North Carolina Nine (9) Element Checklist

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| Watershed | Indian Howard Creeks | | | |
| Applicant Name | Division of Mitigation Services | | | |
| Contact Person/Title | Hal Bryson | | | |
| Address | Raleigh, | | | |
| Phone Number/Email |  | | | |
| Date of Submittal |  | | | |
| Plans using to document the Nine (9) Elements required for 319 funding? Please provide full reference | | | | |
| Name of Plan(s) | | Author/Developer | Year | Link/Location |
| Indian and Howard Creeks LWP Preliminary Findings Report | | NCDENR – Division of Mitigation Services | Dec 2008 | <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329> |
| Indian and Howard Creeks LWP Watershed Assessment Report | | NCDENR – Division of Mitigation Services | Apr 2010 | <http://portal.ncdenr.org/c/document_library/get_file?uuid=c0b89e3d-3d0a-4cdc-a64a-961eae3c1fdf&groupId=60329> |
| Indian and Howard Creeks LWP Final Watershed Management Plan | | NCDENR – Division of Mitigation Services | Oct 2010 | <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| Indian and Howard Creeks LWP Project Implementation Report & Project Atlas | | NCDENR – Division of Mitigation Services | March 2010 | <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329> |
| Indian and Howard Creeks LWP Summary of Findings and Recommendations | | NCDENR – Division of Mitigation Services |  | <http://portal.ncdenr.org/c/document_library/get_file?uuid=6c752cd7-bb97-4547-a239-6bf5efa32a5c&groupId=60329> |

### Once completed, please submit your checklist to Heather Jennings at [he athe r.b.j e nni ngs@nc de nr.gov .](mailto: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 pl ans 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 [e m ai l](mailto:heather.b.jennings@ncdenr.gov) 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.

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| **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 pl an)** | | | | |
| Does the plan(s) identify stressors and  sources in the watershed? | x |  |  | Indian and Howard Creeks LWP – Preliminary Findings Report (pp. 15-19) <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329>  Indian and Howard Creeks LWP- WS Assessment Report (pp. 13-37) <http://portal.ncdenr.org/c/document_library/get_file?uuid=c0b89e3d-3d0a-4cdc-a64a-961eae3c1fdf&groupId=60329>  Indian and Howard Creeks LWP – Final WS Management Plan (Table ES-1, pp. 18-19) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | |
| Was a GIS desktop analysis performed? | x |  | Indian and Howard Creeks LWP Preliminary Findings Report | <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329> |
| Has existing water quality or biological data been reviewed?   * Ambient water quality data * USGS data * Other? | x |  | Indian and Howard Creeks LWP Preliminary Findings Report | <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329> |
| Does the plan(s) identify any water  quality impairments in this watershed (303(d) list)? | x |  | Indian and Howard Creeks LWP Preliminary Findings Report | <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329> |
| Has a field assessment been  conducted?   * CWP (Center for Watershed Protection) Method * EEP (Ecosystem Enhancement Program) Manual * Other? | x |  | Indian and Howard Creeks LWP Watershed Assessment Report | <http://portal.ncdenr.org/c/document_library/get_file?uuid=c0b89e3d-3d0a-4cdc-a64a-961eae3c1fdf&groupId=60329> |
| Does the plan indicate if a TMDL has  been developed for this watershed? | NA |  |  |  |
| Does the plan(s) include a map that  shows where stressors and sources are concentrated? | x |  | Indian and Howard Creeks LWP Preliminary Findings Report | <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329> |

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| **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*) | x |  |  | Indian and Howard Creeks LWP – Final WS Management Plan (Table ES-1, pp. 19 – 43) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329>  Indian and Howard Creeks LWP – Project Implementation and Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329> |
| **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? | x |  | Indian and Howards Creek LWP- Summary of Findings and Recommendations summarizes watershed stressors that are linked to management measures and may serve as indicators of success upon implementation.  In addition, Project Atlas has specific projects identified as well as modeled project benefits that may also serve as indicators. | Indian and Howard Creeks LWP – Final WS Management Plan <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329>  Indian and Howard Creeks LWP – Project Implementation and Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329>  Indian and Howards Creek LWP- Summary of Findings and Recommendations  <http://portal.ncdenr.org/c/document_library/get_file?uuid=6c752cd7-bb97-4547-a239-6bf5efa32a5c&groupId=60329> |
| Has it been roughly quantified how much each management measure will reduce one or more parameters identified in Element 1? | x |  | In project atlas, it has been calculated (modeled) how much certain management measures will reduce some parameters. | Indian and Howard Creeks LWP – Project Implementation and Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329> |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | |
| Has a water quality, watershed or lake response model been developed for this watershed? | x |  | Project Atlas references model | Indian and Howard Creeks LWP – Project Implementation and Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329> |
| **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? | x |  |  | Indian and Howard Creeks LWP – Final WS Management Plan (pp. 45-50)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| Has the technical assistance that may be required to help with design, construction, implementation and monitoring of management strategies | x |  |  | Indian and Howard Creeks LWP – Final WS Management Plan (pp. 45-50)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |

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| listed in the plan(s) been identified? |  |  |  |  |
| **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? | x |  |  | Indian and Howard Creeks LWP – Final WS Management Plan (pp. 45-50)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| Have potential partners/funding  sources to assist with maintenance and/or monitoring (following completion) been identified? | x |  |  | Indian and Howard Creeks LWP – Final WS Management Plan (pp. 45-50)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| **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? | x |  | Final WSMP includes watershed education section. | Indian and Howard Creeks LWP – Final WS Management Plan (pp. 41-44) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | |
| Have resource agencies that can be  integrated into the watershed planning process been identified and/or contacted? | x |  |  | Indian and Howard Creeks LWP – Preliminary Findings Report  (pp. 33-35)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329>  Indian and Howard Creeks LWP – Final WS Management Plan (pp. 9-14) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |
| **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? | x |  | Preliminary Findings has general goals (p. 35). Final WS Plan identifies restoration activities (p. 19-24) and institutional measures (24-42) for implementation to address stressors. Project Atlas has specific projects identified as well as modeled project benefits. | Indian and Howard Creeks LWP – Preliminary Findings Report  <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329>  Indian and Howard Creeks LWP – Final WS Management Plan (pp. 9-44) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329>  Indian and Howard Creeks LWP-Project Atlas  <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329> |
| 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*)? | x |  | Preliminary Findings has general short, mid and long term goals. Final WS Plan has projects prioritized to help determine short vs. long term potential projects. | Indian and Howard Creeks LWP – Preliminary Findings Report  (pp. 33-34)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329>  Indian and Howard Creeks LWP – Final WS Management Plan (pp. 21, 43-44) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329> |

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| **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? |  |  | Final WSMP (pp 24-42) has items to help track if management measures are being implemented and also outlines general implementation strategy (pp.43-44). Project Atlas has specific projects identified as well as modeled project benefits. These activities as well as specific projects identified in Project Atlas may be tracked as implementation occurs. | Indian and Howard Creeks LWP – Preliminary Findings Report  (pp. 33-34)  <http://portal.ncdenr.org/c/document_library/get_file?uuid=da443c5a-7e6b-4e84-9b0b-14c7fd63a074&groupId=60329>  Indian and Howard Creeks LWP – Final WS Management Plan (pp. 9-44) <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329>  Indian and Howard Creeks LWP Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329> |
| **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? | x |  | Project Atlas has specific projects identified as well as modeled project benefits that may serve as indicators. Monitoring conducted as part of the Watershed Assessment Plan and subsequent baseline monitoring by Mooresville Regional Office provide baseline conditions for implementation. Mitigation projects will have pre- and post-construction monitoring conducted to evaluate stream stability. | Indian and Howard Creeks LWP – Final WS Management Plan <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329>  Indian and Howard Creeks LWP – Project Implementation and Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329>  Indian and Howard Creeks LWP – Watershed Assessment Report  <http://portal.ncdenr.org/c/document_library/get_file?uuid=c0b89e3d-3d0a-4cdc-a64a-961eae3c1fdf&groupId=60329> |
| **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? | x |  | NCDWR Mooresville Regional Office coordinated with local SWCD to conduct monitoring in the Mill Creek Watershed (Figure 4.4 of Finals Watershed Management Plan) that drains to Indian Creek upstream of the municipal drinking water intake.  Figures 4 and 5 Indian Creek and Howard Creeks Watershed Assessment Report document water quality monitoring conducted as part of planning effort as well as and nearby DWR ambient monitoring stations (includes C5170000 on Indian Creek). | Indian and Howard Creeks LWP – Final WS Management Plan <http://portal.ncdenr.org/c/document_library/get_file?uuid=35c4ac34-c8e5-49fd-a6a0-5c2b6c710d97&groupId=60329>  Indian and Howard Creeks LWP – Project Implementation and Project Atlas <http://portal.ncdenr.org/c/document_library/get_file?uuid=94a60086-8fd6-43d2-8444-93e3949e3aab&groupId=60329>  Indian and Howard Creeks LWP – Watershed Assessment Report  <http://portal.ncdenr.org/c/document_library/get_file?uuid=c0b89e3d-3d0a-4cdc-a64a-961eae3c1fdf&groupId=60329> |
| **OPTIONAL (Supplemental and/or supporting information)** | | | | |
| Are there plans for conducting water  quality monitoring?   * Intensive/On-going? * Field kits? |  |  | NCDWR Mooresville Regional Office coordinated with local SWCD to conduct monitoring in the Mill Creek Watershed (Figure 4.4) that drains to Indian Creek upstream of the municipal drinking water intake. |  |
| If water quality monitoring is  expected to be conducted, have you contacted NCDWR? |  |  | NCDWR Mooresville Regional Office coordinated with local SWCD to conduct monitoring in the Mill Creek Watershed (Figure 4.4) that drains to Indian Creek upstream of the municipal drinking water intake. Annual monitoring will continue with more frequent monitoring as justified with additional project implementation.  DWR maintains ambient monitoring station on Indian Creek (C5170000) as well as several nearby DWR ambient monitoring stations (Figure 5 of Indian and Howard Creeks LWP – Watershed Assessment Report). | Indian and Howard Creeks LWP – Watershed Assessment Report  <http://portal.ncdenr.org/c/document_library/get_file?uuid=c0b89e3d-3d0a-4cdc-a64a-961eae3c1fdf&groupId=60329> |