|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Watershed** | **Rich Fork Creek, Davidson County** | | | |
| **Applicant Name** | Piedmont Triad Regional Council | | | |
| **Contact Person and Title** | Cy Stober, Senior Regional Planner | | | |
| **Address** | 1398 Carrollton Crossing Drive, Kernersville, NC 27284 | | | |
| **Phone Number/Email** | (336)904-0300 / [cstober@ptrc.org](mailto:cstober@ptrc.org) | | | |
| **Date of Submittal** | January 21, 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** |
| Rich Fork Creek Watershed Assessment | PTCOG | 2008 | <http://www.ptrc.org/modules/showdocument.aspx?documentid=1274> |
| Rich Fork Creek Watershed Restoration Plan | PTCOG | 2009 | <http://www.ptrc.org/index.aspx?page=253> |
| Rich Fork Creek Watershed Restoration Plan, with CITYgreen Project Atlas Appendix | PTCOG | 2009 | <http://www.ptrc.org/modules/showdocument.aspx?documentid=1273> |
| *Once completed, please submit your checklist to Kim Nimmer at* [*kimberly.nimmer@ncdenr.gov*](mailto:kimberly.nimmer@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*](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 Kim Nimmer by* [*email*](mailto:kimberly.nimmer@ncdenr.gov) *or by phone at (919) 807-6438. 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? | √ |  | Both plans reviewed include a watershed characterization component and have identified stressors and sources in the watershed. The page numbers identified explicitly name these sources | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274), pp. 17 & 18; 35 – 43  [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272) |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | |
| Was a GIS desktop analysis performed? | √ |  | Evident throughout both plans. | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274)  [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272) |
| Has existing water quality or biological data been reviewed?   * Ambient water quality data * USGS data * Other? | √ |  | Ambient water quality data collected by DENR was reviewed. | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274), pp. 17 & 18 |
| Does the plan(s) identify any water quality impairments in this watershed (303(d) list)? | √ |  | Yes. Rich Fork Creek is listed as impaired for Exceeding Criteria for Fair Fish Communities and its downstream extent for Exceeding Criteria for Poor Fish Communities. The communities of Rich For Creek are also implementing a TMDL for violating NC’s fecal coliform water quality standard. Its tributary Hunts Fork is listed as impaired for Exceeding Criteria for Fair Benthos.  The RFC Watershed Assessment identifies high levels of impervious cover in the watershed’s headwaters as a source of stress and impairment. | Draft 2014 303(d) List: <http://portal.ncdenr.org/c/document_library/get_file?uuid=570da5ea-ac71-4b5f-963c-086a725c0f2f&groupId=38364> (pp 1008; 1010 - 1011)  Impaired for:   * (Exceeding Criteria) Fair Fish Community * ( Exceeding Criteria) Poor Fish Community   [RFC](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274) Watershed Assessment |
| Has a field assessment been conducted?   * CWP (Center for Watershed Protection) Method * EEP (Ecosystem Enhancement Program) Manual * Other? | √ |  | Field inventories of BMPs, stormwater infrastructure, and streams were conducted as part of the Ellerbe Creek WIP. | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274), pp. 35 – 40 |
| Does the plan indicate if a TMDL has been developed for this watershed? | √ |  | The RFC Watershed Assessment repeatedly refers to the consent decree that the City of High Point has with the US EPA over failure to respond to the fecal coliform bacteria TMDL on Rich Fork Creek. However, it mainly discusses this topic in reference to the improvements in the creek’s dissolved oxygen levels in recent history. | [RFC](http://portal.ncdenr.org/web/fallslake/home) Watershed Assessment |
| Does the plan(s) include a map that shows where stressors and sources are concentrated? | √ |  | The RFC Watershed Assessment maps many of the land use and land cover characters that affect watershed conditions. Most notably, though, it maps all of the field data collected on behalf of this study, documenting hundreds of instances of need in the watershed . | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274), pp. 39 & 40. |
| 1. **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*) | √ |  | The RFC Watershed Assessment features a chapter of seven policy recommendations needed to improve local water quality conditions.  The RFC Restoration Plan features a project atlas that documents 33 projects that directly address the sources of and impacts of impairment in this watershed. It also features an implementation timeline that provides a narrative on how the projects and policies may be implemented to most effectively improve local water quality conditions. | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274); pp. 41 – 61  [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272) |
| 1. **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? | √ |  | The implementation timeline in the RFC Watershed Restoration Plan documents how policy and project measures could most effectively address sources of impairment in the watershed, and what benchmarks will denote progress toward restoration of supporting water quality conditions. | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272), pp. 114 – 121 |
| Has it been roughly quantified how much each management measure will reduce one or more parameters identified in Element 1? | √ |  | Yes, CITYgreen was used to quantify all benefits of the projects in the watershed. PTCOG had the benefit of modeling best practices on each project atlas site and used the CITYgreen software to produce masses of pollutants removed from the air and water. | [RFC](http://durhamnc.gov/ich/op/pwd/storm/Documents/Ellerbe_WIP/ECWIP_part2.pdf) Watershed Restoration Plan, CITYgreen appendix |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | |
| Has a water quality, watershed or lake response model been developed for this watershed? | √ |  | Yes, the NC DWR is currently developing a complex watershed and lake model for High Rock Lake, which includes the entire RFC watershed. | [High Rock Lake Special Study Stakeholders page](http://portal.ncdenr.org/web/wq/high-rock-lake) |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. **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? | | √ |  | | The LATT Watershed Restoration Plan’s recommended policies and projects include numerous features with individual costs that can all be readily cross-referenced. A cost-benefit analysis is provided by the CITYgreen software, representing the total costs of restoration and/or retrofitting at each site in the project atlas for Restoration.  The costs for project implementation have been quantified using the Maryland Department of Natural Resources’ (MD DNR) Estimated Costs tool. These costs are summarized for each project in the project atlas and included in the project profile attribute table. The costs of the easements was based upon the tax value data the PTRC has on file for Davidson and Guilford Counties. | | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272); pp. 12 – 112  [RFC Watershed Restoration Plan, CITYgreen Appendix](http://www.ptrc.org/modules/showdocument.aspx?documentid=1273) |
| 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? | | √ |  | | The RFC Watershed Restoration Plan provides a narrative description of the technical assistance for each policy recommendation and project in the atlas, most notably in the implementation timeline. The MD DNR Estimated Costs Tool integrates technical assistance costs into its projections. | | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272), pp. 114 – 121 |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | | | | |
| Have potential partners and funding sources to assist with implementation of the watershed plan(s) been identified and/or contacted? | | √ |  | | The RFC Watershed Restoration Plan provides a narrative description of the technical assistance for each policy recommendation and project in the atlas, most notably in the implementation timeline. | | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272), pp. 114 – 121 |
| Have potential partners/funding sources to assist with maintenance and/or monitoring (following completion) been identified? | | √ |  | | The RFC Watershed Restoration Plan identifies all of the partners needed for each project in the project atlas, including maintenance, especially in each project’s profile in the atlas and in the implementation timeline. Monitoring is identified as a project need, but explored in less depth. Both are discussed in the plan’s implementation timeline. The policy recommendations in the RFC Watershed Assessment discuss the necessary roles and responsibilities for each of the stakeholders in ensuring that the initiative is executed successfully. | | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274), pp. 41 – 61  [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272) |
| 1. **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? | | √ |  | | “Watershed Outreach and Education” is explicitly named as policy recommendations in the RFC Watershed Assessment. Many of the other recommendations are described as having a bedrock of education in order to be successfully implemented: “Stormwater Retrofits”, “Riparian Buffer Restoration”, “Rural Lands Protection”, and “Improved Site Design.” Outreach efforts are also integrated into the text throughout the Restoration Plan, and a consistent thread in its implementation timeline and project atlas. | | [RFC Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1274), pp. 51 – 53  [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272) |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | | | | |
| Have resource agencies that can be integrated into the watershed planning process been identified and/or contacted? | | √ |  | | The City of Lexington and Davidson County were and are participating in the PTRC’s outreach and education program Stormwater SMART, which has been the main venue for promoting watershed stewardship and restoration. This association facilitated the application to the NC DWR’s 205j grant program to create Davidson County citizens For Improving Stream Health (DC FISH), which supported the creation of Adopt-A-Stream and/or StreamWatch programs throughout Davidson County, but with an emphasis on its impaired waters: Rich Fork, Abbotts, and Swearing Creeks and High Rock Lake.  The City of High Point has used this plan and the fecal coliform bacteria TMDL for Rich Fork Creek as baselines for their capital improvements in their Westside WWTP, which discharges directly to the creek. The City has and will be spending over $30 million in improvements to its treatment plant and associated infrastructure, which were identified in the TMDL as a primary source of pollution and impairment. This includes $2 million in stream restoration efforts along their Payne/Kennedy Mill Creek outfall.  The PTCOG and PTRC have been fortunate in acquiring further state and federal water quality planning grants to conduct similar watershed planning p-projects for other impaired water bodies in Davidson County, allowing many of the project stakeholders of the Rich Fork Creek watershed planning efforts to reconvene about similar issues, especially in regard to policies and ordinances throughout Davidson County. | | [Stormwater SMART](http://www.stormwatersmart.org)  [DC FISH](http://www.ptrc.org/index.aspx?page=249)  [City of High Point Westside WWTP](http://www.highpointnc.gov/minutes/wastewater/ws.cfm)  L[ower Abbotts Creek Watershed Restoration Plan](http://www.ptrc.org/index.aspx?page=251) |
| 1. **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? | | √ |  | | The RFC Watershed Restoration Plan features an Implementation Timeline that provides qualitative and quantitative benchmarks to document improvements in watershed health and function. The project atlas includes monitoring requirements for individual projects to track this progress. The Implementation Timeline is broken down into four blocks of varying windows of time: Phase I = 2010 – 2012; Phase II = 2012 – 2016; Phase III = 2016 – 2020; & Phase IV = 2020 – 2030. These phases have specific actions associated with them, including project implementation and the adoption of the Policy Recommendations detailed in the *RFC Watershed Assessment*, including new or revised ordinances, codes, and/or policies. | | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272) ; pp 114 – 119. |
| 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*)? | | √ |  | | The RFC Watershed Restoration Plan’s implementation timeline is broken down into four phases that can transcribed into short- (2010 – 2012), mid- (2012 – 2016), long- (2016 – 2020), and very long- (2020 – 2030) term windows with associated activities and goals. | | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272), pp. 114 – 121 |
| 1. **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? | | √ |  | | The RFC Watershed Restoration Plan features an implementation timeline that provides qualitative and quantitative benchmarks to document improvements in watershed health and function. The project atlas includes monitoring requirements for individual projects to track this progress. These are all described in a three-tier approach: the six “goals” listed on page 114 are the project milestones; each phase all include a narrative that discusses these milestones and if they are being achieved. These are largely discussed in qualitative terms, but the use of water quality data to guide this adaptive management process is identified and crucial to meeting these milestones. | | [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272), pp. 114 – 121 |
| 1. **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? | √ | |  | | The RFC Watershed Restoration Plan features an implementation timeline that provides qualitative and quantitative benchmarks to document improvements in watershed health and function. These are ultimately criteria that will de-list Rich Fork Creek from the 303(d) list, so regular monitoring of the resident fish communities is the primary monitoring priority. However the creek has a history of low dissolved oxygen levels, and the plan recommends regular monitoring for this parameter as well as for all others regularly monitored by the Cities of High Point and Thomasville under their respective NDPES permits. Lastly, the PTCOG’s later work in the Lower Abbotts Creek watershed identifies sediment from Rich Fork Creek as its primary source of turbidity impairment. The PTCOG also noted the intensive bank erosion and morphological incision of the creek’s streams that is uncharacteristic of healthy Piedmont stream morphology. The source of this stress is attributed to stormwater runoff, and both stormwater flows and sediment levels are identified as a priority concerns in this watershed. The project atlas includes monitoring requirements for individual projects to track this progress. The pollutant reductions identified in the CITYgreen appendix should be reflected in local water quality and stream conditions. Project implementation will be presumed to reduce these loads to local catchments and the regional watershed. This must be verified with local and regional water quality data for each project. | | Lower Abbotts Creek Watershed Restoration Plan, pp. 17 – 25.  [RFC Watershed Restoration Plan](http://www.ptrc.org/modules/showdocument.aspx?documentid=1272), pp.114 – 121  [RFC Watershed Restoration Plan, CITYgreen Appendix](http://www.ptrc.org/modules/showdocument.aspx?documentid=1273) |
| 1. **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? | | √ |  | | The City of High Point continues to monitor downstream of its wastewater discharge of its Westside WWTP  The City of Lexington provided water quality monitoring services for a similar watershed restoration planning effort in Lower Abbotts Creek, of which Rich Fork Creek is the most significant tributary. It collected data just upstream of the confluence, as the Yadkin-Pee Dee River Basin Association (YPDRBA) maintains an ambient water quality monitoring station downstream of the confluence. This data determined that Rich Fork Creek is the primary source of impairment for Lower Abbotts Creek.  The NC DWR’s special study relied upon a 319-supported water quality monitoring and modeling effort to determine the sources of nutrient impairment in this 4,000-square mile watershed, including Rich Fork Creek. Nitrogen and phosphorous loads – including sediment-bound phosphorous – will be determined through this enormous effort. The results should be available in 2015.  The program DC FISH was created to create a network of citizen-led water quality monitoring groups throughout Davidson County. However, it was necessary to focus that support more on resident recruitment and education focused on explaining the need for watershed stewardship in the county. The next step would be to institutionalize this network and its data, at least at a grassroots level. | | [City of High Point Westside WWTP](http://www.highpointnc.gov/minutes/wastewater/ws.cfm)  [Lower Abbotts Creek Watershed Assessment](http://www.ptrc.org/modules/showdocument.aspx?documentid=1088), pp. 33 – 42  [NC Division of Water Resources High Rock Lake Watershed Monitoring Project](http://portal.ncdenr.org/c/document_library/get_file?uuid=901501d5-6df3-4815-8747-a24401782703&groupId=38364)  [DC FISH](http://www.ptrc.org/index.aspx?page=249)  [Yadkin-Pee Dee River Basin Association](http://www.yadkinpeedee.org/) |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | | | | |
| Are there plans for conducting water quality monitoring?   * Intensive/On-going? * Field kits? | | √ |  | | The City of High Point and the City of Thomasville will both be monitoring this watershed as part of their significant capital investments in wastewater improvements. This monitoring may be directly by municipal staff and in municipal laboratories, or indirectly through their association with the Yadkin-Pee Dee River Basin Association. None of this data is immediately available to the public, but is held by these public entities and is available upon request. Any project managers interested in implementing this plan are advised to contact these entities and develop a working relationship with them and discuss the data available. Contact information has been provided. | | [Yadkin-Pee Dee River Basin Association](http://www.yadkinpeedee.org/)  Executive Director David Saunders [David.Saunders@hdrinc.com](mailto:David.Saunders@hdrinc.com), 336-416-3462  [City of High Point, Department of Public Services, Wastewater Division](http://www.highpointnc.gov/minutes/wastewater/ws.cfm)  Wastewater Plant Manager John Hodges  [john.hodges@highpointnc.gov](mailto:john.hodges@highpointnc.gov), 336-822-4730  [City of Thomasville, Department of Public Services](http://www.thomasville-nc.gov/index.php?p=public_services)  Director Morgan Huffman  [Morgan.Huffman@thomasville-nc.gov](mailto:Morgan.Huffman@thomasville-nc.gov), 336-475-4210 |
| If water quality monitoring is expected to be conducted, have you contacted NCDWR? | | √ |  | | Yes. Both the Cities of High Point and Thomasville are in regular communication with the State regarding its water quality monitoring program through the NPDES program and due to the special orders of consent requiring these investments. | |  |