

# Appendices



## Appendix A. WPP Information Checklist

Elements in the table below correspond to the 9 minimum elements required by EPA for developing watershed-based plans using Clean Water Act 319(h) grant resources. For more information on these guidelines, please refer to EPA's Handbook for Developing Watershed Plans to Restore and Protect Our Waters<sup>1</sup>.

**Table A. 1** Guide to watershed protection plan information

Segment Information	
Name of Waterbody	Spring Creek (Segment 1008)
Assessment Units	1008_01, 1008_02, 1008_03, 1008_04, 1008A_01, 1008B_01, 1008B_02, 1008C_01, 1008C_02, 1008E_01, 1008F_01, 1008F_02, 1008F_03, 1008F_04, 1008H_01, 1008I_01, 1008J_01
Impairments Addressed	Contact recreation/ <i>E. coli</i>
Concerns Addressed	Nitrate, Total Phosphorus, Dissolved Oxygen (grab), Cadmium, Fish Community
Element	Report Section(s) and Page Number(s)
Element A: Identification of Causes and Sources	
1. Sources identified, described and mapped	Section 3 <ul style="list-style-type: none"> <li>pp. 36-55; water quality analysis and point source contribution descriptions</li> <li>pp. 56-91; formal source descriptions, modeled loadings, and maps of spatial distribution</li> </ul>
2. Subwatershed sources	Section 3 <ul style="list-style-type: none"> <li>pp. 56-91; sources are described in terms of their general spatial distribution and loads by subwatersheds</li> <li>Tables 27 summarizes all loadings by subwatershed</li> </ul>
3. Data sources are accurate and verifiable	Section 2 <ul style="list-style-type: none"> <li>In general, data used for characterization and mapping is discussed throughout with footnote links to specific sources</li> <li>pp. 32; description of water quality data and links to the project water quality report</li> </ul> Section 3 <ul style="list-style-type: none"> <li>pp. 37-55; discussion of water quality monitoring analyses, point source data analyses, and data sources</li> <li>pp. 56-91; description of sources and loadings with references to data used</li> </ul> Section 4 <ul style="list-style-type: none"> <li>pp. 93-99; description of LDCs and data sources.</li> <li>pp. 103-108; application of data sources to load reduction goals discussed</li> </ul> Section 8 <ul style="list-style-type: none"> <li>pp. 185-190; discussion of data sources to be used for evaluating success</li> </ul>

<sup>1</sup> <https://www.epa.gov/nps/handbook-developing-watershed-plans-restore-and-protect-our-waters>

Element	Report Section(s) and Page Number(s)
4. Data gaps identified	Section 3 <ul style="list-style-type: none"> <li>• In general, discussion of uncertainty in various modeling and data approaches (pp. 45-47 for WWTF data; pp. 60-62, 86-90 and footnote 21 for SELECT modeling; pp. 83-84 for SSO data)</li> </ul> Section 4 <ul style="list-style-type: none"> <li>• pp. 100-101, discussion of DO precursors</li> </ul> Section 8 <p>pp. 185-190, Specific discussion of additional data sources that may be helpful (other wildlife estimations, BST/MST, etc.)</p>
<b>Element B: Expected Load Reductions</b>	
1. Load reductions achieve environmental goal	Section 4 <ul style="list-style-type: none"> <li>• Pp. 103-108; description of linkage of environmental goal (via LDC reductions) to source loads (via SELECT estimations)</li> <li>• Summarized specifically in Tables 32-35</li> </ul>
2. Load reductions linked to sources	Section 4 <ul style="list-style-type: none"> <li>• Pp. 103-108; description of linkage of environmental goal (via LDC reductions) to source loads (via SELECT estimations)</li> <li>• Summarized specifically in Tables 32-35</li> </ul>
3. Model complexity is appropriate	Section 3 <ul style="list-style-type: none"> <li>• Pp. 56-62; description of modeling approach (p. 60-62 specific to SELECT); link to project modeling report; pp. 62 contains specific description of rationale for modeling approach</li> <li>• Results of modeling indicated above in B1/B2</li> </ul> Section 4 <ul style="list-style-type: none"> <li>• Pp. 93-99; description of LDC modeling approach</li> <li>• Pp. 103-108; description of LDC and SELECT linkage</li> </ul>
4. Basis of effectiveness estimates explained	Section 4 <ul style="list-style-type: none"> <li>• Pp. 106-107; description of use of representative units</li> </ul> Section 5 <ul style="list-style-type: none"> <li>• Pp. 114-148; BMP effectiveness/reduction efficiency discussed in the bottom of each recommended solution page</li> </ul>
5. Methods and data cited and verifiable	Section 3 <ul style="list-style-type: none"> <li>• Throughout (pp. 36-91); data and methods for water quality analyses, point source analyses, and source estimations discussed with references in footnotes as appropriate and links to project modeling and water quality analysis reports</li> </ul> Section 4 <ul style="list-style-type: none"> <li>• Throughout (pp. 103-108); data for load reduction goals discussed, links to project modeling report included</li> </ul>
<b>Element C: Management Measures Identified</b>	
1. Specific management measures are identified	Section 5 <ul style="list-style-type: none"> <li>• pp. 114-148; specific measures described, including technical and financial support needed, roles and responsibilities, etc.</li> </ul> Section 6 <ul style="list-style-type: none"> <li>• pp. 151-162; specific educational measures described, including responsible parties</li> </ul>
2. Priority areas	Section 5 <ul style="list-style-type: none"> <li>• pp. 114-148; discussion of priority areas for each category of specific focus</li> </ul>

Element	Report Section(s) and Page Number(s)
	Section 6 <ul style="list-style-type: none"> <li>Pp. 151-162; general description of intended audiences/areas for educational activities</li> </ul>
3. Measure selection rationale documented	Section 5 <ul style="list-style-type: none"> <li>Pp. 110-111; specific description of guiding principles for selection and selection process</li> <li>Pg. 149; summary of selection process and intention</li> </ul> Section 6 <ul style="list-style-type: none"> <li>pp. 151-154; description of Partnership's goals for selected educational measures</li> </ul>
4. Technically sound	Section 5 <ul style="list-style-type: none"> <li>pp. 114-148; specific measures described, including technical detail</li> </ul> Section 6 <ul style="list-style-type: none"> <li>pp. 151-162; specific educational measures described</li> </ul> Section 7 <ul style="list-style-type: none"> <li>pp. 164-167; specific implementation strategies for measures in general, and pet waste as a focus</li> </ul>
<b>Element D: Technical and Financial Assistance</b>	
1. Estimate of technical assistance	Section 5 <ul style="list-style-type: none"> <li>pp. 114-148; technical assistance needs detailed for each measure in their one-page summary</li> </ul>
2. Estimate of financial assistance	Section 5 <ul style="list-style-type: none"> <li>pp. 114-148; financial assistance needs detailed for each measure in their one-page summary</li> </ul> Appendix D <ul style="list-style-type: none"> <li>List of potential funding sources related to measures in this WPP</li> </ul>
<b>Element E: Education/Outreach</b>	
1. Public education/information	Section 6 <ul style="list-style-type: none"> <li>pp. 151-162; description of public outreach activities</li> </ul>
2. All relevant stakeholders are identified in outreach process	Section 1 <ul style="list-style-type: none"> <li>pp. 3-7; description of initial outreach, forming the Partnership, links to Public Participation Plan for the project</li> </ul> Section 6 <ul style="list-style-type: none"> <li>pp. 151-162; description of public outreach activities including existing partners/roles and focus areas</li> </ul>
3. Stakeholder outreach	Section 1 <ul style="list-style-type: none"> <li>pp. 3-7; description of initial outreach, forming the Partnership, links to Public Participation Plan and Stakeholder Outreach Report for the project</li> </ul>
4. Public participation in plan development	Section 1 <ul style="list-style-type: none"> <li>pp. 3-7; description of initial outreach, forming the Partnership, links to Public Participation Plan and Stakeholder Outreach Report for the project</li> </ul> Section 3 <ul style="list-style-type: none"> <li>pp. 56-59; description of Partnership process in identifying sources and assumptions (specific to each source, pp. 63-91)</li> </ul> Section 4 <ul style="list-style-type: none"> <li>pp. 103-108; description of stakeholder choices in reduction linkage, load allocation, etc.</li> </ul> Section 5 <ul style="list-style-type: none"> <li>pp. 110-111; description of stakeholder participation in measures selection</li> </ul> Section 6

Element	Report Section(s) and Page Number(s)
	<ul style="list-style-type: none"> <li>• pp. 151-154; description of stakeholder decisions on outreach strategies Section 7</li> <li>• pp. 164-168; description of stakeholder input on implementation strategies Section 8</li> <li>• pp. 185-190; description of the Partnership's role in determining how the project evaluates success</li> </ul>
5. Emphasis on achieving water quality standards	Section 1 <ul style="list-style-type: none"> <li>• pp. 6-7; description of specific water quality goals for the project/Partnership</li> </ul> All Other Sections <ul style="list-style-type: none"> <li>• Water quality standards are the focus of water quality analyses (Section 3), the focus of all load reduction calculations (Section 4), the focus of recommended solutions (Section 5 and 6), the focus of implementation strategies (Section 7), and the primary measure of success (Section 8).</li> </ul>
6. Operation and maintenance of BMPs	Section 5 <ul style="list-style-type: none"> <li>• pp. 114-148; discussion of specifics of recommended solutions are included with each solution and/or solution category description</li> </ul>
<b>Element F: Implementation Schedule</b>	
1. Includes completion dates	Section 7 <ul style="list-style-type: none"> <li>• pp. 169-172; implementation schedule</li> </ul>
2. Schedule is appropriate	Section 7 <ul style="list-style-type: none"> <li>• pp. 169-172; implementation schedule</li> </ul>
<b>Element G: Milestones</b>	
1. Milestones are measurable and attainable	Section 7 <ul style="list-style-type: none"> <li>• pp. 173-182; milestones described for all measures</li> </ul>
2. Milestones include completion dates	Section 7 <ul style="list-style-type: none"> <li>• pp. 173-182; milestones described for all measures</li> </ul>
3. Progress evaluation and course correction	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-190; describes all methods uses to evaluate success for the project; pp. 190 specifically describes adaptive management processes</li> </ul>
4. Milestones linked to schedule	Section 7 <ul style="list-style-type: none"> <li>• pp. 173-182; Milestones described for all measures with timeframes indicated</li> </ul>
<b>Element H: Load Reduction Criteria</b>	
1. Criteria are measurable and quantifiable	Several sections detail the process of developing load reductions, including (as noted in Element B) Section 3 (source loads), Section 4 (load reductions), and Section 8 (evaluation criteria).
2. Criteria measure progress toward load reduction goal	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-190; describes evaluation criteria and data sources used to evaluate both water quality and programmatic milestones.</li> </ul>
3. Data and models identified	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-190; describes evaluation criteria and data sources used to evaluate both water quality and programmatic milestones.</li> </ul>
4. Target achievement dates for reduction	Throughout the document, the plan states that 2030 is the intended goal year (as noted previously). Section 4 bases load reductions on this timeline. Section 5/6 recommendations are based on time period within this planning horizon. Section 7 schedule and milestones are based on this period. Section 8 evaluation criteria also assumes this date.

Element	Report Section(s) and Page Number(s)
5. Review of progress toward goals	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-190; details the methods that will be used to evaluate progress regarding water quality</li> <li>• pp. 188-190; details the methods that will be used to evaluate progress regarding programmatic means</li> </ul>
6. Criteria for revision	Section 8 <ul style="list-style-type: none"> <li>• pp. 188-190; describes the indicators of success and adaptive management process</li> </ul>
7. Adaptive management	Section 8 <ul style="list-style-type: none"> <li>• pp. 190; describes the adaptive management process</li> </ul>
<b>Element I: Monitoring</b>	
1. Description of how monitoring used to evaluate implementation	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-188; describes the monitoring plan and other potential data sources</li> </ul>
2. Monitoring measures evaluation criteria	Section 8 pp. 188-189 describes the indicators of success, including water quality/monitoring outcomes
3. Routine reporting of progress and methods	Section 8 pp. 185-190, describes both the monitoring process and its reporting/evaluation, as well as the project evaluation and formal reviews process with the Partnership (Table 43, etc.)
4. Parameters are appropriate	Section 8 pp. 185-186 describes the monitoring program
5. Number of sites is adequate	Section 8 pp. 185-186 describes the monitoring program
6. Frequency of sampling is adequate	Section 8 pp. 185-186 describes the monitoring program
7. Monitoring tied to QAPP	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-186 describes the monitoring program under CRP QAPP</li> <li>pp. 186-188 describes the potential use of other data sources</li> </ul>
8. Can link implementation to improved water quality	Section 8 <ul style="list-style-type: none"> <li>• pp. 185-186 discusses the monitoring program</li> <li>pp. 188-189 discussed water quality indicators of success</li> </ul>

## Appendix B. Wastewater Treatment Facilities

Table B. 1 Spring Creek watershed WWTF permittees

Permittee	Permit Number
City of Tomball	WQ0010616001
City of Tomball	WQ0010616002
Montgomery County WCID 1	WQ0010857001
Harris County WCID 92	WQ0010908001
Northampton MUD	WQ0010910001
Southern Montgomery County MUD	WQ0011001001
San Jacinto River Authority	WQ0011401001
Dowdell PUD	WQ0011404001
Harris County MUD 26	WQ0011406001
Spring Creek Utility District	WQ0011574001
Harris County MUD 1	WQ0011630001
Harris County MUD 1	WQ0011630002
Harris County MUD 82	WQ0011799001
Montgomery County MUD 19	WQ0011970001
Rayford Road MUD	WQ0012030001
Harris County MUD 368	WQ0012044001
Aqua Texas, Inc.	WQ0012303001
J&S Water Company, LLC	WQ0012382001
Aqua Texas, Inc.	WQ0012519001
Monarch Utilities I, LP	WQ0012587001
San Jacinto River Authority	WQ0012597001
Spring Center, Inc.	WQ0012637001
Pinewood Community, LP	WQ0012643001
Trinity SO GP, LLC	WQ0012650001
China Spring Holdings, LP	WQ0012851001
Aqua Texas, Inc.	WQ0012898001
Northgate Crossing MUD 2	WQ0012979004
Aqua Texas, Inc.	WQ0013619001
Wood Trace MUD 1	WQ0013636001
Encanto Real Utility District	WQ0013648001
Magnolia Independent School District	WQ0013653001
1960 Humble Westfield, LTD	WQ0013697001
Inline Utilities, LLC	WQ0013942001
Aqua Texas, Inc.	WQ0014007001
Aqua Texas, Inc.	WQ0014013001
Magnolia Independent School District	WQ0014124001
Utilities Investment Company, Inc.	WQ0014133001
Aqua Texas, Inc.	WQ0014141001
Aqua Texas, Inc.	WQ0014181001

Permittee	Permit Number
Archdiocese of Galveston Houston	WQ0014218001
Harris County MUD 387	WQ0014347001
Harris County MUD 401	WQ0014421001
Is Zen Center	WQ0014491001
Quadvest, LP	WQ0014542001
Harris County MUD 480	WQ0014606001
Montgomery County MUD No 119	WQ0014656001
Navasota Independent School District	WQ0014662001
TWAN Development, LLC	WQ0014776001
Terra Verde Utility Company, LLC	WQ0014901001
City of Magnolia	WQ0014903001
Clover Creek MUD	WQ0014907001
Northwest Harris County MUD 19	WQ0014908001
Northwest Harris County MUD 19	WQ0014908002
Timbercrest Partners, LLC	WQ0014912001
Harris County Improvement District 18	WQ0014964001
Aqua Texas, Inc.	WQ0014973001
Eastwood Hills Mobile Home Park, LP	WQ0014979001
Quadvest, LP	WQ0015003001
Montgomery County MUD 137	WQ0015157001
KTC Interests, LLC	WQ0015246001
Harris County MUD No. 542	WQ0015312001
7E Property Holdings, LP	WQ0015500001



## Appendix C. Agricultural Best Management Practices

This appendix details the typical practices implemented in WQMPs and similar agricultural land management projects<sup>2</sup>. Emphasis for this WPP is put on practices that reduce animal wastes or impede transmission of wastes to water.

**Table C. 1** Agricultural best management practices

Practice	Description
Residue Management	Management of the residual material left on the soil surface of cropland, to reduce nutrient and sediment loss through wind and water erosion.
Critical Area Planting	Establishes permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal practices.
Filter Strips	Establishes a strip or area of herbaceous vegetation between agricultural lands and environmentally sensitive areas to reduce pollutant loading in runoff.
Nutrient Management	Manages the amount, source, placement, form, and timing of the application of plant nutrients and soil amendments to minimize agricultural nonpoint source pollution of surface and groundwater resources.
Riparian Forest Buffers	Establishes an area dominated by trees and shrubs located adjacent to and up-gradient from watercourses to reduce excess amounts of sediment, organic material, nutrients, and pesticides in surface runoff and excess nutrients and other chemicals in shallow groundwater flow.
Terraces	Used to reduce sheet and rill erosion, prevent gully development, reduce sediment pollution/loss, and retain runoff for moisture conservation.
Grassed Waterways	Natural or constructed channel-shaped or graded and established with suitable vegetation to protect and improve water quality.
Prescribed Grazing	Manages the controlled harvest of vegetation with grazing animals to improve or maintain the desired species composition and vigor of plant communities through adaptive multi-paddock grazing and other techniques.
Riparian Herbaceous Buffers	Establishes an area of grasses, grass-like plants, and forbs along watercourses to improve and protect water quality by reducing sediment and other pollutants in runoff, as well as nutrients and chemicals in shallow groundwater.
Watering Facilities	Places a device (tank, trough, or other water-tight container) that provides animal access to water and protects streams, ponds, and water supplies from contamination through alternative access to water.
Field Borders	Establishes a strip of permanent vegetation at the edge or around the perimeter of a field.
Conservation Cover	Establishes permanent vegetative cover to protect soil and water.
Stream Crossings	Creates a stabilized area or structure constructed across a stream to provide a travel way for people, livestock, equipment, or vehicles, improving water quality by reducing sediment, nutrient, organic, and inorganic loading of the stream.
Alternative Shade	Creation of shade reduces time spent loafing in streams and riparian areas, thus reducing pollutant loading and erosion of riparian areas.

<sup>2</sup> Technicians work with local landowners/producers to design WQMPs on a site-specific basis. More information about WQMPs, standard practices, and related TSSWCB programs can be found at <https://www.tsswcb.texas.gov/programs/water-quality-management-plan>.

## Appendix D. Potential Funding Resources

This appendix contains examples of funding resources, by category, that may be utilized to implement aspects of this WPP's recommendations. These resources represent potential external sources of funding other than existing or local contributions (*ad valorem* tax revenue, landowner contributions, etc.). The Partnership will continue to track, evaluate, and match grant sources for potential implementation activities as part of the ongoing facilitation of this WPP.

**Table D. 1** Potential funding sources

Grant Program	Grantor	Uses
Clean Water Act 319(h) Nonpoint Source grants	TCEQ, TSSWCB	Multiple implementation and outreach activities
Clean Water Act 604(b) water quality management planning grants	TCEQ	Data development, forestry outreach
Flood Infrastructure Fund / Flood Mitigation Assistance Program	TWDB	Flood mitigation, resilience
Clean Water State Revolving Fund	TWDB	Utility infrastructure, related planning
Community Development Block Grant (MIT/DR)	GLO/HUD	Flood mitigation, resilience
Private Foundation Grants	Private Foundations (e.g., Houston Endowment, Hershey Foundation, Powell Foundation, and others)	Multiple, specific to foundations
Various grant programs	TPWD	Wildlife, parks and recreation, farm and ranchland preservation, trails
Building Resilient Infrastructure and Communities (BRIC)	FEMA/Texas Division of Emergency Management	Disaster resilience
WQMP	TSSWCB	Agricultural best practices
Regional Conservation Partnership Program (RCPP)	USDA NRCS	Conservation
H-GAC OSSF SEP	TCEQ/WWTFs; Harris County	OSSF remediation for low income households
Restoring America's Wildlife Act	TPWD	Federal support for ecosystem restoration and related projects.
Farm Bill Programs (EQIP, and others)	USDA NRCS, local SWCDs	Landowner support for property improvements with environmental benefits, including conservation easements, forest reserves, watershed protection, wetland mitigation, water quality, etc.
Corporate donations	Corporate partners	Varies by entity
Land and Water Conservation Fund	US Forest Service	Conservation
Various grant programs	US Fish and Wildlife Service	Conservation, habitat restoration, wetlands restoration, endangered species

Grant Program	Grantor	Uses
Various grant programs	National Park Service	Outdoor recreation, conservation
Various other grant programs	EPA	Coastal watersheds/estuaries, brownfields, clean water
Wetland and Stream Mitigation Banks	USACE	Wetland and stream mitigation banking
Deepwater Horizon/RESTORE Act Settlement funds	Gulf Coast Ecosystem Restoration Trust Fund, State of Texas (representative)	Conservation, restoration, resilience