Watershed	**Upper Swift Creek Watershed, Wake County**			
Applicant Name	Triangle J Council of Governments			
Contact Person/Title	Mike Schlegel, Water Resources Program Manager			
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Date of Submittal	February 26, 2015			
What plans will you be using to document the 9 Elements required for 319 funding? Please provide a full reference.	**Name of Plan(s)**	**Author/ Developer**	**Year**	**Link/Location**
	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL)	NC Division of Water Resources (NCDWR)	2009	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin
	Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (WARP Report)	NC Division of Water Resources (NCDWR)	2003	Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report)
	Upper Swift Creek Local Watershed Plan (LWP)	NC Ecosystem Enhancement Program with:		
		Phase I: AMEC Earth & Environmental, Inc. and Kimley Horn and Assoc.	2003	Preliminary Findings Report – Introduction Preliminary Findings Report – Data Assessment Preliminary Findings Report – Cumulative Analysis and Prioritization Preliminary Findings Report – Recommended Actions
		Phases II and III: Tetra Tech	2005	Detailed Assessment and Targeting of Management Report (Appendices)
		Phase IV: UNRBA	2010	Upper Neuse Phase IV Restoration Implementation

Once completed, please submit your checklist to Heather Jennings at heather.b.jennings@ncdenr.gov. DWR will conduct an internal review and notify you when the plan has been determined to meet all of the 9 Elements and is eligible for Section 319 Grant implementation funding. As they are approved, they will be listed on DWR's list of 319 watershed plans at http://portal.ncdenr.org/web/wq/ps/nps/319program/nc-watershed-plans. If you are developing a plan that you are hoping to submit to 319 in the same year, please contact Heather Jennings by email or by phone at (919) 807-6437. Your plan will need to be submitted for approval at least 45 days prior to the 319 Grant application due date.

1. Identification of the Causes and Sources Checklist	Yes	No	Notes	Identify location of information (include link or attach plan and identify section and page number)
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Does the plan(s) identify stressors and sources in the watershed?	√		Yes, the Swift Creek TMDL provides discussion on both Pollutant Source Assessment and Stressor Identification. In addition, both the Data Assessment and Cumulative Analysis and Prioritization reports, part of the Upper Swift Creek LWP identify stressors and sources in the watershed. The WARP Report also includes detailed discussion on potential causes and sources of impairment.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (Pages 8-12) Preliminary Findings Report – Data Assessment Preliminary Findings Report – Cumulative Analysis and Prioritization WARP Report (Section 3, Potential Causes of Biological Impairment; Section 7, Analysis and Conclusions-Causes and Sources of Impairment)
OPTIONAL (Supplemental and/or supporting information)				
Was a GIS desktop analysis performed?	√		Yes, the Upper Swift Creek LWP used GIS to evaluate geography, geology, soils, topography, surface hydrology, wetlands, floodplains, buffers, natural heritage elements, historical and archaeological sites, habitat, and land use.	Preliminary Findings Report – Data Assessment Preliminary Findings Report – Cumulative Analysis and Prioritization
Has existing water quality or biological data been reviewed? • Ambient water quality data • USGS data • Other?	√		Yes, Tetra Tech reviewed water quality monitoring and biological sampling data as part of its development of the Detailed Assessment and Targeting of Management Report. The Upper Swift Creek LWP also refers to the WARP report which provides a detailed review of existing water quality and biological monitoring data. In addition, the WARP assessment included additional biological, stream, chemical, and toxicity sampling.	Detailed Assessment and Targeting of Management Report (Section 2.1.1 Review of Available Monitoring Data) Preliminary Findings Report – Data Assessment (Section 2.2.2 Documented Water Quality Conditions) WARP Report (Section 4, Biological Conditions and Stream Habitat; Section 5, Chemical and Toxicological Conditions; Section 6, Channel and Riparian Conditions)

Does the plan(s) identify any water quality impairments in this watershed (303(d) list)?	√		Yes. At the time the above referenced plans were developed, Upper Swift Creek was listed as impaired for its inability to support sufficient levels of aquatic life.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin Preliminary Findings Report – Introduction (as well as all subsequent documents) WARP Report (Executive Summary)
Has a field assessment been conducted? • CWP (Center for Watershed Protection) Method • EEP (Ecosystem Enhancement Program) Manual • Other?	√		Yes, Tetra Tech conducted field work in order to ground-truth classifications and to identify sites for preservation and restoration. In addition, NCDWR conducted extensive field assessments as part of the development of the WARP Report. EEP conducted site visits as part of its Phase IV Restoration Implementation effort in order to determine site suitability for implementation.	Detailed Assessment and Targeting of Management Report Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report) Upper Neuse Phase IV Restoration Implementation
Does the plan indicate if a TMDL has been developed for this watershed?	√		A TMDL for Swift Creek has been developed as noted in the introductory information of this checklist.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin
Does the plan(s) include a map that shows where stressors and sources are concentrated?	√		Yes, the Swift Creek TMDL, the WARP Report, and the Upper Swift Creek LWP all include maps, figures, and/or images that identify where stressors and sources are concentrated.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report Detailed Assessment and Targeting of Management Report (Appendices)

2. Description of the NPS Management Measures Checklist	Yes	No	Notes	Identify location of information (include link or attach plan and identify section and page number)
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Does the plan(s) identify management measures that address the stressors and sources identified in Element 1? (*note: prioritization of projects would be considered to meet this element*)	√		Yes, the Swift Creek TMDL, the WARP report, the Upper Swift Creek LWP, and the EEP Upper Neuse Phase IV Restoration Implementation reports all identify and include detailed discussions on management measures that can be implemented to address stressors and sources.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report Detailed Assessment and Targeting of Management Report (Appendices) Upper Neuse Phase IV Restoration Implementation
3. Estimate of the load reductions expected for the management measures	**Yes**	**No**	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Have potential indicators been identified for each management measure to determine success?	√		Yes. The Swift Creek TMDL provides a comprehensive discussion on TMDL implementation. This discussion includes steps that can be taken to help achieve the TMDL. These steps have indicators that can be monitored and tracked to determine success such as the number of BMPs installed, impervious cover reductions, impervious surface disconnections, and adoption of LID ordinances, among others. The Detailed Assessment and Targeting of Management Report developed by Tetra Tech also includes extensive	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Detailed Assessment and Targeting of Management Report (Section 5, Targeting of Management) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report

			discussion on load reductions, metrics, and indicators that can be used to assess success. The WARP Report also provides discussion on indicators or metrics that can be used to assess success for improvements in biological communities.	
Has it been roughly quantified how much each management measure will reduce one or more parameters identified in Element 1?	√		Yes, the Swift Creek TMDL provides discussion on the loading reductions needed to achieve the TMDL target. In addition, the Detailed Assessment and Targeting of Management Report also provides an extensive discussion on the estimates of pollutant removal by various stormwater treatment practices.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 13) Detailed Assessment and Targeting of Management Report (Section 10 Identification of Protection Needs)
OPTIONAL (Supplemental and/or supporting information)				
Has a water quality, watershed or lake response model been developed for this watershed?		√		

4. Estimate of the technical and financial assistance needed	Yes	No	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Have the potential costs associated with management activities listed in the plan(s) been identified?	√		Yes. The Detailed Assessment and Targeting of Management Report developed by Tetra Tech includes a detailed discussion on the benefits, feasibility, and costs of stream restoration, wetlands restoration, and BMP retrofit opportunities. The WARP Report also provides discussion on the potential costs and technical assistance that may be	Detailed Assessment and Targeting of Management Report (Section 6.1.2 Benefits, Feasibility, and Costs of Stream Restoration; Section 7.2 Benefits, Feasibility, and Costs of Wetlands Restoration Sites; and Section 8.1.4 Feasibility, Costs, and Benefits of BMP Retrofit Opportunities) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies)

			necessary to implement identified management measures. In addition, the WARP report provides discussion on potential partners and funding sources.	
Has the technical assistance that may be required to help with design, construction, implementation and monitoring of management strategies listed in the plan(s) been identified?	√		Yes. The Detailed Assessment and Targeting of Management Report developed by Tetra Tech includes a detailed discussion on the benefits, feasibility, and costs of stream restoration, wetlands restoration, and BMP retrofit opportunities. This discussion also identifies potential partners, potential funding opportunities, and the level of technical assistance that may be required to implement various recommendations identified. The WARP Report also provides discussion on the potential costs and technical assistance that may be necessary to implement identified management measures. In addition, the WARP report provides discussion on potential partners and funding sources. The Swift Creek TMDL also identifies the technical assistance that may be required to implement management measures, and also provides some discussion on current and future monitoring needs, and identifies potential partners who may assist in these efforts.	Detailed Assessment and Targeting of Management Report (Section 6.1.2 Benefits, Feasibility, and Costs of Stream Restoration; Section 7.2 Benefits, Feasibility, and Costs of Wetlands Restoration Sites; and Section 8.1.4 Feasibility, Costs, and Benefits of BMP Retrofit Opportunities) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14)
OPTIONAL (Supplemental and/or supporting information)				
Have potential partners and funding sources to assist with implementation	√		Yes. The Detailed Assessment and Targeting of Management Report	Detailed Assessment and Targeting of Management Report (Section 6.1.2 Benefits, Feasibility, and Costs of

of the watershed plan(s) been identified and/or contacted?			developed by Tetra Tech includes a detailed discussion on the benefits, feasibility, and costs of stream restoration, wetlands restoration, and BMP retrofit opportunities. This discussion also identifies potential partners, potential funding opportunities, and the level of technical assistance that may be required to implement various recommendations identified. The WARP Report also provides discussion on the potential costs and technical assistance that may be necessary to implement identified management measures. In addition, the WARP report provides discussion on potential partners and funding sources. The Swift Creek TMDL also identifies the technical assistance that may be required to implement management measures, and also provides some discussion on current and future monitoring needs, and identifies potential partners who may assist in these efforts.	Stream Restoration; Section 7.2 Benefits, Feasibility, and Costs of Wetlands Restoration Sites; and Section 8.1.4 Feasibility, Costs, and Benefits of BMP Retrofit Opportunities) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14)
Have potential partners/funding sources to assist with maintenance and/or monitoring (following completion) been identified?	√		The Swift Creek TMDL also identifies the technical assistance that may be required to implement management measures, provides some discussion on current and future monitoring needs, and identifies potential partners who may assist in these efforts.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14)

5. Information/Education component	Yes	No	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Have a range of information and education options been identified in the watershed plan?	√		Yes. All the plans used to complete this checklist make references to or explicit recommendations for public education and outreach. Furthermore, the Upper Neuse Phase IV Restoration Implementation Report provides an Action Strategy to target partner efforts and guide future implementation. Part of this Action Strategy includes a detailed discussion on landowner outreach and education.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection) Upper Neuse Phase IV Restoration Implementation (Swift Creek)
OPTIONAL (Supplemental and/or supporting information)				
Have resource agencies that can be integrated into the watershed planning process been identified and/or contacted?	√		Yes. All the plans used to complete this checklist make references to or explicit recommendations for coordinating with resource agencies for public education and outreach.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection) Upper Neuse Phase IV Restoration Implementation (Swift Creek)

6. Schedule for implementing management measures	Yes	No	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Have the tasks and activities that are related to the implementation and monitoring of management recommendations been identified?	√		Yes. All the documents used to complete this checklist include specific recommendations for activities that are related to the implementation and monitoring of recommended management strategies. In addition, each recommendation section recommends specific steps, general cost types, and a list of potential pitfalls for use in implementing the recommendations.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection) Upper Neuse Phase IV Restoration Implementation (Swift Creek)
Has it been determined if these tasks and activities are short-term, medium, or long-term in nature (*note: prioritization of projects is acceptable for meeting this element*)?	√		Yes. The Detailed Assessment and Targeting of Management Report outlines a general approach for prioritizing overall management recommendations. In addition, the Management Report also prioritizes stream, wetland retrofit BMP, and preservation sites for implementation. In addition, the WARP Report also provides a general approach for prioritizing management recommendations and then further refines some of its recommendations into short-term, medium, and long-term time frames.	Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies)

7. Description of interim, measurable milestones	Yes	No	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Have interim, measurable milestones (things that you can track) that can help determine if management measures (in Element 2) are being implemented been identified?	√		General discussion of interim, measurable milestones (things that can be tracked) is provided as narrative in the recommended strategies and scenarios provided in all of the plans used to complete this checklist. In addition, all of the reports include specific management recommendations with implementation steps identified. These steps have indicators that can be monitored and tracked to determine success such as the number of BMPs installed, impervious cover reductions, impervious surface disconnections, and adoption of LID ordinances, among others. In addition, the WARP Report also provides a general approach for prioritizing management recommendations and then further refines some of its recommendations into short-term, medium, and long-term time frames. Implementation of recommendations can also be considered milestones.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection) Upper Neuse Phase IV Restoration Implementation (Swift Creek)

8. Criteria that can be used to determine if loading reductions are being achieved	Yes	No	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Have criteria and/or indicators that can be used to determine if management strategies and activities listed in the plan(s) are being effective been identified?	√		All of the plans used to complete this checklist identify programmatic criteria and indicators that can be used to determine if management strategies are effective. In addition, the Swift Creek TMDL, WARP Report, and Management Report all identify specific criteria and/or loadings that can be used to track effectiveness.	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection) Upper Neuse Phase IV Restoration Implementation (Swift Creek)
9. Monitoring	Yes	No	Notes	**Identify location of information (include link or attach plan and identify section and page number**
REQUIRED (This box(es) below must be checked Yes in order to be eligible as a 9 Element plan)				
Has a monitoring plan that includes each of the criteria and/or indicators identified in Element 8 been developed?	√		Yes. The Swift Creek TMDL notes that an ongoing monitoring program is critical in assessing the effectiveness of implementation efforts and identifies NCDWR as having an ongoing monitoring plan in place. In addition, the EEP requires a standardized monitoring protocol at all of its restoration sites. The Management Report developed by Tetra Tech also provides specific recommendations for future monitoring that can be conducted in association	TMDL for Addressing Impaired Biological Integrity in the Headwaters of Swift Creek Watershed, Neuse River Basin (TMDL Implementation; Page 14) Assessment Report: Biological Impairment in the Upper Swift Creek Watershed (also know as WARP Report (Section 8 Improving Stream Integrity in Upper Swift Creek: Recommended Strategies) Detailed Assessment and Targeting of Management Report (Section 10.1.1 General Management Recommendations for Watershed Protection)

			with the implementation of recommended management strategies. The WARP Report also sets out specific recommendations for future monitoring to evaluate the criteria and indicators identified throughout the plans.	
OPTIONAL (Supplemental and/or supporting information)				
Are there plans for conducting water quality monitoring? • Intensive/On-going? • Field kits?	√		Yes. Both the Town of Cary and Wake County currently have very robust water quality monitoring programs in the Upper Swift Creek	Town of Cary Water Resources Department Wake County Water Quality Division
If water quality monitoring is expected to be conducted, have you contacted NCDWR?	√		Yes. Both the Town of Cary and Wake County are in regular communication with the State regarding its water quality monitoring program.	