Palm River Restoration Project Phase II, East McKay Bay (Palm River)
Environmental Compliance Documentation
March 2017

Contents

1. Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification for SAJ-2013-03249 (NW-LDD) – Page 2

2. Department of the Army Attachment A: Palm River Project SAJ-2013-03249 (NW-LDD) – Page 13

3. Palm River Endangered Species Act, FWS Letter – Page 22

4. Department of the Army Nationwide Permit 27 Decision Document – Page 24

CESAJ-RD-ST 31 July 2014

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Memorandum Documenting Nationwide Permit/Regional General Permit Verification for SAJ-2013-03249(NW-LDD)

1. **Applicant**: Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

2. Project Site:

a. Waterway Affected: McKay Bay

b. Project Location (*Site address, Section, Township, Range, City, County, State*): The project site consists of two parcels. The North parcel is located west of 12th Avenue South and the South parcel is located west of Colorado Avenue in Palm River – Clair Mel, Hillsborough County, Florida. The site is located in Section 21 and 28, Township 29 South, and Range 19 East.

c. Approximate Central Coordinates: Latitude 27.9358°; Longitude -82.4083°

3. Pre-Construction Notification Receipt Date: 12 November 2013 **Complete?** ☐ Yes ☒No

4. Additional Information Requested Date: (☐ N/A) 20 December 2013

5. Pre-Construction Notification Complete Date: 10 February 2014

6. Jurisdiction over Waters of the United States: Reference the Preliminary Jurisdictional Determination form dated 11 November 2013.

7. Authority: ☐Section 10 ☒Section 404 ☐Section 103

8. Project Description (Describe activities in waters of the U.S. considered for verification): The project proposes the restoration and/or improvement of wetlands and upland habitats on two parcels within the Tampa Bay watershed. Both parcels have extensive drainage ditch excavation that has resulted in reduced hydroperiods within palustrine wetlands and disruption of surface drainage due to extensive spoil banks. Disturbed areas on both parcels have been colonized by nuisance species, primarily Brazilian pepper and also lead tree, air potato, and cogongrass. Habitat restoration design elements would utilize a habitat mosaic approach that provides

palustrine wetland enhancement and creation, oligohaline and estuarine wetland habitat enhancement, and enhancement of existing coastal oak/palm hammock uplands.

North parcel water quality enhancement would occur by diverting the drainage ditch along 12th Avenue into a wet detention treatment pond and littoral shelf system on the north side of the roadway. The existing ditch would be graded back to create a 2.6-acre wet detention pond and a structure set at a target elevation of 2.0-feet NAVD to retain the low flow condition and provide stormwater treatment. Any water stages above elevation 2.0 feet would be allowed to pass over the structure and discharge to the west, as occurs in the existing condition. The existing disturbed wetland areas located on either side of 12th Avenue are proposed to be incorporated into the proposed system and would be interconnected via an under road culvert. Upland and wetland habitats south of 12th Avenue have been altered via the excavation of upland-cut ditches that were apparently constructed to drain otherwise isolated wetlands. The primary enhancement of remnant palustrine wetlands would consist of the backfilling of the existing upland-cut drainage ditches using the extensive spoil mounds that are present along the ditch courses. Restored wetland areas would be treated to remove nuisance/exotic vegetation, followed by replanting with desirable wetland plant species. Wetland areas to be enhanced would receive nuisance/non-native vegetation removal treatments. Upland areas outside of the spoil bank removal areas would be enhanced via nuisance vegetation removal and replanting if necessary.

The South parcel has two open ditch inflows. The existing drainage channel at the northern inflow is proposed to be diverted to a proposed wet detention pond. The secondary inflow to the South parcel would be captured within a proposed stormwater pond to retain the water up to a target elevation of 2.3 feet NAVD. The enhancement of wetland and upland habitats on the South parcel would be conducted in a similar fashion as those described for the North parcel.

The completed project would result in increased stormwater retention and nutrient load removal.

The project would result in 1.68 acres of temporary impacts, consisting of mostly dredge impacts to existing drainage ditches where stormwater detention areas are proposed. Permanent impacts of 0.36 acres would result from construction of drainage structures, ditch block and/or ditch backfill construction.

9. Type of Permit Requested: Nationwide Permit Number(s) 27; Regional General Permit number(s).

10. Pre-construction Notification Required: ☒Yes ☐No

11. Waiver required to begin work (*see General Condition 31 (a)(2) as applied to appropriate NWPs*): ☐Yes ☒ No **Rationale**: The project does not exceed the specified limits of NWP 27.

12. Coordination with Agencies/Tribes Needed: ☐Yes ☒No Date: Resolution:

13. Commenting Agencies: (☒ N/A)

a. US Fish and Wildlife Service (FWS):

b. US Environmental Protection Agency (EPA):

c. National Marine Fisheries Service (NMFS):

d. State Historic Preservation Office (SHPO):

e. State Agency (list commenting state agencies):

f. Other:

14. Substantive Issues Raised and U.S. Army Corps of Engineers (Corps) Resolution (*Consideration of Comments*): (☒ N/A)

15. Compliance with Other Federal Laws (*If specific law is not applicable write N/A*):

a. Endangered Species Act (ESA) – Section 7:

(1) "Action Area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

(2) Determined scope of analysis: The scope of analysis has been determined to be the immediate footprint of the project site.

(3) Name of species potentially present:

The project site is located within the core foraging area of the federally endangered wood stork (*Mycteria americana)*.

(4) Effects determination(s):

Wood Stork: The project is “not likely to adversely affect” the endangered wood stork.

(5) Basis for determination(s):

Wood Stork: Completion of the “South Florida Programmatic Concurrence Key for the Wood Stork – January 25, 2010” resulted in a determination of A > B > “not likely to adversely affect”.

(6) Date of FWS/NMFS concurrence(s): NA

(7) Additional information (optional): NA

b. Magnuson-Stevens Act – Essential Fish Habitat (EFH): NA

(1) Name of species potentially present:

(2) Effects determination(s):

(3) Basis for determination(s):

(4) Date of NMFS concurrence:

(5) Additional information (optional):

c. National Historic Preservation Act (NHPA) – Section 106:

(1) “Permit Area” Tests – Activities outside the waters of the United States

☐ are included because all of the following tests are satisfied:

☒ are not included because the following tests are not satisfied:

☐ Such activity would not occur but for the authorization of the work or structures within the waters of the United States;

☒Such activity is integrally related to the work or structures to be authorized within waters of the United States (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program);

☐ Such activity is directly associated (first order impact) with the work or structures to be authorized.

(2) Determined scope of analysis: The scope of analysis was determined to be the immediate footprint of the project site.

(3) Known site present: ☐ Yes ☒ No The consultant's search of the Department of Historic Resources (DHR) GIS data revealed three sites within the vicinity of the project area. The McKay Bay Midden is a few thousand feet to the west of the project site. This site is not eligible for listing th the National Register of Historic Places (NRHP). This site is likely to have been impacted by the construction of the maintenance dredge spoil containment berms that were constructed by the Corps in the 1960s. The current project proposes no improvements in this location. A second site, designated "NN", has not be investigated. The site location is mapped to occur in an area where past filling and excavation for the construction of the dredge containment cells has likely disturbed the resoruce. In this location, hand removal of nuisance vegetation along the drainage ditch is proposed; however, no excavatio or filling activities are proposed. Finally, a site designated as "Prehistoric Scatter #1" is also not eligible for listing in the NRHP. This area is located well off site within an existing residential development and would not be impacted by the proposed project. The project was coordinated with the Jacksonville District Archeologist and the determination was made that no further coordination was required. The standard cultural resources special conditions would be included as Special Conditions of the permit, if authorized.

(4) Survey required/conducted: ☐ Yes ☒ No

(5) Effects determination: "No Potential to Cause Effect"

(6) Rationale: Completion of the "Jacksonville District Regulatory Division Appendix C/Section 106 Historic Property Key - March 2013" resulted in a determination of 1 > 2 > 3 > "No Potential to Cause Effect." The permit area has been so extensively modified that little likelihood exists for the proposed project to impinge upon a historic property even if present within the affected area.

(7) Date consultation complete (if necessary): NA

(8) Additional information (optional): NA

d. Section 401 Water Quality Certification (WQC):

(1) Individual certification required: ☒ Yes ☐ No

(2) ☒Issued ☐Waived ☐Denied ☐Pending

The Florida Department of Environmental Protection, issued Permit No. 29-0322543-001 for this project on 12 December, 2013. The Southwest Florida Water Management District is the applicant for the project.

(3) Additional information (optional): NA

e. Coastal Zone Management Act (CZMA):

(1) Individual certification required: ☒ Yes ☐ No

(2) ☒Issued ☐Waived ☐Denied ☐Pending

The Florida Department of Environmental Protection, issued Permit No. 29-0322543-001 for this project on 12 December, 2013. Issuance of a State permit implies compliance with the CZMA.

(3) Additional information (optional): NA

f. Wild and Scenic Rivers Act:

(1) Project located on designated or "study" river: ☐ Yes ☒ No

(2) Managing agency: NA

(3) Date written determination provided that the project will not adversely affect the Wild and Scenic River designation or study status: NA

(4) Additional information (optional): NA

g. Other: NA

16. Special Conditions Required: ☒ Yes ☐ No **Rationale:**

a. Within 10 days from the date of initiating the authorized work, the Permittee shall provide to the Corps a written notification of the date of commencement of work authorized by this permit. This notification shall be sent to TampaCompliance.Reg@usace.army.mil

b. Within 60 days of completion of the work authorized, the Permittee must complete the "Self-Certification Statement of Compliance" form. The Permittee shall reference

this permit number, SAJ-2013-003249(NW-LDD) on all submittals. This form shall be sent to TampaCompliance.Reg@usace.army.mil

c. The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

d. Cultural Resources/Historic Properties:

1) No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

2) If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work in the vicinity and notify the Corps. The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

3) A cultural resources assessment may be required of the permit area, if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO and the Corps.

4) In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work in the vicinity shall immediately cease and the Permittee shall immediately

notify the medical examiner, Corps, and State Archeologist. The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist, SHPO and the Corps.

e. Prior to the initiation of any of the work authorized by this permit the Permittee shall install turbidity barriers around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained until the authorized work has been completed and all erodible materials have been stabilized.

f. Should any other regulatory agency require changes to the work authorized or obligated by this permit, the Permittee will be advised that a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Tampa Regulatory Office.

17. Compensatory Mitigation Determination: The applicant has avoided and minimized impacts to the maximum extent practicable.

a. Is compensatory mitigation required for unavoidable impacts to jurisdictional aquatic resources to reduce the individual and cumulative adverse environmental effects to a minimal level? ☐ Yes ☒ No The project is a habitat restoration project that would result in overall net benefit to wetlands and the aquatic environment. Therefore, no mitigation is required for this project.

b. Is the impact in the service area of an approved mitigation bank? ☐ Yes ☐ No

c. Does the mitigation bank have appropriate number and resource type of credits available? ☐ yes ☐ no ☐ N/A

d. Is the impact in the service area of an approved in-lieu fee program? ☐ Yes ☐ No

e. Does the in-lieu fee program have appropriate number and resource type of credits available? ☐ Yes ☐ No ☐ N/A

f. Check the selected compensatory mitigation option(s):

☐ mitigation bank credits

☐ in-lieu fee program credits

☐ permittee-responsible mitigation under a watershed approach

☐ permittee-responsible mitigation, on-site and in-kind

☐ permittee-responsible mitigation, off-site and out-of-kind

g. If a selected compensatory mitigation option deviates from the order of the options presented in §332.3(b)(2)-(6), explain why the selected compensatory mitigation option is environmentally preferable. Address the criteria provided in §332.3(a)(1) (i.e., the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project):

(1) Description of the compensatory mitigation: (☐ N/A)

(2) Selection of the mitigation type and location, §332.3(b)(2)-(6), considered the following: (☐ N/A)

Consideration	☐ **N/A – Permittee -Responsible**	☐ **N/A – <name of MB/ILF#1>**	☐ **N/A – <name of MB/ILF#2>**
uncertainty	<discuss/compare>	<discuss/compare>	<discuss/compare>
temporal loss	<discuss/compare>	<discuss/compare>	<discuss/compare>
risk	<discuss/compare>	<discuss/compare>	<discuss/compare>
size and ecological value of parcel	<discuss/compare>	<discuss/compare>	<discuss/compare>
consolidation of resources	<discuss/compare>	<discuss/compare>	<discuss/compare>
scientific/technical analysis, planning and implementation	<discuss/compare>	<discuss/compare>	<discuss/compare>
timing of site identification, project specific planning and financial assurances in advance of impact or otherwise	<discuss/compare>	<discuss/compare>	<discuss/compare>

identified high priority resource need on watershed scale	<discuss/compare>	<discuss/compare>	<discuss/compare>
achieve success soonest	<discuss/compare>	<discuss/compare>	<discuss/compare>
practicable and compatible with project	<discuss/compare>	<discuss/compare>	<discuss/compare>
likelihood to offset impact	<discuss/compare>	<discuss/compare>	<discuss/compare>
environmentally preferable	<discuss/compare>	<discuss/compare>	<discuss/compare>

(3) Selection relied upon the following aspects of the Mitigation Plan, §332.4(c)(2)-(14):

(☐ N/A if Mitigation Bank or In-Lieu Fee)

(a) Objectives: (☐ N/A) <Explain>

(b) Site Selection: (☐ N/A) <Explain>

(c) Site Protection Instrument: (☐ N/A) <Explain>

(d) Baseline Information: (☐ N/A) <Explain>

(e) Determination of Credits: (☐ N/A) <Explain>

(f) Mitigation Work Plan: (☐ N/A) <Explain>

(g) Maintenance Plan: (☐ N/A) <Explain>

(h) Performance Standards: (☐ N/A) <Explain>

(i) Monitoring Requirements: (☐ N/A) <Explain>

(j) Long-term management plan: (☐ N/A) <Explain>

(k) Adaptive management plan: (☐ N/A) <Explain>

(l) Financial Assurances: (☐ N/A) <Explain>

(m) Other Information: (☐ N/A) <Explain>

(4) Selection is environmentally preferable, §332.3(a)(1), based on the following: <Explain>

h. Other Mitigative Actions: NA

18. Determination (Reference General Condition 23(e)): The proposed activity, with proposed mitigation (if applicable), would result in no more than minimal individual and cumulative adverse environmental effects and would not be contrary to the public interest provided the special conditions identified above are incorporated. This project complies with all terms and conditions of NWP 27 including any applicable regional conditions.

PREPARED BY:

DARLENE DANNELS _____
Project Manager Date

REVIEWED BY:

For
KEVIN D. O'KANE _____
Chief, Tampa Permits Section Date

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
10117 PRINCESS PALM AVENUE, SUITE 120
TAMPA, FLORIDA 33610-8302

1 August 2014

REPLY TO ATTENTION OF

Regulatory Division
South Permits Branch
Tampa Permits Section
SAJ-2013-03249(NW-LDD)

Mr. Mark A. Hammond
Director, Resource Management Division
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34609-6899

Dear Mr. Hammond:

The U.S. Army Corps of Engineers (Corps) assigned your application for a Department of the Army permit, which the Corps received on November 12, 2013, the file number SAJ-2013-03249(NW-LDD). The project site consists of two parcels. The North parcel is located west of 12th Avenue South and the South parcel is located west of Colorado Avenue in Palm River – Clair Mel, Hillsborough County, Florida. The site is located in Section 21 and 28, Township 29 South, and Range 19 East.

A review of the information and drawings provided indicates that the project will result in the following work:

The project will restore and/or improve wetlands and upland habitats on two parcels within the Tampa Bay watershed. Both parcels have extensive drainage ditch excavation that has resulted in reduced hydroperiods within palustrine wetlands and disruption of surface drainage due to extensive spoil banks. Disturbed areas on both parcels have been colonized by nuisance species, primarily Brazilian pepper and also lead tree, air potato, and cogongrass. Habitat restoration design elements will utilize a habitat mosaic approach that provides palustrine wetland enhancement and creation, oligohaline and estuarine wetland habitat enhancement, and enhancement of existing coastal oak/palm hammock uplands.

North parcel water quality enhancement will occur by diverting the drainage ditch along 12th Avenue into a wet detention treatment pond and littoral shelf system on the north side of the roadway. The existing ditch will be graded back to create a 2.6-acre wet detention pond and a structure set at a target elevation of 2.0-feet NAVD to retain the low flow condition and provide stormwater treatment. Any water stages above

elevation 2.0 feet will be allowed to pass over the structure and discharge to the west, as occurs in the existing condition. The existing disturbed wetland areas located on either side of 12th Avenue will be incorporated into the proposed system and will be interconnected via an under road culvert. Upland and wetland habitats south of 12th Avenue have been altered via the excavation of upland-cut ditches that were apparently constructed to drain otherwise isolated wetlands. The primary enhancement of remnant palustrine wetlands will consist of the backfilling of the existing upland-cut drainage ditches using the extensive spoil mounds that are present along the ditch courses. Restored wetland areas will be treated to remove nuisance/exotic vegetation, followed by replanting with desirable wetland plant species. Wetland areas to be enhanced will receive nuisance/non-native vegetation removal treatments. Upland areas outside of the spoil bank removal areas will be enhanced via nuisance vegetation removal and replanting if necessary.

The South parcel has two open ditch inflows. The existing drainage channel at the northern inflow will be diverted to a proposed wet detention pond. The secondary inflow to the South parcel will be captured within a proposed stormwater pond to retain the water up to a target elevation of 2.3 feet NAVD. The enhancement of wetland and upland habitats on the South parcel will be conducted in a similar fashion as those described for the North parcel.

The completed project will result in increased stormwater retention and nutrient load removal.

The project will result in 1.68 acres of temporary impacts, consisting of mostly dredge impacts to existing drainage ditches where stormwater detention areas are proposed. Permanent impacts of 0.36 acres will result from construction of drainage structures, ditch block and/or ditch backfill construction.

Your project, as depicted on the enclosed drawings, is authorized by Nationwide Permit (NWP) Number 27. In addition, project specific conditions have been enclosed. This verification is valid until **March 18, 2017**. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit. Please access the U.S. Army Corps of Engineers' (Corps) Jacksonville District's Regulatory Internet page to access Internet links to view the Final Nationwide Permits, Federal Register Vol. 77, dated February 21, 2012,

specifically pages 10270 – 10290, the Corrections to the Final Nationwide Permits, Federal Register 77, March 19, 2012, and the List of Regional Conditions. The Internet page address is:

http://www.saj.usace.army.mil/Missions/Regulatory.aspx

Please be aware this Internet address is case sensitive and should be entered as it appears above. Once there you will need to click on "Source Book"; and, then click on "Nationwide Permits." These files contain the description of the Nationwide Permit authorization, the Nationwide Permit general conditions, and the regional conditions, which apply specifically to this verification for NWP 27. Enclosed is a list of the six General Conditions, which apply to all Department of the Army authorizations. You must comply with all of the special and general conditions and any project specific condition of this authorization or you may be subject to enforcement action. In the event you have not completed construction of your project within the specified time limit, a separate application or re-verification may be required.

The following special conditions are included with this verification:

1. Within 10 days from the date of initiating the authorized work, the Permittee shall provide to the Corps a written notification of the date of commencement of work authorized by this permit. This notification shall be sent to TampaCompliance.Reg@usace.army.mil

2. Within 60 days of completion of the work authorized, the attached *Self-Certification Statement of Compliance* must be completed and submitted to the U.S. Army Corps of Engineers. Send the completed form to TampaCompliance.Reg@usace.army.mil

3. **Cultural Resources/Historic Properties:**

a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other

physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition ; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist and from the Corps.

4. **Turbidity Barriers:** Prior to the initiation of any of the work authorized by this permit the Permittee shall install floating turbidity barriers with weighted skirts that extend to within one foot of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained until the authorized work has been completed and all erodible materials have been stabilized.

5. **Assurance of Navigation and Maintenance:** The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers, to remove,

relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

6. Should any other regulatory agency require changes to the work authorized or obligated by this permit, the Permittee will be advised that a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Tampa Regulatory Office.

This letter of authorization does not include conditions that would prevent the 'take' of a state-listed fish or wildlife species. These species are protected under sec. 379.411, Florida Statutes, and listed under Rule 68A-27, Florida Administrative Code. With regard to fish and wildlife species designated as species of special concern or threatened by the State of Florida, you are responsible for coordinating directly with the Florida Fish and Wildlife Conservation Commission (FWC). You can visit the FWC license and permitting webpage (http://www.myfwc.com/license/wildlife/) for more information, including a list of those fish and wildlife species designated as species of special concern or threatened. The Florida Natural Areas Inventory (http://www.fnai.org/) also maintains updated lists, by county, of documented occurrences of those species.

This letter of authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP, please contact me by telephone at 813-769-7068.

Thank you for your cooperation with our permit program. The Corps Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to complete our automated Customer Service Survey at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Please be aware

this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Your input is appreciated – favorable or otherwise.

Sincerely,

Darlene Dannels
Project Manager

Enclosures

Copies furnished:
Mr. Michael Palmer MPalmer@kingengineering.com

CESAJ-RD-PE

GENERAL CONDITIONS
33 CFR PART 320-330
PUBLISHED FEDERAL REGISTER DATED 13 NOVEMBER 1986

1. The time limit for completing the work authorized ends on **March 18, 2017**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort of if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2013-03249(NW-LDD)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019.

_____
(TRANSFEREE-SIGNATURE)

_____
(DATE)

_____
(NAME-PRINTED)

_____

_____
(MAILING ADDRESS)

_____
(CITY, STATE, ZIP CODE)

_____
(SUBDIVISION)

_____ _____
(LOT) **(BLOCK)**

_____
(STREET ADDRESS)

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: SAJ-2013-03249(NW-LDD)

Permittee's Name & Address (please print or type):_____

_____

_____

Telephone Number:_____

Location of the Work:_____

_____

Date Work Started:_____ Date Work Completed:_____

PROPERTY IS INACCESSIBLE WITHOUT PRIOR NOTIFICATION: YES _____ NO_____

TO SCHEDULE AN INSPECTION PLEASE CONTACT _____
AT _____

Description of the Work (e.g. bank stabilization, residential or commercial filling, docks, dredging,
etc.):_____

_____

_____

Acreage or Square Feet of Impacts to Waters of the United States: _____

Describe Mitigation completed (if applicable): _____

_____

Describe any Deviations from Permit (attach drawing(s) depicting the deviations):

_____

_____

****

I certify that all work, and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

_____
Signature of Permittee

_____
Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Field Office
1601 Balboa Avenue
Panama City, FL 32405-3721

IN REPLY REFER TO:

Tel 9850)769-0552
Fax (850) 763-2177

February 22, 2017

Mr. John Ettinger
Gulf Coast Ecosystem Restoration Council
500 Poydras Street, Suite 1117
New Orleans, Louisana 70130

Re: Gulf Restoration - RESTORE Act -
Palm River Restoration Project Phase I
I, East McKay Bay (Palm River)
04EF3000-2017-I-0086

Dear Mr. Ettinger:

The Fish and Wildlife Service (Service) has reviewed the Restore Act funding project titled, "Palm River Restoration Project Phase II, East McKay Bay (Palm River)". We submit this letter under the authority of the Endangered Species Act (Act) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The proposed project includes removal of invasive plant species, re-vegetation with natural plant species, and construction of storm water retention ponds. The changes to the project are only administrative in nature, as EPA has transferred the action items to The State of Florida for implementation. The components of these actions have been previously consulted on:

1) Wood Stork – May Affect, Not likely to adversely Affect – this determination was made through the use of the South Florida Programmatic Concurrence Key for the Wood Stork
2) Indigo Snake - May Affect, Not likely to adversely Affect – this determination was made and concurred with the Jacksonville Field Office through email correspondence dated 9/28/2015.

Based on the negligible changes to the proposed project and the previous consultations, we agree with the determination "may affect, not likely to adversely affect" listed species.

The above comments are provided in accordance with the Endangered Species Act of 1973, as amended (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). This fulfills the requirement of Section 7 of the Act and no further action is required. If modifications are made to the project, if additional information involving potential effects to the listed species becomes available, if new species is listed, or if designated critical habitat may be adversely affected by the project, re-initiation of consultation may be necessary.

If you have any questions about these comments, please contact Channing St. Aubin (850) 769-0552) extension 248 for additional information and coordination.

Sincerely,

Dr. Sean Blomquist
Ecological Services Chief

DECISION DOCUMENT
NATIONWIDE PERMIT 27

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 impacts, 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

Aquatic Habitat Restoration, Establishment, and Enhancement Activities. Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.

To the extent that a Corps permit is required, activities authorized by this NWP include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to establish or re-establish wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

This NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services.

Except for the relocation of non-tidal waters on the project site, this NWP does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa) or uplands. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type. This NWP does not authorize stream channelization. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments.

Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services.

Reversion. For enhancement, restoration, and establishment activities conducted: (1) In accordance with the terms and conditions of a binding stream or wetland enhancement or restoration agreement, or a wetland establishment agreement, between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperating agencies; (2) as voluntary wetland restoration, enhancement, and establishment actions documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) on reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the applicable state agency, this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or establishment activities). The reversion must occur within five years after expiration of a limited term wetland restoration or establishment agreement or permit, and is authorized in these circumstances even if the discharge occurs after this NWP expires. The five-year reversion limit does not apply to agreements without time limits reached between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS, or an appropriate state cooperating agency. This NWP also authorizes discharges of dredged or fill material in waters of the United States for the reversion of wetlands that were restored, enhanced, or established on prior-converted cropland or on uplands, in accordance with a binding agreement between the landowner and NRCS, FSA, FWS, or their designated state cooperating agencies (even though the restoration, enhancement, or establishment activity did not require a section 404 permit). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before conducting any reversion activity the permittee or the appropriate Federal or state agency must notify the district engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps

Regulatory requirements are applicable to that type of land at the time. The requirement that the activity results in a net increase in aquatic resource functions and services does not apply to reversion activities meeting the above conditions. Except for the activities described above, this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion.

Reporting. For those activities that do not require pre-construction notification, the permittee must submit to the district engineer a copy of: (1) The binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement, or a project description, including project plans and location map; (2) the NRCS or USDA Technical Service Provider documentation for the voluntary stream enhancement or restoration action or wetland restoration, enhancement, or establishment action; or (3) the SMCRA permit issued by OSMRE or the applicable state agency. The report must also include information on baseline ecological conditions on the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. These documents must be submitted to the district engineer at least 30 days prior to commencing activities in waters of the United States authorized by this NWP.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing any activity (see general condition 31), except for the following activities:

> (1) Activities conducted on non-Federal public lands and private lands, in accordance with the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the U.S. FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies;
>
> (2) Voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or
>
> (3) The reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency.

However, the permittee must submit a copy of the appropriate documentation to the district engineer to fulfill the reporting requirement. (Sections 10 and 404)

Note: This NWP can be used to authorize compensatory mitigation projects, including mitigation banks and in-lieu fee projects. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition, since compensatory mitigation is generally intended to be permanent.

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 Authority

- 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 minimal individual and cumulative adverse effects on the aquatic environment and generally comply with the related laws cited in 33 CFR 320.3. Activities that result in more than minimal individual and cumulative adverse effects on the aquatic environment 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). General condition 16 restricts the use of NWPs for activities that are located in Federally-designated wild and scenic rivers. None of the NWPs authorize the construction of 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 NWPs 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 February 16, 2011, 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 February 16, 2011, 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.

The Corps proposed to modify this NWP by adding "the removal of small dams" to the list of examples of activities authorized by this NWP. We also proposed to remove the phrase "that has not been abandoned" that modifies the term "prior converted cropland." We proposed to change "Notification" provisions (1) and (2) so that certain stream restoration, rehabilitation, and enhancement activities would be subject to the reporting provision instead of requiring pre-construction notification. Lastly, we proposed to modify "Notification" provision (1) by adding the U.S. Forest Service to the list of Federal agencies that can develop stream or wetland enhancement, restoration, or establishment agreements.

Many commenters supported the addition of removal of small dams to the list of examples of activities authorized by this NWP. One commenter said that if this NWP is modified to authorize the removal of small dams, the NWP should also authorize discharges of dredged or fill material to re-establish appropriate stream channel configurations, with a 1/2-acre limit for the stream channel reconfiguration. Some of these commenters requested clarification as to what constitutes a "small dam." One commenter agreed with the addition of removing small dams but expressed concern regarding potential impacts to water quality when a small dam is removed. One commenter recommended requiring sediment testing before authorizing the removal of small dams.

After further consideration, we have determined that since the NWP 27 issued in 2007 authorized the installation, removal, and maintenance of small water control structures (which clearly includes small dams), it is not necessary to modify this NWP by adding the removal of small dams to the list of examples of activities authorized by NWP 27, so we have not made this proposed change. We agree that the NWP should also authorize the restoration of the stream channel that were affected by the construction of a small water control structure, if that water control structure is to be removed. We do not agree that such activities should be limited to 1/2-acre, since this NWP authorizes only aquatic resource restoration, establishment, and enhancement activities that result in net increases in aquatic resource functions and services. Aquatic resource habitat restoration and enhancement activities involving the removal of small water control structures should be designed and implemented to prevent or minimize the movement of pollutants, including chemical compounds adsorbed to sediments that have accumulated in the impoundment, from the impounded area once the small water control structure is removed. Sediment testing may be required on a case-by-case basis if there are substantive concerns about potential contaminants.

Several commenters suggested that NWP 27 activities be subject to strict technical guidelines and enforceable success criteria commensurate with the scope of the activity being undertaken. A number of commenters expressed concern that some of the activities authorized by NWP 27 may result in a loss of waters rather than a net gain. One commenter said that aquatic resource restoration, establishment, and enhancement activities should have management plans that include goals and objectives, baseline conditions, effective monitoring requirements, and adaptive management plans. This commenter stated that without this level of documentation, the effectiveness of any restoration, establishment, or enhancement activity cannot be effectively evaluated for success. One commenter recommended adding a requirement for performance bonds to ensure that these activities are monitored and are achieving their goals and objectives.

For those NWP 27 activities that require pre-construction notification, the prospective permittee is required to submit a complete pre-construction notification, with the information listed in paragraph (b) of general condition 31. Activities conducted in accordance with agreements with other Federal or state agencies should be adequately documented to determine whether there will be net increases in aquatic resource functions and services. When Corps districts review the reports required for activities conducted under agency agreements, they will assess whether those activities will satisfy the terms and conditions of this NWP. If a particular activity does not, then the district will notify the project proponent within 30 days of when the report was submitted to the district engineer. This NWP requires authorized activities to result in net increases in aquatic resource functions and services, which will generally add acreage to the nation's aquatic habitat base. Although there may be some NWP 27 activities that result in a decrease in aquatic resource area to increase the functional capacity of those aquatic habitats, such changes are acceptable because it is the ecosystem functions, and the benefits people derive from those functions, that are important to society. To provide better information to assess whether there will be a net increase in aquatic resource functions and services, we have added a provision to the reporting requirement that requires the prospective permittee to provide information on the baseline ecological conditions at the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. Unless the activities authorized by this NWP are to be used as compensatory mitigation for Department of the Army permits (e.g., mitigation banks or in-lieu fee projects), the project proponent is not required to submit mitigation plans that comply with 33 CFR 332.4. The aquatic resource restoration, establishment, or enhancement activity should be sufficiently documented to help district engineers decide whether the terms and conditions of this NWP are satisfied. Performance bonds or other types of financial assurances may be required on a case-by-case basis, if such assurances are necessary to provide funding to be used for remediation or adaptive management.

One commenter requested that this NWP authorize the rehabilitation or enhancement of tidal streams, stating that such activities would result in net increases in the functions and services provided by existing tidal aquatic resources and would not be contrary to the provision that prohibits the relocation of tidal waters or the conversion of tidal waters to other aquatic uses. One commenter pointed out that NWP 27 covers a wide range of habitat restoration and enhancement activities and there should be greater flexibility to allow resource managers to

plan for sea level rise. This commenter recommended adding the beneficial use of dredged material as a thin layer application to provide sediment to sediment starved marshes, which may provide substrate to maintain those marshes as local sea levels rise. One commenter suggested modifying this NWP by clarifying that it authorizes activities that involve removing or modifying existing drainage ditches and structures, to establish or re-establish wetland or stream hydrology. Another commenter suggested adding the re-establishment of submerged aquatic vegetation or emergent tidal wetlands in areas where those plant communities previously existed. One commenter supported the inclusion of mechanized land clearing to remove non-native invasive species in this NWP.

We agree that the rehabilitation or enhancement of tidal streams should be authorized by this NWP and have modified the first paragraph to include this category of activities. The enhancement of tidal wetlands may be accomplished by minor additions of sediment to facilitate changes in tidal marsh elevation that may successfully track sea level rise. We agree with providing more clarity concerning the types of ditch manipulations that can be used for restoring wetland hydrology and have removed the phrase "and drainage ditches" after "the backfilling of artificial channels" and replaced it with "such as drainage tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology" after "the removal of existing drainage structures." We also agree that the re-establishment of submerged aquatic vegetation or emergent tidal wetlands should be authorized by this NWP, as long as those shallow water habitat and wetland types previously existed in the project area. Such re-establishment activities would not constitute a conversion of tidal waters to other aquatic uses; instead it would be a form of rehabilitation of those habitat types. We have retained the provision authorizing mechanized land clearing to remove non-native, invasive plant species.

One commenter requested that the terms "type" and "natural wetland" be defined in the paragraph that describes the activities that are not authorized by this NWP. Another commenter supported the provision that prohibits the conversion of natural wetlands to another aquatic use and recommended that this prohibition also be applied to the conversion of one type of aquatic habitat to another. One commenter said that the NWP should clearly state that wetlands with documented hydrologic alterations are not "natural" wetlands and that hydrologic restoration of these wetlands is not to be considered a conversion of a natural wetland to another "type" but instead it should be considered as wetland rehabilitation. One commenter stated that a provision should be added to this NWP to clarify that compensatory mitigation is not required for activities authorized by this NWP since they must result in net increases in aquatic resource functions and services.

As indicated by the parenthetical in the first sentence of the referenced paragraph, the term "type" as used for the purposes of this NWP refers to the general category of aquatic resource, such as wetland or stream. We do not believe it would be appropriate to define the term "natural wetland" except to contrast it with constructed wetlands, such as those that are often used to treat wastewater. District engineer have the discretion to determine what constitutes a "natural wetland" for the purposes of this NWP. We have added a sentence to this paragraph to clarify that changes in wetland plant communities that are caused by

restoring wetland hydrology are to be considered wetland rehabilitation activities that are authorized by this NWP. Such wetland rehabilitation activities are not to be considered conversions to another aquatic habitat type. We concur that compensatory mitigation should not be required for NWP 27 activities and have added a sentence to the text of the NWP to clearly state this stipulation.

One commenter said that the NWP should prohibit the relocation of naturally occurring non-tidal aquatic resources. One commenter suggested changing the conversion provision to state that no wetlands may be converted to open water impoundments rather than limiting the prohibition to tidal wetlands. Another commenter stated that while they understand the need for language to clarify that conversion from "streams to wetlands" is not desirable, there are some areas that have been drained or ditched to create water flow away from agricultural land, where there was previously a wetland. This commenter asked whether reestablishing wetlands on the site could be authorized by this NWP. The commenter said that the NWP is too restrictive and has the potential to prohibit activities that may result in aquatic resources that are more appropriately integrated into the landscape.

The relocation of non-tidal waters and wetlands on a project site, including relocation activities that convert open water impoundments to non-tidal wetlands and vice versa, can result in net increases in aquatic resource functions and services when viewed in a watershed context. Therefore, we do not agree that it is appropriate to exclude such activity from coverage under this NWP if it meets all other conditions, including a net increase in resource functions and services. Ditches that were constructed in wetlands to drain those wetlands are not considered streams for the purposes of this provision of the NWP. As discussed earlier, this NWP authorizes the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology.

One commenter asked if the removal of bulkheads, derelict structures, and pilings, can be authorized by this NWP while another suggested that the NWP allow for the temporary use of spat (e.g., larval oysters) collecting devices for the purpose of shellfish restoration.

The removal of structures in navigable waters of the United States is authorized by this NWP if it is a part of an aquatic habitat restoration or enhancement activity. The temporary use of spat devices for oyster habitat restoration is more appropriately authorized by NWP 4.

One commenter said that the provisions concerning shellfish seeding are not clear and asked if the intent of the NWP is to authorize shellfish seeding activities to enhance threatened shellfish populations. This commenter also said that shellfish enhancement activities should be limited to native species. One commenter recommended authorizing shellfish restoration activities without requiring pre-construction notification when such activities are conducted or approved by a government agency with resource management oversight. One commenter requested we not include shellfish restoration activities in this NWP, because these activities alter existing substrate and benthic habitat and should be reviewed under the individual permit evaluation process. This commenter also recommended imposing a one-acre limit for the placement of scattered shell.

This NWP authorizes shellfish seeding activities, which may help increase shellfish populations in specific waters. Division engineers may regionally condition this NWP to limit shellfish seeding activities to native species. Further, in response to a pre-construction notification or report, a district engineer may exercise discretionary authority and condition a specific NWP authorization to limit it to the seeding of native shellfish species. We do not agree that there should be no pre-construction notification requirement if there is oversight by another government entity with the responsibility for managing shellfish resources. Since these activities occur in navigable waters, the Corps needs to review them on a case-by-case basis to ensure that they result in minimal individual and cumulative adverse effects on the aquatic environment and navigation and provide net increases in aquatic resource functions and services. Shellfish restoration activities should be authorized by this NWP because shellfish provide important ecosystem services in aquatic ecosystems, including the improvement of water quality. In most cases, the changes to benthic habitat are minor when compared to the ecosystem services provided by the shellfish. We also do not agree that there should be a one acre limit for the placement of shell to construct oyster habitat because larger oyster habitat construction activities can still result in a net increase in aquatic resource functions and services.

One commenter said that stream restoration projects should be limited to 500 linear feet. One commenter stated that the construction of small nesting islands and the alteration of rare or imperiled wetlands should be not be authorized by this NWP. This commenter also suggested acreage limits for categories of activities authorized by this NWP, such as limiting excavation of wetlands to provide shallow water habitat for wildlife to 1/2-acre in altered wetlands; excavating no more than 1 and 1/2-acre of wetlands that have been regularly farmed within the past five years or wetlands documented to be dominated by invasive species; a 3-acre limit for excavation activities; and limiting the placement of fill for the construction of dikes, berms, or water control structures to two acres. This commenter also recommended limiting impoundments to a maximum height of six feet, with a maximum impounded area of no more than five acres during a design flood. This commenter also said that enhancement of hydrology should not be authorized unless a state agency concurs that the wetland has been farmed within the last five years or is dominated by invasive species.

Since this NWP authorizes only those aquatic habitat restoration, establishment, and enhancement activities that result in net increases in aquatic resource functions and services, we do not agree that the recommended limits should be added to this NWP. Division engineers can regionally condition this NWP to restrict or prohibit its use over specific geographic areas or categories of waters. In response to a pre-construction notification, district engineers can add conditions to the NWP authorization to ensure that the NWP authorizes only those activities that result in minimal adverse effects on the aquatic environment.

Two commenters supported the addition of the United States Forest Service as a federal agency that can develop agreements for the restoration, enhancement, or establishment of streams and wetlands. One commenter recommended removing the reversion provision of

NWP 27. Another commenter said that the reversion provision should be eliminated or significantly modified because it is inconsistent with other NWPs. Two commenters stated that the reversion of wetlands should not be authorized if the wetlands were being used for compensatory mitigation. One commenter asked how many acres of wetlands could be reverted under this NWP. One commenter asked whether a "USDA Technical Service Provider" includes county soil and water conservation districts.

The reversion provision is necessary for those aquatic resource restoration, enhancement, or establishment activities that are done in accordance with binding agreements, voluntary actions, or permits, where those agreements, actions, or permits allow the project proponent to revert the affected lands to its prior condition. If the reversion provision is removed, it would create a disincentive to do certain aquatic restoration, enhancement, or establishment activities that could provide some aquatic resource functions and services for a substantial period of time and benefit the watershed. Nationwide permit 27 differs from the other NWPs because of the types of activities it authorizes. As stated in the Note at the end of NWP 27, reversion of an area used as a compensatory mitigation project is not authorized by this NWP. We do not track the acreage of wetland or stream restoration and enhancement activities, or of wetland establishment activities, that were authorized by NWP 27 and might be eligible for reversion. There is no limit on the amount of wetlands that can be reverted under a single authorization, provided all conditions of the NWP are met. County soil and water conservation districts can register with the U.S. Department of Agriculture to be a technical service provider.

One commenter said that pre-construction notifications should include photographs, a description of pre-project site conditions, and a discussion of general aquatic resource functions and services anticipated to be provided by the activity. Another commenter stated that pre-construction notification should be required for all activities.

Paragraph (b) of general condition 31, pre-construction notification, requires prospective permittees to submit documentation that describes the proposed activity, including the anticipated loss of waters of the United States and, if appropriate, sketches that help clarify the project. The pre-construction notification also must include a delineation of wetlands, other special aquatic sites, and other aquatic habitats. We do not agree that pre-construction notification should be required for all activities. The reporting requirements for those activities that do not require pre-construction notification provide sufficient opportunity for district engineers to notify a project proponent if the proposed work does not comply with the terms and conditions of the NWP. We have modified the "Reporting" provision of this NWP to require the permittee to submit information on the baseline ecological conditions at the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. We have also changed the "Notification" provision of this NWP by replacing the phrase "the activity" with "any activity" to clarify that any activity that does not require reporting requires a pre-construction notification. The last sentence of this NWP has been changed to clarify that appropriate documentation concerning the agreement, voluntary action, or Surface Mining Control and Reclamation Act permit is to be provided to the district engineer to fulfill the reporting requirement.

One commenter said the NWP should require the use of best management practices to avoid sediment loading of waters especially when mechanized land clearing or work is conducted in waters of the United States. The commenter stated that best management practices, such as floating barriers, should also be used in upland areas to protect downstream water quality. One commenter stated that Tribes should be notified to ensure that NWP 27 activities avoid impacts to tribal treaty natural resources and cultural resources.

General condition 12, soil erosion and sediment controls, requires permittees to implement appropriate soil and erosion and sediment controls during the work. In response to a pre-construction notification, district engineers can add conditions to the NWP authorization to require more specific sediment and erosion controls. Division engineers can impose regional condition on this NWP to require notification of the appropriate Tribe or Tribes if a proposed activity might affect tribal treaty natural resources and cultural resources. General condition 17, Tribal rights, requires that no NWP activity or its operation impair reserved treaty rights, including treaty fishing and hunting rights. Cultural resources are protected through the requirements of general condition 20, historic properties, and general condition 21, discovery of previously unknown remains and artifacts.

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 minimal individual and cumulative adverse effects on the aquatic environment. 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 minimal adverse effects on the aquatic environment, 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 minimal individual and cumulative adverse effects on the aquatic environment 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 minimal individual and cumulative adverse effects on the aquatic environment. 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 authorize activities that result only in minimal individual and cumulative adverse effects on the aquatic environment. 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 aquatic habitat restoration, establishment, and enhancement activities that have minimal individual and cumulative adverse effects on the aquatic environment. 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 February 16, 2011, Federal Register notice, the Corps requested comments on the

proposed reissuance of this NWP. The Corps proposed to add the removal of small dams from the list of examples of activities authorized by this NWP. The Corps also proposed to add stream restoration and enhancement to the types of binding agreements that could be executed by the U.S. Fish and Wildlife Service, Natural Resources Conservation Service, Farm Service Agency, National Marine Fisheries Service, National Ocean Service, and U.S. Forest Service, or their designated state cooperating agencies.

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 effects on the aquatic environment, especially in high value or unique wetlands and other waters.

Corps divisions and districts also monitor and analyze the cumulative adverse effects of the NWPs, and if warranted, further restrict or prohibit the use of the NWPs to ensure that the NWPs do not authorize activities that result in more than minimal individual and cumulative adverse effects on the aquatic environment. 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 NWPs, 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 minimal individual and cumulative adverse effects on the aquatic environment, 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 minimal individual and cumulative adverse 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 NWPs. During the evaluation of a pre-construction notification, the district engineer may determine that additional avoidance and minimization is practicable. 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 effects on the aquatic environment, 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

The affected environment consists of terrestrial and aquatic ecosystems. The total land area in the United States is approximately 2,300,000,000 acres, and the total land area in the contiguous United States is approximately 1,894,000,000 acres (Lubowski et al. 2006) . Land uses in 48 states of the contiguous United States as of 2002 is provided in Table 3.1 (Lubowski et al. 2006). 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. Agricultural and non-agricultural land uses in the 48 states (Lubowski et al. 2006).

Land Use	Acres	Percent of Total
Agriculture	1,171,000,000	61.8
Forest land	425,000,000	22.4
Transportation use	27,000,000	1.4
Recreation and wildlife areas	100,000,000	5.3
National defense areas	15,000,000	0.8
Urban land	59,000,000	3.1
Miscellaneous use	97,000,000	5.1
Total land area	1,894,000,000	100.0

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 also http://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands/fgdc-announce , accessed December 12, 2011). 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.

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 coastline. 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).

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.

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).

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 2009) 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. The land use determined by 2007 NRI is summarized in Table 3.3. The 2007 NRI estimates that there are 110,671,500 acres of palustrine and estuarine wetlands on non-Federal land and water areas in the United States (USDA 2009). The 2007 NRI estimates that there are 48,471,100 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 2007 National Resources Inventory acreages for palustrine and estuarine wetlands on non-federal land, by land cover/use category (USDA 2009).

National Resources Inventory Land Cover/Use Category	Area of Palustrine and Estuarine Wetlands (acres)
cropland, pastureland, and Conservation Reserve Program land	16,790,300
forest land	66,043,100
rangeland	7,940,300
other rural land	14,744,800
developed land	1,571,900
water area	3,581,100
Total	110,671,500

The land cover/use categories used by the 2007 NRI are defined below (USDA 2009). Croplands are areas used to produce crops adapted 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, by stream order. This estimate does not include many

small streams. Many small streams are not mapped on 1:24,000 scale U.S. Geological Survey topographic maps (Leopold 1994) or included in other analyses (Meyer and Wallace 2001). In a study of stream mapping in the southeastern United States, only 20% 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). For a 1:24,000 scale topographic map, the smallest tributary found by using 10-foot contour interval has drainage area of 0.7 square mile and length of 1,500 feet, and smaller channels are common throughout the United States (Leopold 1994). 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 may be classified as "waters of the United States."

The USFWS status and trends study does not assess the condition or quality of wetlands and deepwater habitats (Dahl 2011). The Nation's aquatic resource base is underestimated by the USFWS status and trends study, the National Wetland Inventory (NWI), and studies that estimate the length or number of stream channels within watersheds (see above). The status and trends study does not include Alaska and Hawaii. The underestimate by the status and trends study and the NWI results from the minimum size of wetlands detected through remote sensing techniques and the difficulty of identifying certain wetland types through those remote sensing techniques. The NWI maps do not show small or linear wetlands (Tiner 1997) that may be directly impacted by activities authorized by NWPs. For the latest USFWS status and trends study, most of the wetlands identified are larger than 1 acre, but the minimum size of detectable wetlands varies by wetland type (Dahl 2011). Some wetland types less than one acre in size can be identified; the smallest wetland detected for the most recent status and trends report was 0.1 acre (Dahl 2011). Because of the limitations of remote sensing techniques, certain wetland types are not included in the USFWS status and trends study: seagrass beds, submerged aquatic vegetation, submerged reefs, and certain types of forested wetlands (Dahl 2011). Therefore, activities authorized by NWPs 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.

Information on water quality in waters and wetlands, as well as the causes of water quality impairment, is collected by the U.S. Environmental Protection Agency (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. The 2010 national summary of water quality data (U.S. EPA 2012).

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	965,693 miles	27.3	445,079 miles	6,369 miles	514,246 miles
Lakes, reservoirs and ponds	41,666,049 acres	18,796,765 acres	45.1	5,833,964 acres	38,681 acres	12,924,120 acres
Bays and estuaries	87,791 square miles	32,830 square miles	37.4	11,045 square miles	17 square miles	21,768 square miles
Coastal shoreline	58,618 miles	9,143 miles	15.6	1,746 miles	0 miles	7,396 miles
Ocean and near coastal waters	54,120 square miles	1,275 square miles	2.4	968 square miles	0 square miles	307 square miles
Wetlands	107,700,000 acres	1,311,645 acres	1.2	208,944 acres	805 acres	1,101,895 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

According to the 2010 national summary (U.S. EPA 2012), 53% of assessed rivers and streams, 66% of assessed bays and estuaries, 81% of assessed coastal shoreline, 24% of assessed ocean and near coastal waters, and 84% of assessed wetlands are impaired.

For rivers and streams, 34 causes of impairment were identified, and the top 10 causes were pathogens, sediment, nutrients, organic enrichment/oxygen depletion, polychlorinated biphenyls, habitat alterations, metals (excluding mercury), mercury, flow alterations, and temperature. The primary sources of impairment for the assessed rivers and streams were agriculture, atmospheric deposition, unknown sources, hydrology modification, urban-related runoff/stormwater, wildlife, municipal discharges/sewage, unspecified non-point sources, habitat alterations, and resource extraction.

For bays and estuaries, 28 causes of impairment were identified, and the top 10 causes of impairment were mercury, pathogens, polychlorinated biphenyls, organic enrichment/oxygen depletion, dioxins, metals (excluding mercury), noxious aquatic plants, pesticides, algal growth, and unknown causes of impaired biota. The primary sources of impairment of bays and estuaries were atmospheric deposition, "unknown," municipal discharges/sewage, wildlife, industrial, other sources, agriculture, unspecified non-point sources, hydrologic modifications, and habitat alterations.

For coastal shorelines, 17 causes of impairment were listed, led by mercury, pathogens,

organic enrichment/oxygen depletion, metals (excluding mercury), pesticides, polychlorinated biphenyls, turbidity, nutrients, algal growth, and unknown causes of impaired biota. The top 10 sources of impairment for coastal shorelines were "unknown," atmospheric deposition, urban-related runoff/stormwater, municipal discharges/sewage, agriculture, hydrologic modifications, industrial, unspecified non-point sources, wildlife, and recreational boating and marinas.

For ocean and near coastal waters, 16 causes of impairment were identified, and the top 10 causes of impairment were mercury, pathogens, organic enrichment/oxygen depletion, nuisance exotic species, toxics, polychlorinated biphenyls, turbidity, pesticides, metals, and toxic organics. Habitat alterations were ranked eleventh. The primary sources of impairment of ocean and near coastal waters were "unknown," atmospheric deposition, recreational boating and marinas, municipal discharges/sewage, unspecified non-point sources, urban-related runoff/stormwater, recreation and tourism (non-boating), industrial, hydrologic modifications, and construction.

For wetlands, 27 causes of impairment were identified, and the top 10 causes were organic enrichment/oxygen depletion, pathogens, mercury, metals (excluding mercury), habitat alterations, nutrients, flow alterations, toxic inorganics, total toxics, and sediment. The primary sources for wetland impairment were "unknown," wildlife, municipal discharges/sewage, agriculture, atmospheric deposition, industrial, hydrology modifications, resource extraction, other, and unspecified non-point sources.

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.

Not all of the Nation's aquatic resources are subject to regulatory jurisdiction under Section 404 of the Clean Water Act. Waters of the United States subject to Section 404 of the Clean Water Act are defined at 33 CFR part 328. Some wetlands are not subject to Clean Water Act jurisdiction because they do not meet the criteria at Part 328. In its decision in *Solid Waste County of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001), the U.S. Supreme Court ruled that Clean Water Act jurisdiction does not apply to isolated, intrastate, non-navigable waters based on their use as habitat for migratory birds. Tiner (2003) estimated that in some areas of the country, the proportion of wetlands that are geographically isolated, and may not be subject to Clean Water Act jurisdiction is approximately 20 to 50 percent of the wetland area, and there are other areas where more than 50 percent of the wetlands are geographically isolated. Geographically isolated wetlands comprise a substantial proportion of the wetlands found in regions with arid, semi-arid, and semi-humid climates, as well as areas with karst topography (Tiner 2003).

However, it is difficult to determine from maps or aerial photographs whether wetlands are hydrologically isolated from other waters, because there may be small surface hydrologic connections that are not included on those maps or detected by those photographs (Tiner 2003). The scope of waters subject to Clean Water Act jurisdiction has also been affected by the U.S. Supreme Court decision in the consolidated cases of *Rapanos v. U.S.* and *Carabell v. U.S.*, but there have been no formal studies to estimate the proportion of wetlands, streams, and other aquatic resources that may have been affected by that decision.

This NWP authorizes activities in all waters of the United States. These waters are included in the marine, estuarine, palustrine, lacustrine, and riverine systems of the Cowardin classification system.

Wetland functions are the biophysical processes that occur within a wetland (King et al. 2000). Wetlands provide many functions, such as habitat for fish and shellfish, habitat for waterfowl and other wildlife, habitat for rare and endangered species, food production, plant production, flood conveyance, flood-peak reduction, flood storage, shoreline stabilization, water supply, ground water recharge, pollutant removal, sediment accretion, and nutrient uptake (NRC 1992).

Functions provided by streams include sediment transport, water transport, transport of nutrients and detritus, habitat for many species of plants and animals (including endangered or threatened species), and maintenance of biodiversity (NRC 1992). Streams also provide hydrologic functions, nutrient cycling functions, food web support, and corridors for movement of aquatic organisms (Allan and Castillo 2007).

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).

Activities authorized by this NWP will provide a wide variety of services that are valued by society. Aquatic resource restoration, establishment, and enhancement activities provide ecological functions that provide important services for the health and well-being of human communities. Examples of those services are listed above.

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 supplemental 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. 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 or indirect 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 effects on the aquatic environment. 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 activities that may affect endangered or threatened species or critical habitat.

4.2 Impact Analysis

This NWP authorizes activities in all waters of the United States for aquatic resource restoration, establishment, and enhancement activities. There is no acreage limit for this NWP, but the terms of the NWP limit the types of authorized activities.

Pre-construction notification is required for all activities authorized by this NWP, except for: (1) activities conducted on non-Federal public lands and private lands, in accordance with

the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the U.S. FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies; (2) voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) the reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency. The pre-construction notification requirement allows district engineers to review proposed activities on a case-by-case basis to ensure that the individual and cumulative adverse effects of those activities on the aquatic environment are minimal. Reporting is required for activities that do not require pre-construction notification. If the district engineer determines that the adverse 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).

Additional conditions can be placed on proposed activities on a regional or case-by-case basis to ensure that the activities have minimal individual and cumulative adverse effects on the aquatic environment. 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 minimal individual and cumulative adverse effects on the aquatic environment, 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 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 minimal; or 5) for those NWP activities that require pre-construction notification, add special conditions to NWP authorizations, such as time of year restrictions on conducting the authorized activities, to ensure that the adverse effects on the aquatic environment are minimal. NWPs can authorize activities in high value waters as long as the individual and cumulative adverse effects on the aquatic environment are 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

The Council on Environmental Quality'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 or other DA permits and includes Federal and non-Federal activities that affect the Nation's wetlands, streams, and other aquatic resources. The cumulative effects analysis should focus on specific categories of resources instead of the environmental effects caused by a particular action, and it requires identification of the stressors that cause degradation of those resources, including those caused by actions unrelated to the proposed action (CEQ 1997). The geographic scope of the cumulative impacts 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 actions that have affected the Nation's wetlands, streams, and other aquatic resources, as well as present actions and reasonably foreseeable future actions that are affecting, or will affect, wetlands, streams, and other aquatic resources. The present effects of past federal, non-federal, and private actions are included in the affected environment, which is described in Section 3.0. The affected environment includes current aggregate effects of past actions, which are captured in recent national information on the quantity and quality of wetlands, streams, and other aquatic resources that is summarized in Section 3.0.

In addition to the activities authorized by this NWP, there are many activities that contribute to cumulative effects on wetlands, streams, and other aquatic resources in the United States, and alter the quantity of those resources and the functions they provide. Activities authorized by past versions of NWP 27, 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 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. 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.

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. 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).

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 (Allen 2004). Agriculture is the primary cause of stream impairment, followed by urbanization (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). 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).

Coastal waters are also affected by a wide variety of activities. Most inland waters in the United States drain to coastal areas, and therefore activities that occur in inland watersheds affect coastal waters (NRC 1994). 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). 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). 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 (Millennium Ecosystem Assessment 2005). 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 (Millennium Ecosystem Assessment 2005). The introduction of non-native species may change the functions and structure of coastal wetlands and other habitats (Millennium Ecosystem Assessment 2005). 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). 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). Fishing activities may also modify coastal habitats by changing habitat structure and the biological communities that inhabit those areas (NRC 1994).

There is also little information on the ecological condition or 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 2012) because of various activities and other stressors. These data deficiencies make it more difficult to characterize the affected environment to assess 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 2012), which also contribute to cumulative effects to 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 the 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.

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. 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% of wetland losses (61,630 acres), rural development resulted in 12% of wetland losses (66,940 acres), silviculture accounted for 56% of wetland losses (307,340 acres), and wetland conversion to deepwater habitats caused 21% 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 because the techniques used cannot identify some of those resources (e.g., Dahl (2011) for wetlands; Meyer and Wallace (2001) for streams).

The estimated contribution of this NWP to the cumulative effects to 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, is provided in Section 6.2.2. The activities authorized by this NWP will generally result in increases in aquatic resources and the functions they provide. The activities authorized by this NWP will result in minor contributions to the cumulative effects that have occurred to wetlands, streams, and other aquatic resources in the United States because, as discussed in this section, they are one of many activities that affect those 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 the various activities that affect the quantity of wetlands, streams, and other aquatic resources and the functions they provide, because such data are not available at the national scale.

In a specific watershed, division or district engineers may determine that the cumulative adverse 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 effects. Division and district engineers have the authority to require individual permits in watersheds or other geographic areas where the cumulative adverse 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 effects are 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 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 other mitigation measures 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.

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 improve the natural resource characteristics of the project area through the restoration, enhancement, and establishment of aquatic habitats.

(b) Economics: The activities authorized by this NWP will benefit certain segments of the local economy, especially recreational activities that depend on large populations of fish and

wildlife. Aquatic resource restoration, establishment, and enhancement activities 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. Other facilities associated with these types of activities, such as nature preserves, parks, hunting areas, fishing areas, and hiking trails will provide employment opportunities for the operation and maintenance of these facilities.

(c) Aesthetics: The activities authorized by this NWP may alter the visual character of some waters of the United States, but usually these alterations will be beneficial. The extent and perception of these changes will vary, depending on the size and configuration of the authorized activity, the nature of the surrounding area, and the public uses of the area. Air quality and noise levels are unlikely to be adversely affected by aquatic resource restoration, establishment, and enhancement activities, except during construction.

(d) General environmental concerns: Activities authorized by this NWP will not adversely affect general environmental concerns, such as water, air, noise, and land pollution, except during construction. The authorized activities will improve the physical, chemical, and biological characteristics of the aquatic environment. 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. Specific environmental concerns are addressed in other sections of this document.

(e) Wetlands: In general, wetlands will be restored, enhanced, or established through activities authorized by this NWP. Activities into waters of the United States for aquatic resource restoration, establishment, and enhancement projects may result in the alteration of wetlands. Non-tidal wetlands may also be changed by conversion to another aquatic habitat type, but the same type of wetland (e.g., emergent, scrub-shrub) must be provided elsewhere on the project site. The conversion of tidal wetlands is not authorized by this NWP. Tidal wetlands may be rehabilitated or enhanced by activities authorized by this NWP. Some wetlands may be temporarily impacted by the activity when used for temporary staging areas and access roads. These wetlands will be restored, but the plant community may be different, especially if the site was originally forested.

Wetlands provide habitat, including foraging, nesting, spawning, rearing, and resting sites for aquatic and terrestrial species. The 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.

Division engineers can regionally condition this NWP to restrict or prohibit its use in high

value non-tidal wetlands. 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. District engineers will also exercise discretionary authority to require an individual permit if the affected wetlands are high value and the activity will result in more than minimal adverse effects on the aquatic environment. District engineers can also add case-specific special conditions to the NWP authorization to reduce impacts to 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 that restore, establish, or enhance aquatic habitat for many species of fish and wildlife. Activities authorized by this NWP may alter the habitat characteristics of streams and wetlands, favoring certain species at the expense of other species. Tidal open waters, tidal streams, and tidal wetlands may be rehabilitated or enhanced as a result of activities authorized by this NWP. 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 such changes should improve the quality of aquatic habitat. The project proponent may remove invasive non-native plant species to improve the quality of fish and wildlife habitat. If the site is to be planted by the project proponent, only native species should be planted. For those activities authorized by this NWP that require pre-construction notification, the district engineer will have an opportunity to review the proposed activity and assess potential impacts on fish and wildlife values to ensure that the authorized activity results in minimal adverse effects on the aquatic environment.

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, unless the primary purpose of the activity is to impound water. Compliance with general conditions 3 and 5 will ensure that the authorized activity has 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.

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.), including any requirements to obtain take permits, is the responsibility of the project proponent for a particular NWP activity. General condition 19 states that the permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act.

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 minimal adverse effects on essential fish habitat.

(h) Flood hazards: The activities authorized by this NWP are unlikely to adversely affect the flood-holding capacity of 100-year floodplains. Compliance with general condition 9 will also reduce flood hazards. This general condition requires the permittee to maintain, to the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters, except under certain circumstances.

(i) Floodplain values: Activities authorized by this NWP may affect floodplain values by changing plant communities, substrate, and elevations. In most cases, these changes will be beneficial to the aquatic environment. The flood-holding capacity of the floodplain is unlikely to be adversely affected by the activities authorized by this NWP. Some of the activities authorized by this NWP may be designed to increase the frequency of flooding to improve local water quality and benefit certain organisms that depend on flooding patterns as part of their life cycles. The fish and wildlife habitat values of floodplains may be adversely affected by activities authorized by this NWP, by modifying or eliminating areas used for nesting, foraging, resting, and reproduction by certain species of wildlife. The water quality functions of floodplains may also be altered by these activities. Modification of the floodplain may also affect other hydrological processes, such as groundwater recharge.

The stream and wetland restoration and enhancement activities authorized by this NWP will have only minor adverse effects on floodplain values. General condition 23 requires avoidance and minimization of impacts to waters of the United States to the maximum extent practicable at the project site, which will reduce losses of floodplain values. The mitigation requirements of this general condition will ensure that the adverse effects of these activities on floodplain values are minimal. Compliance with general condition 9 will ensure that activities on floodplains will not cause more than minimal adverse effects on floodplain values, especially flood storage and conveyance.

(j) Land use: Activities authorized by this NWP will retain the natural land use of the project area. Conservation easements, deed restrictions, or other agreements to maintain the aquatic habitats on the property, including riparian areas, may be required as conditions added to this NWP by district engineers. Since the primary responsibility for land use decisions is held by state, local, and Tribal governments, the Corps scope of review is limited to significant

issues of overriding national importance, such as navigation and water quality (see 33 CFR 320.4(j)(2)).

(k) Navigation: Activities authorized by this NWP will not adversely affect navigation, because these activities must comply with general condition 1. The pre-construction notification requirements and reported activities will allow district engineers to review proposed activities and assess the potential adverse effects on navigation. If there are navigation concerns, then the district engineer can exercise discretionary authority and require an individual permit for the proposed activity.

(l) Shore erosion and accretion: The activities authorized by this NWP may affect shore erosion and accretion processes, if they are constructed in coastal areas. These activities are likely to have minor adverse effects on shore erosion and accretion. The restoration, enhancement, or establishment of wetlands in coastal areas will stabilize sediments and improve water quality. Some bank protection may be necessary to protect the wetlands that are restored, enhanced, or established along the shore.

(m) Recreation: Activities authorized by this NWP may change the recreational uses of the area. Certain recreational activities, such as bird watching, hunting, and fishing may be improved by providing habitat for species that attract bird watchers, hunters, and fishermen. Some aquatic resource restoration, establishment, or enhancement activities may eliminate certain recreational uses of the area, especially of the landowner restricts access to the area. Overall, the activities authorized by this NWP will benefit certain recreational uses of the area.

(n) Water supply and conservation: Activities authorized by this NWP may affect both surface water and groundwater supplies. Surface water supplies may be increased through the construction of impoundments. Groundwater recharge may be improved by wetland restoration, establishment, or enhancement activities. The activities authorized by this NWP are likely to enhance water supplies by improving local water quality. General condition 7 prohibits discharges in the vicinity of public water supply intakes.

(o) Water quality: The activities authorized by this NWP will improve water quality. These activities will increase the quantity and quality of wetlands, riparian areas, and streams in the watershed. The establishment and maintenance of wetland and riparian vegetation will improve water quality because these plants trap sediments, pollutants, and nutrients and transform chemical compounds. Wetland and riparian 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 column. Wetlands and riparian areas also decrease the velocity of flood waters, removing suspended sediments from the water column and reducing turbidity. Riparian vegetation also serves an important role in the water quality of streams by shading the water from the intense heat of the sun.

During construction, small amounts of oil and grease from construction equipment may be

discharged into the waterway. Because most of the construction will occur during a relatively short period of time, the frequency and concentration of these discharges are not expected to have more than minimal adverse effects on overall water quality. This NWP requires Section 401 water quality certification, since it authorizes discharges of dredged or fill material into waters of the United States. Most water quality concerns are addressed by the state or Tribal Section 401 agency.

(p) Energy needs: During construction, the activities authorized by this NWP will temporarily increase energy consumption in the area, but adverse effects to energy needs will be negligible.

(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 may adversely affect food and fiber production, especially where wetland restoration, establishment, or enhancement projects are conducted on land used for agricultural production. Stream restoration and enhancement activities may also decrease the amount of farmland, if, for example, a riparian zone is established along a stream that runs through cropland. The loss of farmland is more appropriately addressed through the land use planning and zoning authority held by state and local governments. Some aquatic habitat restoration, establishment, and enhancement activities may increase populations of economically important game species, which provide food for some citizens.

(s) Mineral needs: Activities authorized by this NWP may increase demand for aggregates and stone, which may be used to construct the aquatic resource restoration, establishment, or enhancement project. The activities authorized by this NWP will have negligible adverse effects on the demand for 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 aquatic resource restoration, establishment, and enhancement activities, provided the activity complies with the terms and conditions of the NWP and results in minimal adverse effects on the aquatic environment.

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 activities in all waters of the United States, including discharges of dredged or fill material, for aquatic resource restoration, establishment, and enhancement activities that have minimal individual and cumulative adverse effects on the aquatic environment. These activities satisfy public and private needs for aquatic resource

functions, services, and values. The need for this NWP is based upon the number of these activities that occur annually with minimal individual and cumulative adverse effects on the aquatic environment.

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 minimal individual and cumulative adverse effects on the aquatic environment and overall public interest. District engineers 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 aquatic resource restoration, establishment, or enhancement activity. Activities authorized by this NWP will have minimal individual and cumulative adverse effects on the aquatic environment.

The terms, conditions, and provisions of the NWP were developed to ensure that individual and cumulative adverse environmental effects are minimal. Specifically, NWPs do not obviate the need for the permittee to obtain other Federal, state, or local authorizations required by law. The NWPs 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 Clean Water Act Section 404(b)(1) Guidelines Analysis

The 404(b)(1) compliance criteria for general permits are provided at 40 CFR 230.7.

6.1 Evaluation Process (40 CFR 230.7(b))

6.1.1 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.

6.1.2 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 preconstruction 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 6.2.3(j)(1) of this document for further information.

6.1.3 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 6.2.3 of this document. Mitigation required by the district engineer will ensure that the adverse effects on the aquatic environment are 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.

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.

6.1.4 Factual determinations (40 CFR 230.11)

The factual determinations required in 40 CFR 230.11 are discussed in section 6.2.3 of this document.

6.1.5 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. Since the activities authorized by this NWP must result in net increases in aquatic resource functions and services, compensatory mitigation is not necessary.

6.2 Evaluation Process (40 CFR 230.7(b))

6.2.1 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 discharges of dredged or fill material for aquatic resource restoration, establishment, and enhancement 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., discharges of dredged or fill material for aquatic resource restoration, establishment, and enhancement activities) in a specific category of waters (i.e., waters of the United States). 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 aquatic resource restoration, establishment, and enhancement activities.

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.

6.2.2 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)] 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 August 1, 2009, to July 31, 2010, the Corps estimates that this NWP will be used approximately 1,650 times per year on a national basis, resulting in impacts to approximately 880 acres of waters of the United States, including jurisdictional wetlands. The demand for these types of activities could increase or decrease over the five-year duration of this NWP. Using the current trend, approximately 8,250 activities could be authorized over a five year period until this NWP expires, resulting in impacts to approximately 4,400 acres of waters of the United States, including jurisdictional wetlands. This NWP has been modified to state that compensatory mitigation is not required for activities authorized by this NWP, because those activities must result in net increases in aquatic resource functions and services.

Wetland restoration, enhancement, and establishment projects can provide wetland functions, as long as those projects are 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). The success of wetland restoration, enhancement, and establishment is dependent on the technical expertise of the mitigation provider, allowing sufficient time for wetland structure and functions to develop, and recognizing the ability for ecosystems to undergo self-design during their development (Mitsch and Gosselink 2007). In its review, the NRC (2001) concluded that some wetland types can be successfully 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.

In its review, 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 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 success of replacing wetland functions depends on the particular function of interest, the restoration or establishment techniques used, and the extent of degradation of the wetland restoration or establishment project site and its watershed.

The ecological success 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 successful, especially in cases where monitoring and adaptive management are used to correct deficiencies in these efforts (Zedler and Kercher 2005). Irreversible changes to landscapes, especially those that affect hydrology within contributing drainage areas or watersheds , cause wetland degradation and impede the success of wetland restoration efforts (Zedler and Kercher 2005).

Streams are difficult-to-replace resources and stream rehabilitation, enhancement, and preservation should be used since those techniques are most likely to be successful. Stream rehabilitation is usually the most effective 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). 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 passive recovery of streams and riparian areas, 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 channel, bank, and/or riparian area modifications to improve habitat and dam removal (NRC 1992). Road improvements, riparian rehabilitation, reconnecting floodplains to their rivers, and installing in-stream habitat structures have had varying degrees of success in stream rehabilitation activities (Roni et al. 2008). Success of these 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).

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 been successful in increasing 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 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.

6.2.3 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 result in minor changes to the substrate of those waters, since the NWP authorizes activities that restore, establish, or enhance aquatic habitats. There will be beneficial changes to the physical, chemical, and biological characteristics of the substrate. The original substrate may be removed and replaced with material that will improve the growth and reproduction of vegetation or improve the aquatic habitat characteristics of the area. Temporary fills may be placed upon the substrate, but must be removed upon completion of the activity (see general condition 13). Some erosion may occur 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. 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, sediment and erosion control plans are required 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: The activities authorized by this NWP can affect some characteristics of water, such as water clarity, chemical content, dissolved gas concentrations, pH, and temperature, but these effects are likely to be positive, with benefits to the local aquatic environment. The chemical and physical characteristics of the waterbody may be changed by aquatic habitat restoration, establishment, or enhancement activities, but such changes should be improvements or negligible adverse effects. 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, which will ensure that those activities do not violate applicable water quality standards. The establishment of riparian vegetation will 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. Since certain activities authorized by this NWP require pre-construction notification and others require reporting, the district engineer will have an opportunity to review the proposed activity and assess potential impacts on current patterns and water circulation. The installation of water control structures and habitat features may affect current patterns and water circulation, but the adverse effects are likely to be minor. 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.

(e) Normal water level fluctuations: The activities authorized by this NWP will have negligible adverse effects on normal water level fluctuations. Some activities may involve the construction of water control structures, which will alter the water level fluctuations of non-tidal waters. This NWP does not authorize the conversion of tidal waters to other aquatic uses, which will prevent adverse effects to tidal fluctuations in the area. 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 authorizes the restoration, establishment, or enhancement of aquatic resources, but does not authorize the relocation or conversion of tidal waters. These activities will not cause changes to salinity gradients.

(g) Threatened and endangered species: The Corps believes that the procedures currently in place result in proper coordination under 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. The Corps also believes that current local procedures in Corps districts are effective in ensuring compliance with ESA.

Under general condition 18, no activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

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 the taking 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. Based on the evaluation of all available information, the district engineer will initiate consultation with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (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 consultation through the individual permit process. If ESA 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 activity until ESA consultation is complete. If the district engineer determines that the activity will have no effect on any threatened and endangered species or critical habitat, then the district engineer will notify the applicant that he or she may proceed under the NWP authorization.

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 activity may affect listed species or their critical habitat and, if necessary, initiate ESA 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 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" decision.

Based on the safeguards discussed above, 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, 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 formal consultation under Section 7 of the Endangered Species Act, or through other coordination with the USFWS and/or the NMFS, as appropriate, the Corps will establish procedures to ensure that the NWP will not 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 special conditions to be added to an NWP authorization by the district engineer.

(h) Fish, crustaceans, molluscs, and other aquatic organisms in the food web. The activities authorized by this NWP will benefit most species of fish, crustaceans, molluscs, and other aquatic organisms in the food web. Some species may be adversely affected by changes in habitat characteristics that may occur as a result of activities authorized by this NWP. These activities will increase or improve the habitat for these species, which will increase populations of those organisms. Certain activities require pre-construction notification and others require reporting; therefore the district engineer will review the proposed activity and assess potential impacts on fish and other aquatic organisms and ensure that those impacts are 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 pre-construction conditions. Benthic and sessile animals are expected to recolonize sites after construction. 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. The activities authorized by this NWP may favor certain riparian species at the detriment of other riparian species. Some species of fish spawn on floodplains, which could be prevented if the authorized activity causes substantial adverse changes to floodplain habitat. The removal of invasive non-native plant species will benefit aquatic organisms in the food web.

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 benefit other wildlife associated with aquatic ecosystems, such as resident and transient mammals, birds, reptiles, and

amphibians, through the restoration, establishment, or enhancement of aquatic habitat, including breeding and nesting areas, escape cover, travel corridors, and preferred food sources. However, certain species may benefit from these changes while other species may be displaced by the destruction of specialized habitat. 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. 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 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 beneficial effects on wetlands. The quantity and quality of wetlands in a watershed will be improved by the activities authorized by this NWP. District engineers will review pre-construction notifications and reported activities to ensure that the adverse effects on the aquatic environment are 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 may result in the loss of mud flats if tidal wetlands are reestablished where mud flats are located. Such adverse effects are likely to be minor. Pre-construction notification or reporting is required for all activities authorized by this NWP, and the district engineer will have an opportunity to review the proposed activity and determine if the adverse effects on the aquatic environment are minimal.

(4) Vegetated shallows: The activities authorized by this NWP may affect vegetated shallows in non-tidal waters, if the project proponent wants to change aquatic habitat types in those areas. This NWP does not authorize the conversion of tidal waters to other aquatic uses, although it does authorize re-establishment of tidal wetlands in tidal waters where those wetlands previously existed. For those activities authorized by this NWP that require pre-construction notification, the district engineer will have an opportunity to review the proposed activity and assess potential impacts on vegetated shallows and ensure that the adverse effects are minimal. Division engineers can also regionally condition this NWP to prohibit conversion of non-tidal vegetated shallows.

(5) Coral reefs: The activities authorized by this NWP will have minimal adverse effects on coral reefs, since the NWP does not authorize the conversion of tidal waters to other uses.

(6) Riffle and pool complexes: Stream restoration and enhancement activities authorized by this NWP may affect riffle and pool complexes, but the adverse effects will be minimal since stream restoration and enhancement activities improve habitat characteristics. The district engineer will review pre-construction notifications and reported activities to determine if proposed activities will result in minimal adverse effects on the aquatic environment. If the riffle and pool complexes are high value and the 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. In response to a pre-construction notification, the district engineer which will review the activity to ensure that adverse effects to economically important fish and shellfish are 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 individual and cumulative impacts to essential fish habitat are minimal. For example, division and district engineers can impose regional and special conditions to ensure that activities authorized by this NWP will result in 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 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.

7.0 Determinations

7.1 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.

7.2 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.

7.3 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 minimal individual and cumulative adverse effects on the aquatic environment.

7.4 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:

13 Feb 2012

Michael J. Walsh
Major General, US Army
Deputy Commanding General
for Civil and Emergency Operations

8.0 Literature Cited

Allan, J.D. 2004. Landscapes and Riverscapes: The Influence of Land Use on Stream Ecosystems. Annual Review of Ecology, Evolution, and Systematics. 35:257–284.

Allan, J.D. and M.M. Castillo. 2007. Stream Ecology: Structure and Function of Running Waters, 2nd edition. Springer (The Netherlands). 436 pp.

Brinson, M.M. and A.I. Malvárez. 2002. Temperate freshwater wetlands: type, status and threats. Environmental Conservation 29:115-133.

Council on Environmental Quality (CEQ). 1997. Considering cumulative effects under the National Environmental Policy Act.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service. FWS/OBS-79-31. 131 pp.

Dahl, T.E. 2011. Status and trends of wetlands in the conterminous United States 2004 to 2009. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. 108 pp.

Dahl, T.E. 1990. Wetlands losses in the United States 1780s to 1980s. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 21 pp.

Dale, V.H., S. Brown, R.A. Haeuber, N.T. Hobbs, N. Huntly, R.J. Naiman, W.E. Riebsame, M.G. Turner, and T.J. Valone. 2000. Ecological principles and guidelines for managing the use of land. Ecological Applications 10:639-670.

Gosselink, J.G. and L.C. Lee. 1989. Cumulative impact assessment in bottomland hardwood forests. Wetlands 9:83-174.

Hall, J.V., W.E. Frayer, and B.O. Wilen. 1994. Status of Alaska Wetlands. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. 33 pp.

Hansen, W.F. 2001. Identifying stream types and management implications. Forest Ecology and Management 143:39-46.

King, D.M., Wainger, L.A., C.C. Bartoldus, and J.S. Wakely. 2000. Expanding wetland assessment procedures: Linking indices of wetland function with services and values. ERDC/EL TR-00-17, U.S. Army Engineer Research and Development Center, Vickburg, MS.

Leopold, L.B., M.G. Wolman, and J.P. Miller. 1964. Fluvial Processes in Geomorphology. Dover Publications, Inc. (New York). 522 pp.

Leopold, L.B. 1994. A View of the River. Harvard University Press (Cambridge). 298 pp.

Leopold. L.B. 1968. Hydrology for urban land planning – A guidebook on the hydrologic effects of urban land use. Department of the Interior. U.S. Geological Survey. Geological Survey Circular 554. 18 pp.

Lubowski, R.N., M. Versterby, S. Bucholtz, A. Baez, and M.J. Roberts. 2006. Major land uses in the United States, 2002. United States Department of Agriculture, Economic Research Service. Economic Information Bulletin Number 14. 54 pp.

Meyer, J.L. and J.B. Wallace. 2001. Lost linkages and lotic ecology: rediscovering small streams. In Ecology: Achievement and Challenge. Ed. by M.C. Press, N.J. Huntly, and S. Levin. Blackwell Science (Cornwall, Great Britain). pp. 295-317.

Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-being: Current State and Trends, Volume 1, Chapter 19, Coastal Ecosystems. Island Press (Washington, DC). pp 513-549.

Mitsch, W.J. and J.G. Gosselink. 2007. Wetlands. 4th edition. John Wiley and Sons, Inc. (Hoboken, New Jersey) 582 pp.

National Research Council (NRC). 1992. Restoration of Aquatic Ecosystems. National Academy Press (Washington, DC). 552 pp.

National Research Council (NRC). 1994. Priorities for Coastal Ecosystem Science. National Academy Press (Washington, DC). 118 pp.

National Research Council (NRC). 2001. Compensating for Wetland Losses Under the Clean Water Act. National Academy Press (Washington, DC). 322 pp.

National Research Council (NRC). 2002. Riparian Areas: Functions and Strategies for Management National Academy Press (Washington, DC). 444 pp.

Palmer, M.A., H.L. Menninger, and E. Bernhardt. 2010. River restoration, habitat heterogeneity, and biodiversity: a failure of theory or practice? Freshwater Biology 55:205-222.

Paul, M.J. and J.L. Meyer. 2001. Streams in the urban landscape. Annual Review of Ecology and Systematics. 32:333-365.

Peterson, C.H. and J. Lubchenco. 1997. Marine ecosystem services, in Nature's Services: Societal Dependence on Natural Ecosystems. Edited by G.C. Daily. Island Press (Washington, DC). pp. 177-194.

Postel, S. and S. Carpenter. 1997. Freshwater ecosystem services, in Nature's Services:

Societal Dependence on Natural Ecosystems. Edited by G.C. Daily. Island Press (Washington, DC). pp. 195-214.

Roni, P., K. Hanson, and T. Beechie. 2008. Global review of the physical and biological effectiveness of stream habitat rehabilitation techniques. North American Journal of Fisheries Management 28:856-890.

Tiner, R.W. 2003. Geographically isolated wetlands in the United States. Wetlands 23:494-516.

Tiner, R. 1997. NWI maps: Basic information on the Nation's wetlands. Bioscience 47:269.

U.S. Department of Agriculture. 2009. Summary Report: 2007 National Resources Inventory, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa. 123 pages. http://www.nrcs.usda.gov/technical/NRI/2007/2007_NRI_Summary.pdf (accessed 10/26/2010)

U.S. Environmental Protection Agency (U.S. EPA). 2012. National Summary of State Information reported for 2010 under Clean Water Act Sections 305(b) and 303(d). http://iaspub.epa.gov/waters10/attains_index.control (accessed January 5, 2012).

Walter, R.C. and D.J. Merritts. 2008. Natural streams and the legacy of water-powered mills. Science 319:299-304.

Wright, T., J. Tomlinson, T. Schueler, K. Cappiella, A. Kitchell, and D. Hirschman. 2006. Direct and indirect impacts of urbanization on wetland quality. Wetlands and Watersheds Article #1. Center for Watershed Protection (Ellicott City, Maryland). 81 pp.

Zedler, J.B. and S. Kercher. 2005. Wetland resources: Status, trends, ecosystem services, and restorability. Annual Review Environmental Resources. 30:39-74.