

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

PROPOSAL

DATE AND TIME OF BID OPENING: **JULY 25, 2018 AT 2:00 PM**

CONTRACT ID DB00439
WBS 2SP.20541.2

FEDERAL-AID NO. STATE FUNDED
COUNTY LENOIR
T.I.P. NO.
MILES 0.190
ROUTE NO. SR 1330
LOCATION SR 1330 (HAROLD SUTTON RD) SITE 2

TYPE OF WORK SR 1330 (HAROLD SUTTON RD) SITE #2 PIPE REPLACEMENT

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

BIDS WILL BE RECEIVED AS SHOWN BELOW:

THIS IS A ROADWAY & STRUCTURE PROPOSAL

5% BID BOND OR BID DEPOSIT REQUIRED

**PROPOSAL FOR THE CONSTRUCTION OF
CONTRACT No. DB00439 IN LENOIR COUNTY, NORTH CAROLINA
JUNE 28, 2018
DEPARTMENT OF TRANSPORTATION,
RALEIGH, NORTH CAROLINA**

The Bidder has carefully examined the location of the proposed work to be known as Contract No. **DB00439**; has carefully examined the plans and specifications, which are acknowledged to be part of the proposal, the special provisions, the proposal, the form of contract, and the forms of contract payment bond and contract performance bond; and thoroughly understands the stipulations, requirements and provisions. The undersigned bidder agrees to bound upon his execution of the bid and subsequent award to him by the Department of Transportation in accordance with this proposal to provide the necessary contract payment bond and contract performance bond within fourteen days after the written notice of award is received by him. The undersigned Bidder further agrees to provide all necessary machinery, tools, labor, and other means of construction; and to do all the work and to furnish all materials, except as otherwise noted, necessary to perform and complete the said contract in accordance with *the 2018 Standard Specifications for Roads and Structures* by the dates(s) specified in the Project Special Provisions and in accordance with the requirements of the Engineer, and at the unit or lump sum prices, as the case may be, for the various items given on the sheets contained herein.

The Bidder shall provide and furnish all the materials, machinery, implements, appliances and tools, and perform the work and required labor to construct and complete State Highway Contract No. **DB00439** in **Lenoir County**, for the unit or lump sum prices, as the case may be, bid by the Bidder in his bid and according to the proposal, plans, and specifications prepared by said Department, which proposal, plans, and specifications show the details covering this project, and hereby become a part of this contract.

The published volume entitled *North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, January 2018* with all amendments and supplements thereto, is by reference incorporated into and made a part of this contract; that, except as herein modified, all the construction and work included in this contract is to be done in accordance with the specifications contained in said volume, and amendments and supplements thereto, under the direction of the Engineer.

If the proposal is accepted and the award is made, the contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except over the signature of the said Contract Officer or Division Engineer.

The quantities shown in the itemized proposal for the project are considered to be approximate only and are given as the basis for comparison of bids. The Department of Transportation may increase or decrease the quantity of any item or portion of the work as may be deemed necessary or expedient.

An increase or decrease in the quantity of an item will not be regarded as sufficient ground for an increase or decrease in the unit prices, nor in the time allowed for the completion of the work, except as provided for the contract.

Accompanying this bid is a bid bond secured by a corporate surety, or certified check payable to the order of the Department of Transportation, for five percent of the total bid price, which deposit is to be forfeited as liquidated damages in case this bid is accepted and the Bidder shall fail to provide the required payment and performance bonds with the Department of Transportation, under the condition of this proposal, within 14 calendar days after the written notice of award is received by him, as provided in the Standard Specifications; otherwise said deposit will be returned to the Bidder.

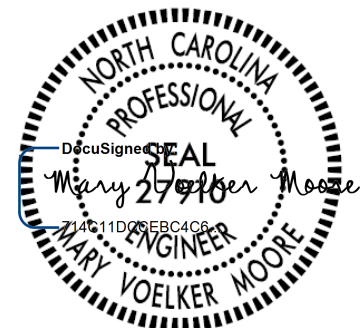


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INSTRUCTIONS TO BIDDERS

**PLEASE READ ALL INSTRUCTIONS CAREFULLY
BEFORE PREPARING AND SUBMITTING YOUR BID.**

All bids shall be prepared and submitted in accordance with the following requirements. Failure to comply with any requirement may cause the bid to be considered irregular and may be grounds for rejection of the bid.

For preparing and submitting the bid electronically using the on-line system Bid Express®, refer to Article 102-8(B) of the *2018 Standard Specifications*.

Bidders that bid electronically on Raleigh Central-Let projects will need a separate Digital Signature form Bid Express® for Division Contracts.

ELECTRONIC ON-LINE BID THRU BID EXPRESS:

1. Download entire proposal from Connect NCDOT website. Download EBS file from Connect NCDOT or Bid Express websites.
2. Prepare and submit EBS file using Expedite software.
3. Expedite software necessary for electronic bid preparation may be downloaded from the Connect NCDOT website at: <https://connect.ncdot.gov/letting/Pages/EBS-Information.aspx>

PROJECT SPECIAL PROVISIONS

GENERAL

DESCRIPTION:

This project proposes the replacement of an existing 60” corrugated metal pipe with a 112”x75” aluminum pipe and headwalls on SR 1330 (Harold Sutton Road) in Lenoir County.

CONTRACT TIME AND LIQUIDATED DAMAGES:

(4-17-12)

108

SP1 G07 C

The date of availability for this contract is **September 3, 2018**.

The completion date for this contract is **February 2, 2019**.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 2-21-12)

108

SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **September 3, 2018**.

The completion date for this intermediate contract time is **November 2, 2018**.

The liquidated damages for this intermediate contract time are **Five Hundred Dollars (\$500.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

PERMANENT VEGETATION ESTABLISHMENT:

(2-16-12) (Rev. 10-15-13)

104

SP1 G16

Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish permanent vegetation on all erodible areas within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the *2018 Standard Specifications*. All work required for initial vegetation planting shall be performed as a part of the work necessary for the completion and acceptance of the Intermediate Contract Time (ICT). Between the time of ICT and Final Project acceptance, or otherwise referred to as the vegetation establishment period, the Department will be responsible for preparing the required National Pollutant Discharge Elimination System (NPDES) inspection records.

Once the Engineer has determined that the permanent vegetation establishment requirement has been achieved at an 80% vegetation density (the amount of established vegetation per given area to stabilize the soil) and no erodible areas exist within the project limits, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

Payment for *Response for Erosion Control, Seeding and Mulching, Repair Seeding, Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation, and Stone for Erosion Control* will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the *2018 Standard Specifications*. No additional compensation will be made for maintenance and removal of temporary erosion control items.

BOND REQUIREMENTS – No Bonds Required

(06-01-16)

SPD 01-420B

The provisions of Articles 102-10 and 103-7 of the *2018 Standard Specifications for Roads and Structures* are waived for this project. No bonds required.

MAJOR CONTRACT ITEMS:

(2-19-02)

104

SP1 G28

The following listed items are the major contract items for this contract (see Article 104-5 of the *2018 Standard Specifications*):

Line #	Description
03 —	Generic Miscellaneous Item 45' - 112"x75" 8 GA. CAP with Headwalls

SPECIALTY ITEMS:

(7-1-95)(Rev. 1-17-12)

108-6

SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the *2018 Standard Specifications*).

Line #	Description
12-20	Erosion Control

FUEL PRICE ADJUSTMENT:

(11-15-05) (Rev. 2-18-14)

109-8

SP1 G43

Revise the *2018 Standard Specifications* as follows:

Page 1-83, Article 109-8, Fuel Price Adjustments, add the following:

The base index price for DIESEL #2 FUEL is **\$2.4505** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

Description	Units	Fuel Usage Factor Diesel
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Asphalt Concrete Base Course, Type ____	Gal/Ton	2.90
Asphalt Concrete Intermediate Course, Type ____	Gal/Ton	2.90
Asphalt Concrete Surface Course, Type ____	Gal/Ton	2.90
Open-Graded Asphalt Friction Course	Gal/Ton	2.90
Permeable Asphalt Drainage Course, Type ____	Gal/Ton	2.90
Sand Asphalt Surface Course, Type ____	Gal/Ton	2.90
Aggregate for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement for Cement Treated Base Course	Gal/Ton	0.55
__" Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to __" Pavement	Gal/SY	0.245

SCHEDULE OF ESTIMATED COMPLETION PROGRESS:

(7-15-08) (Rev. 5-17-16)

108-2

SP1 G58

The Contractor's attention is directed to the Standard Special Provision entitled *Availability of Funds Termination of Contracts* included elsewhere in this proposal. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

	<u>Fiscal Year</u>	<u>Progress (% of Dollar Value)</u>
2019	(7/01/18 - 6/30/19)	100% of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2018 Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE (DIVISIONS):

(10-16-07)(Rev. 5-15-18)

102-15(J)

SP1 G67

Description

The purpose of this Special Provision is to carry out the North Carolina Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with State funds.

Definitions

Additional MBE/WBE Subcontractors - Any MBE/WBE submitted at the time of bid that will not be used to meet either the Combined MBE/WBE goal. No submittal of a Letter of Intent is required, unless the additional participation is used for banking purposes.

Combined MBE/WBE Goal: A portion of the total contract, expressed as a percentage that is to be performed by committed MBE/WBE subcontractors.

Committed MBE/WBE Subcontractor - Any MBE/WBE submitted at the time of bid that is being used to meet either the Combined MBE / WBE goal by submission of a Letter of Intent. Or any MBE or WBE used as a replacement for a previously committed MBE or WBE firm.

Contract Goal Requirement - The approved participation at time of award, but not greater than the advertised Combined MBE/WBE contract goal.

Goal Confirmation Letter - Written documentation from the Department to the bidder confirming the Contractor's approved, committed participation along with a listing of the committed MBE and WBE firms.

Manufacturer - A firm that operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Contractor.

MBE Participation (Anticipated) - A portion of the total contract, expressed as a percentage that is anticipated to be performed by committed MBE subcontractor(s).

Minority Business Enterprise (MBE) - A firm certified as a Disadvantaged Minority-Owned Business Enterprise through the North Carolina Unified Certification Program.

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

North Carolina Unified Certification Program (NCUCP) - A program that provides comprehensive services and information to applicants for MBE/WBE certification. The MBE/WBE program follows the same regulations as the federal Disadvantaged Business Enterprise (DBE) program in accordance with 49 CFR Part 26.

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

WBE Participation (Anticipated) - A portion of the total contract, expressed as a percentage that is anticipated to be performed by committed WBE subcontractor(s).

Women Business Enterprise (WBE) - A firm certified as a Disadvantaged Women-Owned Business Enterprise through the North Carolina Unified Certification Program.

Forms and Websites Referenced in this Provision

Payment Tracking System - On-line system in which the Contractor enters the payments made to MBE and WBE subcontractors who have performed work on the project.
<https://apps.dot.state.nc.us/Vendor/PaymentTracking/>

DBE-IS Subcontractor Payment Information - Form for reporting the payments made to all MBE/WBE firms working on the project. This form is for paper bid projects only.
<https://connect.ncdot.gov/business/Turnpike/Documents/Form%20DBE-IS%20Subcontractor%20Payment%20Information.pdf>

RF-1 MBE/WBE Replacement Request Form - Form for replacing a committed MBE or WBE.
<http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Request%20Form.pdf>

SAF Subcontract Approval Form - Form required for approval to sublet the contract.

<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Subcontract%20Approval%20Form%20Rev.%202012.zip>

JC-1 Joint Check Notification Form - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.

<http://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notification%20Form.pdf>

Letter of Intent - Form signed by the Contractor and the MBE/WBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed MBE/WBE for the amount listed at the time of bid.

<http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf>

Listing of MBE and WBE Subcontractors Form - Form for entering MBE/WBE subcontractors on a project that will meet the Combined MBE/WBE goal. This form is for paper bids only.

[http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20\(State\).docx](http://connect.ncdot.gov/municipalities/Bid%20Proposals%20for%20LGA%20Content/09%20MBE-WBE%20Subcontractors%20(State).docx)

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where MBEs and WBEs quoted on the project. This sheet is submitted with good faith effort packages.

<http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls>

Combined MBE/WBE Goal

The Combined MBE/WBE Goal for this project is **2.0 %**

The Combined Goal was established utilizing the following anticipated participation for Minority Business Enterprises and Women Business Enterprises:

(A) **Minority Business Enterprises 1.0 %**

- (1) *If the anticipated MBE participation is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that MBEs participate in at least the percent of the contract as set forth above.
- (2) *If the anticipated MBE participation is zero*, the Contractor shall make an effort to recruit and use MBEs during the performance of the contract. Any MBE participation obtained shall be reported to the Department.

(B) Women Business Enterprises **1.0 %**

- (1) *If the anticipated WBE participation is more than zero*, the Contractor shall exercise all necessary and reasonable steps to ensure that WBEs participate in at least the percent of the contract as set forth above.
- (2) *If the anticipated WBE participation is zero*, the Contractor shall make an effort to recruit and use WBEs during the performance of the contract. Any WBE participation obtained shall be reported to the Department.

The Bidder is required to submit only participation to meet the Combined MBE/WBE Goal. The Combined Goal may be met by submitting all MBE participation, all WBE participation, or a combination of MBE and WBE participation.

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as MBE and WBE certified shall be used to meet the Combined MBE / WBE goal. The Directory can be found at the following link.

[https:// www.ebs.nc.gov/VendorDirectory/default.html](https://www.ebs.nc.gov/VendorDirectory/default.html)

The listing of an individual firm in the directory shall not be construed as an endorsement of the firm's capability to perform certain work.

Listing of MBE/WBE Subcontractors

At the time of bid, bidders shall submit all MBE and WBE participation that they anticipate to use during the life of the contract. Only those identified to meet the Combined MBE/WBE goal will be considered committed, even though the listing shall include both committed MBE/WBE subcontractors and additional MBE/WBE subcontractors. Any additional MBE/WBE subcontractor participation above the goal for which letters of intent are received will follow the banking guidelines found elsewhere in this provision. All other additional MBE/WBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goals. Only those firms with current MBE and WBE certification at the time of bid opening will be acceptable for listing in the bidder's submittal of MBE and WBE participation. The Contractor shall indicate the following required information:

(A) Electronic Bids

Bidders shall submit a listing of MBE and WBE participation in the appropriate section of Expedite, the bidding software of Bid Express®.

- (1) Submit the names and addresses of MBE and WBE firms identified to participate in the contract. If the bidder uses the updated listing of MBE and WBE firms

shown in Expedite, the bidder may use the dropdown menu to access the name and address of the firms.

- (2) Submit the contract line numbers of work to be performed by each MBE and WBE firm. When no figures or firms are entered, the bidder will be considered to have no MBE or WBE participation.
- (3) The bidder shall be responsible for ensuring that the MBE and WBE are certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE goal.

(B) Paper Bids

- (1) *If either the Combined MBE/ WBE goal is more than zero,*
 - (a) Bidders, at the time the bid proposal is submitted, shall submit a listing of MBE/WBE participation, including the names and addresses on *Listing of MBE and WBE Subcontractors* contained elsewhere in the contract documents in order for the bid to be considered responsive. Bidders shall indicate the total dollar value of the MBE and WBE participation for the contract.
 - (b) If bidders have no MBE or WBE participation, they shall indicate this on the *Listing of MBE and WBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Bids submitted that do not have MBE and WBE participation indicated on the appropriate form will not be read publicly during the opening of bids. The Department will not consider these bids for award and the proposal will be rejected.
 - (c) The bidder shall be responsible for ensuring that the MBE/WBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the bid-letting, that MBE's or WBE's participation will not count towards achieving the Combined MBE/WBE goal.
- (2) *If the Combined MBE/WBE Goal is zero,* entries on the *Listing of MBE and WBE Subcontractors* are not required for the zero goal, however any MBE or WBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in the special provision.

MBE or WBE Prime Contractor

When a certified MBE or WBE firm bids on a contract that contains a Combined MBE/WBE Goal, the firm is responsible for meeting the goals or making good faith efforts to meet the goal, just like any other bidder. In most cases, a MBE or WBE bidder on a contract will meet the Combined MBE/WBE goal by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the MBE or WBE bidder and any other similarly certified subcontractors will count toward the goal. The MBE or WBE bidder shall list itself along with any MBE or WBE subcontractors, if any, in order to receive credit toward the goals.

MBE/WBE prime contractors shall also follow Sections A or B listed under *Listing of MBE/WBE Subcontractors* just as a non-MBE/WBE bidder would.

Written Documentation – Letter of Intent

The bidder shall submit written documentation for each MBE/WBE that will be used to meet the Combined MBE/WBE goal of the contract, indicating the bidder's commitment to use the MBE/WBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the Engineer no later than 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

If the bidder fails to submit the Letter of Intent from each committed MBE and WBE to be used toward the Combined MBE/WBE goal, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the Combined MBE/WBE goal. If the lack of this participation drops the commitment below Combined MBE/WBE goal, the Contractor shall submit evidence of good faith efforts for the goal not met, completed in its entirety, to the Engineer no later than 2:00 p.m. of the eighth calendar day following opening of bids, unless the eighth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

Banking MBE/WBE Credit

If the committed MBE/WBE participation submitted by Letter of Intent exceeds the algebraic sum of the Combined MBE/WBE goal by \$1,000 or more, the excess will be placed on deposit by the Department for future use by the bidder. Separate accounts will be maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months.

When the apparent lowest responsive bidder fails to submit sufficient participation by MBE and WBE firms to meet the advertised goal, as part of the good faith effort, the Department will consider allowing the bidder to withdraw funds to meet the Combined MBE/WBE goal as long as there are adequate funds available from the bidder's MBE and WBE bank accounts.

Submission of Good Faith Effort

If the bidder fails to meet or exceed the Combined MBE/WBE goal, the apparent lowest responsive bidder shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal.

One complete set and **Two (2)** copies of this information shall be received in the office of the Engineer no later than 2:00 p.m. of the fifth calendar day following opening of bids, unless the fifth day falls on Saturday, Sunday or an official state holiday. In that situation, it is due in the office of the Engineer no later than 10:00 a.m. on the next official state business day.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of MBE/WBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with a Combined MBE/WBE Goal More Than Zero

Adequate good faith efforts mean that the bidder took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient MBE/WBE participation. Adequate good faith efforts also mean that the bidder actively and aggressively sought MBE/WBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a bidder has made. Listed below are examples of the types of actions a bidder will take in making a good faith effort to meet the goals and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

- (A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified MBEs/WBEs that are also prequalified subcontractors. The bidder must solicit this interest within at least 10 days prior to bid opening to allow the MBEs/WBEs to respond to the solicitation. Solicitation shall provide the opportunity to MBEs/WBEs within the Division and surrounding Divisions where the project is located. The bidder must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.

- (B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the Combined MBE/WBE goal will be achieved.
- (1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE/WBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
 - (2) Negotiate with subcontractors to assume part of the responsibility to meet the advertised goal when the work to be sublet includes potential for MBE/WBE participation (2nd and 3rd tier subcontractors).
- (C) Providing interested certified MBEs/WBEs that are also prequalified subcontractors with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (D) (1) Negotiating in good faith with interested MBEs/WBEs. It is the bidder's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for MBEs/WBEs to perform the work.
- (2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE subcontractors, and would take a firm's price and capabilities as well as the advertised goal into consideration. However, the fact that there may be some additional costs involved in finding and using MBEs/WBEs is not in itself sufficient reason for a bidder's failure to meet the advertised goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidding contractors are not, however, required to accept higher quotes from MBEs/WBEs if the price difference is excessive or unreasonable.
- (E) Not rejecting MBEs/WBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (F) Making efforts to assist interested MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or bidder.

- (G) Making efforts to assist interested MBEs/WBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of MBEs/WBEs. Contact within 7 days from the bid opening the Business Opportunity and Work Force Development Unit at BOWD@ncdot.gov to give notification of the bidder's inability to get MBE or WBE quotes.
- (I) Any other evidence that the bidder submits which shows that the bidder has made reasonable good faith efforts to meet the advertised goal.

In addition, the Department may take into account the following:

- (1) Whether the bidder's documentation reflects a clear and realistic plan for achieving the Combined MBE/WBE goal.
- (2) The bidders' past performance in meeting the contract goal.
- (3) The performance of other bidders in meeting the advertised goal. For example, when the apparent successful bidder fails to meet the goal, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the apparent successful bidder could have met the goal. If the apparent successful bidder fails to meet the advertised goal, but meets or exceeds the average MBE and WBE participation obtained by other bidders, the Department may view this, in conjunction with other factors, as evidence of the apparent successful bidder having made a good faith effort.

If the Department does not award the contract to the apparent lowest responsive bidder, the Department reserves the right to award the contract to the next lowest responsive bidder that can satisfy to the Department that the Combined MBE/WBE goal can be met or that an adequate good faith effort has been made to meet the advertised goal.

Non-Good Faith Appeal

The Engineer will notify the contractor verbally and in writing of non-good faith. A contractor may appeal a determination of non-good faith made by the Goal Compliance Committee. If a contractor wishes to appeal the determination made by the Committee, they shall provide written notification to the Engineer. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting MBE/WBE Participation Toward Meeting the Combined MBE/WBE Goal

(A) Participation

The total dollar value of the participation by a committed MBE/WBE will be counted toward the contract goal requirements. The total dollar value of participation by a committed MBE/WBE will be based upon the value of work actually performed by the MBE/WBE and the actual payments to MBE/WBE firms by the Contractor.

(B) Joint Checks

Prior notification of joint check use shall be required when counting MBE/WBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 (*Joint Check Notification Form*) and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A MBE/WBE may enter into subcontracts. Work that a MBE subcontracts to another MBE firm may be counted toward the anticipated MBE participation. The same holds for work that a WBE subcontracts to another WBE firm. Work that a MBE/WBE subcontracts to a non-MBE/WBE firm does not count toward the contract goal requirement. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the MBE or WBE participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified firms and there is no interest or availability, and they can get assistance from other certified firms, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE breakdown. If a MBE or WBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, it shall be presumed that the MBE or WBE is not performing a commercially useful function.

(D) Joint Venture

When a MBE or WBE performs as a participant in a joint venture, the Contractor may count toward its contract goal requirement a portion of the total value of participation with the MBE or WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE or WBE performs with its forces.

(E) Suppliers

A contractor may count toward its MBE /WBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained

from a MBE or WBE regular dealer and 100 percent of such expenditures from a MBE or WBE manufacturer.

(F) **Manufacturers and Regular Dealers**

A contractor may count toward its MBE /WBE requirement the following expenditures to MBE/WBE firms that are not manufacturers or regular dealers:

- (1) The fees or commissions charged by a MBE/WBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.
- (2) With respect to materials or supplies purchased from a MBE/WBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Commercially Useful Function

(A) **MBE/WBE Utilization**

The Contractor may count toward its contract goal requirement only expenditures to MBEs and WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a MBE/WBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the MBE/WBE credit claimed for its performance of the work, and any other relevant factors. If it is determined that a MBE or WBE is not performing a Commercially Useful Function, the contractor may present evidence to rebut this presumption to the Department.

(B) MBE/WBE Utilization in Trucking

The following factors will be used to determine if a MBE or WBE trucking firm is performing a commercially useful function:

- (1) The MBE/WBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting the Combined MBE/WBE goal.
- (2) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
- (3) The MBE/WBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
- (4) The MBE may subcontract the work to another MBE firm, including an owner-operator who is certified as a MBE. The same holds true that a WBE may subcontract the work to another WBE firm, including an owner-operator who is certified as a WBE. When this occurs, the MBE or WBE who subcontracts work receives credit for the total value of the transportation services the subcontracted MBE or WBE provides on the contract. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the participation breakdown. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified transportation service providers and there is no interest or availability, and they can get assistance from other certified providers, the Engineer will not hold the prime responsible for meeting the individual MBE or WBE participation breakdown.
- (5) The MBE/WBE may also subcontract the work to a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who subcontracts the work to a non-MBE/WBE is entitled to credit for the total value of transportation services provided by the non-MBE/WBE subcontractor not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the MBE/WBE and the Contractor will not count towards the MBE/WBE contract requirement.
- (6) A MBE/WBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the MBE/WBE has exclusive use of and control over the truck. This requirement does not preclude

the leased truck from working for others during the term of the lease with the consent of the MBE/WBE, so long as the lease gives the MBE/WBE absolute priority for use of the leased truck. This type of lease may count toward the MBE/WBE's credit as long as the driver is under the MBE/WBE's payroll.

- (7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the MBE/WBE that they are subcontracted/leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

MBE/WBE Replacement

When a Contractor has relied on a commitment to a MBE or WBE firm (or an approved substitute MBE or WBE firm) to meet all or part of a contract goal requirement, the contractor shall not terminate the MBE/WBE for convenience. This includes, but is not limited to, instances in which the Contractor seeks to perform the work of the terminated subcontractor with another MBE/WBE subcontractor, a non-MBE/WBE subcontractor, or with the Contractor's own forces or those of an affiliate. A MBE/WBE may only be terminated after receiving the Engineer's written approval based upon a finding of good cause for the termination. The prime contractor must give the MBE/WBE firm 5 days to respond to the prime contractor's notice of termination and advise the prime contractor and the Department of the reasons, if any, why the firm objects to the proposed termination of its subcontract and why the Department should not approve the action.

All requests for replacement of a committed MBE/WBE firm shall be submitted to the Engineer for approval on Form RF-1 (*Replacement Request*). If the Contractor fails to follow this procedure, the Contractor may be disqualified from further bidding for a period of up to 6 months.

The Contractor shall comply with the following for replacement of a committed MBE/WBE:

(A) Performance Related Replacement

When a committed MBE/WBE is terminated for good cause as stated above, an additional MBE/WBE that was submitted at the time of bid may be used to fulfill the MBE/WBE commitment to meet the Combined MBE/WBE Goal. A good faith effort will only be required for removing a committed MBE/WBE if there were no additional MBEs/WBEs submitted at the time of bid to cover the same amount of work as the MBE/WBE that was terminated.

If a replacement MBE/WBE is not found that can perform at least the same amount of work as the terminated MBE/WBE, the Contractor shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

- (1) Copies of written notification to MBEs/WBEs that their interest is solicited in contracting the work defaulted by the previous MBE/WBE or in subcontracting other items of work in the contract.
 - (2) Efforts to negotiate with MBEs/WBEs for specific subbids including, at a minimum:
 - (a) The names, addresses, and telephone numbers of MBEs/WBEs who were contacted.
 - (b) A description of the information provided to MBEs/WBEs regarding the plans and specifications for portions of the work to be performed.
 - (3) A list of reasons why MBE/WBE quotes were not accepted.
 - (4) Efforts made to assist the MBEs/WBEs contacted, if needed, in obtaining bonding or insurance required by the Contractor.
- (B) Decertification Replacement
- (1) When a committed MBE/WBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Contractor to solicit replacement MBE/WBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement.
 - (2) When a committed MBE/WBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named MBE/WBE firm, the Contractor shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another similarly certified MBE/WBE subcontractor to perform at least the same amount of work to meet the Combined MBE/WBE goal requirement. If a MBE/WBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed MBE/WBE, the Contractor will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a MBE/WBE based upon the Contractor's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE participated in the original contract work.

When the Engineer makes changes that result in extra work, which has more than a minimal impact on the contract amount, the Contractor shall seek additional participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Engineer makes changes that result in an alteration of plans or details of construction, and a portion or all of the work had been expected to be performed by a committed MBE/WBE, the Contractor shall seek participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Contractor requests changes in the work that result in the reduction or elimination of work that the Contractor committed to be performed by a MBE/WBE, the Contractor shall seek additional participation by MBEs/WBEs equal to the reduced MBE/WBE participation caused by the changes.

Reports and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a MBE/WBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE subcontractors.

When using transportation services to meet the contract commitment, the Contractor shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

Within 30 calendar days of entering into an agreement with a MBE/WBE for materials, supplies or services, not otherwise documented by the SAF as specified above, the Contractor shall furnish the Engineer a copy of the agreement. The documentation shall also indicate the percentage (60% or 100%) of expenditures claimed for MBE/WBE credit.

Reporting Minority and Women Business Enterprise Participation

The Contractor shall provide the Engineer with an accounting of payments made to all MBE and WBE firms, including material suppliers and contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

- (A) Withholding of money due in the next partial pay estimate; or
- (B) Removal of an approved contractor from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

While each contractor (prime, subcontractor, 2nd tier subcontractor) is responsible for accurate accounting of payments to MBEs/WBEs, it shall be the prime contractor's responsibility to report all monthly and final payment information in the correct reporting manner.

Failure on the part of the Contractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that contractor and any affiliate companies from being approved for further work on future projects until the required information is submitted.

Contractors reporting transportation services provided by non-MBE/WBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments. The Contractor shall report the accounting of payments through the Department's DBE Payment Tracking System.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the *2018 Standard Specifications* may be cause to disqualify the Contractor.

U.S. DEPARTMENT OF TRANSPORTATION HOTLINE:

(11-22-94)

108-5

SP1 G100

To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free hotline Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the hotline to report such activities.

The hotline is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

CARGO PREFERENCE ACT:

(2-16-16)

Privately owned United States-flag commercial vessels transporting cargoes are subject to the Cargo Preference Act (CPA) of 1954 requirements and regulations found in 46 CFR 381.7. Contractors are directed to clause (b) of 46 CFR 381.7 as follows:

- (b) Contractor and Subcontractor Clauses. "Use of United States-flag vessels: The contractor agrees-

“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

SUBSURFACE INFORMATION:

(7-1-95)

450

SP1 G112 A

There is **no** subsurface information available on this project.

COOPERATION BETWEEN CONTRACTORS:

(7-1-95)

105-7

SP1 G133

The Contractor's attention is directed to Article 105-7 of the *2018 Standard Specifications*.

The Contractor on this project shall cooperate with the Contractor working within or adjacent to the limits of this project to the extent that the work can be carried out to the best advantage of all concerned.

COOPERATION WITH STATE FORCES:

The Contractor shall cooperate and coordinate work with State Forces working within the limits of this project as directed by the Engineer.

OUTSOURCING OUTSIDE THE USA:

(9-21-04) (Rev. 5-16-06)

SP1 G150

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

Outsourcing for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION:

(1-16-07) (Rev 11-22-16)

105-16, 225-2, 16

SP1 G180

General

Schedule and conduct construction activities in a manner that will minimize soil erosion and the resulting sedimentation and turbidity of surface waters. Comply with the requirements herein regardless of whether or not a National Pollution discharge Elimination System (NPDES) permit for the work is required.

Establish a chain of responsibility for operations and subcontractors' operations to ensure that the *Erosion and Sediment Control/Stormwater Pollution Prevention Plan* is implemented and maintained over the life of the contract.

- (A) *Certified Supervisor* - Provide a certified Erosion and Sediment Control/Stormwater Supervisor to manage the Contractor and subcontractor operations, insure compliance with Federal, State and Local ordinances and regulations, and manage the Quality Control Program.
- (B) *Certified Foreman* - Provide a certified, trained foreman for each construction operation that increases the potential for soil erosion or the possible sedimentation and turbidity of surface waters.
- (C) *Certified Installer* - Provide a certified installer to install or direct the installation for erosion or sediment/stormwater control practices.
- (D) *Certified Designer* - Provide a certified designer for the design of the erosion and sediment control/stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control/stormwater plan.

Roles and Responsibilities

- (A) *Certified Erosion and Sediment Control/Stormwater Supervisor* - The Certified Supervisor shall be Level II and responsible for ensuring the erosion and sediment

control/stormwater plan is adequately implemented and maintained on the project and for conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours notice from initial exposure of an erodible surface to the project's final acceptance. Perform the following duties:

- (1) Manage Operations - Coordinate and schedule the work of subcontractors so that erosion and sediment control/stormwater measures are fully executed for each operation and in a timely manner over the duration of the contract.
 - (a) Oversee the work of subcontractors so that appropriate erosion and sediment control/stormwater preventive measures are conformed to at each stage of the work.
 - (b) Prepare the required National Pollutant Discharge Elimination System (NPDES) Inspection Record and submit to the Engineer.
 - (c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
 - (d) Implement the erosion and sediment control/stormwater site plans requested.
 - (e) Provide any needed erosion and sediment control/stormwater practices for the Contractor's temporary work not shown on the plans, such as, but not limited to work platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.
 - (f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Contractor in jurisdictional areas.
 - (g) Conduct all erosion and sediment control/stormwater work in a timely and workmanlike manner.
 - (h) Fully perform and install erosion and sediment control/stormwater work prior to any suspension of the work.
 - (i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment control/stormwater issues due to the Contractor's operations.
 - (j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces or any location where sediment leaves the Right-of-Way.
 - (k) Have available a set of erosion and sediment control/stormwater plans that are initialed and include the installation date of Best Management Practices. These practices shall include temporary and permanent groundcover and be properly updated to reflect necessary plan and field changes for use and review by Department personnel as well as regulatory agencies.

- (2) Requirements set forth under the NPDES Permit - The Department's NPDES Stormwater permit (NCS000250) outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000, General Permit to Discharge Stormwater* under the NPDES, and states that the Department shall incorporate the applicable requirements into its

delegated Erosion and Sediment Control Program for construction activities disturbing one or more acres of land. The Department further incorporates these requirements on all contracted bridge and culvert work at jurisdictional waters, regardless of size. Some of the requirements are, but are not limited to:

- (a) Control project site waste to prevent contamination of surface or ground waters of the state, i.e. from equipment operation/maintenance, construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste.
 - (b) Inspect erosion and sediment control/stormwater devices and stormwater discharge outfalls at least once every 7 calendar days and within 24 hours after a rainfall event of 0.5 inch that occurs within a 24 hour period. Additional monitoring may be required at the discretion of Division of Water Resources personnel if the receiving stream is 303(d) listed for turbidity and the project has had documented problems managing turbidity.
 - (c) Maintain an onsite rain gauge or use the Department's Multi-Sensor Precipitation Estimate website to maintain a daily record of rainfall amounts and dates.
 - (d) Maintain erosion and sediment control/stormwater inspection records for review by Department and Regulatory personnel upon request.
 - (e) Implement approved reclamation plans on all borrow pits, waste sites and staging areas.
 - (f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
 - (g) Provide secondary containment for bulk storage of liquid materials.
 - (h) Provide training for employees concerning general erosion and sediment control/stormwater awareness, the Department's NPDES Stormwater Permit NCS000250 requirements, and the applicable requirements of the *General Permit, NCG010000*.
 - (i) Report violations of the NPDES permit to the Engineer immediately who will notify the Division of Water Quality Regional Office within 24 hours of becoming aware of the violation.
- (3) Quality Control Program - Maintain a quality control program to control erosion, prevent sedimentation and follow provisions/conditions of permits. The quality control program shall:
- (a) Follow permit requirements related to the Contractor and subcontractors' construction activities.
 - (b) Ensure that all operators and subcontractors on site have the proper erosion and sediment control/stormwater certification.
 - (c) Notify the Engineer when the required certified erosion and sediment control/stormwater personnel are not available on the job site when needed.

- (d) Conduct the inspections required by the NPDES permit.
 - (e) Take corrective actions in the proper timeframe as required by the NPDES permit for problem areas identified during the NPDES inspections.
 - (f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch/seed or vegetative cover on a section-by-section basis.
 - (g) Use flocculants approved by state regulatory authorities where appropriate and where required for turbidity and sedimentation reduction.
 - (h) Ensure proper installation and maintenance of temporary erosion and sediment control devices.
 - (i) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
 - (j) The Contractor's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.
- (B) *Certified Foreman* - At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:
- (1) Foreman in charge of grading activities
 - (2) Foreman in charge of bridge or culvert construction over jurisdictional areas
 - (3) Foreman in charge of utility activities

The Contractor may request to use the same person as the Level II Supervisor and Level II Foreman. This person shall be onsite whenever construction activities as described above are taking place. This request shall be approved by the Engineer prior to work beginning.

The Contractor may request to name a single Level II Foreman to oversee multiple construction activities on small bridge or culvert replacement projects. This request shall be approved by the Engineer prior to work beginning.

- (C) *Certified Installers* - Provide at least one onsite, Level I Certified Installer for each of the following erosion and sediment control/stormwater crew:
- (1) Seeding and Mulching
 - (2) Temporary Seeding
 - (3) Temporary Mulching
 - (4) Sodding
 - (5) Silt fence or other perimeter erosion/sediment control device installations
 - (6) Erosion control blanket installation
 - (7) Hydraulic tackifier installation
 - (8) Turbidity curtain installation
 - (9) Rock ditch check/sediment dam installation
 - (10) Ditch liner/matting installation

- (11) Inlet protection
- (12) Riprap placement
- (13) Stormwater BMP installations (such as but not limited to level spreaders, retention/detention devices)
- (14) Pipe installations within jurisdictional areas

If a Level I *Certified Installer* is not onsite, the Contractor may substitute a Level II Foreman for a Level I Installer, provided the Level II Foreman is not tasked to another crew requiring Level II Foreman oversight.

- (D) *Certified Designer* - Include the certification number of the Level III-B Certified Designer on the erosion and sediment control/stormwater component of all reclamation plans and if applicable, the certification number of the Level III-A Certified Designer on the design of the project erosion and sediment control/stormwater plan.

Preconstruction Meeting

Furnish the names of the *Certified Erosion and Sediment Control/Stormwater Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* and notify the Engineer of changes in certified personnel over the life of the contract within 2 days of change.

Ethical Responsibility

Any company performing work for the North Carolina Department of Transportation has the ethical responsibility to fully disclose any reprimand or dismissal of an employee resulting from improper testing or falsification of records.

Revocation or Suspension of Certification

Upon recommendation of the Chief Engineer to the certification entity, certification for *Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* may be revoked or suspended with the issuance of an *Immediate Corrective Action (ICA)*, *Notice of Violation (NOV)*, or *Cease and Desist Order* for erosion and sediment control/stormwater related issues.

The Chief Engineer may recommend suspension or permanent revocation of certification due to the following:

- (A) Failure to adequately perform the duties as defined within this certification provision.
- (B) Issuance of an ICA, NOV, or Cease and Desist Order.
- (C) Failure to fully perform environmental commitments as detailed within the permit conditions and specifications.
- (D) Demonstration of erroneous documentation or reporting techniques.
- (E) Cheating or copying another candidate's work on an examination.
- (F) Intentional falsification of records.

- (G) Directing a subordinate under direct or indirect supervision to perform any of the above actions.
- (H) Dismissal from a company for any of the above reasons.
- (I) Suspension or revocation of one's certification by another entity.

Suspension or revocation of a certification will be sent by certified mail to the certificant and the Corporate Head of the company that employs the certificant.

A certificant has the right to appeal any adverse action which results in suspension or permanent revocation of certification by responding, in writing, to the Chief Engineer within 10 calendar days after receiving notice of the proposed adverse action.

Chief Engineer
1536 Mail Service Center
Raleigh, NC 27699-1536

Failure to appeal within 10 calendar days will result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified will result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process.

The Chief Engineer will hear the appeal and make a decision within 7 days of hearing the appeal. Decision of the Chief Engineer will be final and will be made in writing to the certificant.

If a certification is temporarily suspended, the certificant shall pass any applicable written examination and any proficiency examination, at the conclusion of the specified suspension period, prior to having the certification reinstated.

Measurement and Payment

Certified Erosion and Sediment Control/Stormwater Supervisor, Certified Foremen, Certified Installers and Certified Designer will be incidental to the project for which no direct compensation will be made.

PROJECT SPECIAL PROVISIONS

ROADWAY

112”X75” CORR. ALUMINUM PIPE WITH HEADWALLS

300

SP

Perform the required aluminum pipe culvert construction in accordance with this Special Provision.

The work covered by this special provision consists of furnishing all labor, equipment, materials and a manufacturer representative on site, to install the aluminum pipe culvert as indicated on the plans and Standard Specifications.

Design of the aluminum pipe culvert shall be the responsibility of the Contractor and shall comply with the latest AASHTO design specifications and requirements. The Contractor shall submit, fourteen (14) days prior to commencing work at each site, two sets of detailed plans and design calculations that have been checked and sealed by a North Carolina Registered Professional Engineer. The plans should be submitted to the Resident Engineer.

Payment will be made under:

Pay Item	Pay Unit
112”X75” Corrugated Aluminum Pipe with Headwalls	LS

GENERAL ALUMINUM STRUCTURE

REQUIREMENTS:

All items are incidental to Aluminum Pipe Culvert:

- All materials shall meet the requirements of the *2018 Standard Specifications*.
- Pipe material shall be made of aluminum alloy and in dimensions per the standard specifications and hydraulic recommendations.
- Poor quality of workmanship of any materials supplied will constitute grounds for the structure being rejected.
- Manufacturer’s representative, with at least two (2) years of experience in the installation of the type of structure, is required to provide technical assistance with the assembly of structure and headwalls as well as being on site during the installation and backfilling of pipe with headwalls through completion.
- Detailed shop drawings and design calculations shall be submitted for acceptance. The supplier shall provide a design that meets the requirements of AASHTO and is sealed by a NC registered Professional Engineer.
- Headwall locations shall be at or beyond the shoulder point.

- Headwalls will be required on the inlet and outlet of all pipes.
- Pipe invert elevations shall be 1' below streambed.
- Headwall foundation shall be undercut and backfilled with either #5 or #57 stone 1' below bottom of headwall elevation.
- Wing walls shall be required if ditches are adjacent to the structure.
- Pipe is to be fully welded inside and out to headwalls using two root welds and two finish welds on either side of the wall. All finish welds are to be ground to a smooth finish.
- Headwall and pipe are to be reinforced per AASHTO specifications and structural engineer's requirements.
- All hardware including nuts, bolts, washers, rods, etc. shall be hot dipped galvanized.
- A 2' wide band and a continuous 3/8" thick x 2' wide flat gasket made of closed cell neoprene rubber which upon assembly provides a watertight seal at each joint will be required.
- All holes or tears in the pipe must be repaired prior to backfilling.
- Pipe bed will be undercut and backfilled with either #5 or #57 stone 1' below pipe invert elevations. Work for pipe bed undercut and #5 or #57 stone will be incidental to the pipe installation.
- Prepare the pipe foundation in accordance with the applicable method as shown in the contract documents, true to line and grade and uniformly firm. Where the material is found to be of poor supporting, value, or rock and when the Engineer cannot make adjustment in the locations of the pipe, undercut existing foundation material within the limits of the plans. Backfill the undercut with the specified material of either #5 or #57 stone. Encapsulate the #5 or #57 stone with foundation conditioning geotextile before placing bedding material. Overlap all transvers and longitudinal joints in the geotextile at least 18". Maintain the pipe foundation in dry condition.
- Any undercut beyond the 1' specified, that is out of the Contractor's control and directed by the Engineer, will be paid for as Undercut Excavation by the CY which will include the fabric and backfill material of either #5 or #57 stone.
- Backfill material shall be either #5 or #57 stone from 1' below streambed elevation to top of pipe/box culvert.
- Backfill material shall extend a minimum of 3' from the O.D. of the pipe in both directions.
- ABC stone will be placed from top of pipe/box culvert to top of subgrade.

- Supplier to include all necessary wale beams, headwall cap, continuous flat gaskets and galvanized steel tieback rods with DMA plates and adjustable hot dip galvanized turnbuckles.
- Pipe sections and bands shall be assembled and alphanumerically / alignment match-marked at the plant site before shipping to verify fit.
- Bands shall be installed onto the pipe sections prior to shipping.
- Pipe manufacturer must provide certification of the measured dimensions of the pipe, bands and the continuous flat gaskets. Certification must state that the bands and the gaskets have been pre-fitted and will securely tighten around the supplied pipe. Certification of the dimensions must be signed by the manufacturer's representative and dated.

EXAMPLE: Supplied pipe measures ___ inches in diameter. Supplied bands and the continuous flat gaskets measure _____ inches in length and will securely fasten pipe sections, without field modification.

Signature: _____ Date: _____

NCDOT APPROVED PIPE AND HEADWALL VENDORS:

Contech Construction Products, Inc.

Rahn Sutton

Phone: 919-889-0878

Lane Enterprises,

Inc. Paul Vaughn

Phone: 540-674-4645

Pomona Pipe, Inc.

Don Joyce

Phone: 336-255-2655

LUMP SUM GRADING:

(1-30-14)

226

SPD 02-300

Description

Grade the project to the typical sections and details shown. Grading shall be comprehensive grading as defined in Section 226 of the *2018 Standard Specifications*, and shall include clearing and grubbing; all excavation within the area of the Typical Sections, including borrow, unclassified, and undercut excavation; construction of embankments, subgrade, and shoulders; construction of all intersecting roads and drives; the construction of all ditches within the area of the right of way or easements; all drainage ditch excavation; all silt excavation; removal, resetting,

and maintenance of all mailboxes; removal and disposal of existing pavement, cross-line and driveway pipe, concrete and asphalt driveways; the disposal of any other unsuitable material in a waste area provided by the contractor; the loading, hauling, placement, shaping, and compaction of any excavated earth material; backfilling with a suitable material of all structures, and pavement removal.

Construction Method

Dispose of any waste material and/or furnish any borrow material needed. Borrow quantity for this project is estimated at 0 cubic yards. The Contractor should make his own determination of borrow quantities. No material may be wasted or removed from the project unless approved by the Engineer.

Shape, compact, and grade the slopes, ditches, subgrade and shoulders to the lines, grades, and typical sections established by the plans or as directed by the Engineer. Roadway ditches shall be cleaned, reshaped, and maintained until final acceptance of the project. Drainage adequate for the protection of the subgrade shall be provided at all times. Grading shall include shaping all disturbed areas to facilitate drainage, prevent the impoundment of water, and dressing all areas to a condition suitable for seeding and mulching by the Contractor. Previously approved subgrade that is damaged by natural causes, construction or hauling equipment, or traffic, shall be restored to the required lines, grades, typical sections, and densities at no expense to the Department.

Excavated areas shall be uniformly graded, well compacted, and free of debris and loose material. Excavated areas adjacent to existing pavement having more than a 2 inch drop from the edge of pavement shall not be left open overnight. Such areas shall be made safe by the placement of solid material at a 6:1 or flatter slope. All open areas shall be identified and guarded by adequate traffic control devices as directed and approved by the *Manual of Uniform Traffic Control Devices* (MUTCD), *2018 Roadway Standards Drawings*, and the Engineer.

Remove and satisfactorily dispose of vegetation and debris from within the project limits. All waste disposal shall be in accordance with state, federal and local regulations regarding the disposal of waste material. All permits and fees for any such disposal shall be the responsibility of the Contractor, and the Department shall not be held liable for disposal of any materials outside the project right of way.

Measurement and Payment

Grading will be paid in accordance with Article 226-3 of the *Standard Specifications*. No separate payment will be made for borrow as it shall be incidental to the comprehensive item *Grading*.

GEOTEXTILE FOR PAVEMENT STABILIZATION:

(5-15-18)

Description

Supply and install geotextile for pavement stabilization in accordance with the contract.

Geotextile for pavement stabilization may be required above chemically stabilized subgrades or below Class IV subgrade stabilization to prevent pavement cracking at locations shown in the plans and as directed. Define “subbase” as the portion of the roadbed below the Class IV subgrade stabilization.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Geotextiles	1056
Select Material, Class IV	1016

Use Class IV select material for Class IV subgrade stabilization. Provide Type 5 geotextile for geotextile for pavement stabilization that meets the following tensile strength requirements in the machine direction (MD) and cross-machine direction (CD):

GEOTEXTILE FOR PAVEMENT STABILIZATION REQUIREMENTS		
Tensile Strength	Requirement (MARV ^A)	Test Method
Tensile Strength @ 5% Strain (MD & CD ^A)	1,900 lb/ft	ASTM D4595
Ultimate Tensile Strength (MD & CD ^A)	4,800 lb/ft	ASTM D4595

A. MD, CD and MARV per Article 1056-3 of the *Standard Specifications*.

Construction Methods

Geotextile for pavement stabilization may be required at locations shown in the plans and other locations as directed. For locations with ABC on chemically stabilized subgrades, use of geotextile for pavement stabilization will be based on sampling and testing for chemical stabilization. For all other locations, notify the Engineer when the embankment is completed to within 2 ft of subgrade elevation and allow 3 days for the Engineer to determine if geotextile for pavement stabilization is required.

Before placing geotextile for pavement stabilization below Class IV subgrade stabilization, proof roll subbases in accordance with Section 260 of the *Standard Specifications*. Place geotextile for pavement stabilization above chemically stabilized subgrades or below Class IV subgrade stabilization as shown in the plans. Pull geotextiles taut so they are in tension and free of kinks, folds, wrinkles or creases. Install geotextile for pavement stabilization perpendicular to the survey or lane line in the MD and adjacent to each other in the CD as shown in the plans. Continuous geotextiles are required in the MD, i.e., do not splice or overlap geotextiles so seams are parallel to the survey or lane line. Completely cover stabilized subgrades or subbases with geotextile for pavement stabilization. Overlapping geotextiles in the CD is permitted but not required. Overlap geotextiles in the direction that aggregate will be placed to prevent lifting the edge of the top geotextile. Hold geotextiles in place with wire staples or anchor pins as needed.

Do not damage geotextile for pavement stabilization when placing ABC or Class IV subgrade stabilization. Place and compact ABC in accordance with the contract and *Standard Specifications*. Place, compact and maintain Class IV subgrade stabilization in accordance with Article 505-3 of the *Standard Specifications* for a Type 2 aggregate subgrade. Do not operate heavy equipment on geotextiles any more than necessary to construct base courses or subgrades. Replace any damaged geotextiles to the satisfaction of the Engineer.

Measurement and Payment

Geotextile for Pavement Stabilization will be measured and paid in square yards. Geotextiles will be measured along subgrades or subbases as the square yards of exposed geotextiles installed before placing ABC or Class IV subgrade stabilization. No measurement will be made for overlapping geotextiles. The contract unit price for *Geotextile for Pavement Stabilization* will be full compensation for providing, transporting and installing geotextiles, wire staples and anchor pins.

Class IV Subgrade Stabilization will be measured and paid in accordance with Article 505-4 of the *Standard Specifications*. No measurement will be made for any undercut excavation of fill materials from subbases.

Payment will be made under:

Pay Item	Pay Unit
Geotextile for Pavement Stabilization	Square Yard

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

(11-21-00)

620

SP6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the *2018 Standard Specifications*.

The base price index for asphalt binder for plant mix is **\$501.67** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **June 1, 2018**.

FINAL SURFACE TESTING NOT REQUIRED:

(5-18-04) (Rev. 2-16-16)

610

SP6 R45

Final surface testing is not required on this project in accordance with Section 610-13, *Final Surface Testing and Acceptance*.

ASPHALT CONCRETE PLANT MIX PAVEMENTS:

(2-20-18)

610, 1012

SP6 R65

Revise the 2018 Standard Specifications as follows:

Page 6-17, Table 610-1, MIXING TEMPERATURE AT THE ASPHALT PLANT, replace with the following:

Binder Grade	JMF Temperature
PG 58-28; PG 64-22	250 - 290°F
PG 76-22	300 - 325°F

Page 6-17, Subarticle 610-3(C), Job Mix Formula (JMF), lines 38-39, delete the fourth paragraph.

Page 6-18, Subarticle 610-3(C), Job Mix Formula (JMF), line 12, replace “SF9.5A” with “S9.5B”.

Page 6-18, Table 610-3, MIX DESIGN CRITERIA, replace with the following:

Mix Type	Design ESALs millions ^A	Binder PG Grade ^B	Compaction Levels		Max. Rut Depth (mm)	Volumetric Properties			
			G _{mm} @			VMA % Min.	VTM %	VFA Min.-Max.	%G _{mm} @ N _{ini}
			N _{ini}	N _{des}					
S4.75A	< 1	64 - 22	6	50	11.5	16.0	4.0 - 6.0	65 - 80	≤ 91.5
S9.5B	0 - 3	64 - 22	6	50	9.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S9.5C	3 - 30	64 - 22	7	65	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S9.5D	> 30	76 - 22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
I19.0C	ALL	64 - 22	7	65	-	13.5	3.0 - 5.0	65 - 78	≤ 90.5
B25.0C	ALL	64 - 22	7	65	-	12.5	3.0 - 5.0	65 - 78	≤ 90.5
		Design Parameter				Design Criteria			
All Mix Types		Dust to Binder Ratio (P _{0.075} / P _{be})				0.6 - 1.4 ^C			
		Tensile Strength Ratio (TSR) ^D				85% Min. ^E			

A. Based on 20 year design traffic.

B. Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.

C. Dust to Binder Ratio (P_{0.075} / P_{be}) for Type S4.75A is 1.0 - 2.0.

D. NCDOT-T-283 (No Freeze-Thaw cycle required).

E. TSR for Type S4.75A & B25.0C mixes is 80% minimum.

Page 6-19, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%), replace with the following:

TABLE 610-5 BINDER GRADE REQUIREMENTS (BASED ON RBR%)			
Mix Type	%RBR ≤ 20%	21% ≤ %RBR ≤ 30%	%RBR > 30%
S4.75A, S9.5B, S9.5C, I19.0C, B25.0C	PG 64-22	PG 64-22 ^A	PG 58-28
S9.5D, OGFC	PG 76-22 ^B	n/a	n/a

A. If the mix contains any amount of RAS, the virgin binder shall be PG 58-28.

B. Maximum Recycled Binder Replacement (%RBR) is 18% for mixes using PG 76-22 binder.

Page 6-20, Table 610-6, PLACEMENT TEMPERATURES FOR ASPHALT, replace with the following:

TABLE 610-6 PLACEMENT TEMPERATURES FOR ASPHALT	
Asphalt Concrete Mix Type	Minimum Surface and Air Temperature
B25.0C	35°F
I19.0C	35°F
S4.75A, S9.5B, S9.5C	40°F ^A
S9.5D	50°F

A. If the mix contains any amount of RAS, The virgin binder shall be PG 58-28.

Page 6-23, Table 610-7, DENSITY REQUIREMENTS, replace with the following:

Mix Type	Minimum % G_{mm} (Maximum Specific Gravity)
S4.75A	85.0 ^A
S9.5B	90.0
S9.5C, S9.5D, I19.0C, B25.0C	92.0

- A. Compaction to the above specified density will be required when the S4.75A mix is applied at a rate of 100 lbs/sy or higher.

Page 6-32, Article 610-16 MEASUREMENT AND PAYMENT, replace with the following:

Pay Item	Pay Unit
Asphalt Concrete Base Course, Type B25.0C	Ton
Asphalt Concrete Intermediate Course, Type I19.0C	Ton
Asphalt Concrete Surface Course, Type S4.75A	Ton
Asphalt Concrete Surface Course, Type S9.5B	Ton
Asphalt Concrete Surface Course, Type S9.5C	Ton
Asphalt Concrete Surface Course, Type S9.5D	Ton

Page 10-30, Table 1012-1, AGGREGATE CONSENSUS PROPERTIES, replace with the following:

Mix Type	Coarse Aggregate Angularity^B	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
<i>Test Method</i>	<i>ASTM D5821</i>	<i>AASHTO T 304</i>	<i>AASHTO T 176</i>	<i>ASTM D4791</i>
S4.75A; S9.5B	75 / -	40	40	-
S9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

- A. Requirements apply to the design aggregate blend.
 B. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has 2 or more fractured faces.

STABILIZATION REQUIREMENTS:

(3-11-16)

S-2

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING:**(East Crimp)**

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

March 1 - August 31		September 1 - February 28	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

March 1 - August 31		September 1 - February 28	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Scorpion
2 nd Millennium	Essential	Kalahari	Serengeti
3 rd Millennium	Evergreen 2		Shelby
Apache III	Falcon IV	Kitty Hawk 2000	Sheridan
Avenger	Falcon NG	Legitimate	Signia
Barlexas	Falcon V	Lexington	Silver Hawk
Barlexas II	Faith	LSD	Sliverstar
Bar Fa	Fat Cat	Magellan	Shenandoah Elite
Barrera	Festnova	Matador	Sidewinder
Barrington	Fidelity	Millennium SRP	Skyline
Barrobusto	Finelawn Elite	Monet	Solara
Barvado	Finelawn Xpress	Mustang 4	Southern Choice II
Biltmore	Finesse II	Ninja 2	Speedway
Bingo	Firebird	Ol' Glory	Spyder LS
Bizem	Firecracker LS	Olympic Gold	Sunset Gold
Blackwatch	Firenza	Padre	Taccoa
Blade Runner II	Five Point	Patagonia	Tanzania
Bonsai	Focus	Pedigree	Trio
Braveheart	Forte	Picasso	Tahoe II
Bravo	Garrison	Piedmont	Talladega
Bullseye	Gazelle II	Plantation	Tarheel
Cannavaro	Gold Medallion	Proseeds 5301	Terrano
Catalyst	Grande 3	Prospect	Titan ltd
Cayenne	Greenbrooks	Pure Gold	Titanium LS
Cessane Rz	Greenkeeper	Quest	Tracer
Chipper	Gremlin	Raptor II	Traverse SRP
Cochise IV	Greystone	Rebel Exeda	Tulsa Time
Constitution	Guardian 21	Rebel Sentry	Turbo
Corgi	Guardian 41	Rebel IV	Turbo RZ
Corona	Hemi	Regiment II	Tuxedo RZ
Coyote	Honky Tonk	Regenerate	Ultimate
Darlington	Hot Rod	Rendition	Venture
Davinci	Hunter	Rhambler 2 SRP	Umbrella
Desire	Inferno	Rembrandt	Van Gogh
Dominion	Innovator	Reunion	Watchdog
Dynamic	Integrity	Riverside	Wolfpack II
Dynasty	Jaguar 3	RNP	Xtremegreen
Endeavor	Jamboree	Rocket	

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

All areas seeded and mulched shall be tacked with asphalt. Crimping of straw in lieu of asphalt tack shall not be allowed on this project.

CRIMPING STRAW MULCH:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

COIR FIBER WATTLE:

Description

Coir Fiber Wattles are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting. Coir Fiber Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Coir Fiber Wattles are to be placed as directed. Installation shall follow the detail provided as directed. Work includes furnishing materials, installation of coir fiber wattles, matting installation, and removing wattles.

Materials

Coir Fiber Wattle shall meet the following specifications:

100% Coir (Coconut) Fibers	
Minimum Diameter	12 in.
Minimum Density	3.5 lb/ft ³ +/- 10%
Net Material	Coir Fiber
Net Openings	2 in. x 2 in.
Net Strength	90 lbs.
Minimum Weight	2.6 lbs./ft. +/- 10%

Anchors: Stakes shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Coir Fiber Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install coir fiber wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

The Contractor shall maintain the coir fiber wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of DGS accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

Measurement and Payment

Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*.

Payment will be made under:

Pay Item	Pay Unit
Coir Fiber Wattle	Linear Foot

COIR FIBER MAT:**Description**

Furnish material, install and maintain coir fiber mat in locations shown on the plans or in locations as directed. Work includes providing all materials, excavating and backfilling, and placing and securing coir fiber mat with stakes, steel reinforcement bars or staples as directed.

Materials

Item	Section
Coir Fiber Mat	1060-14

Anchors: Stakes, reinforcement bars, or staples shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 1"- 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Place the coir fiber mat immediately upon final grading. Provide a smooth soil surface free from stones, clods, or debris that will prevent the contact of the mat with the soil. Unroll the mat and apply without stretching such that it will lie smoothly but loosely on the soil surface.

For stream relocation applications, take care to preserve the required line, grade, and cross section of the area covered. Bury the top slope end of each piece of mat in a narrow trench at least 6 in. deep and tamp firmly. Where one roll of matting ends and a second roll begins, overlap the end of the upper roll over the buried end of the second roll so there is a 6 in. overlap. Construct check trenches at least 12 in. deep every 50 ft. longitudinally along the edges of the mat or as directed. Fold over and bury mat to the full depth of the trench, close and tamp firmly. Overlap mat at least 6 in. where 2 or more widths of mat are installed side by side.

Place anchors across the mat at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the mat 3 ft. apart.

Adjustments in the trenching or anchoring requirements to fit individual site conditions may be required.

Measurement and Payment

Coir Fiber Mat will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

No measurement will be made for anchor items.

Payment will be made under:

Pay Item	Pay Unit
Coir Fiber Mat	Square Yard

IMPERVIOUS DIKE:

Description

This work consists of furnishing, installing, maintaining, and removing an *Impervious Dike* for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed.

Materials

Acceptable materials shall include but not be limited to sheet piles, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious geotextile. Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

Measurement and Payment

Impervious Dike will be measured and paid as the actual number of linear feet of impervious dike(s) constructed, measured in place from end to end of each separate installation that has been completed and accepted. Such price and payment will be full compensation for all work including but not limited to furnishing materials, construction, maintenance, and removal of the impervious dike.

Payment will be made under:

Pay Item	Pay Unit
Impervious Dike	Linear Foot

RESPONSE FOR EROSION CONTROL:**Description**

Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of the following work as shown herein, by an approved subcontractor.

Section	Erosion Control Item	Unit
1605	Temporary Silt Fence	LF
1606	Special Sediment Control Fence	LF/TON
1615	Temporary Mulching	ACR
1620	Seed - Temporary Seeding	LB
1620	Fertilizer - Temporary Seeding	TN
1631	Matting for Erosion Control	SY
SP	Coir Fiber Mat	SY
1640	Coir Fiber Baffles	LF
SP	Permanent Soil Reinforcement Mat	SY
1660	Seeding and Mulching	ACR
1661	Seed - Repair Seeding	LB
1661	Fertilizer - Repair Seeding	TON
1662	Seed - Supplemental Seeding	LB
1665	Fertilizer Topdressing	TON
SP	Safety/Highly Visible Fencing	LF
SP	Response for Erosion Control	EA

Construction Methods

Provide an approved subcontractor who performs an erosion control action as described in the NPDES Inspection Form SPPP30. Each erosion control action may include one or more of the above work items.

Measurement and Payment

Response for Erosion Control will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the *Standard Specifications* will not apply to this item of work.

Payment will be made under:

Pay Item	Pay Unit
Response for Erosion Control	Each

DEWATERING:

Description

The contractor shall adhere to the permits and/or plan for the dewatering process. Any deviation from the permit must be pre-approved by the permitting agencies and NCDOT. No additional time or compensation will be granted if alternate methods are used.

Measurement and Payment

Generic Erosion Control Item (Dewatering) will be paid for at the lump sum price bid which will be full compensation for all items required in the construction and removal of the temporary bypass system for dewatering including, but not limited to, any necessary pumps, hardware, aqua barriers, silt bags/special stilling basins, or any other items contained in Article 400 of the *Standard Specifications*.

Payment will be made under:

Pay Item	Pay Unit
Generic Erosion Control Item (Dewatering)	Lump Sum

PROJECT SPECIAL PROVISIONS

PERMITS

The Contractor's attention is directed to the following permits, which have been issued to the Department of Transportation by the authority granting the permit.

PERMIT

AUTHORITY GRANTING THE PERMIT

Dredge and Fill and/or Work in Navigable Waters (404)	U. S. Army Corps of Engineers
Water Quality (401)	Division of Environmental Management, DEQ State of North Carolina
Buffer Certification	Division of Environmental Management, DEQ State of North Carolina

The Contractor shall comply with all applicable permit conditions during construction of this project. Those conditions marked by * are the responsibility of the Department and the Contractor has no responsibility in accomplishing those conditions.

Agents of the permitting authority will periodically inspect the project for adherence to the permits.

The Contractor's attention is also directed to Articles 107-10 and 107-13 of the *2018 Standard Specifications* and the following:

Should the Contractor propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Contractor's responsibility to coordinate with the Engineer to determine what, if any, additional permit action is required. The Contractor shall also be responsible for initiating the request for the authorization of such construction method by the permitting agency. The request shall be submitted through the Engineer. The Contractor shall not utilize the construction method until it is approved by the permitting agency. The request normally takes approximately 60 days to process; however, no extensions of time or additional compensation will be granted for delays resulting from the Contractor's request for approval of construction methods not specifically identified in the permit.

Where construction moratoriums are contained in a permit condition which restricts the Contractor's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the restricted waters, wetlands or buffer zones, provided that activities outside those areas is done in such a manner as to not affect the restricted waters, wetlands or buffer zones.

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4085

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- NATIONWIDE PERMIT 3 (MAINTENANCE),
- NATIONWIDE PERMIT 4 (FISH AND WILDLIFE HARVESTING, ENHANCEMENT, AND ATTRACTION DEVICES AND ACTIVITIES),
- NATIONWIDE PERMIT 5 (SCIENTIFIC MEASUREMENT DEVICES),
- NATIONWIDE PERMIT 6 (SURVEY ACTIVITIES),
- NATIONWIDE PERMIT 7 (OUTFALL STRUCTURES AND ASSOCIATED INTAKE STRUCTURES),
- NATIONWIDE PERMIT 19 (MINOR DREDGING),
- NATIONWIDE PERMIT 20 (RESPONSE OPERATIONS FOR OIL OR HAZARDOUS SUBSTANCES),
- NATIONWIDE PERMIT 22 (REMOVAL OF VESSELS),
- NATIONWIDE PERMIT 25 (STRUCTURAL DISCHARGES),
- NATIONWIDE PERMIT 30 (MOIST SOIL MANAGEMENT FOR WILDLIFE),
- NATIONWIDE PERMIT 32 (COMPLETED ENFORCEMENT ACTIONS),
- NATIONWIDE PERMIT 36 (BOAT RAMPS),
- REGIONAL GENERAL PERMIT 197800056 (PIERS, DOCKS AND BOATHOUSES), AND
- REGIONAL GENERAL PERMIT 197800125 (BOAT RAMPS)

Water Quality Certification Number 4085 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (3, 4, 5, 6, 7, 19, 20, 22, 25, 30, 32, and 36) of the US Army Corps of Engineers regulations and Regional General Permits 197800056 and 197800125.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: March 19, 2017

Signed this day March 3, 2017

By



for S. Jay Zimmerman, P.G.
Director

Activities meeting any one (1) of the following thresholds or circumstances require written approval for a 401 Water Quality Certification from the Division of Water Resources (DWR):

- a) If any of the conditions of this Certification (listed below) cannot be met; or
- b) Total additional permanent impacts to streams (including stream relocations or restorations) greater than 40 linear feet at an existing stream impact location; or
- c) Total temporary and permanent impacts to wetlands equal to or greater than one-tenth (1/10) of an acre; or
- d) Any dewatering activity related to dam maintenance or removal; or
- e) Any impacts to streams from excavation or dredging, except for projects qualifying for a Nationwide Permit 19; or
- f) Any impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River, except for projects qualifying for a Nationwide Permit 3; or
- g) Any impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
- h) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
- i) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless*:
 - i) The activities are listed as "EXEMPT" from these rules; or
 - ii) A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
 - iii) A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

I. ACTIVITY SPECIFIC CONDITIONS:

1. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. For all other projects that disturb one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); have permanent wetland, stream, or open water impacts; and are proposing new built-upon area shall comply with the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

- a. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.
- b. Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs do not satisfy this condition. Projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs do not satisfy this condition.
- c. Projects that require written authorization from DWR shall submit the following with their application for review and approval:
 - i. For projects that have a stormwater management plan (SMP) reviewed under a state stormwater program¹ or a state-approved local government stormwater program² shall submit plans that show the location and approximate size of all proposed stormwater measures;
 - ii. All other low density projects not covered above shall submit a completed low density supplement form with all required items; and
 - iii. All other high density projects not covered above shall submit a completed SMP, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high density development requirements of 15A NCAC 02H .1003.
- d. Projects that do not require written approval from DWR shall obtain approval of the SMP, when required, before any impacts authorized by this Certification occur.
- e. SMPs approved by DWR may be phased on a case-by-case basis. SMPs for each future phase must be approved before construction of that phase is commenced. Approved SMPs may not be modified without prior written authorization from DWR.

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]
2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

¹ e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

² e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h), compensatory mitigation may be required for losses of greater than 150 linear feet of streams and/or greater than one (1) acre of wetlands. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 150 linear feet per stream.

Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.
5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0200]

Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]
7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]
8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]
10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible, including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]
13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]
14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]
15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]
16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]
18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]
19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.
20. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance should not take place within 50 feet of a waterbody or wetlands to prevent contamination by fuels and oils. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]
21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506 (b)(3) and (c)(3)]
22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.
23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]
24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project,

including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]
26. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website <https://edocs.deq.nc.gov/Forms/Certificate-of-Completion>). [15A NCAC 02H .0502(f)]
27. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]
28. If the property or project is sold or transferred, the new Permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).
2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]
4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.
5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.
6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the waters or downstream waters are precluded.
7. Public hearings may be held prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Resources.

History Note: Water Quality Certification (WQC) Number 4085 issued March 3, 2017 replaces WQC 3883 issued March 19, 2012; WQC Number 3687 issued November 1, 2007; WQC Number 3624 issued March 19, 2007; WQC Number 3494 issued December 31, 2004; and WQC Number 3376 issued March 18, 2002.

DECISION DOCUMENT NATIONWIDE PERMIT 3

This document discusses the factors considered by the Corps of Engineers (Corps) during the issuance process for this Nationwide Permit (NWP). This document contains: (1) the public interest review required by Corps regulations at 33 CFR 320.4(a)(1) and (2); (2) a discussion of the environmental considerations necessary to comply with the National Environmental Policy Act; and (3) the impact analysis specified in Subparts C through F of the 404(b)(1) Guidelines (40 CFR Part 230). This evaluation of the NWP includes a discussion of compliance with applicable laws, consideration of public comments, an alternatives analysis, and a general assessment of individual and cumulative environmental effects, including the general potential effects on each of the public interest factors specified at 33 CFR 320.4(a).

1.0 Text of the Nationwide Permit

Maintenance. (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This NWP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This NWP also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.). The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall

and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization.

(c) This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After conducting the maintenance activity, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 32). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Authorities: Section 10 of the Rivers and Harbors Act of 1899 and section 404 of the Clean Water Act (Sections 10 and 404))

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act section 404(f) exemption for maintenance.

1.1 Requirements

General conditions of the NWPs are in the Federal Register notice announcing the issuance of this NWP. Pre-construction notification requirements, additional conditions, limitations, and restrictions are in 33 CFR part 330.

1.2 Statutory Authorities

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)
- Section 404 of the Clean Water Act (33 U.S.C. 1344)

1.3 Compliance with Related Laws (33 CFR 320.3)

1.3.1 General

NWPs are a type of general permit designed to authorize certain activities that have no more than minimal individual and cumulative adverse environmental effects and generally comply with the related laws cited in 33 CFR 320.3. Activities that result in more than minimal individual and cumulative adverse environmental effects cannot be authorized by NWPs. Individual review of each activity authorized by an NWP will not normally be performed, except when pre-construction notification to the Corps is required or when an applicant requests verification that an activity complies with an NWP. Potential adverse impacts and compliance with the laws cited in 33 CFR 320.3 are controlled by the terms and conditions of each NWP, regional and case-specific conditions, and the review process that is undertaken prior to the issuance of NWPs.

The evaluation of this NWP, and related documentation, considers compliance with each of the following laws, where applicable: Sections 401, 402, and 404 of the Clean Water Act; Section 307(c) of the Coastal Zone Management Act of 1972, as amended; Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended; the National Environmental Policy Act of 1969; the Fish and Wildlife Act of 1956; the Migratory Marine Game-Fish Act; the Fish and Wildlife Coordination Act, the Federal Power Act of 1920, as amended; the National Historic Preservation Act of 1966; the Interstate Land Sales Full Disclosure Act; the Endangered Species Act; the Deepwater Port Act of 1974; the Marine Mammal Protection Act of 1972; Section 7(a) of the Wild and Scenic Rivers Act; the Ocean Thermal Energy Act of 1980; the National Fishing Enhancement Act of 1984; the Magnuson-Stevens Fishery and Conservation and Management Act, the Bald and Golden Eagle Protection Act; and the Migratory Bird Treaty Act. In addition, compliance of the NWP with other Federal requirements, such as Executive Orders and Federal regulations addressing issues such as floodplains, essential fish habitat, and critical resource waters is considered.

1.3.2 Terms and Conditions

Many NWPs have pre-construction notification requirements that trigger case-by-case review of certain activities. Two NWP general conditions require case-by-case review of all activities that may adversely affect Federally-listed endangered or threatened species or historic properties (i.e., general conditions 18 and 20, respectively). General condition 16 restricts the use of NWPs for activities that are located in Federally-designated wild and scenic rivers. None of the NWPs the construction of authorize artificial reefs. General condition 28 prohibits the use of an NWP with other NWPs, except when the acreage loss of waters of the United States does not exceed the highest specified acreage limit of the NWPs used to authorize the single and complete project.

In some cases, activities authorized by an NWP may require other federal, state, or local authorizations. Examples of such cases include, but are not limited to: activities that are in marine sanctuaries or affect marine sanctuaries or marine mammals; the ownership,

construction, location, and operation of ocean thermal conversion facilities or deep water ports beyond the territorial seas; activities that result in discharges of dredged or fill material into waters of the United States and require Clean Water Act Section 401 water quality certification; or activities in a state operating under a coastal zone management program approved by the Secretary of Commerce under the Coastal Zone Management Act. In such cases, a provision of the NWP states that an NWP does not obviate the need to obtain other authorizations required by law. [33 CFR 330.4(b)(2)]

Additional safeguards include provisions that allow the Chief of Engineers, division engineers, and/or district engineers to: assert discretionary authority and require an individual permit for a specific activity; modify NWPs for specific activities by adding special conditions on a case-by-case basis; add conditions on a regional or nationwide basis to certain NWPs; or take action to suspend or revoke an NWP or NWP authorization for activities within a region or state. Regional conditions are imposed to protect important regional concerns and resources. [33 CFR 330.4(e) and 330.5]

1.3.3 Review Process

The analyses in this document and the coordination that was undertaken prior to the issuance of the NWP fulfill the requirements of the National Environmental Policy Act (NEPA), the Fish and Wildlife Coordination Act, and other acts promulgated to protect the quality of the environment.

All NWPs that authorize activities that may result in discharges into waters of the United States require water quality certification. NWPs that authorize activities within, or affecting land or water uses within a state that has a Federally-approved coastal zone management program, must also be certified as consistent with the state's program. The procedures to ensure that the NWPs comply with these laws are described in 33 CFR 330.4(c) and (d), respectively.

1.4 Public Comment and Response

For a summary of the public comments received in response to the June 1, 2016, Federal Register notice, refer to the preamble in the Federal Register notice announcing the reissuance of this NWP. The substantive comments received in response to the June 1, 2016, Federal Register notice were used to improve the NWP by changing NWP terms and limits, pre-construction notification requirements, and/or NWP general conditions, as necessary.

We proposed to modify this NWP to state that it also authorizes regulated activities associated with the removal of previously authorized structures or fills. The proposed modification to NWP 3 would authorize the removal of the previously authorized structure or fill in those cases where authorization is required (e.g., work in section 10 waters). We also proposed to modify paragraph (c) of this NWP to clarify that the use of temporary mats in jurisdictional waters and wetlands is also authorized by this NWP, if those mats are

used to minimize impacts during regulated maintenance activities. This provision of NWP 3 would only be necessary in circumstances where the Corps district has determined that the use of such mats in jurisdictional waters and wetlands requires DA authorization.

Many commenters supported all proposed modifications of NWP 3. Several commenters objected to the reissuance of this NWP, and some stated that it does not authorize a category of activities that is similar in nature. Two commenters opposed the reissuance of NWP 3, stating that it allows for piecemealing of maintenance activities and does not require evaluation of practicable alternatives. A few commenters said that maintenance activities should require individual permits.

This NWP only authorizes maintenance activities, a general category of activities that is similar in nature. General condition 15 requires each NWP activity to be a single and complete project, and states that the same NWP cannot be used more than once for the same single and complete project. Other than on-site avoidance and minimization measures, NWPs do not require the evaluation of practicable alternatives (see paragraph (a) of general condition 23, mitigation, and 40 CFR 230.7(b)(1)). Maintenance activities involving discharges of dredged or fill material into waters of the United States and/or structures or work in navigable waters of the United States usually have no more than minimal adverse environmental effects, individually and cumulatively, so authorization by NWP is appropriate. District engineers have the authority to exercise discretionary authority and require individual permits for any maintenance activities they determine will result in more than minimal adverse environmental effects.

Two commenters requested clarification regarding the use of the phrase “previously authorized” under paragraph (a), and whether it is necessary to supply the district engineer with documentation of the previous authorization. One commenter questioned whether a grandfathering provision is required for any currently serviceable structure or fill authorized by 33 CFR 330.3. Several commenters objected to the proposal to modify paragraph (a) of this NWP to authorize the removal of previously authorized structures or fills, and several commenters expressed their support for that proposed modification. Several commenters requested further clarification of the meaning of “minimum necessary” in paragraph (a), while one commenter said that there is no need to clarify this term. Two commenters asked for an explanation of the circumstances under which an activity would be considered a maintenance activity authorized by this NWP.

The term “previously authorized” means the structure or fill was authorized by an individual permit or a general permit, or the structure or fill was authorized under the provisions of 33 CFR 330.3. To qualify for NWP 3 authorization, it is not necessary for the project proponent to produce a copy of the prior authorization. In many cases it might not be possible to produce a copy of a written authorization because the discharge, structure, or work may have been authorized by a general permit that does not require reporting, or it was authorized by regulation without a reporting requirement. Once a structure or fill is authorized, it remains authorized unless the district engineer suspends or revokes the authorization (see 33 CFR 325.6). The district engineer has the discretion to determine what constitutes the minimum necessary for the purposes of this NWP. In general terms, in the context of this NWP maintenance consists of repairing, rehabilitating, or replacing

previously authorized structures or fills.

One commenter suggested adding a 200-foot limit to paragraph (a) of this NWP. Three commenters suggested adding “stabilization” after the phrase “repair, rehabilitation, or replacement” to clarify that stabilization activities are authorized by paragraph (a) of this NWP. One commenter recommended authorizing wetland dike maintenance under paragraph (a). One commenter said that there should be a limit on the size of structures or fills that can be removed under paragraph (a). Two commenters requested clarification regarding whether NWP 3 requires the removal of structures. Two commenters stated that in site-specific cases it may be environmentally preferable to abandon a structure or pipeline and keep it in place. A few commenters stated that maintenance activities often go beyond the intent of this NWP and, occasionally in emergency situations, are more extensive than necessary to respond to the emergency. They said those activities should require PCNs after the emergency response is completed if additional work is required.

Since this NWP authorizes maintenance activities and only allows minor deviations, we do not believe it would be appropriate to impose a quantitative limit on this NWP other than the 200-foot limit in paragraph (b). Stabilization activities can be authorized by NWP 13 or other NWPs. Wetland dikes that were previously authorized and are currently serviceable can be maintained under the authorization provided by this NWP. The intent of the proposed modification of this NWP with respect to authorizing the removal of structures or fills is to provide Department of the Army authorization when the landowner or other appropriate entity wants to remove a structure or fill from jurisdictional waters and wetlands, in case the prior authorization does not cover the removal of the structure or fill. This NWP does not require the removal of structures or fills. If it would be environmentally preferable to keep the structure or fill in place, then the structure or fill can remain in place unless the district engineer takes action under his or her authority to require the responsible party to remove the structure or fill. For example, under paragraph (c) of general condition 1, navigation, the district engineer can require a permittee to remove structures or works from navigable waters of the United States. If a district engineer determines that an activity, including an activity conducted to respond to an emergency, did not comply with the terms and conditions of NWP 3, and an excessive amount of work was done, he or she can take action to address the alleged non-compliance. One potential approach might be to require an individual permit for that activity.

For paragraph (b) of NWP 3, one commenter recommended removing the 200-foot limit. Two commenters suggested increasing that limit to 300 feet. One commenter said that any new riprap should be limited to being placed in the original project footprint. One commenter asked whether new or additional riprap to protect a structure or fill could be authorized by this NWP. Two commenters said the use of riprap should be discouraged, and other means of controlling erosion should be used. A number of commenters said that the use of riprap in paragraph (b) should not require a PCN. One commenter said that in some cases, it is not possible to restore the waterway in the vicinity of the existing structure to the approximate dimensions that existed when the structure was built, because of changes to the stream channel that naturally occurred over time since the structure was originally constructed. One commenter stated support for the language requiring restoration of the waterway to those approximate dimensions.

We are retaining the 200-foot limit in paragraph (b) because we believe it is an appropriate limit, along with the PCN requirement, for ensuring that authorized activities result in no more than minimal adverse environmental effects. We have removed the last two sentences of this paragraph. The use of riprap or other erosion control measures such as bioengineering to protect the structure or fill from erosion may be authorized by other NWP, such as NWP 13. The use of the word “approximate” in that sentence in paragraph (b) allows for the restoration of the waterway even though changes to the watershed and other alterations may have caused stream dimensions to change over time. Because all activities authorized by paragraph (b) require PCNs, district engineers will have the opportunity to consider the changes that have occurred to the stream over time, and determine whether the proposed activity is authorized by NWP 3 despite those changes.

Several commenters supported the addition of timber mats to the temporary activities authorized by this NWP. One commenter said that the use of timber mats in waters of the United States always requires Department of the Army authorization. One commenter requested clarification of the circumstances under which the use of timber mats in waters of the United States is a regulated activity. One commenter questioned whether the use of wetland mats requires a PCN. One commenter recommended limiting the use of temporary mats so that impacts do not exceed 300 linear feet of stream bed and/or 1/2-acre of waters of the United States. One commenter recommended adding the word “promptly” prior to “removed” so that the fourth sentence of paragraph (c) would read: “After conducting the maintenance activity, temporary fills must be promptly removed in their entirety and the affected areas returned to preconstruction elevations.”

We have retained the use of timber mats in paragraph (c) of this NWP. District engineers will determine on a case-by-case basis whether using timber mats to conduct NWP activities requires Department of the Army authorization. For this NWP, only activities authorized by paragraph (b) require PCNs, unless an NWP general condition triggers a PCN requirement (e.g., paragraph (c) of general condition 18, endangered species or paragraph (c) of general condition 20, historic properties) or a regional condition. Since temporary mats authorized by paragraph (c) are temporary features, it is not necessary to impose quantitative limits on their use. We do not agree that the “promptly” should be added to the fourth sentence of paragraph (c) because there will be circumstances where temporary fills need to remain in place for a longer time period. An example would be to allow the affected areas to stabilize before removing temporary fills.

A few commenters said that PCNs should be required for all activities authorized by this NWP. One commenter said that proposed removals of previously authorized structures or fills should require PCNs. Some commenters said that tribes should be notified of proposed NWP 3 activities because of potential impacts to tribal trust resources. Two commenters stated that PCNs should be required for any proposed activity under paragraph (a) that would result in more than a minor deviation from the structure’s configuration or the filled area.

Because this NWP only authorizes maintenance activities, we do not believe that PCNs should be required for all activities. Division engineers have discretion to impose regional conditions on this NWP to require PCNs for some or all activities, including removal

activities, if they believe additional PCNs are necessary to ensure that activities authorized in a region result in no more than minimal adverse environmental effects. For the 2017 NWP, Corps districts have been consulting with tribes to identify regional conditions that protect tribal trust resources. Corps districts may also establish coordination procedures with tribes to ensure that NWP 3 activities do not cause more than minimal adverse effects on tribal rights, protected tribal resources, or tribal lands. Maintenance activities that result in more than minor deviations in the structure's configuration or filled area are not authorized under paragraph (a), unless it is a structure or fill that was destroyed or damaged by a storm, flood, fire, or other discrete event, and the structure or fill needs to be reconstructed. For repair, rehabilitation, or replacement activities conducted after storms or other discrete events, the structure or fill should be similar to what was damaged or destroyed, and constructed in the same general footprint as the original structure or fill.

One commenter said that a PCN should be required for any placement of new or additional riprap under paragraph (b). One commenter stated that the placement of riprap to protect an existing structure should not require a PCN. Several commenters recommended removing the PCN requirement for activities authorized by paragraph (b), because they believe that the removal of accumulated sediment results in only minimal adverse environmental effects. Three commenters suggested not requiring PCNs for removal of accumulated sediments within an existing structure, such as a culvert. One commenter asked whether the PCN requirement for activities authorized by paragraph (b) only applies to activities in section 10 waters.

All activities authorized by paragraph (b) of this NWP require PCNs. As discussed above, we have removed the last two sentences of this paragraph. The project proponent has the option of using NWP 13 or another NWP to authorize the placement of riprap to protect the existing structure, which in some circumstances does not require a PCN. The removal of accumulated sediment within an area extending 200 feet from a structure or fill has the potential to result in more than minimal adverse environmental effects, so we believe requiring a PCN for those sediment removal activities is appropriate. We have modified paragraph (a) to clarify that it authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. Therefore, the removal of accumulated sediment and debris in those areas does not require a PCN unless a general condition or regional condition triggers a PCN requirement for those activities. The removal of accumulated sediment and debris outside of the immediate vicinity of the structure or fill, and up to 200 feet from that structure or fill, could be authorized by paragraph (b) and would therefore require a PCN. The PCN requirement for activities authorized under paragraph (b) of this NWP applies to activities that require section 10 and/or section 404 authorization.

One commenter expressed concern regarding impacts to endangered or threatened species caused by activities authorized by this NWP. One commenter recommended a cumulative impact analysis for NWP 3. One commenter said that compensatory mitigation should be required for all NWP 3 activities. Several commenters stated that this NWP should require use of best management practices to avoid sediment inputs to downstream waters. One commenter said that NWP 3 activities must comply with state or local floodplain management requirements.

Any proposed NWP 3 activity conducted by a non-federal permittee that might affect an ESA-listed species or designated critical habitat requires a PCN because of the requirements of general condition 18. Cumulative effects analyses under the National Environmental Policy Act and Clean Water Act section 404(b)(1) guidelines have been conducted for the 2017 NWP 3. Those cumulative effects analyses are presented in the national decision document for this NWP. We do not agree that compensatory mitigation should be required for all activities authorized by this NWP, because maintenance activities generally cause no more than minimal adverse environmental effects. For those NWP 3 activities that require PCNs, district engineers will determine whether compensatory mitigation or another form of mitigation is necessary to ensure the proposed activities will result in no more than minimal adverse environmental effects, in accordance with 33 CFR 330.1(e)(3). General condition 12, soil erosion and sediment controls, requires the use of appropriate soil erosion and sediment controls for NWP activities. General condition 10, fills in 100-year floodplains, requires fills in those floodplains to comply with applicable Federal Emergency Management Agency (FEMA)-approved state or local floodplain management requirements.

One commenter stated that maintenance of any structure should not create or maintain a fish passage barrier. Another commenter recommended adding terms to this NWP requiring authorized activities to improve aquatic life movements. One commenter recommended that this NWP authorize stream channelization to improve aquatic life movements. One commenter stated that maintenance of any structure should not create or maintain a channel restriction. One commenter stated that treated wood should not be used for maintenance activities to protect water quality.

General condition 2, aquatic life movements, requires NWP activities to be constructed so that they do not substantially disrupt the life cycle movements of indigenous aquatic species, unless the activity's primary purpose is to impound water. We can only condition the NWP to minimize adverse effects on aquatic life movements so that those adverse effects are no more than minimal, but actions the permittee takes to improve aquatic life movements in a waterbody may be considered as mitigation that would be considered in the district engineer's verification decision. While stream channelization may benefit some species, other species are likely to be adversely affected by those activities because they alter their habitat. General condition 9, management of water flows, requires that NWP activities maintain water flows to the maximum extent practicable, and that the capacity of open waters should be maintained. Treated wood may be considered a suitable material for maintenance activities, as long as the district engineer determines that its use complies with general condition 6, suitable material.

One commenter recommended adding terms to this NWP to provide specific requirements regarding slope stability. One commenter asked whether it is more appropriate to conduct pipeline maintenance under NWP 3 or NWP 12. One commenter said that NWP 3 should authorize up to 200 linear feet of stream realignment.

The appropriate slope for maintenance activities should be determined on a case-by-case basis, after considering site- and activity-specific factors. Either NWP 3 or NWP 12 may be

used to authorize pipeline maintenance activities that require DA authorization because they involve discharges of dredged or fill material into waters of the United States and/or structures or work in navigable waters of the United States. Stream realignment is not a maintenance activity and may be authorized by another NWP, a regional general permit, or an individual permit.

2.0 Alternatives

This evaluation includes an analysis of alternatives based on the requirements of NEPA, which requires a more expansive review than the Clean Water Act Section 404(b)(1) Guidelines. The alternatives discussed below are based on an analysis of the potential environmental impacts and impacts to the Corps, Federal, Tribal, and state resource agencies, general public, and prospective permittees. Since the consideration of off-site alternatives under the 404(b)(1) Guidelines does not apply to specific projects authorized by general permits, the alternatives analysis discussed below consists of a general NEPA alternatives analysis for the NWP.

2.1 No Action Alternative (No Nationwide Permit)

The no action alternative would not achieve one of the goals of the Corps Nationwide Permit Program, which is to reduce the regulatory burden on applicants for activities that result in no more than minimal individual and cumulative adverse environmental effects. The no action alternative would also reduce the Corps ability to pursue the current level of review for other activities that have greater adverse effects on the aquatic environment, including activities that require individual permits as a result of the Corps exercising its discretionary authority under the NWP program. The no action alternative would also reduce the Corps ability to conduct compliance actions.

If this NWP is not available, substantial additional resources would be required for the Corps to evaluate these minor activities through the individual permit process, and for the public and Federal, Tribal, and state resource agencies to review and comment on the large number of public notices for these activities. In a considerable majority of cases, when the Corps publishes public notices for proposed activities that result in no more than minimal adverse environmental effects, the Corps typically does not receive responses to these public notices from either the public or Federal, Tribal, and state resource agencies. Another important benefit of the NWP program that would not be achieved through the no action alternative is the incentive for project proponents to design their projects so that those activities meet the terms and conditions of an NWP. The Corps believes the NWPs have significantly reduced adverse effects to the aquatic environment because most applicants modify their projects to comply with the NWPs and avoid the delays and costs typically associated with the individual permit process.

In the absence of this NWP, Department of the Army (DA) authorization in the form of another general permit (i.e., regional or programmatic general permits, where available) or

individual permits would be required. Corps district offices may develop regional general permits if an NWP is not available, but this is an impractical and inefficient method for activities with no more than minimal individual or cumulative adverse environmental effects that are conducted across the Nation. Not all districts would develop these regional general permits for a variety of reasons. The regulated public, especially those companies that conduct activities in more than one Corps district, would be adversely affected by the widespread use of regional general permits because of the greater potential for lack of consistency and predictability in the authorization of similar activities with no more than minimal adverse environmental effects. These companies would incur greater costs in their efforts to comply with different regional general permit requirements between Corps districts. Nevertheless, in some states Corps districts have issued programmatic general permits to take the place of this and other NWPs. However, this approach only works in states with regulatory programs comparable to the Corps Regulatory Program.

2.2 National Modification Alternatives

Since the Corps Nationwide Permit program began in 1977, the Corps has continuously strived to develop NWPs that only authorize activities that result in no more than minimal individual and cumulative adverse environmental effects. Every five years the Corps reevaluates the NWPs during the reissuance process, and may modify an NWP to address concerns for the aquatic environment. Utilizing collected data and institutional knowledge concerning activities authorized by the Corps regulatory program, the Corps reevaluates the potential impacts of activities authorized by NWPs. The Corps also uses substantive public comments on proposed NWPs to assess the expected impacts. This NWP was developed to authorize maintenance activities and the removal of accumulated sediments and debris in the vicinity of existing structures that have no more than minimal individual and cumulative adverse environmental effects. The Corps has considered suggested changes to the terms and conditions of this NWP, as well as modifying or adding NWP general conditions, as discussed in the preamble of the Federal Register notice announcing the reissuance of this NWP.

In the June 1, 2016, Federal Register notice, the Corps requested comments on the proposed reissuance of this NWP. The Corps proposed to modify this NWP to clarify that any stream channel modification is limited to the minimum necessary to repair, rehabilitate, or replace the structure or fill, and must be immediately adjacent to that structure or fill. The Corps also proposed to clarify that this NWP does not authorize beach restoration.

2.3 Regional Modification Alternatives

An important aspect for the NWPs is the emphasis on regional conditions to address differences in aquatic resource functions, services, and values across the nation. All Corps divisions and districts are expected to add regional conditions to the NWPs to enhance protection of the aquatic environment and address local concerns. Division engineers can also revoke an NWP if the use of that NWP results in more than minimal individual and

cumulative adverse environmental effects, especially in high value or rare wetlands and other waters. When an NWP is issued or reissued by the Corps, division engineers issue supplemental decision documents that evaluate potential impacts of the NWP at a regional level, and include regional cumulative effects assessments.

Corps divisions and districts also monitor and analyze the cumulative adverse effects of the NWP, and if warranted, further restrict or prohibit the use of the NWP to ensure that the NWP do not authorize activities that result in more than minimal individual and cumulative adverse environmental effects. To the extent practicable, division and district engineers will use regulatory automated information systems and institutional knowledge about the typical adverse effects of activities authorized by NWP, as well as substantive public comments, to assess the individual and cumulative adverse effects on the aquatic environment resulting from regulated activities.

2.4 Case-specific On-site Alternatives

Although the terms and conditions for this NWP have been established at the national level to authorize most activities that have no more than minimal individual and cumulative adverse environmental effects, division and district engineers have the authority to impose case-specific special conditions on NWP authorizations to ensure that the authorized activities will result in no more than minimal individual and cumulative adverse environmental effects.

General condition 23 requires the permittee to minimize and avoid impacts to waters of the United States to the maximum extent practicable at the project site. Off-site alternatives cannot be considered for activities authorized by NWP. During the evaluation of a pre-construction notification, the district engineer may determine that additional avoidance and minimization is practicable. The district engineer may also condition the NWP authorization to require compensatory mitigation to offset losses of waters of the United States and ensure that the net adverse environmental effects are no more than minimal. As another example, the NWP authorization can be conditioned to prohibit the permittee from conducting the activity during specific times of the year to protect spawning fish and shellfish. If the proposed activity will result in more than minimal adverse environmental effects, then the district engineer will exercise discretionary authority and require an individual permit. Discretionary authority can be asserted where there are concerns for the aquatic environment, including high value aquatic habitats. The individual permit review process requires a project-specific alternatives analysis, including the consideration of off-site alternatives, and a public interest review.

3.0 Affected Environment

This environmental assessment is national in scope because the NWP may be used across the country, unless the NWP is revoked or suspended by a division or district engineer under the procedures in 33 CFR 330.5(c) and (d), respectively. The affected environment consists

of terrestrial and aquatic ecosystems in the United States, as they have been directly and indirectly affected by past and present federal, non-federal, and private activities. The past and present activities include activities authorized by the various NWPs issued from 1977 to 2012, activities authorized by other types of Department of the Army (DA) permits, as well as other federal, tribal, state, and private activities that are not regulated by the Corps. Aquatic ecosystems are also influenced by past and present activities in uplands, because those land use/land cover changes in uplands and other activities in uplands have indirect effects on aquatic ecosystems (e.g., MEA 2005b, Reid 1993). Due to the large geographic scale of the affected environment (i.e., the entire United States), as well as the many past and present human activities that have shaped the affected environment, it is only practical to describe the affected environment in general terms. In addition, it is not possible to describe the environmental conditions for specific sites where the NWPs may be used to authorize eligible activities.

The total land area in the United States is approximately 2,264,000,000 acres, and the total land area in the contiguous United States is approximately 1,894,000,000 acres (Nickerson et al. 2011). Land uses in 48 states of the contiguous United States as of 2007 is provided in Table 3.1 (Nickerson et al. 2011). Of the land area in the entire United States, approximately 60 percent (1,350,000,000 acres) is privately owned (Nickerson et al. 2011). In the contiguous United States, approximately 67 percent of the land is privately owned, 31 percent is held by the United States government, and two percent is owned by state or local governments (Dale et al. 2000). Developed non-federal lands comprise 4.4 percent of the total land area of the contiguous United States (Dale et al. 2000).

Table 3.1. Major land uses in the United States (Nickerson et al. 2011).

Land Use	Acres	Percent of Total
Agriculture	1,161,000,000	51.3
Forest land	544,000,000	24.0
Transportation use	27,000,000	1.2
Recreation and wildlife areas	252,000,000	11.1
National defense areas	23,000,000	1.0
Urban land	61,000,000	2.7
Miscellaneous use	197,000,000	8.7
Total land area	2,264,000,000	100.0

3.1 Quantity of Aquatic Ecosystems in the United States

There are approximately 283.1 million acres of wetlands in the United States; 107.7 million acres are in the conterminous United States and the remaining 175.4 million acres are in Alaska (Mitsch and Hernandez 2013). Wetlands occupy less than 9 percent of the global land area (Zedler and Kercher 2005). According to Dahl (2011), wetlands and deepwater habitats cover approximately 8 percent of the land area in the conterminous United States. Rivers and streams comprise approximately 0.52 percent of the total land area of the

continental United States (Butman and Raymond 2011). Therefore, the wetlands, streams, rivers, and other aquatic habitats that are potentially waters of the United States and subject to regulation by the Corps under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 comprise a minor proportion of the land area of the United States. The remaining land area of the United States (more than 92 percent, depending on the proportion of wetlands, streams, rivers, and other aquatic habitats that are subject to regulation under those two statutes) is outside the Corps regulatory authority.

Dahl (1990) estimated that approximately 53 percent of the wetlands in the conterminous United States were lost in the 200-year period from the 1780s to 1980s, while Alaska lost less than one percent of its wetlands and Hawaii lost approximately 12 percent of its original wetland acreage. In the 1780s, there were approximately 221 million acres of wetlands in the conterminous United States (Dahl 1990). California lost the largest percentage of its wetlands (91 percent), whereas Florida lost the largest acreage (9.3 million acres) (Dahl 1990). During that 200-year period, 22 states lost more than 50 percent of their wetland acreage, and 10 states have lost more than 70 percent of their original wetland acreage (Dahl 1990).

Frayner et al. (1983) evaluated wetland status and trends in the United States during the period of the mid-1950s to the mid-1970s. During that 20-year period, approximately 7.9 million acres of wetlands (4.2 percent) were lost in the conterminous United States. Much of the loss of estuarine emergent wetlands was due to changes to estuarine subtidal deepwater habitat, and some loss of estuarine emergent wetlands was due to urban development. For palustrine vegetated wetlands, nearly all of the losses of those wetlands were due to agricultural activities (e.g., conversion to agricultural production).

The U.S. Fish and Wildlife Service also examined the status and trends of wetlands in the United States during the period of the mid-1970s to the 1980s, and found that there was a net loss of more than 2.6 million acres of wetlands (2.5 percent) during that time period (Dahl and Johnson 1991). Freshwater wetlands comprised 98 percent of those wetland losses (Dahl and Johnson 1991). During that time period, losses of estuarine wetlands were estimated to be 71,000 acres, with most of that loss due to changes of emergent estuarine wetlands to open waters caused by shifting sediments (Dahl and Johnson 1991). Conversions of wetlands to agricultural use were responsible for 54 percent of the wetland losses, and conversion to other land uses resulted in the loss of 41 percent of wetlands (Dahl and Johnson 1991). Urban development was responsible for five percent of the wetland loss (Dahl and Johnson 1991). The annual rate of wetland loss has decreased substantially since the 1970s (Dahl 2011), when wetland regulation became more prevalent (Brinson and Malvarez 2002).

Between 2004 and 2009, there was no statistically significant difference in wetland acreage in the conterminous United States (Dahl 2011). According to the 2011 wetland status and trends report, during the period of 2004 to 2009 urban development accounted for 11 percent of wetland losses (61,630 acres), rural development resulted in 12 percent of wetland losses (66,940 acres), silviculture accounted for 56 percent of wetland losses (307,340 acres), and wetland conversion to deepwater habitats caused 21 percent of the loss in wetland area

(115,960 acres) (Dahl 2011). Some of the losses occurred to wetlands that are not subject to Clean Water Act jurisdiction and some losses are due to activities not regulated under Section 404 of the Clean Water Act, such as unregulated drainage activities, exempt forestry activities, or water withdrawals. From 2004 to 2009, approximately 100,020 acres of wetlands were gained as a result of wetland restoration and conservation programs on agricultural land (Dahl 2011). Another source of wetland gain is conversion of other uplands to wetlands, resulting in a gain of 389,600 acres during the period of 2004 to 2009 (Dahl 2011). Inventories of wetlands, streams, and other aquatic resources are incomplete because the techniques used for those studies cannot identify some of those resources (e.g., Dahl (2011) for wetlands; Meyer and Wallace (2001) for streams).

Losses of vegetated estuarine wetlands due to the direct effects of human activities have decreased significantly due to the requirements of Section 404 of the Clean Water Act and other laws and regulations (Dahl 2011). During the period of 2004 to 2009, less than one percent of estuarine emergent wetlands were lost as a direct result of human activities, while other factors such as sea level rise, land subsidence, storm events, erosion, and other ocean processes caused substantial losses of estuarine wetlands (Dahl 2011). The indirect effects of other human activities, such as oil and gas development, water extraction, development of the upper portions of watersheds, and levees, have also resulted in coastal wetland losses (Dahl 2011). Eutrophication of coastal waters can also cause losses of emergent estuarine wetlands, through changes in growth patterns of marsh plants and decreases in the stability of the wetland substrate, which changes those marshes to mud flats (Deegan et al. 2012).

The Emergency Wetlands Resources Act of 1986 (Public Law 99-645) requires the USFWS to submit wetland status and trends reports to Congress (Dahl 2011). The latest status and trends report, which covers the period of 2004 to 2009, is summarized in Table 3.2. The USFWS status and trends report only provides information on acreage of the various aquatic habitat categories and does not assess the quality or condition of those aquatic habitats (Dahl 2011).

Table 3.2. Estimated aquatic resource acreages in the conterminous United States in 2009 (Dahl 2011).

Aquatic Habitat Category	Estimated Area in 2009 (acres)
Marine intertidal	227,800
Estuarine intertidal non-vegetated	1,017,700
Estuarine intertidal vegetated	4,539,700
All intertidal waters and wetlands	5,785,200
Freshwater ponds	6,709,300
Freshwater vegetated	97,565,300
• Freshwater emergent wetlands	27,430,500
• Freshwater shrub wetlands	18,511,500
• Freshwater forested wetlands	51,623,300
All freshwater wetlands	104,274,600
Lacustrine deepwater habitats	16,859,600
Riverine deepwater habitats	7,510,500
Estuarine subtidal habitats	18,776,500
All wetlands and deepwater habitats	153,206,400

The acreage of lacustrine deepwater habitats does not include the open waters of Great Lakes (Dahl 2011).

The Federal Geographic Data Committee has established the Cowardin system developed by the U.S. Fish and Wildlife Service (USFWS) (Cowardin et al. 1979) as the national standard for wetland mapping, monitoring, and data reporting (Dahl 2011) (see Federal Geographic Data Committee (2013)). The Cowardin system is a hierarchical system which describes various wetland and deepwater habitats, using structural characteristics such as vegetation, substrate, and water regime as defining characteristics. Wetlands are defined by plant communities, soils, or inundation or flooding frequency. Deepwater habitats are permanently flooded areas located below the wetland boundary. In rivers and lakes, deepwater habitats are usually more than two meters deep. The Cowardin et al. (1979) definition of “wetland” differs from the definition used by the Corps and U.S. EPA for the purposes of implementing Section 404 of the Clean Water Act. The Corps-U.S. EPA regulations defines wetlands as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” [33 CFR 328.3(c)(4); 40 CFR 230.3(o)(3)(iv)] The Cowardin et al. (1979) requires only one factor (i.e., wetland vegetation, soils, hydrology) to be present for an area to be a wetland, while the Corps-U.S. EPA wetland definition requires all three factors to be present under normal circumstances (Tiner 1997b, Mitsch and Gosselink 2015). The NWI produced by applying the Cowardin et al. (1979) definition is the only national scale wetland inventory

available. There is no national inventory of wetland acreage based on the Corps-U.S. EPA wetland definition at 33 CFR 328.3(c)(4).

There are five major systems in the Cowardin classification scheme: marine, estuarine, riverine, lacustrine, and palustrine (Cowardin et al. 1979). The marine system consists of open ocean on the continental shelf and its high energy coastlines. The estuarine system consists of tidal deepwater habitats and adjacent tidal wetlands that are usually partially enclosed by land, but may have open connections to open ocean waters. The riverine system generally consists of all wetland and deepwater habitats located within a river channel. The lacustrine system generally consists of wetland and deepwater habitats located within a topographic depression or dammed river channel, with a total area greater than 20 acres. The palustrine system generally includes all non-tidal wetlands and wetlands located in tidal areas with salinities less than 0.5 parts per thousand; it also includes ponds less than 20 acres in size. Approximately 95 percent of wetlands in the conterminous United States are freshwater wetlands, and the remaining 5 percent are estuarine or marine wetlands (Dahl 2011).

According to Hall et al. (1994), there are more than 204 million acres of wetlands and deepwater habitats in the State of Alaska, including approximately 174.7 million acres of wetlands. Wetlands and deepwater habitats comprise approximately 50.7 percent of the surface area in Alaska (Hall et al. 1994).

The National Resources Inventory (NRI) is a statistical survey conducted by the Natural Resources Conservation Service (NRCS) (USDA 2015) of natural resources on non-federal land in the United States. The NRCS defines non-federal land as privately owned lands, tribal and trust lands, and lands under the control of local and state governments. Acreages of palustrine and estuarine wetlands and the land uses those wetlands are subjected to are summarized in Table 3.3. The 2012 NRI estimates that there are 111,220,800 acres of palustrine and estuarine wetlands on non-Federal land and water areas in the United States (USDA 2015). The 2012 NRI estimates that there are 49,518,700 acres of open waters on non-Federal land in the United States, including lacustrine, riverine, and marine habitats, as well as estuarine deepwater habitats.

Table 3.3. The 2012 National Resources Inventory acreages for palustrine and estuarine wetlands on non-federal land, by land cover/use category (USDA 2015).

National Resources Inventory Land Cover/Use Category	Area of Palustrine and Estuarine Wetlands (acres)
cropland, pastureland, and Conservation Reserve Program land	17,800,000
forest land	65,800,000
rangeland	8,000,000
other rural land	14,700,000
developed land	1,400,000
water area	3,600,000
Total	111,300,000

The land cover/use categories used by the 2012 NRI are defined below (USDA 2015). Croplands are areas used to produce crops grown for harvest. Pastureland is land managed for livestock grazing, through the production of introduced forage plants. Conservation Reserve Program land is under a Conservation Reserve Program contract. Forest land is comprised of at least 10 percent single stem woody plant species that will be at least 13 feet tall at maturity. Rangeland is land on which plant cover consists mostly of native grasses, herbaceous plants, or shrubs suitable for grazing or browsing, and introduced forage plant species. Other rural land consists of farmsteads and other farm structures, field windbreaks, marshland, and barren land. Developed land is comprised of large urban and built-up areas (i.e., urban and built-up areas 10 acres or more in size), small built-up areas (i.e., developed lands 0.25 to 10 acres in size), and rural transportation land (e.g., roads, railroads, and associated rights-of-way outside urban and built-up areas). Water areas are comprised of waterbodies and streams that are permanent open waters.

The wetlands data from the Fish and Wildlife Service's Status and Trends study and the Natural Resources Conservation Service's National Resources Inventory should not be compared, because they use different methods and analyses to produce their results (Dahl 2011).

Leopold, Wolman, and Miller (1964) estimated that there are approximately 3,250,000 miles of river and stream channels in the United States. This estimate is based on an analysis of 1:24,000 scale topographic maps. Their estimate does not include many small streams. Many small streams, especially headwater streams, are not mapped on 1:24,000 scale U.S. Geological Survey (USGS) topographic maps (Leopold 1994) or included in other inventories (Meyer and Wallace 2001), including the National Hydrography Dataset (Elmore et al. 2013). Many small streams and rivers are not identified through maps produced by aerial photography or satellite imagery because of inadequate image resolution

or trees or other vegetation obscuring the visibility of those streams from above (Benstead and Leigh 2012). In a study of stream mapping in the southeastern United States, only 20 percent of the stream network was mapped on 1:24,000 scale topographic maps, and nearly none of the observed intermittent or ephemeral streams were indicated on those maps (Hansen 2001). Another study in Massachusetts showed that those types of topographic maps exclude over 27 percent of stream miles in a watershed (Brooks and Colburn 2011). For a 1:24,000 scale topographic map, the smallest tributary found by using 10-foot contour interval has a drainage area of 0.7 square mile and length of 1,500 feet, and smaller stream channels are common throughout the United States (Leopold 1994). Benstead and Leigh (2012) found that the density of stream channels (length of stream channels per unit area) identified by digital elevation models was three times greater than the drainage density calculated by using USGS maps. Elmore et al. (2013) made similar findings in watersheds in the mid-Atlantic, where they determined that the stream density was 2.5 times greater than the stream density calculated with the National Hydrography Dataset. Due to the difficulty in mapping small streams, there are no accurate estimates of the total number of river or stream miles in the conterminous United States that might be considered as “waters of the United States.”

The quantity of the Nation’s aquatic resources presented by studies that estimate the length or number of stream channels (see above) or the acreage of wetlands (USFWS status and trends studies, National Wetland Inventory (NWI), and Natural Resources Inventory (NRI) are underestimates, because those inventories do not include many small wetlands and streams. The USFWS status and trends study does not include Alaska, Hawaii, or the territories. The underestimate of national wetland acreage by the USFWS status and trends study and the NWI is primarily the result of the minimum size of wetlands detected through remote sensing techniques and the difficulty of identifying certain wetland types through those remote sensing techniques. The remote sensing approaches used by the USFWS for its NWI maps and its status and trends reports result in errors of omission that exclude wetlands that are difficult to identify through photointerpretation (Tiner 1997a). These errors of omission are due to wetland type and the size of target mapping units (Tiner 1997a). Therefore, it is important to understand the limitations of the source data when describing the environmental baseline for wetlands using maps and studies produced by remote sensing, especially in terms of wetland quantity.

Factors affecting the accuracy of wetland maps made by remote sensing include: the degree of difficulty in identifying a wetland, map scale, the quality and scale of the source information (e.g., aerial or satellite photos), the environmental conditions when the source information was obtained, the time of year source information was obtained, the mapping equipment, and the skills of the people producing the maps (Tiner 1999). The map scale usually affects the target mapping unit, which is the minimum wetland size that can be consistently mapped (Tiner 1997b). In general, wetland types that are difficult to identify through field investigations are likely to be underrepresented in maps made by remote sensing (Tiner 1999). Wetlands difficult to identify through remote sensing include forested wetlands, small wetlands, narrow wetlands, mowed wetlands, farmed wetlands, wetlands with hydrology at the drier end of the wetland hydrology continuum, and significantly drained wetlands (Tiner 1999). In the most recent wetland status and trends report published

by the U.S. Fish and Wildlife Service, the target minimum wetland mapping unit was 1 acre, although some easily identified wetlands as small as 0.1 acre were identified in that effort (Dahl 2011). The National Wetland Inventory identifies wetlands regardless of their jurisdictional status under the Clean Water Act (Tiner 1997b).

Activities authorized by NWP's will adversely affect a smaller proportion of the Nation's wetland base than indicated by the wetlands acreage estimates provided in the most recent status and trends report, or the NWI maps for a particular region.

Not all wetlands, streams, and other types of aquatic resources are subject to federal jurisdiction under the Clean Water Act (Mitsch and Gosselink 2015). Two U.S. Supreme Court decisions have identified limits to Clean Water Act jurisdiction. In 2001, in *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* (531 U.S. 159) the U.S. Supreme Court held that the use of isolated, non-navigable, intrastate waters by migratory birds is not, by itself a sufficient basis for exercising federal regulatory authority under the Clean Water Act (see 80 FR 37056). In the Supreme Court's 2006 decision in *Rapanos v. United States*, (547 U.S. 715), one justice stated that waters and wetlands regulated under the Clean Water Act must have a "significant nexus" to downstream traditional navigable waters. Four justices (the plurality) concluded that Clean Water Act jurisdiction applies only to relatively permanent waters connected to traditional navigable waters and to wetlands that have a continuous surface connection to those relatively permanent waters. The remaining justices in *Rapanos* stated that Clean Water Act jurisdiction applies to waters and wetlands that meet either the significant nexus test or the Plurality's test.

There are 94,133 miles of shoreline in the United States (NOAA 1975). Of that shoreline, 88,633 miles are tidal shoreline and 5,500 miles are shoreline along the Great Lakes and rivers that connect those lakes to the Atlantic Ocean. More recently, Gittman et al. (2015) estimated that there are 99,524 miles of tidal shoreline in the conterminous United States.

3.2 Quality of Aquatic Ecosystems in the United States

The USFWS status and trends study does not assess the condition or quality of wetlands and deepwater habitats (Dahl 2011). Information on water quality in waters and wetlands, as well as the causes of water quality impairment, is collected by the U.S. EPA under Sections 305(b) and 303(d) of the Clean Water Act. Table 3.4 provides U.S. EPA's most recent national summary of water quality in the Nation's waters and wetlands.

Table 3.4. National summary of water quality data (U.S. EPA 2015).

Category of water	Total waters	Total waters assessed	Percent of waters assessed	Good waters	Threatened waters	Impaired waters
Rivers and streams	3,533,205 miles	1,046,621 miles	29.6	476,765 miles	7,657 miles	562,198 miles
Lakes, reservoirs and ponds	41,666,049 acres	17,904,395 acres	43.0	5,658,789 acres	145,572 acres	12,100,034 acres
Bays and estuaries	87,791 square miles	33,402 square miles	38.0	7,291 square miles	0 square miles	26,111 square miles
Coastal shoreline	58,618 miles	8,162 miles	13.9	900 miles	0 miles	7,262 miles
Ocean and near coastal waters	54,120 square miles	1,674 square miles	3.1	616 square miles	0 square miles	1,058 square miles
Wetlands	107,700,000 acres	1,112,438 acres	1.0	573,947 acres	0 acres	538,492 acres
Great Lakes shoreline	5,202 miles	4,431 miles	85.2	78 miles	0 miles	4,353 miles
Great Lakes open waters	60,546 square miles	53,332 square miles	88.1	62 square miles	0 square miles	53,270 square miles

Waters and wetlands classified by states as “good” meets all their designated uses. Waters classified as “threatened” currently support all of their designated uses, but if pollution control measures are not taken one or more of those uses may become impaired in the future. A water or wetland is classified by the state as “impaired” if any one of its designated uses is not met. The definitions of good, threatened, and impaired are applied by states to describe the quality of their waters (the above definitions were found in the metadata in U.S. EPA (2015)). Designated uses include the “protection and propagation of fish, shellfish and wildlife,” “recreation in and on the water,” the use of waters for “public water supplies, propagation of fish, shellfish, wildlife, recreation in and on the water,” and “agricultural, industrial and other purposes including navigation.” (40 CFR 130.3). These designated uses are assessed by states in a variety of ways, by examining various physical, chemical and biological characteristics, so it is not possible to use the categories of “good,” “threatened,” and “impaired” to infer the level of ecological functions and services these waters perform.

According to the latest U.S. EPA national summary (U.S. EPA 2015), 54 percent of assessed rivers and streams, 68 percent of assessed lakes, reservoirs, and ponds, 78 percent of assessed bays and estuaries, 89 percent of assessed coastal shoreline, 63 percent of assessed ocean and near coastal waters, and 48 percent of assessed wetlands are impaired.

For rivers and streams, 34 causes of impairment were identified, and the top 10 causes were pathogens, sediment, nutrients, mercury, organic enrichment/oxygen depletion, polychlorinated biphenyls, metals (other than mercury), temperature, habitat alterations, and

flow alteration(s). The primary sources of impairment for the assessed rivers and streams were agriculture, unknown sources, atmospheric deposition, urban-related runoff/stormwater, hydromodification, municipal discharges/sewage, natural/wildlife, unspecified point source, habitat alterations not directly related to hydromodification, and resource extraction.

Thirty-one causes of impairment were identified for bays and estuaries. The top 10 causes of impairment for these waters is: mercury, polychlorinated biphenyls, pathogens, organic enrichment/oxygen depletion, dioxins, other causes, fish consumption advisories, metals (other than mercury), noxious aquatic plants, and pesticides. For bays and estuaries, the top 10 sources of impairment were atmospheric deposition, unknown sources, municipal discharges/sewage, other sources, industrial, natural/wildlife, urban-related runoff/stormwater, spills/dumping, unspecified non-point sources, and agriculture.

Coastal shorelines were impaired by 15 identified causes, the top 10 of which were: mercury, pathogens, organic enrichment/oxygen depletion, turbidity, pH/acidity/caustic conditions, nutrients, temperature, oil and grease, algal growth, and causes unknown/impaired biota. The top 10 sources of impairment of coastal shorelines are “unknown,” atmospheric deposition, municipal discharges/sewage, urban-related runoff/stormwater, hydromodification, unspecified non-point sources, agriculture, recreational boating and marinas, industrial, and spills/dumping.

For wetlands, 26 causes of impairment were identified, and the top 10 causes were organic enrichment/oxygen depletion, mercury, pathogens, metals (excluding mercury), toxic inorganics, temperature, sediment, algal growth, flow alterations, and turbidity. The primary sources for wetland impairment were “unknown,” agriculture, atmospheric deposition, industrial, municipal discharges/sewage, recreational boating and marinas, resource extraction, natural/wildlife, hydromodification, and unspecified point sources.

Water quality standards are established by states, with review and approval by the U.S. EPA (see Section 303(c) of the Clean Water Act and the implementing regulations at 40 CFR part 131). Under Section 401 of the Clean Water Act States review proposed discharges to determine compliance with applicable water quality standards.

Most causes and sources of impairment are not due to activities regulated under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. Inputs of sediments into aquatic ecosystems can result from erosion occurring within a watershed (Beechie et al. 2013, Gosselink and Lee 1989). As water moves through a watershed it carries sediments and pollutants to streams (e.g., Allan 2004, Dudgeon et al. 2005, Paul and Meyer 2001) and wetlands (e.g., Zedler and Kercher 2005, Wright et al. 2006). Non-point sources of pollution (i.e., pollutants carried in runoff from farms, roads, and urban areas) are largely uncontrolled (Brown and Froemke 2012) because the Clean Water Act only requires permits for point sources discharges of pollutants (i.e., discharges of dredged or fill material regulated under section 404 and point source discharges of other pollutants regulated under section 402).

The indirect effects of changes in upland land use (which are highly likely not to be subject to federal control and responsibility, at least in terms of the Corps Regulatory Program), including the construction and expansion of upland developments, have substantial adverse effects on the quality (i.e. the ability to perform hydrologic, biogeochemical, and habitat functions) of jurisdictional waters and wetlands because those upland activities alter watershed-scale processes. Those watershed-scale processes include water movement and storage, erosion and sediment transport, and the transport of nutrients and other pollutants.

Habitat alterations as a cause or source of impairment may be the result of activities regulated under section 404 and section 10 because they involve discharges of dredged or fill material into jurisdictional waters or structures or work in navigable waters, but habitat alterations may also occur as a result of activities not regulated under those two statutes, such as the removal of vegetation from upland riparian areas. Hydrologic modifications may or may not be regulated under section 404 or section 10, depending on whether those hydrologic modifications are the result of discharges of dredged or fill material into waters of the United States regulated under Section 404 of the Clean Water Act or structures or work in navigable waters of the United States regulated under Section 10 of the Rivers and Harbors Act of 1899. When states, tribes, or the U.S. EPA establish total daily maximum loads (TMDLs) for pollutants and other impairments for specific waters, there may be variations in how these TMDLs are defined (see 40 CFR part 130).

As discussed below, many anthropogenic activities and natural processes affect the ability of jurisdictional waters and wetlands to perform ecological functions. Stream and river functions are affected by activities occurring in their watersheds, including the indirect effects of land uses changes (Beechie et al. 2013, Allan 2004, Paul and Meyer 2001). Booth et al. (2004) found riparian land use in residential areas also strongly affects stream condition because many landowners clear vegetation up to the edge of the stream bank. The removal of vegetation from upland riparian areas and other activities in those non-jurisdictional areas do not require DA authorization. Wetland functions are also affected by indirect effects of land use activities in the land area that drains to the wetland (Zedler and Kercher 2005, Wright et al. 2006). Human activities within a watershed or catchment that have direct or indirect adverse effects on rivers, streams, wetlands, and other aquatic ecosystems are not limited to discharges of dredged or fill material into waters of the United States or structures or work in a navigable waters. Human activities in uplands have substantial indirect effects on the structure and function of aquatic ecosystems, including streams and wetlands, and their ability to sustain populations of listed species. It is extremely difficult to distinguish between degradation of water quality caused by upland activities and degradation of water quality caused by the filling or alteration of wetlands (Gosselink and Lee 1989).

Most causes and sources of impairment are not due to activities regulated under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. Habitat alterations as a cause or source of impairment may be the result of activities regulated under section 404 and section 10 because they involve discharges of dredged or fill material or structures or work in navigable waters, but habitat alterations may also occur as a result of activities not regulated under those two statutes, such as the removal of vegetation from

upland riparian areas. Hydrologic modifications may or may not be regulated under section 404 or section 10.

The U.S. Environmental Protection Agency (U.S. EPA) has undertaken the National Wetland Condition Assessment (NWCA), which is a statistical survey of wetland condition in the United States (U.S. EPA 2016). The NWCA assesses the ambient conditions of wetlands at the national and regional scales. The national scale encompasses the conterminous United States. The regional scale consists of four aggregated ecoregions: Coastal Plains, Eastern Mountains and Upper Midwest, Interior Plains, and West. In May 2016, U.S. EPA issued a final report on the results of its 2011 NWCA (U.S. EPA 2016).

The 2011 NWCA determined that, across the conterminous United States, 48 percent of wetland area (39.8 million acres) is in good condition, 20 percent of the wetland area (12.4 million acres) is in fair condition, and 32 percent (19.9 million acres) is in poor condition (U.S. EPA 2016). The 2011 NWCA also examined indicators of stress for the wetlands that were evaluated. The most prevalent physical stressors were vegetation removal, surface hardening via conversion to pavement or soil compaction, and ditching (U.S. EPA 2016). In terms of chemical stressors, most wetlands were subject to low exposure to heavy metals and soil phosphorous, but substantial percentages of wetland area in the West and Eastern Mountains and Upper Midwest ecoregions were found to have moderate stressor levels for heavy metals (U.S. EPA 2016). For soil phosphorous concentrations, stressor levels were high for 13 percent of the wetland area in the Eastern Mountains and Upper Midwest ecoregion (U.S. EPA 2016). Across the conterminous United States, for biological stressors indicated by non-native plants, 61 percent of the wetland area exhibited low stressor levels (U.S. EPA 2016). When examined on an ecoregion basis, the Eastern Mountains and Upper Midwest and Coastal Plains ecoregions had high percentages of wetland area with low non-native plant stressor levels, but the West and Interior Plains ecoregions had small percentages of areas with low non-native plant stressor levels (U.S. EPA 2016).

3.3 Aquatic resource functions and services

Functions are the physical, chemical, and biological processes that occur in ecosystems (33 CFR 332.2). Wetland functions occur through interactions of their physical, chemical, and biological features (Smith et al. 1995). Wetland functions depend on a number of factors, such as the movement of water through the wetland, landscape position, surrounding land uses, vegetation density within the wetland, geology, soils, water source, and wetland size (NRC 1995). In its evaluation of wetland compensatory mitigation in the Clean Water Act Section 404 permit program, the National Research Council (2001) recognized five general categories of wetland functions:

- Hydrologic functions
- Water quality improvement
- Vegetation support
- Habitat support for animals
- Soil functions

Hydrologic functions include short- and long-term water storage and the maintenance of wetland hydrology (NRC 1995). Water quality improvement functions encompass the transformation or cycling of nutrients, the retention, transformation, or removal of pollutants, and the retention of sediments (NRC 1995). Vegetation support functions include the maintenance of plant communities, which support various species of animals as well as economically important plants. Wetland soils support diverse communities of bacteria and fungi which are critical for biogeochemical processes, including nutrient cycling and pollutant removal and transformation (NRC 2001). Wetland soils also provide rooting media for plants, as well as nutrients and water for those plants. These various functions generally interact with each other, to influence overall wetland functioning, or ecological integrity (Smith et al. 1995; Fennessy et al. 2007). As discussed earlier in this report, the Corps regulations at 33 CFR 320.4(b) list wetland functions that are important for the public interest review during evaluations of applications for DA permits, and for the issuance of general permits.

Not all wetlands perform the same functions, nor do they provide functions to the same degree (Smith et al. 1995). Therefore, it is necessary to account for individual and regional variation when evaluating wetlands and the functions and services they provide. The types and levels of functions performed by a wetland are dependent on its hydrologic regime, the plant species inhabiting the wetland, soil type, and the surrounding landscape, including the degree of human disturbance of the landscape (Smith et al. 1995).

Streams also provide a variety of functions, which differ from wetland functions. Streams also provide hydrologic functions, nutrient cycling functions, food web support, and corridors for movement of aquatic organisms (Allan and Castillo 2007). When considering stream functions, the stream channel should not be examined in isolation. The riparian corridor next to the stream channel is an integral part of the stream ecosystem and has critical roles in stream functions (NRC 2002). Riparian areas provide many of the same general functions as wetlands (NRC 1995, 2002). Fischenich (2006) conducted a review of stream and riparian corridor functions, and through a committee, identified five broad categories of stream functions:

- Stream system dynamics
- Hydrologic balance
- Sediment processes and character
- Biological support
- Chemical processes and landscape pathways

Stream system dynamics refers to the processes that affect the development and maintenance of the stream channel and riparian area over time, as well as energy management by the stream and riparian area. Hydrologic balance includes surface water storage processes, the exchange of surface and subsurface water, and the movement of water through the stream corridor. Sediment processes and character functions relate to processes for establishing and maintaining stream substrate and structure. Biological support functions include the biological communities inhabiting streams and their riparian areas. Chemical processes and pathway functions influence water and soil quality, as well as the chemical processes and nutrient cycles that occur in streams and their riparian areas. Rivers

and streams function perform functions to different degrees, depending on watershed condition, the severity of direct and indirect impacts to streams caused by human activities, and their interactions with other environmental components, such as their riparian areas (Allan 2004, Gergel et al. 2002).

Ecosystem services are the benefits that humans derive from ecosystem functions (33 CFR 332.2). The Millennium Ecosystem Assessment (2005b) describes four categories of ecosystem services: provisioning services, regulating services, cultural services, and supporting services. For wetlands and open waters, provisioning services include the production of food (e.g., fish, fruits, game), fresh water storage, food and fiber production, production of chemicals that can be used for medicine and other purposes, and supporting genetic diversity for resistance to disease. Regulating services relating to open waters and wetlands consist of climate regulation, control of hydrologic flows, water quality through the removal, retention, and recovery of nutrients and pollutants, erosion control, mitigating natural hazards such as floods, and providing habitat for pollinators. Cultural services that come from wetlands and open waters include spiritual and religious values, recreational opportunities, aesthetics, and education. Wetlands and open waters contribute supporting services such as soil formation, sediment retention, and nutrient cycling.

Examples of services provided by wetland functions include flood damage reduction, maintenance of populations of economically important fish and wildlife species, maintenance of water quality (NRC 1995, MEA 2005b) and the production of populations of wetland plant species that are economically important commodities, such as timber, fiber, and fuel (MEA 2005b). Wetlands can also provide important climate regulation and storm protection services (MEA 2005b).

Stream functions also result in ecosystem services that benefit society. Streams and their riparian areas store water, which can reduce downstream flooding and subsequent flood damage (NRC 2002, MEA 2005b). These ecosystems also maintain populations of economically important fish, wildlife, and plant species, including valuable fisheries (MEA 2005b, NRC 2002). The nutrient cycling and pollutant removal functions help maintain or improve water quality for surface waters (NRC 2002, MEA 2005b). Streams and riparian areas also provide important recreational opportunities. Rivers and streams also provide water for agricultural, industrial, and residential use (MEA 2005b).

Freshwater ecosystems provide services such as water for drinking, household uses, manufacturing, thermoelectric power generation, irrigation, and aquaculture; production of finfish, waterfowl, and shellfish; and non-extractive services, such as flood control, transportation, recreation (e.g., swimming and boating), pollution dilution, hydroelectric generation, wildlife habitat, soil fertilization, and enhancement of property values (Postel and Carpenter 1997).

Marine ecosystems provide a number of ecosystem services, including fish production; materials cycling (e.g., nitrogen, carbon, oxygen, phosphorous, and sulfur); transformation, detoxification, and sequestration of pollutants and wastes produced by humans; support of ocean-based recreation, tourism, and retirement industries; and coastal land development

and valuation, including aesthetics related to living near the ocean (Peterson and Lubchenco 1997).

This NWP authorizes structures or work in navigable waters of the United States, as well as discharges of dredged or fill material into all waters of the United States. These waters include in the marine, estuarine, palustrine, lacustrine, and riverine systems of the Cowardin classification system.

Activities authorized by this NWP will help sustain existing structures, fills, and other work that are valued by society, including buildings and infrastructure. For example, maintenance activities are conducted to repair existing structures. This NWP may also be used to authorize the removal of accumulated sediments in the vicinity of existing structures, which will help those structures and their associated facilities to function efficiently.

4.0 Environmental Consequences

4.1 General Evaluation Criteria

This document contains a general assessment of the foreseeable effects of the individual activities authorized by this NWP and the anticipated cumulative effects of those activities. In the assessment of these individual and cumulative effects, the terms and limits of the NWP, pre-construction notification requirements, and the standard NWP general conditions are considered. The supplementary documentation provided by division engineers will address how regional conditions affect the individual and cumulative effects of the NWP.

The following evaluation comprises the NEPA analysis, the public interest review specified in 33 CFR 320.4(a)(1) and (2), and the impact analysis specified in Subparts C through F of the 404(b)(1) Guidelines (40 CFR Part 230).

The issuance of an NWP is based on a general assessment of the effects on public interest and environmental factors that are likely to occur as a result of using this NWP to authorize activities in waters of the United States. As such, this assessment must be speculative or predictive in general terms. Since NWPs authorize activities across the nation, projects eligible for NWP authorization may be constructed in a wide variety of environmental settings. Therefore, it is difficult to predict all of the indirect impacts that may be associated with each activity authorized by an NWP. For example, the NWP that authorizes 25 cubic yard discharges of dredged or fill material into waters of the United States may be used to fulfill a variety of project purposes, and the indirect effects will vary depending on the specific activity and the environmental characteristics of the site in which the activity takes place. Indication that a factor is not relevant to a particular NWP does not necessarily mean that the NWP would never have an effect on that factor, but that it is a factor not readily identified with the authorized activity. Factors may be relevant, but the adverse effects on the aquatic environment are negligible, such as the impacts of a boat ramp on water level fluctuations or flood hazards. Only the reasonably foreseeable direct, indirect, and

cumulative effects are included in the environmental assessment for this NWP. Division and district engineers will impose, as necessary, additional conditions on the NWP authorization or exercise discretionary authority to address locally important factors or to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects. In any case, adverse effects will be controlled by the terms, conditions, and additional provisions of the NWP. For example, Section 7 Endangered Species Act consultation will be required for all activities that may affect endangered or threatened species or critical habitat (see 33 CFR 330.4(f) and NWP general condition 18).

4.2 Impact Analysis

This NWP authorizes structures and work in navigable waters of the United States, as well as discharges of dredged or fill material into all waters of the United States, for the repair, rehabilitation, or replacement of any currently serviceable structure or fill. This NWP authorizes minor deviations in the structure's configuration or filled area, to account for changes in materials, construction techniques, or current construction codes or safety standards. This NWP also authorizes the removal of accumulated sediments in the vicinity of existing structures, as well as the placement of new or additional rip rap to protect the structure. Please see the text of the NWP for a more complete description of authorized activities.

Pre-construction notification is required for all activities authorized by paragraph (b) of this NWP. The pre-construction notification requirement allows district engineers to review proposed activities on a case-by-case basis to ensure that the adverse environmental effects of those activities are no more than minimal. If the district engineer determines that the adverse environmental effects of a particular project are more than minimal after considering mitigation, then discretionary authority will be asserted and the applicant will be notified that another form of DA authorization, such as a regional general permit or individual permit, is required (see 33 CFR 330.4(e) and 330.5).

When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type(s) of resource(s) that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. These criteria are listed in the NWPs in Section D, "District Engineer's Decision." If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-

specific environmental concerns.

Additional conditions can be placed on proposed activities on a regional or case-by-case basis to ensure that the activities have no more than minimal individual and cumulative adverse environmental effects. Regional conditioning of this NWP will be used to account for differences in aquatic resource functions, services, and values across the country, ensure that the NWP authorizes only those activities with no more than minimal individual and cumulative adverse environmental effects, and allow each Corps district to prioritize its workload based on where its efforts will best serve to protect the aquatic environment. Regional conditions can prohibit the use of an NWP in certain waters (e.g., high value waters or specific types of wetlands or waters), lower pre-construction notification thresholds, or require pre-construction notification for some or all NWP activities in certain watersheds or types of waters. Specific NWPs can also be revoked on a geographic or watershed basis where the individual and cumulative adverse environmental effects resulting from the use of those NWPs are more than minimal.

In high value waters, division and district engineers can: 1) prohibit the use of the NWP in those waters and require an individual permit or regional general permit; 2) impose an acreage limit on the NWP; 3) require pre-construction notification for some or all NWP activities in those waters; 4) add regional conditions to the NWP to ensure that the individual and cumulative adverse environmental effects are no more than minimal; or 5) for those NWP activities that require pre-construction notification, add special conditions to NWP authorizations, such as compensatory mitigation requirements, to ensure that the individual and cumulative adverse environmental effects are no more than minimal. NWPs can authorize activities in high value waters as long as the individual and cumulative adverse environmental effects are no more than minimal.

The construction and use of fills for temporary access for construction may be authorized by NWP 33 or regional general permits issued by division or district engineers. The related activity must meet the terms and conditions of the specified permit(s). If the discharge is dependent on portions of a larger project that require an individual permit, this NWP will not apply. [See 33 CFR 330.6(c) and (d)]

4.3 Cumulative Effects

4.3.1 General Analysis

The Council on Environmental Quality's (CEQ's) NEPA regulations define cumulative effects as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." [40 CFR 1508.7.] Therefore, the NEPA cumulative effects analysis for an NWP is not limited to activities authorized by the NWP, other NWPs, or other DA permits (individual permits and regional general permits). The NEPA

cumulative effects analysis must also include other Federal and non-Federal activities that affect the Nation's wetlands, streams, and other aquatic resources, as well as other resources (e.g., terrestrial ecosystems, air) that may be directly or indirectly affected by the proposed action and other actions. According to guidance issued by CEQ (1997), a NEPA cumulative effects analysis should focus on specific categories of resources (i.e., resources of concern) identified during the review process as having significant cumulative effects concerns. These cumulative effects analyses also require identification of the disturbances and stressors that cause degradation of those resources, including those caused by actions unrelated to the proposed action. A NEPA cumulative effects analysis does not need to analyze issues that have little relevance to the proposed action or the decision the agency will have to make (CEQ 1997).

The geographic scope of this cumulative effects analysis is the United States and its territories, where the NWP may be used to authorize specific activities that require DA authorization. The temporal scope of the cumulative effects analysis includes past federal, non-federal, and private actions that continue to affect the Nation's wetlands, streams, and other aquatic resources (including activities authorized by previously issued NWPs, regional general permits, and DA individual permits) as well as present and reasonably foreseeable future federal, non-federal, and private actions that are affecting, or will affect, wetlands, streams, and other aquatic resources. The present effects of past federal, non-federal, and private actions on wetlands, streams, and other aquatic resources are included in the affected environment, which is described in section 3.0. The affected environment described in section 3.0 also includes present effects of past actions, including activities authorized by NWPs issued from 1977 to 2012 and constructed by permittees, which are captured in national information on the quantity and quality of wetlands, streams, and other aquatic resources.

In addition to the activities authorized by this NWP, there are many categories of activities that contribute to cumulative effects on wetlands, streams, and other aquatic resources in the United States, and alter the quantity of those resources, the functions they perform, and the ecosystem services they provide. Activities authorized by past versions of NWP 3, as well as other NWPs, individual permits, letters of permission, and regional general permits have resulted in direct and indirect impacts to wetlands, streams, and other aquatic resources. Those activities may have legacy effects that have added to the cumulative effects and affected the quantity of those resources and the functions they provide. Discharges of dredged or fill material that do not require DA permits because they are exempt from section 404 permit requirements can also adversely affect the quantity of the Nation's wetlands, streams, and other aquatic resources and the functions and services they provide. Discharges of dredged or fill material that convert wetlands, streams, and other aquatic resources to upland areas result in permanent losses of aquatic resource functions and services. Temporary fills and fills that do not convert waters or wetlands to dry land may cause short-term or partial losses of aquatic resource functions and services.

Humans have long had substantial impacts on ecosystems and the ecological functions and services they provide (Ellis et al. 2010). Around the beginning of the 19th century, the degree of impacts of human activities on the Earth's ecosystems began to exceed the degree

of impacts to ecosystems caused by natural disturbances and variability (Steffen et al. 2007). All of the Earth's ecosystems have been affected either directly or indirectly by human activities (Vitousek et al. 1997). Over 75 percent of the ice-free land on Earth has been altered by human occupation and use (Ellis and Ramankutty 2008). Approximately 33 percent of the Earth's ice-free land consists of lands heavily used by people: urban areas, villages, lands used to produce crops, and occupied rangelands (Ellis and Ramankutty 2008). For marine ecosystems, Halpern et al. (2008) determined that there are no marine waters that are unaffected by human activities, and that 41 percent of the area of ocean waters are affected by multiple anthropogenic stressors (e.g., land use activities that generate pollution that go to coastal waters, marine habitat destruction or modification, and the extraction of resources). The marine waters most highly impacted by human activities are continental shelf and slope areas, which are affected by both land-based and ocean-based activities (Halpern et al. 2008). Human population density is a good indicator of the relative effect that people have had on local ecosystems, with lower population densities causing smaller impacts to ecosystems and higher population densities having larger impacts on ecosystems (Ellis and Ramankutty 2008). Human activities such as urbanization, agriculture, and forestry alter ecosystem structure and function by changing their interactions with other ecosystems, their biogeochemical cycles, and their species composition (Vitousek et al. 1997). Changes in land use reduce the ability of ecosystems to produce ecosystem services, such as food production, reducing infectious diseases, and regulating climate and air quality (Foley et al. 2005).

Recent changes in climate have had substantial impacts on natural ecosystems and human communities (IPCC 2014). Climate change, both natural and anthropogenic, is a major driving force for changes in ecosystem structure, function, and dynamics (Millar and Brubaker 2006). However, there are other significant drivers of change to aquatic and terrestrial ecosystems. In addition to climate change, aquatic and terrestrial ecosystems are also adversely affected by land use and land cover changes, natural resource extraction (including water withdrawals), pollution, species introductions, and removals of species (Staudt et al. 2013, Bodkin 2012, MEA 2005d) and changes in nutrient cycling (Julius et al. 2013).

Cumulative effects to wetlands, streams, and other aquatic resources in the United States are not limited to the effects caused by activities regulated and authorized by the Corps under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Other federal, non-federal, and private activities also contribute to the cumulative effects to wetlands, streams, and other aquatic resources, by changing the quantity of those resources and the functions they provide. Wetlands, streams, and other aquatic resources and the functions and services they provide are directly and indirectly affected by changes in land use and land cover, alien species introductions, overexploitation of species, pollution, eutrophication due to excess nutrients, resource extraction including water withdrawals, climate change, and various natural disturbances (MEA 2005b). Freshwater ecosystems such as lakes, rivers, and streams are altered by changes to water flow, climate change, land use changes, additions of chemicals, resource extraction, and aquatic invasive species (Carpenter et al. 2011). Cumulative effects to wetlands, streams, and other aquatic resources are the result of landscape-level processes (Gosselink and Lee 1989). As discussed in more detail

below, cumulative effects to aquatic resources are caused by a variety of activities (including activities that occur entirely in uplands) that take place within a landscape unit, such as the watershed for a river or stream (e.g., Allan 2004, Paul and Meyer 2001, Leopold 1968) or the contributing drainage area for a wetland (e.g., Wright et al. 2006, Brinson and Malvárez 2002, Zedler and Kercher 2005).

Cumulative effects also include environmental effects caused by reasonably foreseeable future actions that may take place after the permitted activity is completed. Such effects may include direct and indirect environmental effects caused by the operation and maintenance of the facility constructed on the discharge of dredged or fill material into waters of the United States or the structures or work in navigable waters of the United States. For NWP 3, this includes activities associated with the operation and maintenance of the structures and fills maintained as a result of activities authorized by this NWP. A variety of pollutants might be released into the environment during the operation and maintenance of these facilities. Those pollutants may be discharged through either point sources or non-point sources and reach jurisdictional waters and wetlands. Point-source discharges would likely require National Pollutant Discharge Elimination System Permits under Section 402 of the Clean Water Act, which is administered by U.S. EPA or by states with approved programs. Pollutants may also be discharged through spills and other accidents. Operations and maintenance activities may also have other direct and indirect effects on wetlands, streams, and other aquatic resources. The Corps does not have the authority to regulate operations and maintenance activities that: (1) do not involved discharges of dredged or fill material into waters of the United States; (2) involve activities exempt from Clean Water Act Section 404 permit requirements under section 404(f); and (3) do not involve structures or work requiring DA authorization under Sections 9 or 10 of the Rivers and Harbors Act of 1899. Reasonably foreseeable future actions regulated by the Corps are considered during the evaluation process.

In a specific watershed, division or district engineers may determine that the cumulative adverse environmental effects of activities authorized by this NWP are more than minimal. Division and district engineers will conduct more detailed assessments for geographic areas that are determined to be potentially subject to more than minimal cumulative adverse environmental effects. Division and district engineers have the authority to require individual permits in watersheds or other geographic areas where the cumulative adverse environmental effects are determined to be more than minimal, or add conditions to the NWP either on a case-by-case or regional basis to require mitigation measures to ensure that the cumulative adverse environmental effects of these activities are no more than minimal. When a division or district engineer determines, using local or regional information, that a watershed or other geographic area is subject to more than minimal cumulative adverse environmental effects due to the use of this NWP, he or she will use the revocation and modification procedure at 33 CFR 330.5. In reaching the final decision, the division or district engineer will compile information on the cumulative adverse effects and supplement this document.

The Corps expects that the convenience and time savings associated with the use of this NWP will encourage applicants to design their projects within the scope of the NWP rather

than request individual permits for projects which could result in greater adverse impacts to the aquatic environment. The minimization encouraged by the issuance of this NWP, as well as compensatory mitigation that may be required for specific activities authorized by this NWP, will help reduce cumulative effects to the Nation's wetlands, streams, and other aquatic resources.

Cumulative effects to specific categories of resources (i.e., resources of concern in accordance with CEQ's (1997) guidance) are discussed in more detail below. As discussed above, in addition to activities regulated under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899, there are many categories of activities that contribute to cumulative effects to the human environment. The activities authorized by this NWP during the 5-year period it will be in effect will result in no more than minimal incremental contributions to cumulative effects to these resource categories.

4.3.2 Cumulative Effects to Aquatic Ecosystems

The ecological condition of rivers and streams is dependent on the state of their watersheds (NRC 1992), because they are affected by activities that occur in those watersheds, including agriculture, urban development, deforestation, mining, water removal, flow alteration, and invasive species (Palmer et al. 2010). Land use changes affect rivers and streams through increased sedimentation, larger inputs of nutrients (e.g., nitrogen, phosphorous) and pollutants (e.g., heavy metals, synthetic chemicals, toxic organics), altered stream hydrology, the alteration or removal of riparian vegetation, and the reduction or elimination of inputs of large woody debris (Allan 2004). Agriculture is the primary cause of stream impairment, followed by urbanization (Foley et al. 2005, Paul and Meyer 2001). Agricultural land use adversely affects stream water quality, habitat, and biological communities (Allan 2004). Urbanization causes changes to stream hydrology (e.g., higher flood peaks, lower base flows), sediment supply and transport, water chemistry, and aquatic organisms (Paul and Meyer 2001). Leopold (1968) found that land use changes affect the hydrology of an area by altering stream flow patterns, total runoff, water quality, and stream structure. Changes in peak flow patterns and runoff affect stream channel stability. Stream water quality is adversely affected by increased inputs of sediments, nutrients, and pollutants, many of which come from non-point sources (Paul and Meyer 2001, Allan and Castillo 2007).

The construction and operation of water-powered mills in the 17th to 19th centuries substantially altered the structure and function of streams in the eastern United States (Walter and Merritts 2008) and those effects have persisted to the present time. In urbanized and agricultural watersheds, the number of small streams has been substantially reduced, in part by activities that occurred between the 19th and mid-20th centuries (Meyer and Wallace 2001). Activities that affect the quantity and quality of small streams include residential, commercial, and industrial development, mining, agricultural activities, forestry activities, and road construction (Meyer and Wallace 2001), even if those activities are located entirely in uplands.

Activities that affect wetland quantity and quality include: land use changes that alter local

hydrology (including water withdrawal), clearing and draining wetlands, constructing levees that sever hydrologic connections between rivers and floodplain wetlands, constructing other obstructions to water flow (e.g., dams, locks), constructing water diversions, inputs of nutrients and contaminants, and fire suppression (Brinson and Malvárez 2002). Wetland loss and degradation is caused by hydrologic modifications of watersheds, drainage activities, logging, agricultural runoff, urban development, conversion to agriculture, aquifer depletion, river management, (e.g., channelization, navigation improvements, dams, weirs), oil and gas development activities, levee construction, peat mining, and wetland management activities (Mitsch and Hernandez 2013). Upland development adversely affects wetlands and reduces wetland functionality because those activities change surface water flows and alter wetland hydrology, contribute stormwater and associated sediments, nutrients, and pollutants, cause increases in invasive plant species abundance, and decrease the diversity of native plants and animals (Wright et al. 2006). Many of the remaining wetlands in the United States are degraded (Zedler and Kercher 2005). Wetland degradation and losses are caused by changes in water movement and volume within a watershed or contributing drainage area, altered sediment transport, drainage, inputs of nutrients from non-point sources, water diversions, fill activities, excavation activities, invasion by non-native species, land subsidence, and pollutants (Zedler and Kercher 2005). According to Mitsch and Gosselink (2015), categories of activities that alter wetlands include: wetland conversion through drainage, dredging, and filling; hydrologic modifications that change wetland hydrology and hydrodynamics; highway construction and its effects on wetland hydrology; peat mining; waterfowl and wildlife management; agriculture and aquaculture activities; water quality enhancement activities; and flood control and stormwater protection.

There is also little national-level information on the ecological condition of the Nation's wetlands, streams, and other aquatic resources, or the amounts of functions they provide, although reviews have acknowledged that most of these resources are degraded (Zedler and Kercher 2005, Allan 2004) or impaired (U.S. EPA 2015) because of various activities, disturbances, and other stressors. These data deficiencies make it more difficult to characterize the affected environment to assess cumulative effects, and the relative contribution of the activities authorized by this NWP to those cumulative effects.

As discussed in section 3.0 of this document there is a wide variety of causes and sources of impairment of the Nation's rivers, streams, wetlands, lakes, estuarine waters, and marine waters (U.S. EPA 2015), which also contribute to cumulative effects to these aquatic resources. Many of those causes of impairment are point and non-point sources of pollutants that are not regulated under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. Two common causes of impairment for rivers and streams, habitat alterations and flow alterations, may be due in part to activities regulated by the Corps under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. Habitat and flow alterations may also be caused by activities that do not involve discharges of dredged or fill material or structures or work in navigable waters. For wetlands, impairment due to habitat alterations, flow alterations, and hydrology modifications may involve activities regulated under section 404, but these causes of impairment may also be due to unregulated activities, such as changes in upland land use that affects the movement of water through a watershed or contributing drainage area or the

removal of vegetation.

Many of the activities discussed in this cumulative effects section that affect wetlands, streams, and other aquatic resources are not subject to regulation under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899.

Estimates of the original acreage of wetlands in the United States vary widely because of the use of different definitions and how those estimates were made (Harris and Gosselink 1990). Dahl (1990) estimates that approximately 53 percent of the wetlands in the conterminous United States were lost in the 200-year period covering the 1780s to 1980s. Much of the wetland loss occurred in the mid-19th century as a result of indirect effects of beaver trapping and the removal of river snags, which substantially reduced the amount of land across the country that was inundated because of beaver dams and river obstructions (Harris and Gosselink 1990). The annual rate of wetland loss has decreased substantially since the 1970s (Dahl 2011), when wetland regulation became more prevalent (Brinson and Malvárez 2002). Between 2004 and 2009, there was no statistically significant difference in wetland acreage in the conterminous United States (Dahl 2011). According to the 2011 wetland status and trends report, during the period of 2004 to 2009 urban development accounted for 11 percent of wetland losses (61,630 acres), rural development resulted in 12 percent of wetland losses (66,940 acres), silviculture accounted for 56 percent of wetland losses (307,340 acres), and wetland conversion to deepwater habitats caused 21 percent of the loss in wetland area (115,960 acres) (Dahl 2011). Some of the losses occurred to wetlands that are not subject to Clean Water Act jurisdiction and some losses are due to activities not regulated under Section 404 of the Clean Water Act, such as unregulated drainage activities, exempt forestry activities, or water withdrawals. From 2004 to 2009, approximately 100,020 acres of wetlands were gained as a result of wetland restoration and conservation programs on agricultural land (Dahl 2011). Another source of wetland gain is conversion of other uplands to wetlands (389,600 acres during 2004 to 2009) (Dahl 2011). Inventories of wetlands, streams, and other aquatic resources are incomplete, especially at national or regional scales, because the techniques used for those inventories cannot identify all of those resources, especially small wetlands and streams (e.g., Dahl (2011) for wetlands; Meyer and Wallace (2001) for streams).

As discussed in section 3.0, national scale inventories of wetlands, streams, and other types of aquatic resources underestimate the quantity of those resources, and only general information is available on their ability to perform ecological functions and services. Therefore, it is not appropriate to make decisions concerning the significance of cumulative effects by calculating the relative proportion of the aquatic resources baseline impacted by a particular action, or a series of actions subject to a particular federal program. In addition, such an approach does not take into account the many categories of other activities that have direct and indirect effects on aquatic resources that are regulated under other federal, states, or local programs or are not regulated by any entity. Under the Council on Environmental Quality's NEPA definition at 40 CFR 1508.7, a cumulative effects analysis should instead examine the relative contribution that a proposed action will have on cumulative effects to one or more categories of natural resources (i.e., "the incremental impact of the action" and whether that incremental impact is significant or not significant).

For aquatic ecosystems, climate change affects water quality, biogeochemical cycling, and water storage (Julius et al. 2013). Climate change will also affect the abundance and distribution of wetlands across the United States, as well as the functions they provide (Mitsch and Gosselink 2015). Climate change results in increases in stream temperatures, more waterbodies with anoxic conditions, degradation of water quality, and increases in flood and drought frequencies (Julius et al. 2013). The increasing carbon dioxide concentration in the atmosphere also changes the pH of the oceans, resulting in ocean acidification (RS and NAS 2014), which adversely affects corals and some other marine organisms.

Compensatory mitigation required by district engineers for specific activities authorized by this NWP will help reduce the contribution of those activities to the cumulative effects on the Nation's wetlands, streams, and other aquatic resources, by providing ecological functions to partially or fully replace some or all of the aquatic resource functions lost as a result of those activities. Compensatory mitigation requirements for the NWPs are described in general condition 23 and compensatory mitigation projects must also comply with the applicable provisions of 33 CFR part 332. District engineers will establish compensatory mitigation requirements on a case-by-case basis, after evaluating pre-construction notifications. Compensatory mitigation requirements for individual NWP activities will be specified through permit conditions added to NWP authorizations. When compensatory mitigation is required, the permittee is required to submit a mitigation plan prepared in accordance with the requirements of 33 CFR 332.4(c). Credits from approved mitigation banks or in-lieu fee programs may also be used to satisfy compensatory mitigation requirements for NWP authorizations. Monitoring is required to demonstrate whether the permittee-responsible mitigation project, mitigation bank, or in-lieu fee project is meeting its objectives and providing the intended aquatic resource structure and functions. If the compensatory mitigation project is not meeting its objectives, adaptive management will be required. Adaptive management may involve taking actions, such as site modifications, remediation, or design changes, to ensure the compensatory mitigation project meets its objectives (see 33 CFR 332.7(c)).

The estimated contribution of activities authorized by this NWP to the cumulative effects to wetlands, streams, and other aquatic resources in the United States during the five year period that the NWP would be in effect, in terms of the estimated number of time this NWP would be used until it expires and the projected impacts and compensatory mitigation, is provided in section 7.2.2. It is not practical or feasible to provide quantitative data on the multitude of other contributors to cumulative effects to these resources, including the federal, non-federal, and private activities that are not regulated by the Corps that will also occur during the five year period this NWP is in effect. National-level data on these many categories of activities that are not regulated by the Corps but contribute to cumulative effects are either not collected for the nation or they are not accessible. The activities authorized by this NWP will result in a minor incremental contribution to the cumulative effects to wetlands, streams, and other aquatic resources in the United States because, as discussed in this section, they are one category of many categories of activities that affect those aquatic resources. The causes of cumulative effects discussed in this section include

past, present, and reasonably foreseeable future federal, non-federal, and private activities. For the national-scale cumulative effects analysis presented in this section, it is not possible to quantify the relative contributions of all of the various activities that affect the quantity of wetlands, streams, and other aquatic resources and the functions and services they provide, because such data are not available at the national scale.

As discussed above, there are many categories of activities not regulated by the Corps under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899 that contribute to cumulative effects to wetland, streams, and other aquatic resources.

During the 5-year period this NWP is in effect, the activities it authorizes will result in only a no more than minimal incremental contribution to cumulative effects to wetlands, streams, and other aquatic ecosystems.

4.3.3 Cumulative Effects to Coastal Areas

In the United States, approximately 39 percent of its population lives in counties that are next to coastal waters, the territorial seas, or the Great Lakes (NOAA 2013). Those counties comprise less than 10 percent of the land area of the United States (NOAA 2013). Coastal waters are also affected by a wide variety of activities. The major drivers of changes to coastal areas are: development activities that alter coastal forests, wetlands, and coral reef habitats for aquaculture and the construction of urban areas, industrial facilities, and resort and port developments (MEA 2005d). Dredging, reclamation, shore protection and other structures (e.g., causeways and bridges), and some types of fishing activities also cause substantial changes to coastal areas (MEA 2005d). Nitrogen pollution to coastal zones change coral reef communities (MEA 2005d). Adverse effects to coastal waters are caused by habitat modifications, point source pollution, non-point source pollution, changes to hydrology and hydrodynamics, exploitation of coastal resources, introduction of non-native species, global climate change, shoreline erosion, and pathogens and toxins (NRC 1994).

Substantial alterations of coastal hydrology and hydrodynamics are caused by land use changes in watersheds draining to coastal waters, the channelization or damming of streams and rivers, water consumption, and water diversions (NRC 1994). Approximately 52 percent of the population of the United States lives in coastal watersheds (NOAA 2013).

Eutrophication of coastal waters is caused by nutrients contributed by waste treatment systems, non-point sources, and the atmosphere, and may cause hypoxia or anoxia in coastal waters (NRC 1994). Changes in water movement through watersheds may also alter sediment delivery to coastal areas, which affects the sustainability of wetlands and intertidal habitats and the functions they provide (NRC 1994). Most inland waters in the United States drain to coastal areas, and therefore activities that occur in inland watersheds affect coastal waters (NRC 1994). Inland land uses, such as agriculture, urban development, and forestry, adversely affect coastal waters by diverting fresh water from estuaries and by acting as sources of nutrients and pollutants to coastal waters (MEA 2005d).

Coastal wetlands have been substantially altered by urban development and changes to the watersheds that drain to those wetlands (Mitsch and Hernandez 2013). Coastal habitat modifications are the result of dredging or filling coastal waters, inputs of sediment via non-

point sources, changes in water quality, or alteration of coastal hydrodynamics (NRC 1994). Coastal development activities, including those that occur in uplands, affect marine and estuarine habitats (MEA 2005b). The introduction of non-native species may change the functions and structure of coastal wetlands and other habitats (MEA 2005b). Fishing activities may also modify coastal habitats by changing habitat structure and the biological communities that inhabit those areas (NRC 1994).

As discussed above, there are many categories of activities not regulated by the Corps under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899 that contribute to cumulative effects to coastal areas. During the 5-year period this NWP is in effect, the activities it authorizes will result in only a no more than minimal incremental contribution to cumulative effects to coastal areas.

4.3.4 Cumulative Effects to Endangered and Threatened Species

The status of species as threatened or endangered is also due to cumulative effects (NRC 1986, Odum 1982), and activities authorized by Department of the Army permits are a minor contributor to the cumulative effects to endangered and threatened species. Land use and land cover changes are the main cause of the loss of biodiversity (Vitousek et al. 1997). The decline of a species that leads to its status as endangered or threatened is usually caused by multiple factors rather than a single factor (Wilcove et al. 1998, Venter et al. 2006, Czech and Krausman 1997, Richter et al. 1997). It is difficult to determine the relative contribution of each cause of species decline or endangerment (Czech and Krausman 1997). For example, for fish species, the number of factors affecting their status ranged from 1 to 15, with an average of 4.5 threats. Over 40 percent of fish species were endangered or threatened as a result of 5 or more factors, and less than 7 percent of fish species were identified as imperiled because of a single factor. During the past few hundred years, human activities have increased species extinction rates by around 1,000 times the Earth's background extinction rates (MEA 2005c).

The main causes of the decline of species to endangered or threatened status are habitat loss and degradation, introduction of species, overexploitation, disease, and climate change (MEA 2005d). Habitat degradation also includes changes in habitat quality caused by habitat fragmentation and pollution. Habitat fragmentation can occur in rivers, and is characterized by disruption of a river's natural flow regime by dams, inter-basin water transfers, or water withdrawals and affects 90 percent of the world's river water volume (MEA 2005d). Invasive alien species are a major cause of species endangerment in freshwater habitats (MEA 2005d). Losses of biological diversity are directly caused by habitat modifications, including land use changes, alteration of river and stream flows, water withdrawals from rivers, losses of coral reefs, and alteration of the sea bed caused by trawling (MEA 2005c). Other direct causes of losses of biodiversity include pollution, invasive species, species overexploitation, climate change, and disease (MEA 2005c). There are often multiple factors interacting with each other to reduce biodiversity, instead of single factors working alone (MEA 2005c).

Wilcove et al. (1998) evaluated five categories of threats to species in the United States, and

conducted further analyses on the types of habitat destruction that caused species to be listed as endangered or threatened under the Endangered Species Act. The five categories of threats were habitat destruction, alien species, overharvest, pollution, and disease. Wilcove et al. (1998) focused on species under the jurisdiction of the U.S. Fish and Wildlife Service. More than half of the endangered and threatened species under the jurisdiction of the NMFS were listed after this study was published. Wilcove et al. (1998) found information on the threats to 1,880 species, out of a total of 2,490 species that were categorized as imperiled at that time. Habitat destruction and degradation was the most common threat, a factor for 85 percent of the imperiled species analyzed. The second most common threat was competition with non-native species, or predation by those species. For aquatic animal species, pollution was the second most common cause of endangerment, after habitat loss (Wilcove et al. 1998).

To more closely examine the causes of habitat loss, Wilcove et al. (1998) analyzed U.S. Fish and Wildlife endangered species listing documents and identified 14 categories of habitat loss or degradation: agriculture; livestock grazing; mining and oil and gas extraction; logging; infrastructure development; road construction and maintenance; military activities; outdoor recreation; use of off-road vehicles; water development projects (e.g., water diversions, flood control facilities; drainage projects; aquaculture; navigation); dams, impoundments, and other water barriers; pollutants (e.g., sediment and mining pollutants); residential and commercial developments; and disruption of fire ecology. Many species were subject to more than one cause of endangerment (Wilcove et al. 1998). Agriculture was the leading cause of habitat destruction, affecting 38 percent of endangered species, followed by residential and commercial development (35 percent), water development (30 percent), and infrastructure development (17 percent). Habitat destruction caused by water development affected 91 percent of listed fish species and 99 percent of listed mussel species.

Richter et al. (1997) studied the factors that endanger freshwater animals. The most significant threats to those species are habitat destruction, habitat fragmentation, pollution, and exotic species. Richter et al. (1997) also looked at the stressors that are impeding the recovery of aquatic species at risk of extinction and found that changes in stream bed substrate composition (e.g., siltation), hydrologic alteration, interactions with other species, nutrient inputs, and habitat destruction were the most common factors. The major sources of stressors to aquatic species are agricultural land use, urban land use, energy generation industries (especially hydroelectric power), and exotic species (Richter et al. 1997). Agricultural activity was identified as having significant adverse effects on aquatic species through non-point source pollution (sediment and nutrients), interactions with exotic species, and water impoundments (Richter et al. 1997). Water impoundments cause changes in hydrology, as well as habitat destruction and fragmentation. Urban land use resulted in much less non-point source pollution than agricultural activities (Richter et al. 1997).

Note that in these studies on species threats and endangerment, the categories of human activities are discussed in general terms, and may include activities in uplands as well as activities in jurisdictional and non-jurisdictional waters and wetlands. Climate change will also alter species distributions, and extinction may occur for those species that cannot adjust

to the changes in climate (Starzmoski 2013).

As discussed above, there are many categories of activities not regulated by the Corps under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899 that contribute to cumulative effects to endangered and threatened species and their designated critical habitats. During the 5-year period this NWP is in effect, the activities it authorizes will result in only a no more than minimal incremental contribution to cumulative effects to endangered and threatened species and their habitats.

4.4 Climate Change

Climate change represents one of the greatest challenges our country faces with profound and wide-ranging implications for the health and welfare of Americans, economic growth, the environment, and international security. Evidence of the warming of climate system is unequivocal and the emission of greenhouse gases from human activities is the primary driver of these changes (IPCC 2014). Already, the United States is experiencing the impacts of climate change and these impacts will continue to intensify as warming intensifies. It will have far-reaching impacts on natural ecosystems and human communities. These effects include sea level rise, ocean warming, increases in precipitation in some areas and decreases in precipitation in other areas, decreases in sea ice, more extreme weather and climate events including more floods and droughts, increasing land surface temperatures, increasing ocean temperatures, and changes in plant and animal communities (IPCC 2014). Climate change also affects human health in some geographic area by increasing exposure to ground-level ozone and/or particulate matter air pollution (Luber et al. 2014). Climate change also increases the frequency of extreme heat events that threaten public health and increases risk of exposure to vector-borne diseases (Luber et al. 2014). Climate impacts affect the health, economic well-being, and welfare of Americans across the country, and especially children, the elderly, and others who are particularly vulnerable to specific impacts. Climate change can affect ecosystems and species through a number of mechanisms, such as direct effects on species, populations, and ecosystems; compounding the effects of other stressors; and the direct and indirect effects of climate change mitigation or adaptation actions (Staudt et al. 2013). Other stressors include land use and land cover changes, natural resource extraction (including water withdrawals), pollution, species introductions, and removals of species (Staudt et al. 2013, Bodkin 2012, MEA 2005d) and changes in nutrient cycling (Julius et al. 2013).

5.0 Public Interest Review

5.1 Public Interest Review Factors (33 CFR 320.4(a)(1))

For each of the 20 public interest review factors, the extent of the Corps consideration of expected impacts resulting from the use of this NWP is discussed, as well as the reasonably foreseeable cumulative adverse effects that are expected to occur. The Corps decision-

making process involves consideration of the benefits and detriments that may result from the activities authorized by this NWP.

(a) Conservation: The activities authorized by this NWP will have negligible effects on the natural resource characteristics of the project area, because the NWP is limited to maintenance activities. The adverse effects of activities authorized by this NWP on conservation will be minor.

(b) Economics: The maintenance of existing, currently serviceable structures or fills will have positive impacts on the local economy. During construction, these activities will generate jobs and revenue for local contractors as well as revenue to building supply companies that sell construction materials. The removal of accumulated sediments in the vicinity of existing structures will sustain effective functioning of those structures, and may help minimize operational costs.

(c) Aesthetics: Maintenance activities will cause negligible changes to the visual character of the waters of the United States where the existing structures or fills are located. The placement of rip rap to protect the existing structure will affect the visual character of the waterbody, but these effects are likely to be minor. The extent and perception of these changes will vary, depending on the extent of the maintenance activity, the nature of the surrounding area, and the public uses of the area. Maintenance activities authorized by this NWP can also modify other aesthetic characteristics, such as air quality and noise levels.

(d) General environmental concerns: Activities authorized by this NWP will affect general environmental concerns, such as water, air, noise, and land pollution. The authorized activities will also affect the physical, chemical, and biological characteristics of the environment. The adverse effects of the activities authorized by this NWP on general environmental concerns will be minor, since the NWP authorizes only maintenance activities. Adverse effects to the chemical composition of the aquatic environment will be controlled by general condition 6, which states that the material used for construction must be free from toxic pollutants in toxic amounts. General condition 23 requires mitigation to minimize adverse effects to the aquatic environment through on-site avoidance and minimization. Compensatory mitigation may be required by district engineers to ensure that the adverse environmental effects are no more than minimal. Specific environmental concerns are addressed in other sections of this document.

(e) Wetlands: Activities authorized by this NWP may result in the loss of small amounts of wetlands. Repair, rehabilitation, and replacement activities may result in minor losses of wetlands because of minor deviations due to construction techniques or changes in materials. The removal of accumulated sediments in the vicinity of existing structures may result in losses of wetlands. Wetlands located in temporary access roads or staging areas may be impacted by the activity, but these wetlands will be restored, unless the district engineer authorizes another use for the area.

Wetlands provide habitat, including foraging, nesting, spawning, rearing, and resting sites for aquatic and terrestrial species. The loss or alteration of wetlands may alter natural

drainage patterns. Wetlands reduce erosion by stabilizing the substrate. Wetlands also act as storage areas for stormwater and flood waters. Wetlands may act as groundwater discharge or recharge areas. The loss of wetland vegetation will adversely affect water quality because these plants trap sediments, pollutants, and nutrients and transform chemical compounds. Wetland vegetation also provides habitat for microorganisms that remove nutrients and pollutants from water. Wetlands, through the accumulation of organic matter, act as sinks for some nutrients and other chemical compounds, reducing the amounts of these substances in the water.

General condition 23 requires avoidance and minimization of impacts to waters of the United States, including wetlands, at the project site. Compensatory mitigation may be required to offset losses of wetlands so that the net adverse environmental effects are no more than minimal. General condition 22 requires submittal of a pre-construction notification prior to use of this NWP in designated critical resource waters and adjacent wetlands, which may include high value wetlands. Division engineers can regionally condition this NWP to restrict or prohibit its use in high value waters. District engineers will also exercise discretionary authority to require an individual permit if the wetlands to be filled are high value and the activity will result in more than minimal adverse environmental effects. District engineers can also add case-specific special conditions to the NWP authorization to reduce impacts to wetlands or require compensatory mitigation to offset losses of wetlands.

(f) Historic properties: General condition 20 states that in cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act have been satisfied.

(g) Fish and wildlife values: This NWP authorizes activities in all waters of the United States, which provide habitat to many species of fish and wildlife. Activities authorized by this NWP may cause minor changes to the habitat characteristics of streams and wetlands, but adverse effects to fish and wildlife habitat will be negligible since this NWP only authorizes maintenance activities. Activities authorized by paragraph (b) of this NWP may improve fish passage by authorizing the removal of accumulated sediments in the vicinity of existing structures that impede the movement of fish and other aquatic organisms. Wetland and riparian vegetation provides food and habitat for many species, including foraging areas, resting areas, corridors for wildlife movement, and nesting and breeding grounds. Open waters provide habitat for fish and other aquatic organisms. Fish and other motile animals will avoid the project site during construction. Woody riparian vegetation shades streams, which reduces water temperature fluctuations and provides habitat for fish and other aquatic animals. Riparian vegetation provides organic matter that is consumed by fish and aquatic invertebrates. Woody riparian vegetation creates habitat diversity in streams when trees and large shrubs fall into the channel, forming snags that provide habitat and shade for fish. The morphology of a stream channel may be altered by activities authorized by this NWP, which can affect fish populations, but these changes will be minor. However, pre-construction notification is required for all activities authorized by paragraph (b) of this NWP, which provides the district engineer with an opportunity to review certain activities, assess

potential impacts on fish and wildlife values, and ensure that the authorized activities result in no more than minimal adverse environmental effects.

General condition 2 will reduce the adverse effects to fish and other aquatic species by prohibiting activities that substantially disrupt the movement of indigenous aquatic species. Compliance with general conditions 3 and 5 will ensure that the authorized activity has no more than minimal adverse effects on spawning areas and shellfish beds, respectively. The authorized activity cannot have more than minimal adverse effects on breeding areas for migratory birds, due to the requirements of general condition 4.

For an NWP activity, compliance with the Bald and Golden Eagle Protection Act (16 U.S.C. 668(a)-(d)), the Migratory Bird Treaty Act (16 U.S.C. 703; 16 U.S.C. 712), and the Marine Mammal Protection Act (16 U.S.C. 1361 et seq.) is the responsibility of the project proponent. General condition 19 states that the permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

Consultation pursuant to the essential fish habitat provisions of the Magnuson-Stevens Fishery Conservation and Management Act will occur as necessary for proposed NWP activities that may adversely affect essential fish habitat. Consultation may occur on a case-by-case or programmatic basis. Division and district engineers can impose regional and special conditions to ensure that activities authorized by this NWP will result in no more than minimal adverse effects on essential fish habitat.

(h) Flood hazards: The activities authorized by this NWP will have negligible adverse effects the flood-holding capacity of the 100-year floodplain, since the NWP is limited to maintenance activities. The removal of accumulated sediments in the vicinity of existing structures will reduce flood hazards by restoring the water-holding capacity of the waterbody and reducing hazards to human health, safety, and welfare.

(i) Floodplain values: Activities authorized by NWP 3 will have minor effects on the flood-holding capacity of the floodplain, as well as other floodplain values, since it is limited to maintenance activities.

(j) Land use: Activities authorized by this NWP will have no adverse effects on land use, because the maintenance of existing structures and fills will not change the existing land use. The removal of accumulated sediments in the vicinity of existing structures will also maintain existing land uses.

(k) Navigation: Activities authorized by this NWP will have minor adverse effects on navigation, because these activities must comply with general condition 1. This NWP authorizes the maintenance, repair, and rehabilitation of structures or fills that may be located in navigable waters. Since the NWP authorizes only minor deviations from the original dimensions or configuration, any adverse effects on navigation will be no more than

minimal. The removal of accumulated sediments from the vicinity of existing structures will have no adverse effects on navigation.

(l) Shore erosion and accretion: The activities authorized by this NWP will have no more than minimal adverse effects on shore erosion and accretion processes, since the NWP is limited to maintenance activities. Repair of bank stabilization activities may be authorized by this NWP, provided the structure or fill is currently serviceable. The removal of accumulated sediments in the vicinity of existing structures will have negligible adverse effects on shore erosion and accretion.

(m) Recreation: Activities authorized by this NWP will not affect the recreational uses of the area, since it is limited to maintenance activities.

(n) Water supply and conservation: Activities authorized by this NWP will have negligible effects on surface water and groundwater supplies because this NWP authorizes only maintenance activities.

(o) Water quality: Maintenance activities in wetlands and waterbodies will have minor adverse effects on water quality. During maintenance activities, small amounts of oil and grease from construction equipment may be discharged into the waterway. Because most of these maintenance activities will occur during a relatively short time period, the frequency and concentration of these discharges are not expected to have more than minimal adverse effects on water quality. The removal of accumulated sediments in the vicinity of existing structures may result in temporary increases in turbidity. If the proposed activity involves a discharge into waters of the United States, Section 401 water quality certification will be required. The water quality certification will ensure that the authorized activity does not violate applicable water quality standards.

(p) Energy needs: The activities authorized by this NWP will not permanently increase energy consumption in the area, because it is limited to maintenance activities.

(q) Safety: The activities authorized by this NWP will be subject to Federal, state, and local safety laws and regulations. Therefore, this NWP will not adversely affect the safety of the project area.

(r) Food and fiber production: Activities authorized by this NWP will have no adverse effects on food and fiber production, since the NWP is limited to maintenance activities.

(s) Mineral needs: Activities authorized by this NWP may increase demand for aggregates and stone, which are used to repair structures or fills. Maintenance activities authorized by this NWP may utilize other building materials, such as steel, aluminum, and copper, which are made from mineral ores.

(t) Considerations of property ownership: The NWP complies with 33 CFR 320.4(g), which states that an inherent aspect of property ownership is a right to reasonable private use. The NWP provides expedited DA authorization for maintenance activities in waters of the

United States that result in no more than minimal adverse environmental effects.

5.2 Additional Public Interest Review Factors (33 CFR 320.4(a)(2))

5.2.1 Relative extent of the public and private need for the proposed structure or work

This NWP authorizes structures or work in navigable waters of the United States, as well as discharges of dredged or fill material into all waters of the United States, for maintenance activities that have no more than minimal individual and cumulative adverse environmental effects. These activities satisfy public and private needs for continued operation and use of existing structures and/or fills. The need for this NWP is based upon the number of these activities that occur annually with no more than minimal individual and cumulative adverse environmental effects.

5.2.2 Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work

Most situations in which there are unresolved conflicts concerning resource use arise when environmentally sensitive areas are involved (e.g., special aquatic sites, including wetlands) or where there are competing uses of a resource. The nature and scope of the activity, when planned and constructed in accordance with the terms and conditions of this NWP, reduce the likelihood of such conflict. In the event that there is a conflict, the NWP contains provisions that are capable of resolving the matter (see Section 1.2 of this document).

General condition 23 requires permittees to avoid and minimize adverse effects to waters of the United States to the maximum extent practicable on the project site. Consideration of off-site alternative locations is not required for activities that are authorized by general permits. General permits authorize activities that have no more than minimal individual and cumulative adverse effects on the environment and the overall public interest. The district engineer will exercise discretionary authority and require an individual permit if the proposed activity will result in more than minimal adverse environmental effects on the project site. The consideration of off-site alternatives can be required during the individual permit process.

5.2.3 The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited

The nature and scope of the activities authorized by the NWP will most likely restrict the extent of the beneficial and detrimental effects to the area immediately surrounding the maintenance activity. Activities authorized by this NWP will have no more than minimal individual and cumulative adverse environmental effects.

The terms, conditions, and provisions of the NWP were developed to ensure that individual

and cumulative adverse environmental effects are no more than minimal. Specifically, NWP's do not obviate the need for the permittee to obtain other Federal, state, or local authorizations required by law. The NWP's do not grant any property rights or exclusive privileges (see 33 CFR 330.4(b) for further information). Additional conditions, limitations, restrictions, and provisions for discretionary authority, as well as the ability to add activity-specific or regional conditions to this NWP, will provide further safeguards to the aquatic environment and the overall public interest. There are also provisions to allow suspension, modification, or revocation of the NWP.

6.0 Endangered and Threatened Species

The Corps' current regulations and procedures for the NWP's result in compliance with Section 7 of the Endangered Species Act (ESA) and ensure that activities authorized by this NWP will not jeopardize the continued existence or any listed threatened and endangered species or result in the destruction or adverse modification of critical habitat. Current local procedures in Corps districts are effective in ensuring compliance with ESA. Those local procedures include regional programmatic consultations and the development of Standard Local Operating Procedures for Endangered Species (SLOPES). The issuance or reissuance of an NWP, as governed by NWP general condition 18 (which applies to every NWP and which relates to endangered and threatened species and critical habitat) and 33 CFR 330.4(f), results in "no effect" to listed species or critical habitat, because no activity that "may affect" listed species or critical habitat is authorized by NWP unless ESA Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) has been completed. Activities that do not comply with general condition 18 or other applicable general or regional conditions are not authorized by any NWP, and thus fall outside of the NWP Program. Unauthorized activities are subject to the prohibitions of Section 9 of the ESA.

Each activity authorized by an NWP is subject to general condition 18, which states that "[n]o activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species." In addition, general condition 18 explicitly states that the NWP does not authorize "take" of threatened or endangered species, which will ensure that permittees do not mistake the NWP authorization as a Federal authorization to take threatened or endangered species. General condition 18 also requires a non-federal permittee to submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat. This general condition also states that, in such cases, non-federal permittees shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized.

Under the current Corps regulations (33 CFR 325.2(b)(5)), the district engineer must review all permit applications for potential impacts on threatened and endangered species or critical

habitat. For the NWP program, this review occurs when the district engineer evaluates the pre-construction notification or request for verification. Nationwide permit general condition 18 requires a non-federal applicant to submit a pre-construction notification to the Corps if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat. Based on the evaluation of all available information, the district engineer will initiate consultation with the USFWS or NMFS, as appropriate, if he or she determines that the proposed activity may affect any threatened and endangered species or critical habitat. Consultation may occur during the NWP authorization process or the district engineer may exercise discretionary authority to require an individual permit for the proposed activity and initiate section 7 consultation during the individual permit process. If ESA Section 7 consultation is conducted during the NWP authorization process without the district engineer exercising discretionary authority, then the applicant will be notified that he or she cannot proceed with the proposed NWP activity until section 7 consultation is completed.

If the district engineer determines that the proposed NWP activity will have no effect on any threatened or endangered species or critical habitat, then the district engineer will notify the applicant that he or she may proceed under the NWP authorization as long as the activity complies with all other applicable terms and conditions of the NWP, including applicable regional conditions. When the Corps makes a “no effect” determination, that determination is documented in the record for the NWP verification.

In cases where the Corps makes a “may affect” determination, formal or informal section 7 consultation is conducted before the activity is authorized by NWP. A non-federal permit applicant cannot begin work until notified by the Corps that the proposed NWP activity will have “no effect” on listed species or critical habitat, or until ESA Section 7 consultation has been completed (see also 33 CFR 330.4(f)). Federal permittees are responsible for complying with ESA Section 7(a)(2) and should follow their own procedures for complying with those requirements (see 33 CFR 330.4(f)(1)). Therefore, permittees cannot rely on complying with the terms of an NWP without considering ESA-listed species and critical habitat, and they must comply with the NWP conditions to ensure that they do not violate the ESA. General condition 18 also states that district engineers may add activity-specific conditions to the NWPs to address ESA issues as a result of formal or informal consultation with the USFWS or NMFS.

Each year, the Corps conducts thousands of ESA section 7 consultations with the FWS and NMFS for activities authorized by NWPs. These section 7 consultations are tracked in ORM2. During the period of March 19, 2012, to September 30, 2016, Corps districts conducted 1,402 formal consultations and 9,302 informal consultations for NWP activities under ESA section 7. During that time period, the Corps also used regional programmatic consultations for 9,829 NWP verifications to comply with ESA section 7. Therefore, each year NWP activities are covered by an average of more than 4,500 formal, informal, and programmatic ESA section 7 consultations with the FWS and/or NMFS. In a study on ESA section 7 consultations tracked by the USFWS, Malcom and Li (2015) found that during the period of 2008 to 2015, the Corps conducted the most formal and informal section 7 consultations, far exceeding the numbers of section 7 consultations conducted by other

federal agencies.

Section 7 consultations are often conducted on a case-by-case basis for activities proposed to be authorized by NWP that may affect listed species or critical habitat, in accordance with the USFWS's and NMFS's interagency regulations at 50 CFR part 402. Instead of activity-specific section 7 consultations, compliance with ESA may also be achieved through formal or informal regional programmatic consultations. Compliance with ESA Section 7 may also be facilitated through the adoption of NWP regional conditions. In some Corps districts SLOPES have been developed through consultation with the appropriate regional offices of the USFWS and NMFS to make the process of complying with section 7 more efficient.

Corps districts have, in most cases, established informal or formal procedures with local offices of the USFWS and NMFS, through which the agencies share information regarding threatened and endangered species and their critical habitat. This information helps district engineers determine if a proposed NWP activity may affect listed species or their critical habitat and, when a "may affect" determination is made, initiate ESA section 7 consultation. Corps districts may utilize maps or databases that identify locations of populations of threatened and endangered species and their critical habitat. Where necessary, regional conditions are added to one or more NWPs to require pre-construction notification for NWP activities that occur in known locations of threatened and endangered species or critical habitat. For activities that require agency coordination during the pre-construction notification process, the USFWS and NMFS will review the proposed activities for potential impacts to threatened and endangered species and their critical habitat. Any information provided by local maps and databases and any comments received during the pre-construction notification review process will be used by the district engineer to make a "no effect" or "may affect" determination for the pre-construction notification.

Based on the safeguards discussed in this section, especially general condition 18 and the NWP regulations at 33 CFR 330.4(f), the Corps has determined that the activities authorized by this NWP will not jeopardize the continued existence of any listed threatened or endangered species or result in the destruction or adverse modification of designated critical habitat. Although the Corps continues to believe that these procedures ensure compliance with the ESA, the Corps has taken some steps to provide further assurance. Corps district offices meet with local representatives of the USFWS and NMFS to establish or modify existing procedures such as regional conditions, where necessary, to ensure that the Corps has the latest information regarding the existence and location of any threatened or endangered species or their critical habitat. Corps districts can also establish, through local procedures or other means, additional safeguards that ensure compliance with the ESA. Through ESA Section 7 formal or informal consultations, or through other coordination with the USFWS and NMFS, the Corps establishes procedures to ensure that the NWP is not likely to jeopardize any threatened and endangered species or result in the destruction or adverse modification of designated critical habitat. Such procedures may result in the development of regional conditions added to the NWP by the division engineer, or in conditions to be added to a specific NWP authorization by the district engineer.

If informal section 7 consultation is conducted, and the USFWS and/or NMFS issues a

written concurrence that the proposed activity may affect, but is not likely to adversely affect, listed species or designated critical habitat, the district engineer will add conditions (e.g., minimization measures) to the NWP authorization that are necessary to avoid the likelihood of adverse effects to listed species or designated critical habitat. If the USFWS and/or NMFS does not issue a written concurrence that the proposed NWP activity “may affect, but is not likely to adversely affect” listed species or critical habitat, the Corps will initiate formal section 7 consultation if it changes its determination to “may affect, likely to adversely affect.”

If formal section 7 consultation is conducted and a biological opinion is issued, the district engineer will add a condition to the NWP authorization to incorporate the appropriate elements of the incidental take statement of the biological opinion into the NWP authorization, if the biological opinion concludes that the activity is not likely to jeopardize the continued existence of listed species or adversely modify or destroy critical habitat. If the biological opinion concludes that the proposed activity is likely to jeopardize the continued existence of listed species or adversely modify or destroy critical habitat, the proposed activity cannot be authorized by NWP and the district engineer will instruct the applicant to apply for an individual permit. The incidental take statement includes reasonable and prudent measures such as mitigation, monitoring, and reporting requirements that minimize incidental take. The appropriate elements of the incidental take statement are dependent on those activities in the biological opinion over which the Corps has control and responsibility (i.e., the discharges of dredged or fill material into waters of the United States and/or structures or work in navigable waters and their direct and indirect effects on listed species or critical habitat). The appropriate elements of the incidental take statement are those reasonable and prudent measures that the Corps has the authority to enforce under its permitting authorities. Incorporation of the appropriate elements of the incidental take statement into the NWP authorization by a binding, enforceable permit condition provides an exemption from the take prohibitions in ESA Section 9 (see Section 7(o)(2) of the ESA).

The Corps can modify this NWP at any time that it is deemed necessary to protect listed species or their critical habitat, either through: 1) national general conditions or national-level modifications, suspensions, or revocations of the NWPs; 2) regional conditions or regional modifications, suspensions, or revocations of NWPs; or 3) activity-specific permit conditions (modifications) or activity-specific suspensions or revocations of NWP authorizations. Therefore, although the Corps has issued the NWPs, the Corps can address any ESA issue, if one should arise. The NWP regulations also allow the Corps to suspend the use of some or all of the NWPs immediately, if necessary, while considering the need for permit conditions, modifications, or revocations. These procedures are provided at 33 CFR 330.5.

7.0 Clean Water Act Section 404(b)(1) Guidelines Analysis

The 404(b)(1) Guidelines compliance criteria for general permits are provided at 40 CFR 230.7. This 404(b)(1) Guidelines compliance analysis includes analyses of the direct, secondary, and cumulative effects on the aquatic environment caused by discharges of

dredged or fill material authorized by this NWP.

7.1 Evaluation Process (40 CFR 230.7(b))

7.1.1 Alternatives (40 CFR 230.10(a))

General condition 23 requires permittees to avoid and minimize discharges of dredged or fill material into waters of the United States to the maximum extent practicable on the project site. The consideration of off-site alternatives is not directly applicable to general permits (see 40 CFR 230.7(b)(1)).

7.1.2 Prohibitions (40 CFR 230.10(b))

This NWP authorizes discharges of dredged or fill material into waters of the United States, which require water quality certification. Water quality certification requirements will be met in accordance with the procedures at 33 CFR 330.4(c).

No toxic discharges will be authorized by this NWP. General condition 6 states that the material must be free from toxic pollutants in toxic amounts.

This NWP does not authorize activities that jeopardize the continued existence of any listed threatened or endangered species or result in the destruction or adverse modification of critical habitat. Reviews of pre-construction notifications, regional conditions, and local operating procedures for endangered species will ensure compliance with the Endangered Species Act. Refer to general condition 18 and to 33 CFR 330.4(f) for information and procedures.

This NWP will not authorize the violation of any requirement to protect any marine sanctuary. Refer to section 7.2.3(j)(1) of this document for further information.

7.1.3 Findings of Significant Degradation (40 CFR 230.10(c))

Potential impact analysis (Subparts C through F): The potential impact analysis specified in Subparts C through F is discussed in section 7.2.3 of this document. Mitigation required by the district engineer will ensure that the adverse effects on the aquatic environment are no more than minimal.

Evaluation and testing (Subpart G): Because the terms and conditions of the NWP specify the types of discharges that are authorized, as well as those that are prohibited, individual evaluation and testing for the presence of contaminants will normally not be required. If a situation warrants, provisions of the NWP allow division or district engineers to further specify authorized or prohibited discharges and/or require testing. General condition 6 requires that materials used for construction be free from toxic pollutants in toxic amounts.

Based upon Subparts B and G, after consideration of Subparts C through F, the discharges

authorized by this NWP will not cause or contribute to significant degradation of waters of the United States.

7.1.4 Factual determinations (40 CFR 230.11)

The factual determinations required in 40 CFR 230.11 are discussed in section 7.2.3 of this document.

7.1.5 Appropriate and practicable steps to minimize potential adverse impacts (40 CFR 230.10(d))

As demonstrated by the information in this document, as well as the terms, conditions, and provisions of this NWP, actions to minimize adverse effects (Subpart H) have been thoroughly considered and incorporated into the NWP. General condition 23 requires permittees to avoid and minimize discharges of dredged or fill material into waters of the United States to the maximum extent practicable on the project site. Compensatory mitigation may be required by the district engineer to ensure that the net adverse effects on the aquatic environment are no more than minimal.

7.2 Evaluation Process (40 CFR 230.7(b))

7.2.1 Description of permitted activities (40 CFR 230.7(b)(2))

As indicated by the text of this NWP in section 1.0 of this document, and the discussion of potential impacts in section 4.0, the activities authorized by this NWP are sufficiently similar in nature and environmental impact to warrant authorization under a single general permit. Specifically, the purpose of the NWP is to authorize structures or work, including discharges of dredged or fill material, for maintenance activities. The nature and scope of the impacts are controlled by the terms and conditions of the NWP.

The activities authorized by this NWP are sufficiently similar in nature and environmental impact to warrant authorization by a general permit. The terms of the NWP authorize a specific category of activity (i.e., structures or work, including discharges of dredged or fill material for maintenance activities) in a specific category of waters (i.e., waters of the United States, including navigable waters). The restrictions imposed by the terms and conditions of this NWP will result in the authorization of activities that have similar impacts on the aquatic environment, namely the replacement of aquatic habitats, such as wetlands and open waters, with structures or fills that are part of maintaining an existing, currently serviceable, structure or fill, including the removal of accumulated sediment from canals associated with intake and outfall structures.

If a situation arises in which the activity requires further review, or is more appropriately reviewed under the individual permit process, provisions of the NWPs allow division and/or district engineers to take such action.

7.2.2 Cumulative effects (40 CFR 230.7(b)(3))

The 404(b)(1) Guidelines at 40 CFR 230.11(a) define cumulative effects as “...the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material.” For the issuance of general permits, such as this NWP, the 404(b)(1) Guidelines require the permitting authority to “set forth in writing an evaluation of the potential individual and cumulative impacts of the categories of activities to be regulated under the general permit.” [40 CFR 230.7(b)] More specifically, the 404(b)(1) Guidelines cumulative effects assessment for the issuance or reissuance of a general permit is to include an evaluation of “the number of individual discharge activities likely to be regulated under a general permit until its expiration, including repetitions of individual discharge activities at a single location.” [40 CFR 230.7(b)(3)] If a situation arises in which cumulative effects are likely to be more than minimal and the proposed activity requires further review, or is more appropriately reviewed under the individual permit process, provisions of the NWPs allow division and/or district engineers to take such action.

Based on reported use of this NWP during the period of March 19, 2012, to March 12, 2015, the Corps estimates that this NWP will be used approximately 4,300 times per year on a national basis, resulting in impacts to approximately 550 acres of waters of the United States, including jurisdictional wetlands. The reported use includes pre-construction notifications submitted to Corps districts, as required by the terms and conditions of the NWP as well as regional conditions imposed by division engineers. The reported use also includes voluntary notifications to submitted to Corps districts where the applicants request written verification in cases when pre-construction notification is not required. The reported use does not include activities that do not require pre-construction notification and were not voluntarily reported to Corps districts. The Corps estimates that 1,000 NWP 3 activities will occur each year that do not require pre-construction notification, and that these activities will impact 15 acres of jurisdictional waters each year.

Based on reported use of this NWP during that time period, the Corps estimates that 2 percent of the NWP 3 verifications will require compensatory mitigation to offset the authorized impacts to waters of the United States and ensure that the authorized activities result in only minimal adverse effects on the aquatic environment. The verified activities that do not require compensatory mitigation will have been determined by Corps district engineers to result in no more than minimal individual and cumulative adverse effects on the aquatic environment without compensatory mitigation. During 2017-2022, the Corps expects little change to the percentage of NWP 3 verifications requiring compensatory mitigation, because there have been no substantial changes in the mitigation general condition or the NWP regulations for determining when compensatory mitigation is to be required for NWP activities. The Corps estimates that approximately 50 acres of compensatory mitigation will be required each year to offset authorized impacts. The demand for these types of activities could increase or decrease over the five-year duration of this NWP.

Based on these annual estimates, the Corps estimates that approximately 26,500 activities

could be authorized over a five year period until this NWP expires, resulting in impacts to approximately 2,830 acres of waters of the United States, including jurisdictional wetlands. Approximately 250 acres of compensatory mitigation would be required to offset those impacts. Compensatory mitigation is the restoration (re-establishment or rehabilitation), establishment, enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. [33 CFR 332.2]

Wetland restoration, enhancement, and establishment projects can provide wetland functions, as long as the wetland compensatory mitigation project is placed in an appropriate landscape position, has appropriate hydrology for the desired wetland type, and the watershed condition will support the desired wetland type (NRC 2001). Site selection is critical to find a site with appropriate hydrologic conditions and soils to support a replacement wetland that will provide the desired wetland functions and services (Mitsch and Gosselink 2015). The ecological performance of wetland restoration, enhancement, and establishment is dependent on practitioner's understanding of wetland functions, allowing sufficient time for wetland functions to develop, and allowing natural processes of ecosystem development (self-design or self-organization) to take place, instead of over-designing and over-engineering the replacement wetland (Mitsch and Gosselink (2015)). Most studies of the ecological performance of compensatory mitigation projects have focused solely on the ecological attributes of the compensatory mitigation projects, and few studies have also evaluated the aquatic resources impacted by permitted activities (Kettlewell et al. 2008), so it is difficult to assess whether compensatory mitigation has fully or partially offset the lost functions provided by the aquatic resources that are impacted by permitted activities. In its review, the NRC (2001) concluded that some wetland types can be restored or established (e.g., non-tidal emergent wetlands, some forested and scrub-shrub wetlands, sea grasses, and coastal marshes), while other wetland types (e.g., vernal pools, bogs, and fens) are difficult to restore and should be avoided where possible. Restored riverine and tidal wetlands achieved wetland structure and function more rapidly than depressional wetlands (Moreno-Mateos et al. 2012). Because of its greater potential to provide wetland functions, restoration is the preferred compensatory mitigation mechanism (33 CFR 332.3(a)(2)). Bogs, fens, and springs are considered to be difficult-to-replace resources and compensatory mitigation should be provided through in-kind rehabilitation, enhancement, or preservation of these wetlands types (33 CFR 332.3(e)(3)).

In its review of outcomes of wetland compensatory mitigation activities, the NRC (2001) stated that wetland functions can be replaced by wetland restoration and establishment activities. They discussed five categories of wetland functions: hydrology, water quality, maintenance of plant communities, maintenance of animal communities, and soil functions. Wetland functions develop at different rates in wetland restoration and establishment projects (NRC 2001). It is difficult to restore or establish natural wetland hydrology, and water quality functions are likely to be different than the functions provided at wetland impact sites (NRC 2001). Reestablishing or establishing the desired plant community may be difficult because of invasive species colonizing the mitigation project site (NRC 2001). The committee also found that establishing and maintaining animal communities depends on the surrounding landscape. Soil functions can take a substantial amount of time to develop,

because they are dependent on soil organic matter and other soil properties (NRC 2001). The NRC (2001) concluded that the ecological performance in replacing wetland functions depends on the particular function of interest, the restoration or establishment techniques used, and the extent of degradation of the compensatory mitigation project site and its watershed.

The ecological performance of wetland restoration and enhancement activities is affected by the amount of changes to hydrology and inputs of pollutants, nutrients, and sediments within the watershed or contributing drainage area (Wright et al. 2006). Wetland restoration is becoming more effective at replacing or improving wetland functions, especially in cases where monitoring and adaptive management are used to correct deficiencies in these efforts (Zedler and Kercher 2005). Wetland functions take time to develop after the restoration or enhancement activity takes place (Mitsch and Gosselink 2015, Gebo and Brooks 2012), and different functions develop at different rates (Moreno-Mateos 2012). Irreversible changes to landscapes, especially those that affect hydrology within contributing drainage areas or watersheds, cause wetland degradation and impede the ecological performance of wetland restoration efforts (Zedler and Kercher 2005). Gebo and Brooks (2012) evaluated wetland compensatory mitigation projects in Pennsylvania and compared them to reference standards (i.e., the highest functioning wetlands in the study area) and natural reference wetlands that showed the range of variation due to human disturbances. They concluded that most of the wetland mitigation sites were functioning at levels within with the range of functionality of the reference wetlands in the region, and therefore were functioning at levels similar to some naturally occurring wetlands. The ecological performance of mitigation wetlands is affected by on the landscape context (e.g., urbanization) of the replacement wetland and varies with wetland type (e.g., riverine or depressional) (Gebo and Brooks 2012). Moreno-Mateos and others (2012) conducted a meta-analysis of wetland restoration studies and concluded that while wetland structure and function can be restored to a large degree, the ecological performance of wetland restoration projects is dependent on wetland size and local environmental setting. They found that wetland restoration projects that are larger in size and in less disturbed landscape settings achieve structure and function more quickly.

Streams are difficult-to-replace resources and compensatory mitigation should be provided through stream rehabilitation, enhancement, and preservation since those techniques are most likely to be ecologically successful (see 33 CFR 332.3(e)(3)). Stream rehabilitation is usually the most effective compensatory mitigation mechanism since restoring a stream to a historic state is not possible because of changes in land use and other activities in a watershed (Roni et al. 2008). Stream rehabilitation and enhancement projects, including the restoration and preservation of riparian areas, provide riverine functions (e.g., Allan and Castillo (2007) for rivers and streams, NRC (2002) for riparian areas). Improvements in ecological performance of stream restoration projects is dependent on the restoration method and how outcomes are assessed (Palmer et al. 2014). Non-structural and structural techniques can be used to rehabilitate and enhance streams, and restore riparian areas (NRC 1992). Non-structural practices include removing disturbances to allow recovery of stream and riparian area structure and function, reducing or eliminating activities that have altered stream flows to restore natural flows, preserving or restoring floodplains, and restoring and protecting riparian areas, including fencing those areas to exclude livestock and people

(NRC 1992). Structural rehabilitation and enhancement techniques include dam removal, as well as channel, bank, and/or riparian area modifications to improve river and stream habitat (NRC 1992).

The restoration and enhancement of river and stream functions and services can be improved through a variety of techniques and in many cases combinations of these techniques are used (Roni et al. 2013). Examples of stream restoration and enhancement techniques include: dam removal and modification, culvert replacement or modification, fish passage structures when connectivity cannot be restored or improved by dam removal or culvert replacement, levee removal or setbacks, reconnecting floodplains and other riparian habitats, road removal, road modifications, reducing sediment and pollution inputs to streams, replacing impervious surfaces with pervious surfaces, restoring adequate in-stream or base flows, restoring riparian areas, fencing streams and their riparian areas to exclude livestock, improving in-stream habitat, recreating meanders, and replacing hard bank stabilization structures with bioengineering bank stabilization measures (Roni et al. 2013). Road improvements, riparian rehabilitation, reconnecting floodplains to their rivers, and installing in-stream habitat structures have had varying degrees of ecological performance in stream rehabilitation activities (Roni et al. 2008). The ecological performance of these stream rehabilitation activities is strongly dependent on addressing impaired water quality and insufficient water quantity, since those factors usually limit the biological response to stream rehabilitation efforts (Roni et al. 2008). Ecologically successful stream rehabilitation and enhancement activities depend on addressing the factors that most strongly affect stream functions, especially water quality, water flow, and riparian quality, and not focusing solely on rehabilitating or enhancing the physical habitat of streams (Palmer et al. 2010). The ability to restore the ecological functions of streams is dependent on the condition of the watershed draining to the stream being restored because human land uses and other activities in the watershed affect how that stream functions (Palmer et al. 2014). Stream restoration projects should focus on restoring ecological processes, such as dam removal, watershed best management practices, improving the riparian zone, and reforestation, instead of focusing on the manipulation the structure of the stream channel (Palmer et al. 2014).

For compensatory mitigation projects, restoration is the preferred mechanism (see 33 CFR 332.3(a)(2)). In an analysis of 89 ecosystem restoration projects, Rey Banayas et al. (2009) concluded that restoration activities can increase biodiversity and the level of ecosystem services provided. However, such increases do not approach the amounts of biodiversity and ecosystem services performed by undisturbed reference sites. The ability to restore ecosystems to provide levels of functions and services similar to historic conditions or reference standard conditions is influenced by human impacts to watersheds and other types of landscapes (e.g., urbanization, agriculture) and to the processes that sustain those ecosystems (Zedler et al. 2012, Hobbs et al. 2014). Those changes need to be taken into account when establishing goals and objectives for restoration projects (Zedler et al. 2012), including compensatory mitigation projects. The ability to reverse ecosystem degradation to restore ecological functions and services is dependent on the degree of degradation of that ecosystem and the surrounding landscape, and whether that degradation is reversible (Hobbs et al. 2014).

As discussed in section 3.0, the status of waters and wetlands in the United States as reported under the provisions of Sections 303(d) and 305(b) of the Clean Water Act exhibits considerable variation, ranging from good to threatened to impaired. One of the criteria that district engineers consider when they evaluate proposed NWP activities is the “degree or magnitude to which the aquatic resources perform these functions” (see paragraph 1 of Section D, “District Engineer’s Decision.” The quality of the affected waters is considered by district engineers when making decisions on whether to require compensatory mitigation for proposed NWP activities to ensure no more than minimal adverse environmental effects (see 33 CFR 330.1(e)(3)), and amount of compensatory mitigation required (see 33 CFR 332.3(f)). The quality of the affected waters also factors into the determination of whether the required compensatory mitigation offsets the losses of aquatic functions caused by the NWP activity.

The compensatory mitigation required by district engineers in accordance with general condition 23 and activity-specific conditions will provide aquatic resource functions and services to offset some or all of the losses of aquatic resource functions caused by the activities authorized by this NWP, and reduce the contribution of those activities to the cumulative effects on the Nation’s wetlands, streams, and other aquatic resources. The required compensatory mitigation must be conducted in accordance with the applicable provisions of 33 CFR part 332, which requires development and implementation of approved mitigation plans, as well as monitoring to assess ecological success in accordance with ecological performance standards established for the compensatory mitigation project. The district engineer will evaluate monitoring reports to determine if the compensatory mitigation project has fulfilled its objectives and is ecological successful. [33 CFR 332.6] If the monitoring efforts indicate that the compensatory mitigation project is failing to meet its objectives, the district engineer may require additional measures, such as adaptive management or alternative compensatory mitigation, to address the compensatory mitigation project’s deficiencies. [33 CFR 332.7(c)]

According to Dahl (2011), during the period of 2004 to 2009 approximately 489,620 acres of former upland were converted to wetlands as a result of wetland reestablishment and establishment activities. Efforts to reestablish or establish wetlands have increased wetland acreage in the United States.

The individual and cumulative adverse effects on the aquatic environment resulting from the activities authorized by this NWP will be no more than minimal. The Corps expects that the convenience and time savings associated with the use of this NWP will encourage applicants to design their projects within the scope of the NWP, including its limits, rather than request individual permits for projects that could result in greater adverse impacts to the aquatic environment. Division and district engineers will restrict or prohibit this NWP on a regional or case-specific basis if they determine that these activities will result in more than minimal individual and cumulative adverse effects on the aquatic environment.

7.2.3 Section 404(b)(1) Guidelines Impact Analysis, Subparts C through F

(a) Substrate: Discharges of dredged or fill material into waters of the United States will

alter the substrate of those waters, usually replacing the aquatic area with dry land, and changing the physical, chemical, and biological characteristics of the substrate. The original substrate will be removed or covered by other material, such as concrete, asphalt, soil, gravel, etc. Temporary fills may be placed upon the substrate, but must be removed upon completion of the activity (see general condition 13). Higher rates of erosion may result during construction, but general condition 12 requires the use of appropriate measures to control soil erosion and sediment.

(b) Suspended particulates/turbidity: Depending on the method of construction, soil erosion and sediment control measures, equipment, composition of the bottom substrate, and wind and current conditions during construction, fill material placed in open waters will temporarily increase water turbidity. Pre-construction notification is required for all NWP activities involving the removal of accumulated sediments from the vicinity of existing structures, or the removal of accumulated sediments from canals associated with outfall and intake structures. The pre-construction notification will allow the district engineer to review each activity and ensure that adverse effects on the aquatic environment are no more than minimal. Particulates will be resuspended in the water column during removal of temporary fills. The turbidity plume will normally be limited to the immediate vicinity of the disturbance and should dissipate shortly after each phase of the construction activity. General condition 12 requires the permittee to stabilize exposed soils and other fills, which will reduce turbidity. In many localities, developers are required to develop and implement sediment and erosion control plans to minimize the entry of soil into the aquatic environment. NWP activities cannot create turbidity plumes that smother important spawning areas downstream (see general condition 3).

(c) Water: Maintenance activities can affect some characteristics of water, such as water clarity, chemical content, dissolved gas concentrations, pH, and temperature. In addition, maintenance activities may change the chemical and physical characteristics of the waterbody by introducing suspended or dissolved chemical compounds or sediments into the water. Changes in water quality can affect the species and quantities of organisms inhabiting the aquatic area. Water quality certification is required for activities authorized by this NWP that result in discharges of dredged or fill material into waters of the United States, which will ensure that the activity does not violate applicable water quality standards. Permittees may be required to implement water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality. Storm water management facilities may be required to prevent or reduce the input of harmful chemical compounds into the waterbody. The district engineer may require the establishment and maintenance of riparian areas next to open waters, such as streams. Riparian areas help improve or maintain water quality, by removing nutrients, moderating water temperature changes, and trapping sediments.

(d) Current patterns and water circulation: Activities authorized by this NWP may adversely affect the movement of water in the aquatic environment. All activities authorized by paragraph (b) of this NWP require pre-construction notification to the district engineer, which will help ensure that adverse effects to current patterns and water circulation are no more than minimal. General condition 9 requires the authorized activity to be designed to

withstand expected high flows and to maintain the course, condition, capacity, and location of open waters to the maximum extent practicable. General condition 10 requires activities to comply with applicable FEMA-approved state or local floodplain management requirements, which will reduce adverse effects to surface water flows.

(e) Normal water level fluctuations: The activities authorized by this NWP will not adversely affect normal patterns of water level fluctuations due to tides and flooding, since it is limited to maintenance activities. To ensure that the NWP does not authorize activities that adversely affect normal flooding patterns, general condition 10 requires NWP activities to comply with applicable FEMA-approved state or local floodplain management requirements. General condition 9 requires the permittee to maintain the pre-construction course, condition, capacity, and location of open waters, to the maximum extent practicable.

(f) Salinity gradients: The activities authorized by this NWP are unlikely to adversely affect salinity gradients, since the NWP is restricted to maintenance activities.

(g) Threatened and endangered species: The NWPs do not authorize activities that will jeopardize the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended. In addition, the NWPs do not authorize activities that will destroy or adversely modify critical habitat of those species. See 33 CFR 330.4(f) and paragraph (a) of general condition 18. For NWP activities, compliance with the Endangered Species Act is discussed in more detail in section 6.0 of this document.

(h) Fish, crustaceans, molluscs, and other aquatic organisms in the food web. All activities authorized by paragraph (b) of this NWP require pre-construction notification to the district engineer, which will allow review of each proposal to remove accumulated sediments, to ensure that adverse effects to fish and other aquatic organisms in the food web are no more than minimal. Fish and other motile animals will avoid the project site during construction. Sessile or slow-moving animals in the path of discharges, equipment, and building materials will be destroyed. Some aquatic animals may be smothered by the placement of fill material. Motile animals will return to those areas that are temporarily impacted by the activity and restored or allowed to revert back to preconstruction conditions. Aquatic animals will not return to sites of permanent fills. Benthic and sessile animals are expected to recolonize sites temporarily impacted by the activity, after those areas are restored. Activities that alter the riparian zone, especially floodplains, may adversely affect populations of fish and other aquatic animals, by altering stream flow, flooding patterns, and surface and groundwater hydrology.

Division and district engineers can place conditions on this NWP to prohibit discharges during important stages of the life cycles of certain aquatic organisms. Such time of year restrictions can prevent adverse effects to these aquatic organisms during reproduction and development periods. General conditions 3 and 5 address protection of spawning areas and shellfish beds, respectively. General condition 3 states that activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. In addition, general condition 3 also prohibits activities that result in the physical destruction of important spawning areas. General condition 5 prohibits activities in areas of concentrated

shellfish populations. General condition 9 requires the maintenance of pre-construction course, condition, capacity, and location of open waters to the maximum extent practicable, which will help minimize adverse impacts to fish, shellfish, and other aquatic organisms in the food web.

(i) Other wildlife: Activities authorized by this NWP will result in adverse effects on other wildlife associated with aquatic ecosystems, such as resident and transient mammals, birds, reptiles, and amphibians, through the destruction of aquatic habitat, including breeding and nesting areas, escape cover, travel corridors, and preferred food sources. This NWP does not authorize activities that jeopardize the continued existence of Federally-listed endangered and threatened species or result in the destruction or adverse modification of critical habitat. Compensatory mitigation, including the establishment and maintenance of riparian areas next to open waters, may be required for activities authorized by this NWP, which will help offset losses of aquatic habitat for wildlife. General condition 4 states that activities in breeding areas for migratory birds must be avoided to the maximum extent practicable.

(j) Special aquatic sites: The potential impacts to specific special aquatic sites are discussed below:

(1) Sanctuaries and refuges: The activities authorized by this NWP will have no more than minimal adverse effects on waters of the United States within sanctuaries or refuges designated by Federal or state laws or local ordinances. General condition 22 requires submittal of a pre-construction notification prior to the use of this NWP in NOAA-designated marine sanctuaries and marine monuments and National Estuarine Research Reserves. District engineers will exercise discretionary authority and require individual permits for specific projects in waters of the United States in sanctuaries and refuges if those activities will result in more than minimal adverse effects on the aquatic environment.

(2) Wetlands: The activities authorized by this NWP will have no more than minimal adverse effects on wetlands. District engineers will review pre-construction notifications to ensure that the adverse effects on the aquatic environment are no more than minimal. Division engineers can regionally condition this NWP to restrict or prohibit its use in certain high value wetlands. See paragraph (e) of section 5.1 for a more detailed discussion of impacts to wetlands.

(3) Mud flats: The activities authorized by this NWP will have no more than minimal adverse effects on mud flats, since it is limited to maintenance activities.

(4) Vegetated shallows: The activities authorized by this NWP will have no more than minimal adverse effects on vegetated shallows in tidal waters, since it is limited to maintenance activities. Activities involving the removal of accumulated sediments are authorized by this NWP, but district engineers will review those proposed activities to determine if they will result in only minimal adverse effects on the aquatic environment. If the vegetated shallows are high value and the proposed activity will result in more than minimal adverse effects on the aquatic environment, the district engineer will exercise

discretionary authority to require the project proponent to obtain an individual permit.

(5) Coral reefs: The activities authorized by this NWP will have no more than minimal adverse effects on coral reefs, since it only authorizes maintenance activities.

(6) Riffle and pool complexes: Activities in riffle and pool complexes may be authorized by this NWP, but district engineers will review proposed removals of accumulated sediments to determine if activities authorized by paragraph (b) will result in no more than minimal adverse effects on the aquatic environment. If the riffle and pool complexes are high value and the proposed activity will result in more than minimal adverse effects on the aquatic environment, the district engineer will exercise discretionary authority to require the project proponent to obtain an individual permit.

(k) Municipal and private water supplies: See paragraph (n) of section 5.1 for a discussion of potential impacts to water supplies.

(l) Recreational and commercial fisheries, including essential fish habitat: The activities authorized by this NWP may adversely affect waters of the United States that act as habitat for populations of economically important fish and shellfish species. Division and district engineers can condition this NWP to prohibit discharges during important life cycle stages, such as spawning or development periods, of economically valuable fish and shellfish. All activities authorized by paragraph (b) require pre-construction notification to the district engineer, which will allow review of each activity in open waters to ensure that adverse effects to economically important fish and shellfish are no more than minimal. Compliance with general conditions 3 and 5 will ensure that the authorized activity does not adversely affect important spawning areas or concentrated shellfish populations. As discussed in paragraph (g) of section 5.1, there are procedures to help ensure that impacts to essential fish habitat are no more than minimal, individually or cumulatively. For example, division and district engineers can impose regional and special conditions to ensure that activities authorized by this NWP will result in no more than minimal adverse effects on essential fish habitat.

(m) Water-related recreation: See paragraph (m) of section 5.1 above.

(n) Aesthetics: See paragraph (c) of section 5.1 above.

(o) Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar areas: General condition 22 requires submittal of a pre-construction notification prior to the use of this NWP in designated critical resource waters and adjacent wetlands, which may be located in parks, national and historical monuments, national seashores, wilderness areas, and research sites. This NWP can be used to authorize activities in parks, national and historical monuments, national seashores, wilderness areas, and research sites if the manager or caretaker wants to conduct activities in waters of the United States and those activities result in no more than minimal adverse effects on the aquatic environment. Division engineers can regionally condition the NWP to prohibit its use in designated areas, such as national wildlife refuges or wilderness areas.

8.0 Determinations

8.1 Finding of No Significant Impact

Based on the information in this document, the Corps has determined that the issuance of this NWP will not have a significant impact on the quality of the human environment. Therefore, the preparation of an Environmental Impact Statement is not required.

8.2 Public Interest Determination

In accordance with the requirements of 33 CFR 320.4, the Corps has determined, based on the information in this document, that the issuance of this NWP is not contrary to the public interest.

8.3 Section 404(b)(1) Guidelines Compliance

This NWP has been evaluated for compliance with the 404(b)(1) Guidelines, including Subparts C through G. Based on the information in this document, the Corps has determined that the discharges authorized by this NWP comply with the 404(b)(1) Guidelines, with the inclusion of appropriate and practicable conditions, including mitigation, necessary to minimize adverse effects on affected aquatic ecosystems. The activities authorized by this NWP will result in no more than minimal individual and cumulative adverse effects on the aquatic environment.

8.4 Section 176(c) of the Clean Air Act General Conformity Rule Review

This NWP has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities authorized by this permit will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot

be practicably controlled by the Corps. For these reasons, a conformity determination is not required for this NWP.

FOR THE COMMANDER

Dated: 21 Dec 2016

A handwritten signature in black ink, appearing to read 'D. Jackson', with a large loop at the beginning and a horizontal line extending to the right.

Donald E. Jackson
Major General, U.S. Army
Deputy Commanding General
for Civil and Emergency Operations

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STANDARD SPECIAL PROVISION
AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(5-20-08)

Z-2

General Statute 143C-6-11. (h) Highway Appropriation is hereby incorporated verbatim in this contract as follows:

(h) Amounts Encumbered. – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in *General Statute 143C-6-11(c)*. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(E) of the *2018 Standard Specifications*.

STANDARD SPECIAL PROVISION
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11)

Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. Of Seed</u>	<u>Restricted Noxious Weed</u>	<u>Limitations per Lb. of Seed</u>
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)	Bermudagrass
Kobe Lespedeza	Browntop Millet
Korean Lespedeza	German Millet – Strain R
Weeping Lovegrass	Clover – Red/White/Crimson
Carpetgrass	

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass	Japanese Millet
Crownvetch	Reed Canary Grass
Pensacola Bahiagrass	Zoysia
Creeping Red Fescue	

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

- Barnyard Grass
- Big Bluestem
- Little Bluestem
- Bristly Locust
- Birdsfoot Trefoil
- Indiangrass
- Orchardgrass
- Switchgrass
- Yellow Blossom Sweet Clover

STANDARD SPECIAL PROVISION**ERRATA**

(2-12-18)

Z-4

Revise the *2018 Standard Specifications* as follows:

Division 7

Page 7-27, line 4, Article 725-1 MEASUREMENT AND PAYMENT, replace article number “725-1” with “724-4”.

Page 7-28, line 10, Article 725-1 MEASUREMENT AND PAYMENT, replace article number “725-1” with “725-3”.

Division 10

Page 10-162, line 1, Article 1080-50 PAINT FOR VERTICAL MARKERS, replace article number “1080-50” with “1080-10”.

Page 10-162, line 5, Article 1080-61 EPOXY RESIN FOR REINFORCING STEEL, replace article number “1080-61” with “1080-11”.

Page 10-162, line 22, Article 1080-72 ABRASIVE MATERIALS FOR BLAST CLEANING STEEL, replace article number “1080-72” with “1080-12”.

Page 10-163, line 25, Article 1080-83 FIELD PERFORMANCE AND SERVICES, replace article number “1080-83” with “1080-13”.

STANDARD SPECIAL PROVISION**PLANT AND PEST QUARANTINES****(Imported Fire Ant, Gypsy Moth, Witchweed, Emerald Ash Borer, And Other Noxious Weeds)**

(3-18-03) (Rev. 12-20-16)

Z-04a

Within Quarantined Area

This project may be within a county regulated for plant and/or pests. If the project or any part of the Contractor's operations is located within a quarantined area, thoroughly clean all equipment prior to moving out of the quarantined area. Comply with federal/state regulations by obtaining a certificate or limited permit for any regulated article moving from the quarantined area.

Originating in a Quarantined County

Obtain a certificate or limited permit issued by the N.C. Department of Agriculture/United States Department of Agriculture. Have the certificate or limited permit accompany the article when it arrives at the project site.

Contact

Contact the N.C. Department of Agriculture/United States Department of Agriculture at 1-800-206-9333, 919-707-3730, or <http://www.ncagr.gov/plantindustry/> to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

1. Soil, sand, gravel, compost, peat, humus, muck, and decomposed manure, separately or with other articles. This includes movement of articles listed above that may be associated with cut/waste, ditch pulling, and shoulder cutting.
2. Plants with roots including grass sod.
3. Plant crowns and roots.
4. Bulbs, corms, rhizomes, and tubers of ornamental plants.
5. Hay, straw, fodder, and plant litter of any kind.
6. Clearing and grubbing debris.
7. Used agricultural cultivating and harvesting equipment.
8. Used earth-moving equipment.
9. Any other products, articles, or means of conveyance, of any character, if determined by an inspector to present a hazard of spreading imported fire ant, gypsy moth, witchweed, emerald ash borer, or other noxious weeds.

STANDARD SPECIAL PROVISION**MINIMUM WAGES**

(7-21-09)

Z-5

FEDERAL: The Fair Labor Standards Act provides that with certain exceptions every employer shall pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

STATE: The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees, wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS (\$7.25) per hour.

This determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the Department of Transportation for any changes in the minimum wage laws, Federal or State. It is the responsibility of the Contractor to keep fully informed of all Federal and State Laws affecting his contract.

STANDARD SPECIAL PROVISION

TITLE VI AND NONDISCRIMINATION:

(6-28-77)(Rev 6/19/2018)

Z-6

Revise the *2018 Standard Specifications* as follows:

Replace Article 103-4(B) with the following:

The North Carolina Department of Transportation is committed to carrying out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts.

The provisions of this section related to United States Department of Transportation (US DOT) Order 1050.2A, Title 49 Code of Federal Regulations (CFR) part 21, 23 United States Code (U.S.C.) 140 and 23 CFR part 200 (or 49 CFR 303, 49 U.S.C. 5332 or 49 U.S.C. 47123) are applicable to all North Carolina Department of Transportation (NCDOT) contracts and to all related subcontracts, material supply, engineering, architectural and other service contracts, regardless of dollar amount. Any Federal provision that is specifically required not specifically set forth is hereby incorporated by reference.

(1) Title VI Assurances (USDOT Order 1050.2A, Appendix A)

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(a) Compliance with Regulations

The contractor (hereinafter includes consultants) shall comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(b) Nondiscrimination

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(c) Solicitations for Subcontractors, Including Procurements of Materials and Equipment

In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it and/or the FHWA may determine to be appropriate, including, but not limited to:

- (i) Withholding payments to the contractor under the contract until the contractor complies; and/or
- (ii) Cancelling, terminating, or suspending a contract, in whole or in part.

(f) Incorporation of Provisions

The contractor shall include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor shall take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

(2) Title VI Nondiscrimination Program (23 CFR 200.5(p))

The North Carolina Department of Transportation (NCDOT) has assured the USDOT that, as a condition to receiving federal financial assistance, NCDOT will comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by Title 49 CFR part 21 and related nondiscrimination authorities to ensure that no person shall, on the ground of race, color, national origin, limited English proficiency, sex, age, or disability (including religion/creed or income-level, where applicable), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs, activities, or services conducted or funded by NCDOT. Contractors and other organizations under contract or agreement with NCDOT must also comply with Title VI and related authorities, therefore:

- (a) During the performance of this contract or agreement, contractors (e.g., subcontractors, consultants, vendors, prime contractors) are responsible for complying with NCDOT's Title VI Program. Contractors are not required to prepare or submit Title VI Programs. To comply with this section, the prime contractor shall:

1. Post NCDOT's Notice of Nondiscrimination and the Contractor's own Equal Employment Opportunity (EEO) Policy in conspicuous locations accessible to all employees, applicants and subcontractors on the jobsite.
2. Physically incorporate the required Title VI clauses into all subcontracts on federally-assisted and state-funded NCDOT projects, and ensure inclusion by subcontractors into all lower-tier subcontracts.
3. Required Solicitation Language. The Contractor shall include the following notification in all solicitations for bids and requests for work or material, regardless of funding source:

"The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed/religion, or limited English proficiency in consideration for an award."

4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.
 5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.
 6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.
- (b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))
- (c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))

(d) The Contractor is responsible for notifying subcontractors of NCDOT's External Discrimination Complaints Process.

1. Applicability

Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.

2. Eligibility

Any person—or class of persons—who believes he/she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.

3. Time Limits and Filing Options

Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:

- (i) The date of the alleged act of discrimination; or
- (ii) The date when the person(s) became aware of the alleged discrimination; or
- (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

Title VI and related discrimination complaints may be submitted to the following entities:

- North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
- Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
- US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070

4. Format for Complaints

Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.

5. Discrimination Complaint Form

Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.

6. Complaint Basis

Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). “Basis” refers to the complainant’s membership in a protected group category.

TABLE 103-1 COMPLAINT BASIS			
Protected Categories	Definition	Examples	Applicable Nondiscrimination Authorities
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. (<i>Executive Order 13166</i>)
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.	
National Origin (<i>Limited English Proficiency</i>)	Place of birth. Citizenship is not a factor. (<i>Discrimination based on language or a person’s accent is also covered</i>)	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. <i>Note:</i> Sex under this program does not include sexual orientation.	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990
Religion (in the context of employment) (<i>Religion/ Creed in all aspects of any aviation or transit-related construction</i>)	An individual belonging to a religious group; or the perception, based on distinguishable characteristics that a person is a member of a religious group. In practice, actions taken as a result of the moral and ethical beliefs as to what is right and wrong, which are sincerely held with the strength of traditional religious views. <i>Note:</i> Does not have to be associated with a recognized religious group or church; if an individual sincerely holds to the belief, it is a protected religious practice.	Muslim, Christian, Sikh, Hindu, etc.	Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. (<i>49 U.S.C. 5332(b); 49 U.S.C. 47123</i>)

(3) Pertinent Nondiscrimination Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
 - The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
 - Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
 - Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability) and 49 CFR Part 27;
 - The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
 - Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- (g) The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- (h) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- (i) The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- (j) Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- (k) Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

- (l) Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).
- (m) Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e et seq., Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin).

(4) Additional Title VI Assurances

***The following Title VI Assurances (Appendices B, C and D) shall apply, as applicable*

(a) Clauses for Deeds Transferring United States Property (1050.2A, Appendix B)

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4.

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the North Carolina Department of Transportation (NCDOT) will accept title to the lands and maintain the project constructed thereon in accordance with the North Carolina General Assembly, the Regulations for the Administration of the Federal-Aid Highway Program, and the policies and procedures prescribed by the Federal Highway Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the NCDOT all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the North Carolina Department of Transportation (NCDOT) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the NCDOT, its successors and assigns.

The NCDOT, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the NCDOT will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

(b) Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program (1050.2A, Appendix C)

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(a):

1. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:
 - (i.) In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
2. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued. *

3. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

- (c) Clauses for Construction/Use/Access to Real Property Acquired Under the Activity, Facility or Program (1050.2A, Appendix D)

The following clauses will be included in deeds, licenses, permits, or similar instruments/ agreements entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(b):

1. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
2. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non-discrimination covenants, the NCDOT will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued. *
3. With respect to deeds, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

STANDARD SPECIAL PROVISION**ON-THE-JOB TRAINING**

(10-16-07) (Rev. 4-21-15)

Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.\

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.

LISTING OF MBE/WBE SUBCONTRACTORS

Sheet _____ of _____

Firm Name and Address	Circle One	Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				

* The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the MBE/WBE subcontractor, and these prices will be used to determine the percentage of the MBE/WBE participation in the contract.

** Dollar Volume of MBE/WBE Subcontractor Percentage of Total Contract Bid Price:

If firm is a Material Supplier Only, show Dollar Volume as 60% of Agreed Upon Amount from Letter of Intent.

If firm is a Manufacturer, show Dollar Volume as 100% of Agreed Upon Amount from Letter of Intent.

LISTING OF MBE/WBE SUBCONTRACTORS

Sheet _____ of _____

Firm Name and Address	Circle One	Item No.	Item Description	* Agreed upon Unit Price	** Dollar Volume of Item
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				
Name Address	MBE WBE				

**** Dollar Volume of MBE Subcontractor** \$ _____

MBE Percentage of Total Contract Bid Price _____%

**** Dollar Volume of WBE Subcontractor** \$ _____

WBE Percentage of Total Contract Bid Price _____%

***The Dollar Volume shown in this column shall be the Actual Price Agreed Upon by the Prime Contractor and the MBE/WBE subcontractor, and these prices will be used to determine the percentage of the MBE/WBE participation in the contract.**

**** Dollar Volume of MBE/WBE Subcontractor Percentage of Total Contract Bid Price.**

If firm is a Material Supplier Only, show Dollar Volume as 60% of Agreed Upon Amount from Letter of Intent.

If firm is a Manufacturer, show Dollar Volume as 100% of Agreed Upon Amount from Letter of Intent.

ADDENDUM(S)

ADDENDUM #1

I, _____
(SIGNATURE)

representing _____

Acknowledge receipt of Addendum #1.

ADDENDUM #2

I, _____
(SIGNATURE)

representing _____

Acknowledge receipt of Addendum #2.

ADDENDUM #3

I, _____
(SIGNATURE)

representing _____

Acknowledge receipt of Addendum #3.

NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

CORPORATION

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

_____ Full name of Corporation

_____ Address as Prequalified

Attest _____ By _____
Secretary/Assistant Secretary President/Vice President/Assistant Vice President
Select appropriate title *Select appropriate title*

_____ Print or type Signer's name

_____ Print or type Signer's name

Date of Execution _____

CORPORATE SEAL

NON-COLLUSION , DEBARMENT AND GIFT BAN CERTIFICATION

PARTNERSHIP

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

Full Name of
Partnership

Address as Prequalified

Signature of Witness

 By

Signature of Partner

Print or type Signer's name

Print or type Signer's name

Date of Execution_____

NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

LIMITED LIABILITY COMPANY

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

Full Name of Firm

Address as Prequalified

Signature of Witness

Signature of Member/Manager/Authorized Agent
Select appropriate title

Print or type Signer's name

Print or type Signer's Name

Date of Execution _____

NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

JOINT VENTURE (2) or (3)

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

Instructions: **2 Joint Venturers** Fill in lines (1), (2) and (3) and execute. **3 Joint Venturers** Fill in lines (1), (2), (3) and (4) and execute. On Line (1), fill in the name of the Joint Venture Company. On Line (2), fill in the name of one of the joint venturers and execute below in the appropriate manner. On Line (3), print or type the name of the other joint venturer and execute below in the appropriate manner. On Line (4), fill in the name of the third joint venturer, if applicable and execute below in the appropriate manner.

(1) _____
 Name of Joint Venture

(2) _____
 Name of Contractor

 Address as Prequalified

_____ Signature of Witness or Attest	By	_____ Signature of Contractor
_____ Print or type Signer's name		_____ Print or type Signer's name

If Corporation, affix Corporate Seal and

(3) _____
 Name of Contractor

 Address as Prequalified

_____ Signature of Witness or Attest	By	_____ Signature of Contractor
_____ Print or type Signer's name		_____ Print or type Signer's name

If Corporation, affix Corporate Seal and

(4) _____
 Name of Contractor (for 3 Joint Venture only)

 Address as Prequalified

_____ Signature of Witness or Attest	By	_____ Signature of Contractor
_____ Print or type Signer's name		_____ Print or type Signer's name

If Corporation, affix Corporate Seal

Date of Execution _____

NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

Name of Prequalified Bidder

_____ Individual name

Trading and doing business as

_____ Full name of Firm

_____ Address as Prequalified

_____ Signature of Witness

_____ Signature of Prequalified Bidder, Individually

_____ Print or type Signer's name

_____ Print or type Signer's name

Date of Execution _____

NON-COLLUSION, DEBARMENT AND GIFT BAN CERTIFICATION

INDIVIDUAL DOING BUSINESS IN HIS OWN NAME

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion, debarment and gift ban certification, the Contractor is attesting his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

Name of Prequalified Bidder _____
Print or type name

Address as Prequalified

Signature of Prequalified Bidder, Individually

Print or type Signer's Name

Signature of Witness

Print or type Signer's name

Date of Execution _____

DEBARMENT CERTIFICATION

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation filed with the Department, or has become erroneous because of changed circumstances.
2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded*, as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.
3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.
4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR 1273)* provided by the Department, without subsequent modification, in all lower tier covered transactions.
5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.
6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

DEBARMENT CERTIFICATION

The prequalified bidder certifies to the best of his knowledge and belief, that he and his principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph b. of this certification; and
- d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- e. Will submit a revised Debarment Certification immediately if his status changes and will show in his bid proposal an explanation for the change in status.

If the prequalified bidder cannot certify that he is not debarred, he shall provide an explanation with this submittal. An explanation will not necessarily result in denial of participation in a contract.

Failure to submit a non-collusion affidavit and debarment certification will result in the prequalified bidder's bid being considered non-responsive.

Check here if an explanation is attached to this certification.

County : Lenoir

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
ROADWAY ITEMS						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM 45'- 112" X 75" 8 GA. CAP/HEAD WALLS	Lump Sum	L.S.	
0004	0043000000-N	226	GRADING	Lump Sum	L.S.	
0005	1077000000-E	SP	#57 STONE	200 TON		
0006	1115000000-E	SP	GEOTEXTILE FOR PAVEMENT STA- BILIZATION	275 SY		
0007	1121000000-E	520	AGGREGATE BASE COURSE	250 TON		
0008	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	80 TON		
0009	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	25 TON		
0010	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	10 TON		
0011	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	110 SY		
0012	6000000000-E	1605	TEMPORARY SILT FENCE	205 LF		
0013	6037000000-E	SP	COIR FIBER MAT	100 SY		
0014	6071012000-E	SP	COIR FIBER WATTLE	50 LF		
0015	6084000000-E	1660	SEEDING & MULCHING	0.5 ACR		
0016	6090000000-E	1661	SEED FOR REPAIR SEEDING	50 LB		
0017	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.2 TON		
0018	6111000000-E	SP	IMPERVIOUS DIKE	164 LF		
0019	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	3 EA		

County : Lenoir

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0020	6133000000-N	SP	GENERIC EROSION CONTROL ITEM DEWATERING	Lump Sum	L.S.	

1020/Jun28/Q1527.7/D66334412000/E20

Total Amount Of Bid For Entire Project :

CONTRACTOR _____

ADDRESS _____

Federal Identification Number _____ Contractors License Number _____

Authorized Agent _____ Title _____

Signature _____ Date _____

Witness _____ Title _____

Signature _____ Date _____

Point of Contact for Post-Bid Inquiries (e.g., Letters of Intent, Insurance, Bonds, Contract Execution):

Name _____

Email _____

Phone _____

THIS SECTION TO BE COMPLETED BY NC DEPARTMENT OF TRANSPORTATION

This bid has been reviewed in accordance with Article 103-1 of the Standard Specifications for Roads and Structures 2018.

Reviewed by NCDOT _____ *Date* _____
Division Contract Engineer

Accepted by NCDOT _____ *Date* _____
Division Engineer