Figure 1: Example On-site Mitigation Feasibility Scope

NCDOT On-Call Services – Natural Resources Investigations
Stream Mitigation Feasibility Study
Randolph County, North Carolina

Project Understanding

The following scope of services was developed based upon initial discussions with North Carolina Department of Transportation (NCDOT) staff. The services provided in this scope consist of conducting a stream mitigation feasibility study for a portion of an unnamed tributary (UT) to Muddy Creek located in Randolph County, north of Randleman, North Carolina. This site was originally evaluated for mitigation opportunity by [redacted] in an Agency Packet in April 2004 ("[redacted] On-Site Stream Mitigation Feasibility Studies, Randolph County, North Carolina"). This site is associated with the [redacted] and may be used as on-site stream mitigation. The proposed [redacted] Bypass right-of-way/alignment bisects the northeastern portion of the property. Based on information provided by NCDOT, the total stream length is approximately 1,800 feet and will likely be Enhancement Level 1.

The objective of this study is to determine the potential for stream mitigation to obtain mitigation credits for satisfying permitting requirements with the US Army Corps of Engineers and NC Department of Environment and Natural Resources for the proposed [redacted] Bypass. The stream feasibility study is intended to identify fatal flaws/constraints and opportunities associated with completing a stream mitigation project on the site.

The feasibility study will consist of two phases. Phase I efforts will include data collection, preliminary property owner interviews, field reconnaissance, review of existing NEPA/SEPA documents, development of a preliminary conceptual mitigation plan, and a meeting with the property owner to discuss the plan. At the completion of Phase I, [redacted] will meet with NCDOT to discuss the results of the initial Phase I efforts. At that time, NCDOT can determine if they want to continue with Phase II. Phase II efforts will include completion of a final conceptual mitigation design plan and preparation of a Stream Feasibility Report. The following scope of services has been prepared to meet this objective.

The tasks listed below correspond to the task list included on the attached fee/manpower estimate.

PHASE I

1.0 Project Administration and Management
Administrative services such as progress reports, phone calls, letters and meetings with NCDOT personnel are included under this task. The [redacted] project manager will review all aspects of project planning and reporting and coordinate these efforts with NCDOT.

Meetings: As part of this task, [redacted] will attend a status meeting with NCDOT at the completion of the feasibility study to provide the Draft report and discuss final report format.

Miscellaneous: Per contract conditions, [redacted] will create and maintain a file on the project and provide monthly invoicing and status reports per NCDOT standards. Quality Control and Quality Assurance measures

will be performed to facilitate quality in product. [redacted] will do this quality control effort before deliverables are provided to Client.

2.0 Data Collection

[redacted] will collect background data/information for the site and immediately surrounding area from readily available sources, such as NCDOT [redacted] NEPA/SEPA documents), Randolph County, Natural Resource Conservation Service (NRCS), and other regulatory/resource agencies. Information to be collected will include:

- Adjacent / On-Site TIP Roadway Location (provided by NCDOT)
- Aerial photographs – current and historical
- Topographic maps including available county maps, US Geological Survey quadrangle maps, and any topographic maps available from NCDOT (Photogrammetry).
- US Fish and Wildlife Service (USFWS) National Wetlands Inventory Maps (NWI)
- NRCS soils surveys and soils maps
- Federal Emergency Management Agency floodplain and floodzone maps as well as local flood studies if available
- USFWS list of federally protected species and NC list of state protected species (Based on review of existing NEPA documents)
- NC Natural Heritage Program database of rare species and habitat (Based on review of existing NEPA documents)
- Property maps, tax maps, and other available maps from Randolph County.
- State Historic Preservation Office databases and maps for known historical/archaeological sites (Based on review of existing NEPA documents)
- Chain-of-Title Review (Based on review of existing NEPA documents)

A majority of the data collection will occur in-house using the Internet, existing GIS databases, personal communications, and [redacted] resources. Some data collection will require trips to the site. A day will be required to gather data from the Randolph County NRCS.

3.0 Preliminary Property Owner Interview(s)

In preparation for the field reconnaissance (Task 4.0), [redacted] will interview the property owner to gain information about existing and historic conditions of the property and known environmental issues. The interview will be initiated via telephone and [redacted] will meet with the property owner on-site. To assist the property owner in gaining a better understanding of the concept of mitigation on the property, [redacted] will contact a representative from the Randolph County NRCS office to meet with [redacted] and the property owner. The on-site interview will occur during the Field Survey (Task 4.0) if allowed by the property owner. It is assumed that a Right-of-Entry Agreement has been signed by the owner.

If a separate trip to meet with the property owner is required, (due to the property owner not being available to meet with [redacted] while the field work is being performed) it will be considered an additional service.

4.0 Field Reconnaissance

A preliminary site visit will be performed by a [redacted] staff member and NCDOT to walk the site prior to field reconnaissance.

[redacted] will perform a limited Rosgen Level II morphological description to determine the stream mitigation potential of the site. [redacted] will visually review on-site and surrounding surface conditions (e.g. soils, drainage

features, and vegetation). Site features that could affect the potential for restoration/mitigation efforts on the property (such as current farming operations, visible utilities, buildings, drainage alterations, or easements, or other right-of-ways) will also be noted and recorded using a GPS unit with sub-meter accuracy. [redacted] will review on-site structures that could be affected by restoration.

The existing condition and historic trends of the watershed will be described using visual reconnaissance and spatial analysis using GIS with spatial data collected in Task 2.0. Stream mitigation potential will be assessed for each unique section of the site streams as defined by Rosgen Classifications. For reaches with potential for restoration, channel morphology will be determined through a geomorphic survey of a riffle cross section, a limited profile survey (average slope), and limited pattern measurements (using GIS analysis, aerial photography, or qualitative field assessment). It is assumed that there will be a maximum of three geomorphic surveys. Channel materials will be characterized for each reach surveyed using a modified Wolman pebble count. Stream channel stability will be assessed visually. Riparian features such as vegetation and habitat, with an emphasis on potential protected species habitat, and similar features important to determine the potential for this site will also be investigated.

Observed wetland areas will be noted and approximated according to observed vegetation and soil samples taken in the field. A detailed delineation will not be performed during this phase of the project. An approximation of existing wetland areas, as well as potential wetland mitigation opportunities will be noted. Approximated wetland areas will be recorded using a GPS unit with sub-meter accuracy.

[redacted] will visually assess habitat and potential for endangered, threatened, or rare species on-site that were discovered during the data collection (Task 2.0). If habitat is observed, [redacted] will notify NCDOT so they can schedule the appropriate biological surveys. [redacted] will not perform any biological surveys or sampling.

Data sufficient to make qualitative and quantitative assessments of the potential for mitigation opportunities and constraints will be collected for the site. Photographs of the site will be taken documenting typical site conditions.

5.0 Chain-of-Title Review

It is assumed that that the [redacted] Bypass NEPA/SEPA documents will have adequate information on the history of ownership of the property. If additional information is needed beyond the data from the existing documents, it will be considered an additional service.

6.0 Preliminary Conceptual Mitigation Alternatives

Preliminary conceptual stream mitigation alternatives will be developed for the site along with plans that will provide a visual representation of the alternatives. GIS mapping, best available topography, [redacted] Bypass corridor aerials, or the best available aerial photography will be used as a base for the conceptual mitigation plans. The plans will identify stream reaches by potential for restoration (Priority I, II, or III as defined by Rosgen), enhancement, and/or preservation for possible alternatives. The plans will show suggested vegetative buffers for each stream reach and will include preliminary easements required to perform the mitigation activities. In addition, any additional opportunities on-site or adjacent to the site will be noted and discussed.

7.0 Environmental Screening (NEPA document review)

[redacted] will review the [redacted] Bypass NEPA documents for data to determine any fatal flaws or constraints to the mitigation plan. [redacted] will review the [redacted] Bypass NEPA documents for data pertaining to existing public record environmental databases including National Priorities List (NPL) and the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list. This data will be reviewed for indications of potential environmental concerns.

[redacted] will perform site reconnaissance visually inspecting on site and surface conditions for obvious signs of contamination. [redacted] will interview property owners regarding the activities and history of the property. [redacted] will prepare a Transaction Screen Process (TSP) questionnaire/checklist.

Site reconnaissance and property owner interviews will be performed under Tasks 3.0 and 4.0.
The results of the TSP questionnaire and existing NEPA/SEPA documents review will be included in the report prepared under Task 11.0.

8.0 Presentation of Preliminary Conceptual Mitigation Plan to NCDOT

[redacted] will meet with NCDOT to review data collected in Phase I and to review the preliminary conceptual mitigation plan. Any questions or concerns with the preliminary plan or data collected in Phase I will be addressed at this time. If it is determined that a fatal flaw exists and the project reach can no longer be considered for mitigation, [redacted] will provide NCDOT a report summarizing all data collected during Phase I. It is assumed that NCDOT will have no revisions to the conceptual plan.

9.0 Presentation of Preliminary Conceptual Mitigation Plan to Property Owner

Following NCDOT approval of the preliminary conceptual mitigation plan, [redacted] will meet on-site with NCDOT staff to present the plan to the property owner. [redacted] will coordinate with a Randolph County NRCS representative to request their attendance at the meeting. [redacted] will discuss the proposed plan and answer any questions or concerns the owner may have regarding mitigation on their property. If the property owner requests modifications to the plan, [redacted] will revise the plan if the requested changes are agreed to by NCDOT.

PHASE II

Following the completion of Phase I, NCDOT will determine if they want to proceed with Phase II. [redacted] will only initiate Phase II activities if authorized by NCDOT.

10.0 Final Conceptual Mitigation Plan

As part of the report, [redacted] will finalize the preliminary conceptual stream mitigation plan developed in Task 6.0. The final plan will incorporate input received from NCDOT and the property owners.

11.0 Draft Report Preparation

[redacted] will prepare a Draft Report of the Phase I findings intended for NCDOT internal use only. The report will incorporate site characterization and constraints/fatal flaw analysis sections. The constraints/ fatal flaw analysis section will include a checklist table for potential issues. The report will consist of the following elements: project history and background, methodologies, property ownership information, existing site conditions, historical conditions of site, mitigation opportunities, figures showing site location, copies of aerial photographs with site located, copies of information collected from agencies, environmental screening data (collected from NEPA documents, site visit, and property owner interview), copies of completed field data summaries, and the conceptual mitigation design.

Color figures will be prepared as appropriate. Three bound Draft copies will be prepared. The report is intended for NCDOT internal use only. Upon receipt of NCDOT comments on the Draft Report and upon approval, a Final Report will be prepared as part of Task 12.0.

12.0 Final Report Preparation

[redacted] will finalize the Draft Report initiated under Task 11.0. The Final report will provide adequate information for review by regulatory agencies but will be intended for NCDOT internal use only. Five bound copies of the Final Report will be prepared.

Fee/Manpower Estimate

The attached spreadsheet contains a listing of tasks to be accomplished with an estimate of man-days by employee classification for the proposed project. [redacted] will perform this Scope of Services on a lump sum basis. A list of direct expenses is included with the spreadsheet of labor cost estimate.

Time Schedule

It is anticipated that the fieldwork and preliminary conceptual mitigation plan would be completed within 60 days of notice to proceed. A meeting with the property owner will be scheduled to review the mitigation plan following the completion of task 8.0. If Phase II is initiated then the draft feasibility report will be completed in 45 days from the completion of Phase I. In addition, should regulatory agency input be required, the schedule may be dependent upon their responsiveness.