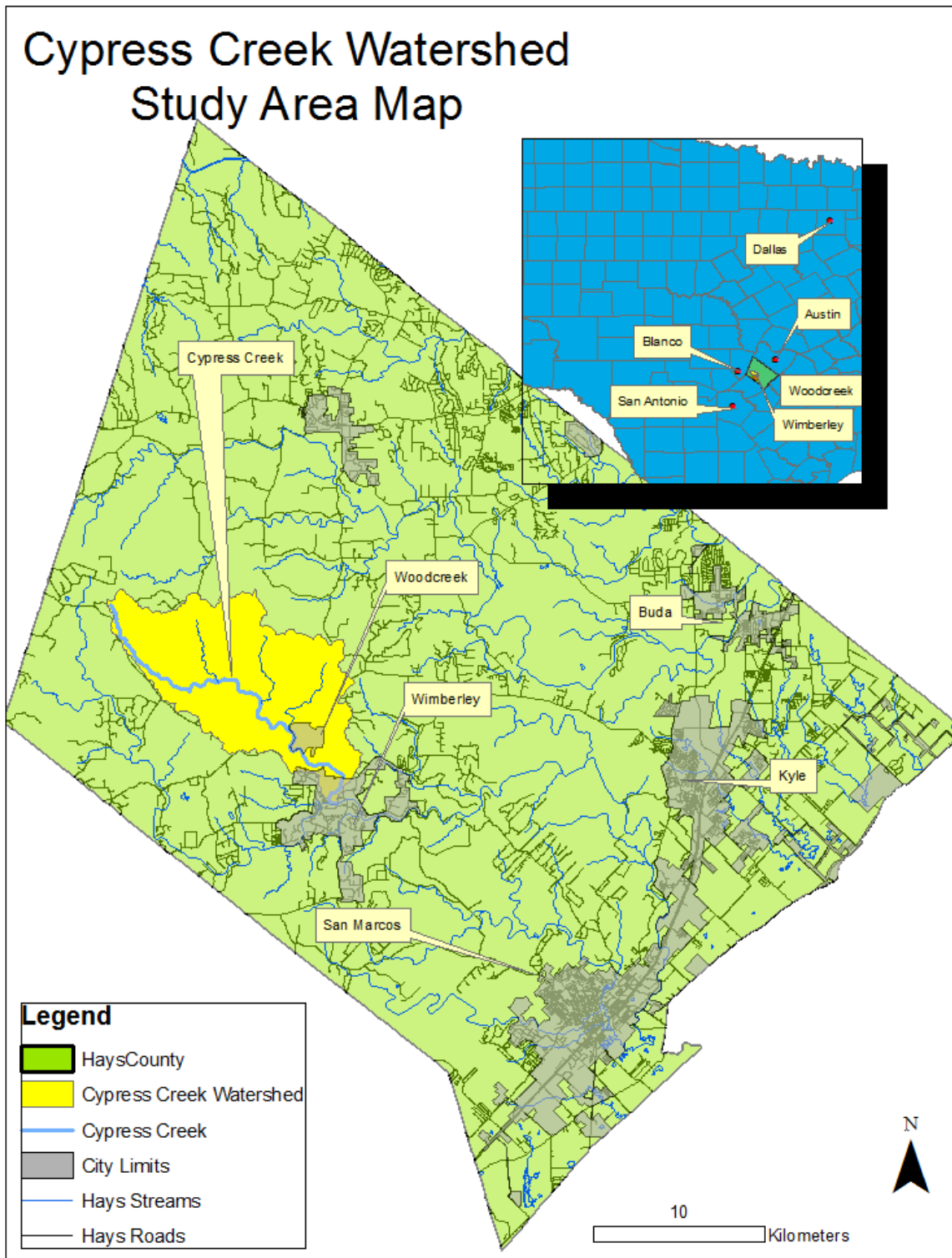


Figure 1. Cypress Creek Watershed.

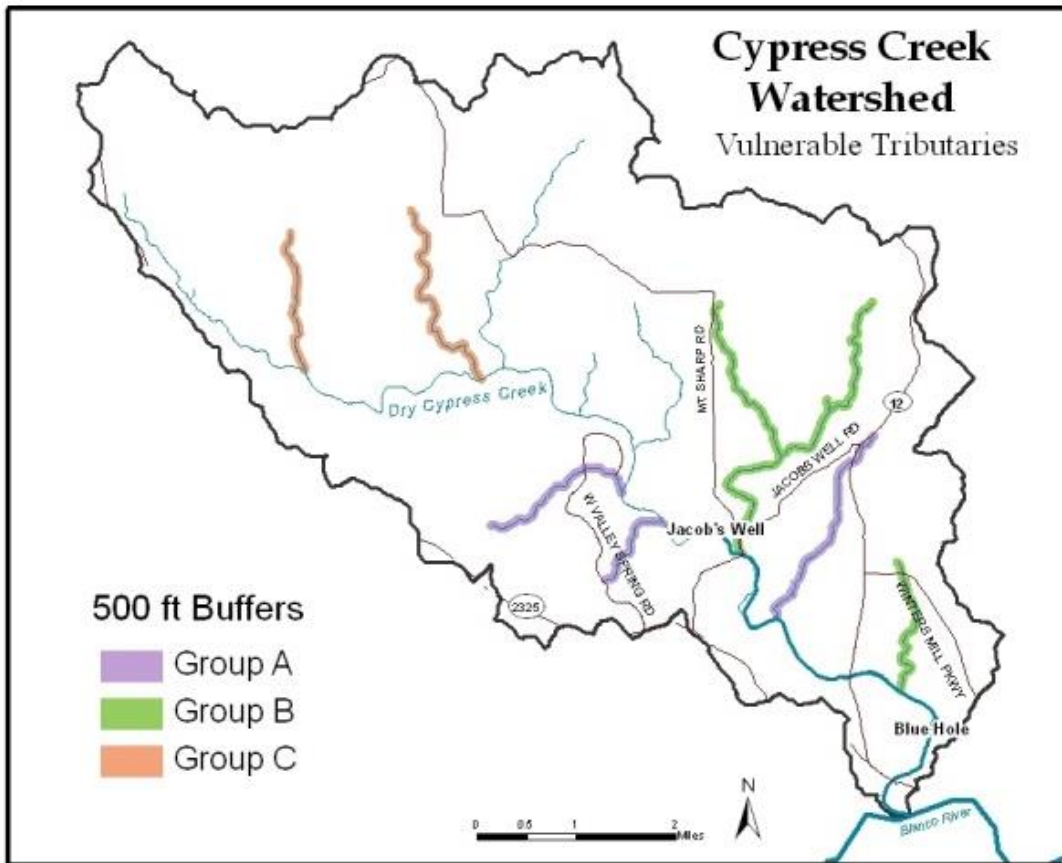


Figure 2. Tributaries Vulnerable to Nonpoint Source Pollution in Cypress Creek Watershed.

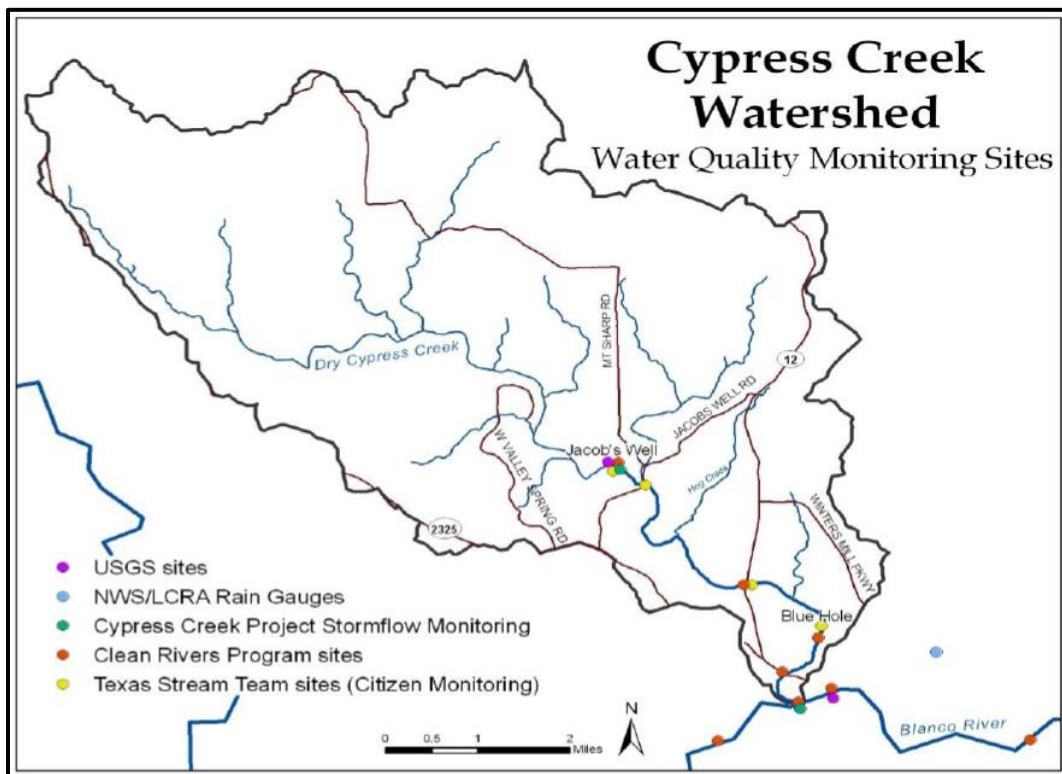


Figure 3. Existing Water Quality Monitoring Sites in Cypress Creek Watershed.

16. Activities:	
<input checked="" type="checkbox"/> Routine Monitoring <input checked="" type="checkbox"/> Storm Event Monitoring <input type="checkbox"/> Best Management Practice (BMP) Effectiveness Monitoring <input checked="" type="checkbox"/> Specialized Monitoring <input checked="" 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 checked="" type="checkbox"/> Implement Structural Management Measures <input checked="" type="checkbox"/> Implement Non-Structural Management Measures <input checked="" 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, structural controls, alternatives, and existing ordinances.
17. Project Period:	Upon signature approval of both parties - August 31, 2022.

18. Applicant Qualifications:

Texas State University’s Meadows Center for Water and the Environment Description, Experience and Technical Capacity:

As a vital part of Texas State University, The Meadows Center for Water and the Environment’s (The Meadows Center) faculty and staff have brought multi-disciplinary expertise to complex, real-world, water-related challenges. Since 2002, The Meadows Center has brought together departments and research centers to both engage in scholarly inquiry and to provide practical science-based solutions to these challenges. Our future depends on water. As such, the Meadows Center’s mission is *to develop and promote programs and techniques for the study and management of water resources for human needs, ecosystem health, economic development, and public education.*

The Meadows Center has a proven record of successful watershed management activities, including data collection, monitoring, modeling, science-based and interdisciplinary watershed characterizations, facilitating stakeholder and community input, planning for improved water quality and quantity, engaging decision makers for policy improvements, and successfully implementing management techniques to improve watershed.

The Meadows Center has been in a leadership position on numerous Clean Water Act (CWA) Section 319(h) funded programs, including the Cypress Creek Watershed Protection Plan, Texas Stream Team, the Upper San Marcos Watershed Protection Plan and Shoal Creek Watershed Protection Plan. The Meadows Center has been instrumental in watershed management projects like the Edwards Aquifer Habitat Conservation Plan, the Transboundary Waters Assessment Programme, and the Regional Framework for Sustainable Use of the Rio Bravo. The Meadows Center has also laid the scientific groundwork for future watershed management in the Pedernales River, the Blanco River, the Red River, and others.

Specific work has included terrestrial and aquatic portions to better understand watershed functions and corresponding planning and management needs. Activities have included surveys and assessments of macroinvertebrates, fishes, riparian plants, macrophyte/instream vegetation, wildlife habitat, land cover and land uses, hydrogeomorphologic characteristics, human demographics and development patterns, and resulting water quality. The Meadows Center has developed Watershed Protection Plans, Species' Conservation and Protection Plans, and Habitat Conservation Plans, including: all technical research activities and stakeholder facilitation; tools like Decision Support Systems (DSS) to assist communities and decision makers with water quality planning and assessment with regard to future development and water use; and assistance with development of federal, state, and private proposals for watershed protection funding.

Due to its long history working with the Texas Commission on Environmental Quality (TCEQ) and other state and federal agencies, The Meadows Center has a proven track record of successfully managing grants and fulfilling grant deliverables in a timely manner.

Key Staff:

Dr. Thomas Hardy will provide general oversight of the monitoring, modeling, and analysis portions of this project. Dr. Hardy holds a Ph.D. in Civil and Environmental Engineering, B.S. and M.S. degrees in Biology and a B.S. in Secondary Education. Dr. Hardy is a member and Certified Fisheries Scientist of the American Fisheries Society, the American Society of Civil Engineers, the American Society of Photogrammetry and Remote Sensing, the American Water Resources Association, the International Association for Hydraulic Research and the International Aquatic Modeling Group. He is on the Executive Committee of

the International Aquatic Modeling Group and President-Elect of the Ecohydraulics Section of the International Association for Hydraulic Research. Dr. Hardy was the Associate Director of the Utah Water Research Laboratory at Utah State for 10 years and is currently the Chief Science Officer of The Meadows Center for Water and the Environment at Texas State University. Dr. Hardy oversees research on the development, testing, validation, and application of multi-disciplinary methodologies for impact assessments in water resource systems and in particular in the ecohydraulics and instream flow assessments. He has accumulated extensive research and consulting experience since 1977 involving aquatic ecosystems modeling, trophic level dynamics, benthic and macro-invertebrate studies, river and reservoir water quantity and quality modeling, remote sensing and image processing, and development and application of impact assessment methodologies in natural systems. He is a recognized national and international expert on instream flow modeling and multi-disciplinary impact assessments.

Dr. Andrew Sansom will provide strategic guidance and liaising with the community. He is one of Texas' leading conservationists. Dr. Sansom currently serves as Research Professor of Geography and Executive Director of The Meadows Center for Water and the Environment at Texas State University. He is a former Executive Director of the Texas Parks and Wildlife Department and Executive Director of the Texas Nature Conservancy. For his commitment to the management and protection of natural resources, Dr. Sansom is a recipient of the Chevron Conservation Award, The Chuck Yeager Award from the National Fish and Wildlife Foundation, The Pugsley Medal from the National Park Foundation, the Seton Award from the International Association of Fish and Wildlife Agencies and the Lifetime Achievement Award from the Nature Conservancy. He is a Distinguished Alumnus of Austin College and Texas Tech University. Dr. Sansom has dedicated his life to environmental conservation. He has served on the Board of Trustees of the Texas Historical Foundation, Bat Conservation International, KLRU Public Television in Austin, The National Audubon Society, The Institute of Nautical Archaeology and The Texas Travel Industry Association. He joined the staff of the National Recreation and Park Association in Washington D.C. in 1969. He served as Environmental Coordinator for the White House Conference on Youth, Special Assistant to Secretary of Interior Rogers C.B. Morton, Director of Conservation Education at the Federal Energy Administration and Deputy Director of the Energy Institute at the University of Houston. His published works have appeared in Texas Monthly, The Texas Observer, Houston City Magazine, Politics Today, Texas Highways, Texas Parks and Wildlife and Texas Town and City. He is the author of eight books, Texas Lost, Texas Past, Scout the Christmas Dog, Water In Texas, Southern Plains Bison: Resurrection of the Lost Texas Herd, After Ike, Of Texas Rivers and Texas Art, and Seasons of Selah.

Emily R. Warren, MSES, MPA will provide general oversight for this program, including internal reporting, reporting to TCEQ and US Environmental Protection Agency (EPA) as appropriate, and oversee budgets and subcontract execution. She is the Associate Director of The Meadows Center for Water and the Environment and since 2003, she has served as the principle manager for The

Meadows Center's operations and programs. She has overseen numerous local, regional, and international projects and has coordinated with governmental agencies, non-governmental organizations, and environmental groups. Ms. Warren has worked as the Deputy and Operations Director for U4I, as the Policy and Regulatory Coordinator for Texas Parks and Wildlife Department, as the Assistant Land Steward for the Sycamore Land Trust, and as a Field Botanist with the Army's Office of the Environment in Indiana. In addition to her work with The Meadows Center, Ms. Warren currently serves as a program and management consultant to the United Nations Development Programme's Global Medical Waste Project and is the Operations Consultant for U4I. Ms. Warren holds a master's degree of Science in Environmental Science and a master's degree in Public Affairs.

Nick Dornak, MS will serve as the Project Manager. Mr. Dornak joined the Meadows Center for Water and the Environment in 2018 to serve as the Watershed Services Program Coordinator. Mr. Dornak has served as Coordinator for the Plum Creek Watershed Partnership for the past six years, over which time he has worked to build local collaboration on projects including the adoption and construction of low impact development BMPs, urban riparian restoration, bacterial source tracking, feral swine management, preferred wastewater management technologies, and extensive outreach and education programs. Mr. Dornak has managed numerous state and federally funded watershed-based projects including 319 grants from both TCEQ and the Texas State Soil and Water Conservation Board. He is currently overseeing implementation of the Cypress Creek WPP and the Upper San Marcos WPP. Mr. Dornak holds a BS in Agricultural Development/Animal Science from Texas A&M University and an MS in Rangeland Ecology and Watershed Management from the University of Wyoming.

Michael Jones, BS will provide as the Quality Assurance Officer, Data Manager, and Field Supervisor. Mr. Jones is currently the Water Resource Specialist for The Meadows Center's Texas Stream Team program. Mr. Jones coordinates the development and implementation of the QA program. Mr. Jones is responsible for the acquisition, verification, and transfer of data to the TCEQ. Mr. Jones oversees data management for the QAPP and performs data quality assurances prior to the transfer of data to TCEQ. Mr. Jones supervises all aspects of the sampling and measurement of surface waters and other parameters in the field. Mr. Jones is responsible for the collection of water samples and field data measurements in a timely manner that meet the quality objectives specified in the Cypress Creek WPP Implementation Water Quality Monitoring & Data Acquisition QAPP. Mr. Jones will also lead educational workshop events and coordinate citizen scientist water quality monitoring within the Cypress Creek Watershed.

Laura Parchman, BS will provide Geographic Information Systems (GIS) expertise. Ms. Parchman began working for The Meadows Center for Water and the Environment as a graduate student research assistant and is currently the Data and GIS specialist with the Texas Stream Team program. Ms. Parchman maintains the geographic and water quality information for Texas Stream Team,

and provides project management, mapping and modeling activities for The Meadows Center. Ms. Parchman served nearly nine years in the United States Navy and was stationed in Monterey, CA; Oahu, HI, and Misawa, Japan.

Technical and Financial Management Capability:

Texas State University’s Office of Sponsored Programs at Texas State University ensures that externally-funded programs are administered in accordance with applicable State and Federal laws, regulations, Office of Management and Budget Circulars and specific terms and conditions. University Policy and Procedure Statement (UPPS) UPPS No. 02.02.02 (Sponsored Programs – Post Award) identifies the general guidelines for the administration of sponsored programs, including Budgetary Controls (Section 07). Section 10 of this UPPS defines the fiscal responsibilities of the Office of Sponsored Programs, Principal Investigator, Department chairs, school directors, deans, vice presidents, and administrators for all externally funded projects. Furthermore, UPPS No. 03.01.09 (Fiscal Responsibilities of Account Managers), UPPS No. 03.01.05 (University Income Recognition and Associated Cash-handling Procedures) and UPPS No. 02.02.01 (Applying for Sponsored Programs, Section 06.02) provide specific policy guidelines for the fiduciary responsibilities of the Principal Investigator.

19. 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	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	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

<p>20. 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 for BMP Effectiveness 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 • Cypress Creek Decision Support System (CC-DSS) <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>21. 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 Grab, Habitat</p>
<p>22. Implements the Texas Coastal NPS Pollution Control Program (See Boundary Map)</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p><i>If yes, complete the items below. If no, continue to Section 24.</i></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>

23. **Implements the**
[Texas NPS Management Program.](#)

Check the appropriate boxes correlating to the Program Components, Objectives, and Milestones of the [Texas NPS Management Program](#). 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 [Texas NPS Management Program](#).

Components (Ch. 1, pg. 8): 2 3 4 5 6 7 8

Long-Term Objectives (Ch. 2, pg. 24):

1 2 3 4 5 6 7 8

Short-Term Objectives (Ch. 2, pg. 25):

Data Collection and Assessment: A B C D E

Implementation: A B C D

Education: A B C D E F G

Milestones:

Priority Watershed Milestones (Ch. 2, pg. 27):

Stakeholder Participation

Water Quality Monitoring

Modeling Plan Development

Implementation

Priority Watersheds (Appendix C):

NPS Program Milestones (Appendix E):

Milestone/Measurement:

- Section 319(h) Grant Program Application
- Watershed Coordination
- Implement WPPs
- Load Reductions
- Effectiveness Monitoring

<p>24. 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><i>Activities required under an MS4 Permit or the associated Stormwater Management Program (SWMP) are not eligible for CWA Section 319 funds. Please refer to the “What Activities Are Eligible” section of the TCEQ web page for more information regarding funding restrictions within stormwater permit areas.</i></p> <p><i>If yes, complete the items below. If no, continue to Section 25.</i></p> <p>MS4 Permit Holder:</p>
<p>25. National Historic Preservation Act:</p>	<p><i>Certain activities such as excavation and digging may require review under the National Historic Preservation Act. Visit this site for more information: http://www.thc.texas.gov/project-review/national-historic-preservation-act</i></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>

26. Water Body Information:

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

27. Background Information:

The Cypress Creek watershed is home to a unique set of rural and urban communities, ecosystems, and 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 the Cypress Creek.

Although water quality in the Cypress Creek is primarily 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/or management in the watershed. Water quality parameters vary considerably from site to site throughout the perennial part of the stream. In general, the three upper most water quality monitoring sites (Jacob's Well, RR12 north, and Blue Hole) tend to be highly influenced by inflow of groundwater in terms of their water chemistry, while the lower two sites (RR12 downtown and the Blanco confluence) tend to cluster closer together and show more of an 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.

28. General Project Description:

Adverse effects on water quality resulting from on-going development within the Cypress Creek watershed already have been observed. The Cypress Creek Watershed Protection Plan (CCWPP) Stakeholder Committee selected a suite of best management practices (BMPs) to mitigate current, as well as future 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. Milestones to track the CCWPP implementation progress were identified for years 4 through 6 as covered by this proposal. #30. Project Goals and Measures of Success, contains additional tables and information presented in the CCWPP as it relates to implementation goals for structural and non-structural BMPs throughout this period.

Monitoring and data collection undertaken during the course of this project will be used to track water quality, WPP progress and to better understand current and trending nonpoint source contributions to Cypress Creek. Routine,

quarterly surface water quality monitoring will be performed at six sites on Cypress Creek under the QAPP for this project. Additional routine surface water quality monitoring of Cypress Creek will be conducted by TST and GBRA, under their respective QAPPs. Groundwater data also will be collected to reduce gaps in knowledge. Partnerships with HTGCD and the Well Owner's Network will allow for inexpensive collection of water quality data and water level in wells in the watershed. Water quality analysis of groundwater will be performed using the methodology outlined in TST's QAPP. A partnering hydrogeologist also will collect information about potential seeps and surface water/groundwater interactions in the main stem of the creek to better understand potential sources of pollution interchange. Additional data will be collected outside the scope of this project, including water quality data collected under Texas Stream Team's QAPP and biomonitoring data, provided by GBRA and USFWS. These data will be analyzed using professionally accepted protocols, will fall under existing Texas Stream Team and GBRA QAPPs (and USFWS guidelines) and will be used to augment project data to better understand Dissolved oxygen and other water quality trends. Meadows Center staff have been trained and are currently engaged in Cypress Creek watershed monitoring and data collection.

These data along with data acquired from ongoing comprehensive reviews to better understand and mitigate pollution from stormwater will be used to improve the reliability and enhance the capability of the existing Decision Support System (DSS) which was developed in 2010 using data collected for the watershed characterization. The purpose of the DSS was to calculate potential water quality impacts of site scale development, providing decision makers with additional tools and more accurate information. Decision Support Systems (DSS) are computer-based tools that interact with large geographically-based datasets and have easy-to-use interfaces to facilitate decision making. The Cypress Creek DSS was based on the best information at that time and provided static large-scale scenarios in the future. Cypress Creek decision-makers and interested stakeholders were trained to use the DSS and quickly recognized the potential application of this tool during implementation. They also recognized enhancements that would support more effective decision-making to reduce nonpoint-source pollution impacts for future development, particularly with respect to scaling the geographic scope. Stakeholders requested that the DSS be enhanced to forecast potential changes to nonpoint source pollution loads from site level developments in the watershed. The Jackson School of Geosciences modeling experts are currently working with the stakeholders and city and county staff to shape the type of outputs created by the DSS and will train stakeholders to use the DSS to make decisions about BMPs and mitigation measures that should be coupled with proposed development. In CCWPP implementation years 4-6 (covered by this proposal), the model will become open source and all related model resources will be available for other water quality protection efforts. One session of enhanced water quality and groundwater modeling using the Cypress Creek DSS will be performed under this project.

Site specific structural BMPs installed during years 4-6 of implementation will serve as highly visible projects highlighting to developers and citizens the effectiveness of BMPs, including preventative, storm-water and low impact development (LID) measures. Structural BMPs prescribed by the CCWPP for implementation years 4-6 include riparian buffers, xeriscaping, engineered swales, rock berms/gabions, biofiltration/rain garden, pervious sidewalks, vegetative filter strips, pet waste stations and educational signage. Measurable Milestones for Implementation Phase – Surface Water Protection Strategy (CCWPP Table 26, pp.110-113) identifies applicable areas and potential pollutant prevention per unit implemented for the identified BMPs (Ex. Engineered Swales will reduce TSS by 99% for the treatment area).

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. Karst is a topography formed from the dissolution of soluble rocks such as limestone, dolomite, and gypsum characterized by underground drainage systems with sinkholes and caves. Under this project, properties identified as beneficial to protecting surface water and/or source water will be targeted for karst feature protection measures along with the adoption of protection measures in city and county codes.

Educational signage, materials and reports/documents will be coupled with BMPs identified above and integrated into a self-guided tour of LID and GSI infrastructure throughout the watershed. The self-guided tour is currently under development as BMPs are constructed.

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 storm-water impacts. Engineers and technical resources will be brought to bear on storm-water, source water, and technical information delivered in workshop settings for evaluation, recommendations on preferred alternatives, and references for new standards.

Because this is an increasingly urban watershed, continued evaluation of existing ordinances will assist the cities and county encompassed within the watershed to quantify the effectiveness of ordinances pertaining to water quality. Project partners and the Stakeholder Committee will work with city and county staff to interpret the findings of this assessment and to entertain the incorporation of additional LID and green infrastructure components.

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 this 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.

29. Additional Information:

a. Project environmental data operations

Continued data acquisition and routine monitoring of surface water and groundwater under various flow regimes and weather conditions during the course of 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 Monitoring and Data Acquisition QAPP.

- Routine surface water quality monitoring for flow, DO, TSS, conductivity, temperature, pH, E. coli, Ammonia, total N and total P at six sites not covered by CRP or TST monitoring. Due to screening level concerns for dissolved oxygen, twenty-four hour dissolved oxygen concentrations will be collected by a deployed water quality sonde at 2 sites (Blue Hole and Cypress/Blanco confluence) twice a year, during the index period with one event during the non-critical period (March 15 - May 31 or October 1 - October 15) and one event during the critical period (July 1 - September 30).
- In partnership with Hays Trinity Groundwater Conservation District (HTGCD), water quality monitoring for DO, transparency, conductivity, temperature, pH, E. coli, nitrate-nitrogen, and orthophosphate will be conducted at two sites in the watershed. Groundwater data will not be synthesized with acquired data due to difference in monitoring protocols.
- Additional routine surface water quality, groundwater quality macroinvertebrate, riparian assessment and GIS data collected by TST, GBRA, HTGCD, USFWS and others under their respective QAPPs will be acquired to better understand habitat and dissolved oxygen concerns and to track other water quality trends.

b. Sustainability

Making sure that the goals of the project continue to be met through activities that are consistent with the current conditions and resources that are available will be the job of the CCWPP Implementation Steering Committee in collaboration with the Meadows Center. Continued regular meetings of the Steering Committee, the project newsletter, website/social media platforms, educational opportunities and technical/financial support commitments of project partners will ensure best practices for information transfer and stakeholder engagement.

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. Additional agreements will be obtained to ensure projects and activities implemented during this project (Years 4-6) 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 for this project will provide technical assistance to the stakeholders through identification and acquisition of resources, seeking and pursuing funding opportunities, and developing additional grant proposals.

A significant level of effort on 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.

30. Project Goals and Measures of Success:

Goal	Measure of Success
<p>To implement activities to reduce nonpoint source pollution (NPS) and protect flow in Cypress Creek and its tributaries, as outlined in the Cypress Creek WPP (Phases I and II of the Cypress Creek Project)</p>	<p>Successful installation of structural BMPs and supporting outreach and education efforts for years 4-6 of CCWPP implementation including:</p> <ul style="list-style-type: none"> • riparian buffers (1) • xeriscaping (1) • engineered swales (1) • karst feature protections (2) • rainwater harvesting (2) • rock berms/gabions (4) • biofiltration/raingardens (1) • pervious sidewalks (5) • pet waste station (1) • vegetative filter strip (1) • net energy zero/green roof (1) • existing BMP maintenance program (6) • ordinance enforcements/ enhancements (1)
<p>To implement activities which prevent increases in NPS in Cypress Creek and its tributaries</p>	<ul style="list-style-type: none"> • nature trail educational signage (1) • “Inside Cypress Creek Watershed...” road sign installation (3) • Cypress Creek DSS session used by city and county staff to assess potential water quality impacts and required BMPs/mitigation activities of proposed large developments
<p>To continue to conduct regular partner and stakeholder meetings to encourage citizen participation, provide partners with updates on progress, and seek stakeholder input and recommendations on needed activities</p>	<p>Productive 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.</p>
<p>To increase decision-makers’ capabilities to preserve water quality through local permitting, ordinances, and implementation of Best Management Practices (BMPs)</p>	<ul style="list-style-type: none"> • Ordinances and design criteria updated by cities and county to improve use of LID and green infrastructure • Process in place for cities and county to “fast-track” proposals with LID and green infrastructure
<p>To coordinate and facilitate stakeholders and partners in identifying and implementing management measures which improve water quality, develop proposals to acquire funding for implementation of management measures, and to manage and track implementation projects while promoting adoption of BMPs</p>	<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. • 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 continue to collect needed water quality monitoring data for tracking water quality trends, WPP implementation and</p>	<ul style="list-style-type: none"> • Data of known and acceptable quality are generated and used in analyses, modeling and decision-making activities; data is used to track changes in water quality

Goal	Measure of Success
determination of future management measures.	<ul style="list-style-type: none"> • Groundwater data and information is collected to support future groundwater modeling and/or source water protection efforts.
To coordinate and conduct water resources and related environmental outreach and education efforts across the watershed	<p>Expansion of local education and outreach activities aimed at preventing pollution throughout the watershed. The WC 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 workshops (1) • OSSF workshop (1) • Groundwater/source water protection workshops (2) • Ecotourism/Ecosystem Services workshop (2) • Rural landowner workshop (1) • Develop and hold music festival to support CCWPP
Ensure partner commitments to long-term WPP implementation and achievement of WPP goals	<ul style="list-style-type: none"> • Development of a sustainability plan for the CCWPP approved by project partners and other key stakeholders

From Cypress Creek Watershed Protection Plan, Nov. 6, 2014 - Table 27. Measurable Milestones for Implementation Phase - Surface Water Protection Strategy

Management Measure	Minimum # Needed Throughout 10 Year Period	Applicable Area/Sub Watershed	Measured Milestones	Year of Implementation			Potential Pollutant Prevention per Unit Implemented £
				1-3	4-6	7-10	
Comprehensive Stormwater Assessment	1 Assessment	12, 14, 15, 39, 40, 41, 44	Completion of assessment of potential WQ Ordinance enhancements (1 PTE), selection of BMPs and locations for implementation based on findings	1			<i>E. coli</i> – 30%
Riparian Buffers	3 Managed Buffer Areas	12, 14, 15, 39, 40, 41, 44	Identify and prioritize locations for implementation, commitments for buffer management	1	1	1	N – 50% TSS – 74% <i>E. Coli</i> – 30%

Management Measure	Minimum # Needed Throughout 10 Year Period	Applicable Area/Sub Watershed	Measured Milestones	Year of Implementation			Potential Pollutant Prevention per Unit Implemented £
				1-3	4-6	7-10	
Xeriscaping/ Nativescaping	2 Areas	Basinwide	Establishment of at least 2 demonstration areas throughout the basin and adoption of HOA rules allowing xeri-- and nativescaping		1	1	N – 75%
Engineered Swales	2 Locations	12, 14, 15, 39, 40, 41, 44	Establishment of at least 2 demonstration areas throughout the basin and use in all new development		1	1	TSS – 99%
Karst Feature Protection Measures	5 Locations	Basinwide	At least 5 properties identified as beneficial to protecting water quality with measures implemented; adoption of protection measures in city and county codes		2	3	<i>E. Coli</i> – 34%
Rainwater Harvesting Strategies	5 Areas	Basinwide	Establishment of at least 5 demonstration areas throughout the basin and use in all new development	1	2	2	Water quantity variable depending on precipitation
Rock Berms/Gabions	5 Berms	12, 14, 15, 39, 40, 41, 44	Establishment of at least 1 demonstration areas throughout the basin and use in all new development in urban public spaces; added to existing codes where appropriate		5		TSS – 55%
Biofiltration/Rain Garden	4 Areas	12, 14, 15, 39, 40, 41, 44	Establishment of at least 4 demonstration areas throughout the basin and use in all new development in public spaces; added to existing codes as water quality protection measure		2	2	N – 56% TSS – 93% <i>E. coli</i> – 75%

Management Measure	Minimum # Needed Throughout 10 Year Period	Applicable Area/Sub Watershed	Measured Milestones	Year of Implementation			Potential Pollutant Prevention per Unit Implemented £
				1-3	4-6	7-10	
Pervious Sidewalks	10 Areas	12, 14, 15, 39, 40, 41, 44	Establishment of at least 10 demonstration areas throughout the basin and use in all appropriate new development in public spaces;		5	5	N – 80% TSS – 90%
Pet Waste Ordinance & Stations	3 Locations	12, 14, 15, 39, 40, 41, 44	Establishment of at least 3 pet waste stations in urban subwatersheds; added to existing codes as water quality protection measure		1	2	<i>E. Coli</i> – 510 billion cfu/day
Vegetative Filter Strips	1 location	12, 14, 15, 39, 40, 41, 44	Establishment of at least 1 demonstration area throughout the basin and use in all new development in public spaces; added to existing codes as water quality protection measure		1		N – 56% TSS – 93% <i>E. coli</i> – 75%
Low Impact Development	2 locations	12, 14, 15, 39, 40, 41, 44	Establishment of at least 1 demonstration area throughout the basin to show Net Energy Zero Lodging and a green roof		1	1	Water quantity variable depending on precipitation
Existing BMP maintenance	20 inspections and maintenance when needed	12, 14, 15, 39, 40, 41, 44	Establishment of program to maintain existing BMPs for proper function	6	6	8	N – 50% TSS – 74% <i>E. coli</i> – 30%
Ordinance enforcements, enhancements and Master Plan development	3 ordinances/plans	12, 14, 15, 39, 40, 41, 44	Redevelopment and implementation of at least 3 key water quality ordinances or plans at the local government level		1	2	N – 50% TSS – 74% <i>E. Coli</i> – 30%
Small Scale Waste Water Treatment	1 location	12, 14, 15, 39, 40, 41, 44	Establishment of at least 1 demonstration area throughout the basin to show small scale wastewater treatment		1		N – 50% <i>E. Coli</i> – 30%

Management Measure	Minimum # Needed Throughout 10 Year Period	Applicable Area/Sub Watershed	Measured Milestones	Year of Implementation			Potential Pollutant Prevention per Unit Implemented
				1-3	4-6	7-10	
Nature Trail Signs	3 signs	12, 14, 15, 39, 40, 41, 44	Erection of at least 3 signs for education		1	2	% prevention unknown
“Entering Watershed” Signs on Roadway	6 signs	Basinwide	Installation of 6 “Entering Watershed” Signs on Roadway to increase community awareness	3	3		% prevention unknown
Watershed Coordinator	10 years	Basinwide	1 full time employee to implement BMPs for water quality reduction and community awareness	3	3	4	% prevention unknown
Enhanced Water Quality and Groundwater Modeling (CC-DSS)	3 sessions	Basinwide	At least 3 sessions in enhanced Water Quality and Groundwater Modeling (CC-DSS) to improve water quality decision making as the scenario changes	1	1	1	% prevention unknown

From Cypress Creek Watershed Protection Plan, Nov. 6, 2014 – Table 1. Potential Ground/source water Protection Strategy Benchmarks

Management Measure	Applicable Area	Benchmarks	Responsible Party/ Partners	Year of Implementation			
				1-2	3-4	5-6	7-8
Highest Prioritization							
Water Conservation Pricing Strategies	Basin-wide	Identification of successful pricing strategies	Stakeholder Committee	X			
	Basin-wide	Finalize pricing schedules and adoption by water providers	Stakeholder Committee	X			
	Basin-wide	Implementation of new pricing and monitoring of water use changes.	Stakeholder Committee	X	X	X	X
Water Conservation Program for Water Providers or Municipalities	Basin-wide	Identification of successful program components.	Stakeholder Committee	X			

Management Measure	Applicable Area	Benchmarks	Responsible Party/ Partners	Year of Implementation			
				1-2	3-4	5-6	7-8
		Development of program, schedule and adoption by water providers	Stakeholder Committee	X			
		Implementation of program and individual measures. Monitoring of water use changes.	Stakeholder Committee		X	X	X
Source Water Protection Strategy							
GW (Flowing) committee meets to ensure GW strategy implementation	Basin-wide	Meet quarterly	Stakeholder Committee	X	X	X	X
Begin meeting with responsible parties to determine what actions are possible	Basin-wide	As needed	Stakeholder Committee	X		X	
Identify what GMA9 process standards are used so CCP can effectively participate in the GMA process	Basin-wide	Identify protocols and report to Stakeholder Committee to determine next steps.	Stakeholder Committee	X			
Apply for funding and technical assistance – including JW USGS gage	Basin-wide	Begin applying for funds/assistance to implement Source Water Protection Strategy using accepted CC-WPP as justification.	Stakeholder Committee	X	X	X	X
Preliminary BMPs for Source Water Protection							
Data collection (historical and current)	Basin-wide	Begin collecting monitoring data for analysis	Stakeholder Committee	X			
Data analysis	Basin-wide	Perform analysis on collected monitoring data	Stakeholder Committee	X			
Present findings to Stakeholder Committee	Basin-wide	Present results of analysis to Stakeholder Committee and determine adaptive management strategy	Stakeholder Committee		X		
Identify Data gaps for next data collection and analysis	Basin-wide	Stakeholder Committee with technical assistance from project partners will identify what is needed to better understand flows from Jacobs Well and effects on surface water quality.	Stakeholder Committee		X		
Coordinate CCP conservation efforts and determine if they can work beyond the watershed to include the Cypress Creek Jacob's Well Springshed	Basin-wide	Stakeholder Committee to begin reaching out to conservation groups in the watershed to discuss pooling efforts and resources to protect the	Stakeholder Committee			X	

Management Measure	Applicable Area	Benchmarks	Responsible Party/ Partners	Year of Implementation			
				1-2	3-4	5-6	7-8
		Cypress Creek recharge zone.					
Karst Feature Protection	Basin-wide	Identify and prioritize karst features for protection in the watershed that contribute water to Jacobs Well	Stakeholder Committee		X		

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. The Stakeholder Committee will also review monitoring data to determine when action is needed to mitigate parameters of concern.

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

This WPP is a preventative plan, designed to prevent NPS pollution from increasing beyond current levels and to potentially reduce current pollution in the watershed. Because this is a preventative WPP, no major water quality improvements are anticipated in the first 3 years of implementation.

Monitoring activities will improve baseline information and allow for the calculation of specific load reductions in the near future and over time as development increases in the watershed. Please refer to Subtask 2.5 for specific modeling activities. As BMPs are implemented, modeling and monitoring will allow the stakeholders to quantify potential pollutant loads reduced. This pollution prevention, through the implementation of structural and nonstructural BMPs will prevent future exceedances and impairments. The first table below shows modeled potential instream Nitrogen loadings and reductions required, based on current conditions (2012). The second table provides the same information in the expected future scenario (2035). Efforts outlined in this proposal will be tracked to determine efficacy in reducing or preventing NPS loadings to Cypress Creek.

Mean Annual Instream Concentrations and Reductions Needed at “Current Conditions” (2012)

Sub ID	Nitrogen Instream Load (Target = 1.5 mg/L)	Nitrogen Reduction Needed (mg/L)	% Nitrogen Reduction Needed*
2	1.66 mg/L	.16 mg/L	9%
4	1.63 mg/L	.13 mg/L	8%
7	1.64 mg/L	.14 mg/L	9%
32	1.86 mg/L	.36 mg/L	19%
35	1.66 mg/L	.16 mg/L	10%

* Estimated pollution load reductions needed to meet water quality goals in the watershed. This analysis is submitted to satisfy Element B of the EPA 9-element criteria for watershed-based plans.

Mean Annual Instream Concentrations and Reductions Needed at “Future Conditions” (2035)

Sub ID	Nitrogen Instream Load (Target = 1.5 mg/L)	Nitrogen Reduction Needed (mg/L)	% Nitrogen Reduction Needed
2	1.78 mg/L	0.28 mg/L	16%
4	1.68 mg/L	0.18 mg/L	11%
7	1.67 mg/L	0.17 mg/L	10%
32	1.90 mg/L	0.40 mg/L	21%
35	1.69 mg/L	0.19 mg/L	11%

* Estimated pollution load reductions needed to meet water quality goals in the watershed. This analysis is submitted to satisfy Element B of the EPA 9-element criteria for watershed-based plans.

Please refer to Section 5 (page 42) and Section 11 (page 103) in the WPP, as well as the Technical Reference Documents C, F and K (<http://cypresscreekproject.net/documents/cypress-creek-watershed-protection-plan/>) for additional information about required load reductions, including of lbs/yr of pollutant reduction and relevant calculations.

In the near term, routine monitoring in the watershed will provide additional information about pollution reduction potential of specific low impact development and green infrastructure measures. With the appropriate design, the demonstration site near downtown Wimberley will have the potential to reduce runoff during storm events at this particular site by at least 50%, TSS by at least 50%, N by 10%, and TP by at least 30% (These values are well under those presented in the New Hampshire Storm-water Manual: Appendix E. BMP Pollutant Removal Efficiency).

Storm-water runoff from 9.4 acres will be controlled. Intercepting this runoff from over 400,000 square feet of surrounding land area at >50% impervious cover, the BMP will capture, treat, and allow to slowly infiltrate over 200,000 gallons of storm-water per 1 inch rain event. With the installation of rainwater collection cisterns, several pounds of nutrients and sediment will be prevented from entering storm-water runoff over the 3 year project.

32. 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 — TXSTATE 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 TCEQ Project Manager's authorization, TXSTATE 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 — TXSTATE 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 TXSTATE by the TCEQ Project Manager.

Subtask 1.3: Reimbursement Forms — TXSTATE 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 — TXSTATE will participate in a post-award meeting with the TCEQ within 30 days of Contract execution.

TXSTATE 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), correction actions and any other matters that require attention. The TCEQ Project Manager may request additional information from TXSTATE prior to the call or meeting. TXSTATE 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. TXSTATE will submit meeting notes (action items at a minimum) to the TCEQ Project Manager within seven days of the meeting or call.

Matters that must be communicated to the TCEQ Project Manager include, but are not limited to:

- Notification a minimum of 14 days before TXSTATE has scheduled public meetings or events, initiation of construction, or other major Task activities.
- Notification within two business days regarding events or circumstances that may require changes to the Budget, Scope of Work, or Schedule of Deliverables.

Subtask 1.5: Coordination Meeting with the EPA — TXSTATE 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 — TXSTATE 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 — TXSTATE will discuss annual fiscal year budgets with the TCEQ Project Manager on a quarterly basis. Starting in the second year of the project, TXSTATE 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 — TXSTATE 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 a QAPP. The storage location of data records, and how data should be coded, will also be determined during these meetings. TXSTATE may conduct additional meetings to determine whether changes to an existing QAPP are needed.

Subtask 2.2: QAPP — TXSTATE will develop and submit to the TCEQ a 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](#)

TXSTATE will develop the QAPP in consultation with the TCEQ Project Manager, QA staff, and contractors. TXSTATE 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 monitoring and data acquisition;
- Groundwater monitoring and data acquisition;
- Using Geographic Information System (GIS), define and map existing drainage basins based upon the most recent topography, land use/land cover and other existing GIS layers for Cypress Creek Watershed;
- Using GIS, map key environmental areas and data (i.e. potential stormwater BMP locations based on geographic features including wetlands, stream buffers and soil types);
- Using existing SWAT model outputs (completed in Phase I, prior contract), US Army Corps of Engineering/GBRA modeling and other similar modeling activities to present information to stakeholders;
- Collection of field data regarding stormwater drainage, including visual observation and photography of stormwater pathways/channels, erosion and surveys of topography;

Monitoring activities are described in Task 3.

Data acquisition activities include the following:

- Routine (Quarterly) surface water quality at Clean Rivers Program (CRP) sites.
 - 12674 - Cypress Creek - RR12 in town (GBRA)
- This monitoring, conducted by the Performing Party staff, is covered under the GBRA CRP QAPP. Data will be acquired to define baseline water quality and track effectiveness of WPP implementation.
- Routine surface water quality monitoring collected by Texas Stream Team (TST) citizen scientists. This monitoring will be covered under the TST QAPP.
- Automated continuous surface water quality monitoring collected at the United States Geological Survey (USGS) gage at Jacob's Well operated by GBRA. This monitoring is performed in accordance with USGS and GBRA protocols. Summaries and analyses of gage data performed in adherence with USGS protocols will be acquired.
- Trinity Aquifer groundwater well monitoring for water level and precipitation collected by Hays Trinity Groundwater Conservation District (HTGCD) and well owner's network. This monitoring will be conducted in accordance with HTGCD protocols.
- Data collection and compilation of existing information, including:
 - Well logs;
 - Water elevations at wells;
 - Discharge from Jacobs Well, San Marcos Springs, Pleasant Valley Springs, and any other measurable points of discharge;
 - Pumping records;
 - River and streamflow measurements; and
 - Location of existing BMPs and other infrastructure
- Macroinvertebrate data collected at sites upstream and downstream of the Railroad-12 bridge over Cypress Creek and at Blue Hole Regional Park. This data collection will be covered under the TST QAPP and will be quality checked by US Fish & Wildlife Service staff.
- Riparian assessments conducted at TST sites by TST citizen scientists. This data collection will be covered under the TST QAPP.

Tasks covered under this QAPP:

- Tasks 2, 3, 4, 5 and 6.

Tasks NOT covered under this QAPP:

- All other tasks

Subtask 2.3: QAPP Annual Reviews and Revisions — TXSTATE 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 — TXSTATE 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. TXSTATE 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 QAPP
- QAPP Annual Reviews and Revisions
- Draft and Final QAPP Amendments

Task 3: Monitoring

Objective: The Performing Party will conduct additional monitoring and coordinate with monitoring performed by its partners during this project.

Subtask 3.1: Monitoring to be conducted by the Performing Party:

- Routine surface water quality monitoring at six sites not covered by CRP or TST monitoring described in Subtask 2.2.
 - 12677 - Cypress Creek - Jacobs Well
 - Id pending - Cypress Creek at Woodcreek Dam
 - Id pending - Cypress Creek at Camp Young Judea
 - 12676 - Cypress Creek - RR12 North
 - 12675 - Cypress Creek - Blue Hole
 - 12673 - Cypress Creek - Confluence
- In partnership with Hays Trinity Groundwater Conservation District, water quality monitoring at two sites added to well monitoring effort described in Subtask 2.2.
 - HCP3
 - Sabino Ranch

Subtask 3.2: Data Submittals — The Performing Party will review, verify, and validate water quality monitoring data before it is submitted to TCEQ.

- The Performing Party will submit an annual report of water quality data that is consistent with TCEQ formatting requirements for upload into the Surface Water Quality Monitoring Information System (SWQMIS); and,
- The Performing Party will submit data reports and presentations for review and approval at least two weeks prior to the scheduled public release.

Deliverables:

- Documentation of monitoring activities, in QPRs
- Data Submittals to SWQMIS
- Annual acquired and collected water quality data summary report, including analyses (See Subtask 2.2 and 3.1)

Task 4: Installation of BMPs at Highly Visible Locations

Objective: The purpose of this Task is to install functioning NPS pollutant control technologies which will educate stakeholders concerning the pollution reduction and water conservation benefits of simple, relatively inexpensive management measures.

Subtask 4.1: Install Rainwater Harvesting Systems – The Performing Party will execute the following:

- Retrofit buildings and structures at two sites with cisterns for harvesting and using rainwater for non-potable uses. This will include: installing the cisterns; connecting the cisterns to irrigation systems and plumbing; plumbing to use rainwater from cisterns; and/or connecting the cisterns to output valves for filling fleet vehicles.
- Develop MOU with local government entities, HOAs and/or volunteer master gardeners/naturalists to maintain the rainwater harvesting BMPs for 10 years or the industry accepted standard for the useful life of the specific BMP installed.
- Install prominent signs at each location explaining the basic concepts underlying cistern technology and identifying the components of the actual installed system.
- Incorporate information about the cisterns into materials for a self-guided public tour and complimenting literature about exhibits.

Subtask 4.2: Install Biofiltration/Bioretenion BMPs – The Performing Party will execute the following:

- Install raingarden, treatment train or equivalent BMP at one publicly accessible site in the watershed (minimum size of rain garden to be 400 square feet);

- Install BMPs which may include treatment trains, berms, swales, bioswales, gabions, bioretention features, rain gardens, vegetated filter strips, green roofs and/or nativescaping at eight sites in the watershed;
- Develop MOU with local government entities, HOAs and/or volunteer master gardeners/naturalists to maintain the biofiltration/bioretention BMPs for 10 years or the industry accepted standard for the useful life of the specific BMP installed.
- Install signs at above sites featuring raingarden/equivalent technology which explain the basic concepts and identify the actual system.
- Incorporate information about rain gardens into materials for a self-guided public tour and complimenting literature about exhibits.

Subtask 4.3: Install New/Retrofitted Pervious Surface BMPs – The Performing Party, will execute the following:

- Install permeable pavers or equivalent BMP at five publicly accessible sites in Woodcreek and Wimberley. Each BMP will be equivalent in size, scope, and pollutant removal potential to at least 250 square feet of pervious sidewalks (1,250 square feet, total).
- Develop MOU with local government entities and/or HOAs to maintain the BMPs for 10 years or the industry accepted standard for the useful life of the specific BMP installed.
- Incorporate information about the BMP into materials for a self-guided public tour and complimenting literature about exhibits.

Subtask 4.4: Install Pet Waste Station – The Performing Party will execute the following:

- Purchase and install one pet waste station at high traffic pet walking area.
- Develop MOU with local government entity and/or HOA to maintain the pet waste station for 10 years or the industry accepted standard life of the station installed.
- Install signs with pet waste station to explain the need to manage pet waste.
- Incorporate information about pet waste stations into materials for a self-guided public tour and complimenting literature about exhibits.

Subtask 4.5: Install Karst Feature Protections – The Performing Party will execute the following:

- Work with project partners and stakeholders to identify and select two karst feature protection BMPs at highly sensitive areas hydrologically connected to Jacobs Well and/or Cypress Creek. Priority will be given to highly sensitive sites to NPS pollution.

- Obtain contracted professional to design and install potential structural BMPs identified.
- Engage volunteers, private property owner(s) and/or city and county staff to maintain the karst feature protection BMP.
- Install signs at publicly accessible site(s) to explain the basic concepts and identify the actual karst features.
- Incorporate information about karst features into materials for a self-guided public tour and complimenting literature about karst feature protections and other exhibits.

Subtask 4.6: Establish Riparian Buffer Zone - The Performing Party will execute the following:

- Work with project partners, stakeholders and volunteers to identify and establish a ¼ mile long riparian buffer zone along a highly sensitive or degraded stretch of Cypress Creek. Priority will be given to a site accessible to the public.
- Engage volunteers, private property owner and/or city and county staff to maintain the buffer zone.
- Install signs at publicly accessible site(s) to explain the basic concepts and identify the actual riparian buffer zone.
- Incorporate information about riparian buffers into materials for a self-guided public tour and complimenting literature about exhibits.

Deliverables:

- Advertised and approved bid for supplying equipment and installing rainwater harvesting systems, LID BMPs, pet waste station, and potential karst feature protection BMPs and riparian buffers (Subtasks 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6).
- Contract/subcontracts for design and construction including site plans for all BMPs installed (Subtasks 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6)
- Final Design Reports for all BMPs (Subtasks 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6)
- Literature about exhibits created for a self-guided public tour (Subtasks 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6)
- Photo-documentation of installed BMPs (Subtasks 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6)
- Documentation of at least twelve educational signs designed, manufactured and installed, including photo documentation - one sign may be used to provide information about multiple BMPs at a single site (Subtasks 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6)

Task 5: Education, Outreach and Community Support

Objective: 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 5.1: Watershed Coordination — The Performing Party's Watershed Coordinator, staff and subgrantee(s)/subcontractor(s) will:

- Serve as the primary conduit for interaction with landowners, citizens, and other entities;
- Facilitate the implementation of the WPP;
- Seek additional funding, coordinate complementary activities in the basin; and
- Track WPP implementation progress.

Subtask 5.2: 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 possible) and will develop new content to execute the following (documentation to be included in QPRs):

- Regularly scheduled meetings and email updates will continue. There will be at least two meetings per year for the Executive Committee and two meetings per year of the full stakeholder committee. Email updates will be provided once per quarter. 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, data, and updates, etc.
- Develop social media application for watershed stakeholders
- Water quality database and dashboard maintained for the website.
- Development, production and dissemination of a newsletter released annually in digital format. All newsletters will be standardized and included in quarterly reports. Newsletters will follow a similar format, between two and eight pages and will be distributed electronically.
- Three “Inside Cypress Creek Watershed Environmentally Sensitive Area” signs installed on county roads within the watershed.
- Updates to materials produced under previous workplan regarding the self-guided tour of structural BMPs in the watershed.

Subtask 5.3 Refined WPP – Develop update or addendum to the WPP, approved by stakeholders. The Performing Party will, in coordination with the Stakeholder Committee, annually 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, in

coordination with the Stakeholder Committee, TCEQ and other parties will formulate a refined WPP for review at least 6 months prior to the end of the implementation period.

Subtask 5.4: Events and workshops – The Performing Party will execute the following:

- Community workshops:
 - One Workshop: OSSF – Homeowner septic system workshop with participation from Texas A&M AgriLife Extension. Workshop includes operational and maintenance activities, treatment process, health and safety, inspections. The 6-hour course certifies Hays County homeowners to maintain their own aerobic system.
 - One Workshop: Riparian design, restoration and management. This workshop will be held in partnership with local community members focused on providing support and resources for riparian restoration.
 - One Workshop: Rural Landowner. The Performing Party will obtain participation from Master Naturalists, Texas A&M AgriLife Extension, Texas State Soil and Water Conservation Board, Farm Bureau, Natural Resource Conservation Service, The Nature Conservancy and Soil for Water for this workshop.
 - Two Workshops: Ground/Source Water Protection – Keeping it flowing. The performing party will obtain participation from Texas A&M AgriLife Extension, project partners and industry professionals to deliver these workshops that will identify the hydrogeologic connectivity of the watershed, potential threats to local groundwater resources and consider stakeholder-driven solutions.
 - 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.
- Speaker Series on water related topics will be hosted by the Performing Party to inform community members and decision makers about key issues in the watershed. Speaker topics range from preventing NPS pollution to understanding related ordinances. Speaker events hosted by the Meadows Center and the project will be advertised in local papers and on community websites. At least 3 events will be held over the 3 -year period.
- Cypress Creek Music Festival – Performing party will work with project partners and contract with a concert promoter to develop and produce a benefit concert with local musicians to support watershed protection and sustainability of the Cypress Creek Project.

- DSS Session – Performing party will conduct one stakeholder training session to demonstrate the utility of the DSS and provide the opportunity for community members to use the tool.

Subtask 5.5: Ordinance and Design Plan Updates – The Performing Party will facilitate continued review of the relevant city and county ordinances that affect Cypress Creek’s water quality and work with project partners to update and strengthen relevant ordinances in continuation of ongoing efforts. The purpose of the continued review and updates will be to follow up on current efforts to determine the region’s effectiveness at mitigating NPS pollution via watershed protection ordinances and regulations, identify potential redundancies and potential improvements, and work closely with key decision makers and stakeholders to establish new approaches that can implement sustainable drainage design.

Evaluation and updates to CCWPP Implementation Years 1-3 projects including:

- Report with review of relevant city, river authority, and county ordinances, assessment of potential water quality ordinance enhancements, potential reductions in NPS contributions from future development and recommendations compiled and published
- Fast Track Review Process Report detailing the design plan review process and the plan for “fast tracking” developer proposals.
- NPS Assessment Report that summarizes existing studies by the City of Woodcreek, Hays County, and the City of Wimberley to provide recommendations on future potential water quality retrofit options and locations, partnering opportunities with other projects, and connecting flood management criteria with water quality incentives.
- Green Infrastructure Plan Review Guide for developers and engineers compiled and published to assist users in navigating regulatory review procedures, incorporating LID and green infrastructure into development plans, and facilitating permitting from local authorities.

Subtask 5.6: Sustainability Plan – The CCWPP states in its Purpose statement, “The ultimate goal of the Cypress Creek Watershed Protection Plan is to ensure that the long-term integrity and sustainability of the Cypress Creek watershed is preserved and that water quality standards are maintained for present and future generations.”

- 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 CCWPP.
- The Performing Party will seek 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.

Deliverables:

- Biannual Steering Committee meetings will be held and documented through announcements, agendas, attendance, presentation materials, and minutes
- Biannual stakeholder meetings will be held and documented through announcements, agendas, attendance, presentation materials, and minutes
- Website will be maintained at least quarterly (documentation of website updates will be included in all QPRs)
- Social media application
- Annual newsletter published
- Photo documentation of three installed “Inside Cypress Creek Watershed Environmentally Sensitive Area” signs
- Update or addendum to the WPP prepared
- Materials from seven hosted workshops documented by announcements and presentation materials
- Speaker series on water related topics held and documented by agendas (at least three organized by project staff and partners)
- Seek bids and secure contract to develop and produce Cypress Creek Music Festival
- Cypress Creek Music Festival materials and photo documentation
- Materials for DSS training session documented by announcements and presentation materials
- Report on evaluation and updates to ordinance and design plans including:
 - Report with review of relevant city, river authority, and county ordinances, assessment of potential water quality ordinance enhancements, potential reductions in NPS contributions from future development and recommendations compiled and published
 - Fast Track Review Process Report
 - NPS Assessment Report
 - Green Infrastructure Plan Review Guide
- Sustainability Plan
- Interlocal Agreement to complement sustainability plan

Task 6.0: 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, if applicable. The Final Report will summarize all the Task Reports in either the text or as appendices.

Subtask 6.1: Draft Final Report — At least 30 days prior to submitting the Final Report, TXSTATE 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 (if applicable to project)
- Appendices (if needed)

Subtask 6.2: Final Report — TXSTATE 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, TXSTATE 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

33. 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 Contract 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	EPA Coordination Meeting	Upon request
1.6	Annual Report Article	Upon request
1.7	Contract Budget updates	Discussed quarterly and updated as needed
1.7	Annual Budget updates	Quarters 5 and 9
2 Quality Assurance		
2.1	QAPP planning meetings notes	Meeting within 30 days of Contract execution
2.2	Draft QAPP	At least 120 days prior to the scheduled initiation of environmental data operations
2.2	Final 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 Monitoring		
3.1	Documentation of monitoring activities in QPRs	The 15 th of the month following each state fiscal quarter

Task No.	Task Deliverable	Due Date
3.2	Data Submittals to SWQMIS	Quarters 4, 8, 12
3.2	Annual acquired and collected water quality data summary report, including analyses	Quarters 4, 8, 12
4 Installation of BMPs at Highly Visible Locations		
4.1-6	Advertised and approved bid for supplying equipment and installing rainwater harvesting systems, demonstration BMPs, pet waste station, and potential karst feature protection BMPs and riparian buffers	Quarter 6
4.1-6	Contract/subcontracts for design and construction including site plans for all BMPs installed	Quarter 7
4.1-6	Final Design Reports for all BMPs	Quarter 9
4.1-6	Literature about exhibits created for a self-guided public tour	Quarter 10
4.1-6	Photo-documentation of installed BMPs	Quarter 10
4.1-6	Documentation of at least twelve educational signs designed, manufactured and installed, including photo documentation - one sign may be used to provide information about multiple BMPs at a single site	Quarter 10
5 Education, Outreach and Community Support		
5.1-2	Biannual Steering Committee meetings will be held and documented through announcements, agendas, attendance, presentation materials, and minutes	Quarters 1, 3, 5, 7, 9, 11
5.1-2	Biannual stakeholder meetings will be held and documented through announcements, agendas, attendance, presentation materials, and minutes	Quarters 2, 4, 6, 8, 10, 12

Task No.	Task Deliverable	Due Date
5.2	Website will be maintained at least quarterly (documentation of website updates will be included in all QPRs)	The 15 th of the month following each state fiscal quarter
5.2	Social media application	Quarter 4
5.2	Annual newsletter published	Quarter 2, 6, 10
5.2	Photo documentation of three installed “Inside Cypress Creek Watershed Environmentally Sensitive Area” signs	Quarter 4
5.3	Update or addendum to the WPP prepared	Quarter 12
5.4	Materials from seven hosted workshops documented by announcements and presentation materials	Quarter 12
5.4	Speaker series on water related topics held and documented by agendas (at least three organized by project staff and partners)	Quarter 4, 8, 12
5.4	Seek bids and secure contract to develop and produce Cypress Creek Music Festival	Quarter 3
5.4	Cypress Creek Music Festival materials and photo documentation	Quarter 8
5.4	Materials for DSS training session documented by announcements and presentation materials	Quarter 10
5.5	Report on evaluation and updates to ordinance and design plans	Quarter 10
5.6	Sustainability Plan	Quarter 6
5.6	Interlocal Agreement to complement sustainability plan	Quarter 8
6 Final Project Report		
6.1	Draft Final Report to TCEQ	Last quarter, month 1
6.2	Address TCEQ/EPA comments	Within 30 days of TCEQ comments
6.2	Final Report	At least two weeks prior to the end of the Contract.

34. Budget Summary:

Category	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
a. Personnel/Salary	\$214,281	\$123,430	\$337,711
b. Fringe Benefits	\$64,284	\$37,029	\$101,313
c. Travel	\$3,060	\$0	\$3,060
d. Supplies	\$33,000	\$0	\$33,000
e. Equipment	\$0	\$0	\$0
f. Contractual	\$378,800	\$80,730	\$ 459,530
g. Construction	\$0	\$0	\$0
h. Other	\$0	\$0	\$0
i. Subtotal: Total Direct Costs (sum a-h)	\$693,425	\$241,189	\$934,614
j. Indirect Costs (% rate)	\$104,013	\$76,276	\$180,289
k. Other In-kind/Third Party		\$214,160	\$214,160
l. Total Project Costs (sum i, j, & k)	\$797,438	\$531,625	\$1,329,063

35. TCEQ Reimbursable Project Costs:

(Federal portion must be a maximum of 60 percent of overall project costs)

Category	Total Amount	Justification (itemized expenses)
Personnel	\$214,281	1. Associate Dir., Meadows Project Oversight (6.0% of \$116,484 for 3 years) = \$20,967. 2. Budget Specialist, Contract mgmt./reporting (5.0% of \$67,896 for 3 years) = \$10,184. 3. Admin. Assistant, Project activities (5.0% of \$37,914 for 3 years) = \$5,687. 4. Sr. Program Coord/Watershed Coord (65.0% of \$81,240 for 3 years) = \$158,418 5. Water quality Monitoring, GIS Specialist (18.0% of \$35,232 for 3 years) = \$19,025.

Fringe Benefits	\$64,284	30% of portions of total staff salaries from above: 1. Associate Dir., Meadows Project Oversight 30% (6.0% of \$116,484 for 3 years) = \$6,290. 2. Budget Specialist, Contract mgmt./reporting 30% (5.0% of \$67,896 for 3 years) = \$3,055. 3. Admin. Assistant, Project activities 30% (5.0% of \$37,914 for 3 years) = \$1,706. 4. Sr. Program Coord/Watershed Coord 30% (65.0% of \$81,240 for 3 years) = \$47,525. 5. Water quality Monitoring, GIS Specialist 30% (18.0% of \$35,232 for 3 years) = \$5,708.
Travel	\$ 3,060	Approximately 165 trips to Wimberley from TXSTATE or from Wimberley to TXSTATE: 34.025 miles @ \$0.545 per mile. 55 trips per year (4-5 trips per month) for meetings, site visits, water quality monitoring and other project activities. *note: when monitoring several sites, additional mileage may incur.
Supplies	\$33,000	1. General office supplies, project related printing, website, etc. \$1,500 (task 1) 2. Water quality monitoring supplies for quarterly monitoring and CRP efforts \$15,000 (task 3) 3. Paper and printing supplies for fact sheets, brochures, meeting materials \$500 (task 5) 4. Social media software licenses and supplies \$5,000 (task 5) 5. Supplies for seven workshops plus DSS training session \$8,000 (task 5) 6. Outreach materials, supplies and publications \$3,000 (task 5)
Equipment	\$0	N/A

Contractual	\$378,800	<p>Laboratory Fees for quarterly surface water and groundwater quality sampling (12 events for each site at \$1,500 per event): \$18,000 (task 3)</p> <p>Rainwater harvesting cisterns, gutters and related equipment at two sites in the watershed (2 sites at \$15,000 each): \$30,000 (task 4)</p> <p>Biofiltration/Bioretenion BMPs and related equipment at nine sites in the watershed (9 sites at \$10,000 each): \$90,000 (task 4)</p> <p>New/Retrofitted Pervious Surface BMPs and related equipment at five sites in the watershed (5 sites at \$10,000 each): \$50,000 (task 4)</p> <p>Pet waste station (1 site): \$800 (task 4)</p> <p>Karst feature protection BMPs and related equipment at two sites in the watershed (2 sites at \$10,000 each): \$20,000 (task 4)</p> <p>Riparian buffer zone and related equipment (1/4 mile zone): \$20,000 (task 4)</p> <p>Signage for BMP sites - 12 signs for highly visible BMP locations listed above: \$5,000 (task 4)</p> <p>Assistance with BMP planning and design, ordinance and design plan updates and report, Doucet and other professionals \$125,000 (tasks 4 & 5)</p> <p>Cypress Creek Music Festival planning, production and advertising \$10,000 (task 5)</p> <p>Develop sustainability plan and Interlocal Agreement \$10,000 (task 5)</p>
Construction	\$ 0	N/A
Other - Professional Services	\$ 0	N/A

Indirect	\$104,013	Rate applies to total direct costs excluding equipment and the portion of subcontract in excess of \$25,000. Indirect cost base (\$693,425).
Total	\$797,438	

36. Matching Project Costs Provided by TXSTATE:

(Non-Federal portion must be a minimum of 40 percent of overall project costs)

Category	Total Amount	Justification (itemized expenses)
Personnel/Salary	\$123,430	1. Executive Director, 15.6068% time/year for 3 years, Annual salary: 202,856 = \$94,978. 2. Associate Director, 5.0% time/year for 3 years, Annual salary: \$116,484 = \$17,473 3. Chief Science Officer, 3.0% time/year for 3 years, Annual salary: \$121,986 = \$10,979
Fringe Benefits (%)	\$37,029	30% of portions of total staff salaries from above: 1. Executive Dir., 30% (15.6068% of \$202,856 for 3 years) = \$28,493. 2. Associate Dir., 30% (5.0% of \$116,484 for 3 years) = \$5,242. 3. Chief Science Officer, 30% (3.0% of \$121,986 for 3 years) = \$3,294.
Travel	\$0	N/A
Supplies	\$0	N/A
Equipment	\$0	N/A
Contractual	\$ 80,730	Operation, maintenance and analyses of USGS/GBRA Water Quality Gage at Jacobs Well = \$80,730
Construction	\$0	N/A
Other	\$0	N/A

Indirect Costs (% rate)	\$76,276	Texas State will provide \$76,276 of the unrecovered indirect costs as match for this project. The source of the non-federal Indirect Cost Match is a portion of the 11% unrecovered indirect costs. The unrecovered indirect cost is the difference between TCEQ's allowable Indirect Cost Recovery rate of 15% and Texas State University's Federally Approved Rate of 26% (if 51% or greater work completed off campus). The indirect cost base (\$693,425) is comprised of Personnel, Fringe, Travel, Supplies, Professional Services and the 1st \$25,000 of the single contract.
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In-kind	\$214,160	<ol style="list-style-type: none"> 1. WVWA donated office space [\$350 mo. rent + \$100 mo. supplies/utilities for 36 mo.] = \$16,200 2. Stakeholder Committee member participation in meetings and implementation activities [\$40/hr (4 technical members) + \$23.40/hr (4 community members) x 3hr x 36 meetings] = \$27,389 3. WVWA Executive Director and Managing Director staff time dedicated to raise additional funds and assist with implementation activities/funds from external source to support grant activities if this grant is approved [\$25,000 per year X 3 years] = \$75,000 4. Use of Wimberley meeting rooms donated monthly [\$150.56 per meeting x 12 meetings x 3 years] = \$5,420 5. GBRA monitoring and analyses of CRP site [\$370 per quarter x 3 yr] = \$4,400 6. Woodcreek staff time committed to WPP implementation activities [\$40/hr x 150 hr] = \$6,000 7. Woodcreek maintenance of installed BMPs = \$4,000 8. Wimberley staff time contribution toward NPS Collaboration/Assessment Plan activities [\$40/hr x 150 hr] = \$6,000 9. Wimberley maintenance of installed BMPs = \$4,000 10. Hays County Development Services staff time committed to WPP implementation activities [\$40/hr x 100 hr] = \$4,000 11. Hays County maintenance of installed BMPs = \$2,000 12. Hill Country Alliance support of stakeholder directed programs and outreach. Staff time contributed to technical committees
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		<p>= \$31,092</p> <p>13. Hays County Master Naturalist - Riparian Recovery Network volunteer time for riparian education and restoration efforts [\$24.64 per hours X 122 hours] = \$2,997</p> <p>14. Texas Stream Team - Trained citizen scientist water quality monitoring, education and data entry for sites in the Cypress Creek watershed [\$24.64 per hour X 1,042 hours] = \$25,662</p> <p>* Please note that technical members contributing in-kind contributions/time cannot be federal employees</p>
Total	\$531,625	See notes in justifications above

37. Budget by Task:

Task/Activity	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
Project Administration	\$ 126,441	\$257,584	\$384,025
Quality Assurance	\$ 56,440	\$7,229	\$63,669
Monitoring	\$ 79,260	\$101,785	\$181,045
Installation of BMPs at Highly Visible Locations	\$ 358,771	\$57,740	\$416,511
Education, Outreach and Community Support	\$ 160,972	\$107,288	\$268,260
Final Report	\$ 15,554	\$0	\$15,554
Total	\$797,438	\$531,625	\$1,329,063

38. Total Budget By Year:

Category	Year 1	Year 2	Year 3	Total
Personnel/Salary	\$112,570	\$112,570	\$112,571	\$337,711
Fringe Benefits	\$33,771	\$33,771	\$33,771	\$101,313
Travel	\$1,020	\$1,020	\$1,020	\$3,060
Supplies	\$11,000	\$11,000	\$11,000	\$33,000
Equipment	\$0	\$0	\$0	\$0

Category	Year 1	Year 2	Year 3	Total
Contractual	\$153,176	\$153,177	\$153,177	\$459,530
Construction	\$0	\$0	\$0	\$ 00
Other	\$0	\$0	\$0	\$0
Indirect Costs	\$60,096	\$60,096	\$60,097	\$180,289
Other In-kind/Third	\$71,386	\$71,387	\$71,387	\$214,160
Total	\$443,019	\$443,021	\$443,023	\$1,329,063