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| https://connect.ncdot.gov/_layouts/images/blank.gif | [Corridor Review](https://connect.ncdot.gov/resources/Environmental/_Layouts/listform.aspx?PageType=4&ListId=%7b849063FC-63DB-47E1-AFD1-D9C5A8A20B8A%7d&ID=64) |
| The ICI On-Site Mitigation Group (ICI) becomes involved with on-site mitigation at Merger Process Concurrence Point 3 when the LEDPA is identified and streams and wetland delineations have been completed. After the LEDPA is selected, the Project Manager will give the ICI Group a set of roadway plans with delineations along with project schedules and deadlines (Merger meeting dates, ROW date, LET date). Hydraulics notifies ICI and the Project Management Group of any potential stream/wetland mitigation sites after 4a but prior to 4b. ICI will review the entire corridor for potential stream or wetland restoration sites in addition to the permit sites from Hydraulics. The goal of the corridor review is to provide a visual cursory review of each stream or wetland crossing and its suitability as a mitigation site based on best professional judgement. The results should be a yes or no answer to carry a site forward to feasibility studies. Info needed prior to site visit:1. Plan sheets
2. Topographic mapping
3. Soils mapping
4. Aerials
5. Review NHP database for T&E species occurrences
6. Review Cultural Resources records

 Things to look for while out in the field:1. Existing conditions of stream/wetland (riparian vegetation, stream bank erosion, aggradation, degradation, slope, substrate, size of channel, ditching, timber harvesting, impacts from farm animals, other features)
2. Adjacent land use (Is there adequate space between homes, businesses, bedrock formations, etc and the proposed highway for natural channel design?)
3. Contaminated areas (look for oil / gas leaks, barrels, trash dumping)
4. Note areas of Threatened and Endangered Species and Cultural Resources to ensure they are not impacted by the relocation.
5. Review design plans to see locations fill/cut slopes, culverts or any other structures that may complicate stream relocations.
6. Note if there are any utilities located within or near relocation/restoration area or the proposed highway corridor such as sewers, electric, gas, etc.

 NEEG will be included in corridor review as needed for recommendations on fatal flaws and constraints, construction issues and projected construction costs. |
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| https://connect.ncdot.gov/_layouts/images/blank.gif | [Site Feasibility](https://connect.ncdot.gov/resources/Environmental/_Layouts/listform.aspx?PageType=4&ListId=%7b849063FC-63DB-47E1-AFD1-D9C5A8A20B8A%7d&ID=65) |
| If site passes the initial corridor review it moves into feasibility. The feasibility study can be cursory for simple, straightforward sites or in-depth for complicated sites. The goal of a feasibility study is to quantify the mitigation potential of a site and investigate thoroughly any potential constraints. The results of the feasibility study should provide enough detail to estimate the linear footage of stream mitigation, the acreage of wetland mitigation, and the additional ROW needed.Information that may be collected and analyzed during feasibility include:* Intermittent/perennial points
* Representative channel cross section
* Reach slopes
* Substrate and soil samples
* Floodplain width
* Drainage area
* Watershed land use
* Adjacent land use
* Presence of hydric soils or existing wetlands
* Environmental Screening
* T & E species occurrence or habitat presence
* Physical or structural constraints
* Historical/Archaeological
* Restoration Options
* Construction constraints
* Landowner concerns, including # of landowners

The feasibility report (Figure 1) should describe the methodologies, property ownership information, existing site conditions, historical conditions of site, mitigation opportunities, site location map, aerial photographs, environmental screening data (collected from NEPA documents, site visit, and property owner interview), field data summaries, and conceptual mitigation design. A plan view map should be developed that illustrates the stream alignment or wetland boundary, mitigation alternatives, the right-of-way required for the project, road crossings, and any other important site features. Submit site feasibility report and request for input to NEEG. Review with the NEEG, REU, NEPMG, and Hydraulics as necessary to decide if site is feasible. |
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| https://connect.ncdot.gov/_layouts/images/blank.gif | [Site Feasibility - Planning](https://connect.ncdot.gov/resources/Environmental/_Layouts/listform.aspx?PageType=4&ListId=%7b849063FC-63DB-47E1-AFD1-D9C5A8A20B8A%7d&ID=66) |
| If the site passes the feasibility study, ICI staff will:* Assign an ID number in data warehouse. The ID number consists of the county number followed chronologically by the number of mitigation sites in that county.
* Highlight in red to indicate a new site. Submit plan view of site with additional right-of-way required to Hydraulics project engineer. Site location should be identified by station number from roadway plans.
* Submit request for initial $25,000 ROW funds for appraisal and negotiation to NEU Administrative Assistant. Request should include plan view of site, property owner name, address, and approximate acreage.
* Send copy of ROW request and approval to ROW agent.
* Submit request for topographic information, if needed, to Photogrammetry and Location and Surveys. The request should include plan view of site, property owner name and address, boundary of site, and limits of topography needed.

ICI staff will provide Hydraulics a 1 page prospectus (Figure 2) for use at the 4b Merger meeting to present on-site stream or wetland reviews and recommendations, along with estimated wetland or buffer acres and stream linear footage.A field review meeting is not necessary but can be scheduled if requested by agencies. Invite the agency representatives, the NEEG engineer, the NEPMG Project Manager, and the Division Environmental Officer (DEO) to the field meeting.Coordinate with NEEG, Hydraulics, and REU to develop site mitigation plan (Figure 3) based on design parameters. The mitigation plan should provide a brief description of existing conditions including:* stream morphology (Rosgen classification),
* hydric soils and existing wetlands
* physiography,
* land use,
* plant and aquatic communities,
* soils,
* and degrading factors.

The plan should also provide a brief description of proposed conditions including:* wetland or stream restoration activities,
* proposed stream morphology,
* proposed wetland type,
* community types,
* planting plan,
* success criteria,
* and monitoring plan.

Submit site mitigation plan to the NEPMG Project Manager to include in permit application with design from the NEEG.The NEEG will manage and coordinate site design, construction, and monitoring with ICI, REU, Hydraulics, and Division personnel. |
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| https://connect.ncdot.gov/_layouts/images/blank.gif | [Bridges and Other Non-Merger Projects](https://connect.ncdot.gov/resources/Environmental/_Layouts/listform.aspx?PageType=4&ListId=%7b849063FC-63DB-47E1-AFD1-D9C5A8A20B8A%7d&ID=67) |
| On site mitigation review for bridges and other non-merger projects will be requested of the ICI Group by the NEPMG after delineations are complete and preliminary plans are available. The same general procedures will be followed except the coordination with the agencies will be handled through site meetings instead of Merger meetings.  |

**Add Links**

**Figure 1. Example On-site Mitigation Feasibility Scope**

**Figure 2. Example On-site Prospectus**

**Figure 3. Example On-site Mitigation Plan Scope**

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| https://connect.ncdot.gov/_layouts/images/blank.gif | [Threatened & Endangered Species Conservation and Riparian Buffer Conservation Programs](https://connect.ncdot.gov/resources/Environmental/_Layouts/listform.aspx?PageType=4&ListId=%7b849063FC-63DB-47E1-AFD1-D9C5A8A20B8A%7d&ID=68) |
| ICI is notified by NEBSG and/or NEPMG of the need for Threatened & Endangered (T&E) Species Conservation and/or Riparian Buffer Conservation after T&E species surveys and estimated effects to the species have been completed for the roadway project. Once it is determined that T&E species and/or Riparian Buffer conservation is needed, the NEBSG and NEPMG provide the ICI Group with the following information:* Species impacted by roadway project
* NRTR, Biological Assessment, CE, roadway plans or other documentation if available
* Site search area (established through coordination between the NEBSG and USFWS based on Critical Habitat Area)
* Level of estimated impacts
* Roadway project deadlines
* Type and extent of conservation measures required

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| Conservation measures vary according to project and species and may include:* on-site (adjacent to the roadway corridor) locations,
* off-site locations,
* restoration, enhancement, or preservation of stream buffer along target species' aquatic habitat,
* restoration, enhancement or preservation of target species' terrestrial habitat.

The search (Figure 4) should prioritize sites according to:* habitat degradation,
* proximity to roadway project,
* restoration potential,
* potential buffer width,
* constraints.

All sites identified should include the following information in a one page prospectus: landowner contact information, parcel size, property location, hydrologic unit, proximity to NCDOT TIP project, distance to expanding development, soil description, water quality information, location of NHP elements, distance to protected areas, general property description, potential problems, potential for creation/enhancement/preservation, a vicinity map, an aerial map of the property showing the location of the potential mitigation site, and a photo.  |

**Add Link**

**Figure 4. Example Conservation Buffer Site Search Scope**

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| https://connect.ncdot.gov/_layouts/images/blank.gif | [Site Planning](https://connect.ncdot.gov/resources/Environmental/_Layouts/listform.aspx?PageType=4&ListId=%7b849063FC-63DB-47E1-AFD1-D9C5A8A20B8A%7d&ID=70) |
| High priority sites proceed to the Site Planning phase. Sites are considered high priority based on the type and amount of mitigation available, minimal constraints, the ecological benefits of the sites, etc. The Site Planning phase includes a review of initial data collection, in field data collection, landowner coordination (only if the site is off-site), and fatal flaw analysis.* The initial data collection involves a review of available information including aerial photos, USGS maps, property boundaries, NWI mapping, NRCS soil mapping, local planning data, NCNHP database, SHPO database, and other available baseline mapping.
* In-field data collection includes a description of existing conditions and plant communities, verification of database information, and determination/location of conservation boundary using GPS. This determination is made on a case-by-case basis based on landowner preferences and negotiations as well as site characteristics. If the site is on-site, no landowner contact has been made therefore, the landowner may not be involved at this phase of the project.
* ICI will contact landowners if the site is off-site. Landowner contact will be handled by ROW if on-site. This phase includes obtaining a signed Right of Entry (if not obtained during site search), performing preliminary contact meeting and initial interview prior to fieldwork, creating maps to assist landowner in visualizing the easement boundary possibilities, meetings with ROW agent to discuss landowner compensation, acquiring a signed Letter of Intent, and possibly a signed option. (see appendix for Letter of Intent).
* The fatal flaw analysis consists of performing hazardous material screening, a federal protected species review, and a cultural resources review. Hazardous material screening consists of searching state and federal databases for known hazardous waste sites on the property and performing a REC survey. A federal protected species review entails reviewing NCNHP files and USFWS listings as well as doing a field reconnaissance for potential habitat. If habitat is found, a survey will be necessary and can be performed through the NEBSG. A request can be made on paper or via email to the NEBSG. The cultural resources review involves assessment of SHPO, OSA, and the NCDOT Survey & Planning Branch information to determine presence or absence of these resources on the property.

As the planning phase begins, ICI project manager will submit a request to set up initial funds via email to NEUs Administrative Assistant. Email should include the following: landowner address and phone number, specific parcel number, TIP#, WO#, and WBS#. This fund allows ROW to begin landowner negotiations and land acquisitions as well as a market study of comparable land values. A written formal request to ROW (see example), which provides the location and size (in acres) of the properties to be acquired for this study, must be submitted by the ICI project manager. A vicinity map and parcel map outlining the area of interest should be attached, if available. ROW will make landowner contact and negotiate purchasing sites via conservation easements or fee simple purchase. Future access to the site for monitoring must be taken into account to ensure the appropriate amount of land is acquired. A draft Conservation Plan should be completed for all feasible sites that are on-site. If the sites are off-site and the landowner remains interested and has signed an option, proceed with the draft Conservation Plan.* This plan should include the following sections: an introduction, methods, existing conditions, reference ecosystem, conservation plan, and a final dispensation of the property.
* The introduction should describe the location, size, and purpose for the site, and an overview of the Conservation Plan document.
* The methods section should list resources used and methods utilized.
* The existing conditions section should cover physiography, topography, land use, soils, and plant communities.
* The reference ecosystem (RFE) section briefly explains how the reference system was chosen. This is followed by data results on the RFE which includes the tree species and the percentage of each within a sample plot. This section only needs to be completed for Buffer Conservation Sites.
* The conservation plan section states the goals of the plan, site preparations, how the site will be restored/enhanced/preserved.
* The final dispensation of the property explains the conservation easement agreement between the landowner and NCDOT. This section only pertains to off-site parcels and should not be included for on- site.

Three copies of the draft will be required for review by ICI, NEEG, and REU. All comments will be incorporated into a final Conservation Plan. Two copies of the final document should be produced; one will be kept in the NEU files and the other will be distributed to USFWS. Once the final plan is completed, ICI requests a survey of the easement boundary from Locations & Surveys (L&S). The easement boundary survey is needed for the conservation easement document. The L&S request form (see appendix) must be completed and all necessary information, including landowner contact information, a copy of the signed Right of Entry form, a vicinity map, and a boundary map of the easement area to be surveyed, should be attached. If L&S is unable to complete the survey due to workload, ICI may outsource the work, but the scope must be approved by L&S prior to ICI approving it. After approval of the final plan:1. Contact the State Attorney General's Office to begin working on the conservation easement.
2. All special provisions agreed to by DOT and the landowner must be agreed upon and incorporated into the document. (The landowner has reviewed a standard conservation easement.)
3. Proofread and approve the document before sending it to the ROW agent to have it signed by landowner.
4. Send to ROW to have it signed by the Landowner.
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| Every tenth acre of wetland and linear foot of stream mitigation must be accounted for in order to comply with federal (404) and state (401) permits. If compliance is not met, construction on road projects can be suspended until corrective measures are performed and/or fines can be levied. With hundreds of both onsite and offsite mitigation projects, NCDOT has a vested interest in creating an effective method of inventorying these projects using GIS so permit violations do not occur.  |

**Add Link**

**Geodatabase Insert**

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| A centralized location and standardized method of storing this information will help to protect the investments of the state of North Carolina. Accurate geographic records of these conservation areas will provide a record of these sites to ensure that they will be preserved into perpetuity. In addition, a detailed geodatabase of NCDOT's mitigation sites may lead to future spatial analyses to improve how NCDOT identifies mitigation needs and plans its mitigation efforts.  |

**Add Links**

**Glossary**

**Appendix A**

**Appendix B**

**Appendix C**