National Park Service
U.S. Department of the Interior

National Park Service
Procedural Manual #77-1: Wetland Protection

Reissued January 2012
(Replaces all previous versions)

ON THE COVER: Camas in bloom at Weippe Prairie, Nez Perce National Historical Park (photo by Jannis Jocius, Nez Perce National Historical Park, 2008)

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This manual may be downloaded at http://www.nature.nps.gov/water/wetlands.cfm, or a hard copy may be obtained by sending a request to the address on the back cover.

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PROCEDURAL MANUAL #77-1: WETLAND PROTECTION

1.0 Introduction

This Procedural Manual was developed for use by the National Park Service (NPS) in carrying out its responsibilities under Executive Order (E.O.) 11990 to protect wetlands. It contains two main elements: 1) the text of Director's Order (D.O.) #77-1:Wetland Protection (last issued in 2002) in Section 2.0 below; and 2) detailed procedures (in Sections 3–5) by which the NPS will implement D.O. #77-1. Figure 1 provides a brief summary of NPS wetland compliance procedures. *The previous version of NPS Procedural Manual #77-1 (issued in 2008) is obsolete and is replaced by this revised manual.*

2.0 Director's Order #77-1: Wetland Protection

D.O. #77-1 (2002) is incorporated in its entirety into this section of the Procedural Manual. This Director's Order establishes the policies, requirements, and standards through which the NPS will meet its responsibilities to protect and preserve wetlands. D.O. #77-1 also requires the Associate Director, Natural Resource Stewardship and Science, to develop and issue this Procedural Manual.

DIRECTOR'S ORDER #77-1: WETLAND PROTECTION

Approved: /s/ Fran P. Mainella
Director, National Park Service

Effective Date: October 30, 2002

1.0 Background and Purpose of this Director's Order

The purpose of this Director's Order is to establish National Park Service (NPS) policies, requirements, and standards for implementing Executive Order (E.O.) 11990: "Protection of Wetlands" (42 Fed. Reg. 26961). E.O. 11990 was issued by President Carter in 1977 in order "…to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative...."

Section 6 of E.O. 11990 directed federal agencies to issue procedures to implement the Executive Order. NPS wetland protection procedures were originally adopted together with E.O. 11988 (Floodplain Management) procedures in the 1980 "NPS Floodplain Management and Wetland Protection Guidelines" (45 Fed. Reg. 35916, minor revisions in 47 Fed. Reg. 36718). Experience with implementing the wetland procedures, and changes in wetland management concepts since they were first published, necessitated updating, streamlining, and clarifying NPS wetland policies and procedures in Director's Order #77-1: Wetland Protection (issued October 22, 1998). The 1998 Director's Order and the accompanying Procedural Manual #77-1 superseded and replaced the 1980 NPS wetland guidance. Included in Director's Order #77-1 were: 1) adoption of a "no net loss of wetlands" goal, which was first proclaimed in 1989 by President George Bush and has been sustained by subsequent Administrations; and 2) adoption of the Cowardin et al. (1979) wetland classification system as the NPS standard for defining, classifying, and inventorying wetlands.

The four-year sunset provision for NPS Director's Orders now requires that Director's Order #77-1 be re-issued. The NPS has operated under the 1998 version of Director's Order #77-1 for the last four years with excellent success. Therefore, the following sections of that document are re-issued without substantive change.

In addition to the requirements of this Director's Order, NPS activities that involve the discharge of dredged or fill material into wetlands or other "waters of the United States" must also comply with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act (regulations and permit process are described in 33 CFR 320-331).

2.0 Policies, Requirements, and Standards

Executive Order 11990 directs the NPS: 1) to provide leadership and to take action to minimize the destruction, loss, or degradation of wetlands; 2) to preserve and enhance the natural and beneficial values of wetlands; and 3) to avoid direct or indirect support of new construction in wetlands unless there are no practicable alternatives to such construction and the proposed action includes all practicable measures to minimize harm to wetlands.

In carrying out the NPS's responsibilities related to:

- acquiring, managing, and disposing of NPS lands and facilities;
- construction and related development activities;
- permitting activities as provided for under NPS regulatory authorities; and
- conducting activities, programs, or planning efforts affecting use of NPS lands,

in a manner consistent with E.O. 11990 and with the "no net loss of wetlands" goal, the NPS will take the following actions:

2.1 The NPS adopts a goal of "no net loss of wetlands." In addition, the NPS will strive to achieve a longer-term goal of net gain of wetlands Servicewide.

2.2 NPS units will conduct parkwide wetland inventories (or will obtain such inventories from appropriate sources such as the National Wetlands Inventory) to help assure proper planning with respect to management and protection of wetland resources. Additional large-scale (more detailed) wetland inventories will be conducted in areas that are proposed for development or are otherwise susceptible to degradation or loss due to human activities.

2.3 For purposes of compliance with Executive Order 11990, the NPS will use "Classification of Wetlands and Deepwater Habitats of the United States" (FWS/OBS-79/31; Cowardin et al. 1979) as the standard for defining, classifying, and inventorying wetlands.

2.4 For proposed new development or other new activities, plans, or programs that are either located in or otherwise have the potential for direct or indirect adverse impacts on wetlands, the NPS will employ a sequence of:

a) avoiding adverse wetland impacts to the extent practicable,
b) minimizing impacts that could not be avoided, and
c) compensating for remaining unavoidable adverse wetland impacts via restoration of degraded wetlands.

Consistent with 2.1 above, compensation for wetland degradation or loss will be at a minimum 1:1 ratio. Actions that may be excepted from the compensation requirement are identified in Procedural Manual #77-1, which was developed by the Associate Director, Natural Resource Stewardship and Science to implement this Director's Order.

2.5 Actions proposed by the NPS that have the potential to have adverse impacts on wetlands will be evaluated through the National Environmental Policy Act (NEPA) planning and compliance process. Regardless of the associated NEPA compliance pathway (environmental assessment, environmental impact statement, or categorical exclusion), a Wetland Statement of Findings documenting compliance with this Director's Order and Procedural Manual #77-1 will be completed for proposed actions that would result in adverse impacts on wetlands. Actions that may be excepted from this Statement of Findings requirement are identified in the Procedural Manual.

2.6 Superintendents will oversee preparation of Statements of Findings and will recommend their approval to Regional Directors. The Chief of the NPS Water Resources Division or, alternatively, a certified Professional Wetland Scientist (Society of Wetland Scientists Certification Program, Inc.) from within the NPS with working knowledge of this Director's Order and Procedural Manual #77-1, will certify: 1) the adequacy of wetland-related technical analyses; and 2) consistency with Servicewide implementation of this Director's Order and Procedural Manual #77-1. Regional Directors have final approval authority for Statements of Findings.

2.7 Where natural wetland characteristics or functions have been degraded or lost due to previous or ongoing human activities, the NPS will, to the extent appropriate and practicable, restore them to pre-disturbance conditions.

2.8 Where appropriate and practicable, the NPS will not simply protect, but will seek to enhance natural wetland values by using them for educational, recreational, scientific, and similar purposes that do not disrupt natural wetland functions.

3.0 Responsibilities

The Director is responsible for ensuring NPS compliance with E.O. 11990 in accordance with provisions of 520 DM 1. In performing this duty, the Director approves NPS policies and directives for complying with the Executive Order.

The Deputy Directors and Associate Directors are responsible for general supervision of the Divisions and Offices under their jurisdictions to ensure compliance with E.O. 11990 as outlined in this Director's Order and Procedural Manual #77-1.

The Associate Director, Natural Resource Stewardship and Science is responsible for: 1) issuing and updating NPS procedures for implementing this Director's Order; and 2) revising relevant portions of the NPS *Management Policies* and NPS natural resources management and NEPA procedures to ensure compliance with E.O. 11990 as outlined in this Director's Order and Procedural Manual #77-1.

The Associate Director, Professional Services is responsible for revising NPS planning procedures as necessary to satisfy the requirements of E.O. 11990 as outlined in this Director's Order and Procedural Manual #77-1.

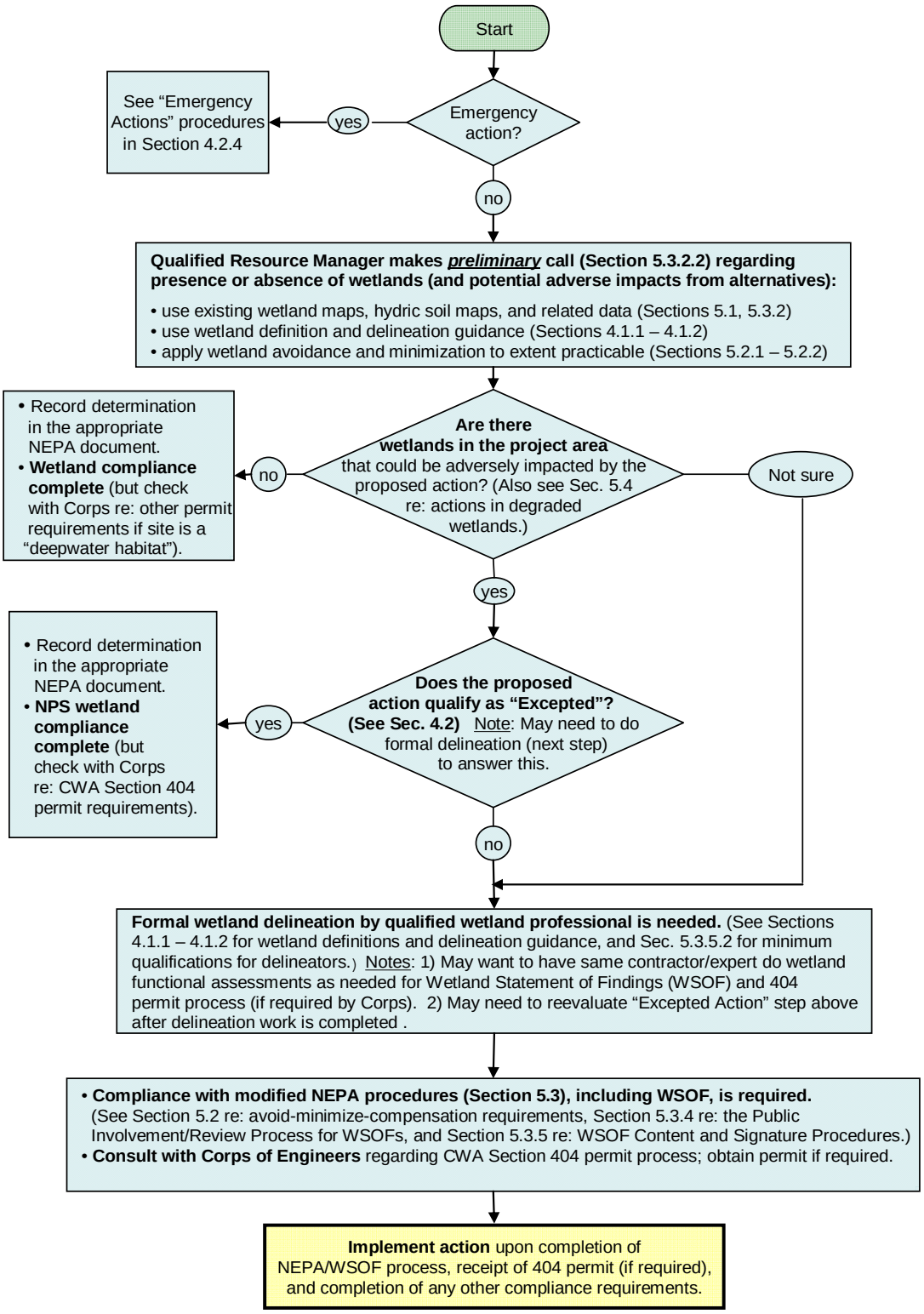
The Superintendents oversee the planning/NEPA process, identify preferred alternatives, assure that appropriate wetland permits have been obtained (e.g., Section 404 of the Clean Water Act), and oversee preparation of Statements of Findings as outlined in this Director's Order and Procedural Manual #77-1, utilizing the wetland technical information developed during the planning process. Superintendents sign the "Recommended" line on Statement of Findings cover sheets.

The Chief, Water Resources Division (or a certified Professional Wetland Scientist from within the NPS as described in this Director's Order and Procedural Manual #77-1) signs the "Certification of Technical Adequacy and Servicewide Consistency" line on Statement of Findings cover sheets, assuring both technical adequacy of wetland analyses and Servicewide consistency in implementation of this Director's Order and Procedural Manual #77-1.

The Regional Directors are responsible for ensuring compliance with E.O. 11990 within their respective Regions as outlined in this Director's Order and Procedural Manual #77-1. They are responsible for final approval of Statements of Findings after recommendation by Superintendents and certification of technical adequacy and Servicewide consistency as described in Section 2.6.

------End of Director's Order------

Figure 1: Summary of the NPS wetlands compliance process for activities subject to D.O. #77-1 and these procedures (see Section 4.1.3 regarding applicability)



3.0 Relationships to Other Requirements

3.1 Relationships to DOI and CEQ Policies and Procedures for Implementing E.O. 11990 and the National Environmental Policy Act

E.O. 11990 was issued "in furtherance of the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 *et seq.*), in order to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands." The policies, requirements, and standards in D.O. #77-1, as implemented under these procedures, supplement and must be used in conjunction with the Department of the Interior procedures and policies for implementing E.O. 11990 (520 DM 1); the Council on Environmental Quality (CEQ) Implementing Regulations for NEPA (40 CFR Part 1500); the Department of the Interior policies and procedures for complying with NEPA (516 DM 1-7, 12); and NPS NEPA procedures (D.O. #12 and the D.O. #12 Handbook).

NEPA compliance is triggered whenever the NPS considers an action that may have impacts on the human environment. Possible NEPA compliance pathways include an Environmental Assessment (EA), an Environmental Impact Statement (EIS) or a Categorical Exclusion (CE). Many factors are evaluated in determining the appropriate NEPA pathway for an action under consideration. NPS Interim Guidance relating to categorical exclusions (May 2009) states that a CE should only be used if the action would result in no greater than minor impacts, and Section 3.5 of the Interim Guidance states that when actions proposed by the NPS have the potential to cause *significant* impacts, they can't be categorically excluded. If a CE can't be used, an EA or EIS must be prepared.

As explained in Sections 5.3.4 and 5.3.5 of these procedures, a Wetland Statement of Findings must be prepared if an NPS action has the potential to have adverse impacts on wetlands (unless the action is "excepted" under Section 4.2). If such wetland impacts can't be excepted under Section 4.2, then the Statement of Findings is incorporated into the EA or EIS process as described in Section 5.3.4.1-3 of these procedures. If the wetland impacts are determined not to be *significant*, and other factors justify a CE, then the procedures described in Section 5.3.4.4 of these procedures apply.

3.2 Relationship to Compliance with Section 404 of the Clean Water Act

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers issues permits for activities that result in the discharge of dredged or fill material into waters of the United States, including wetlands. Regulated activities range from depositing fill for building pads or roads to discharges associated with mechanized landclearing.

Although portions of the Corps of Engineers 404 permit procedures (33 CFR 320-330) are similar to some of the requirements found in D.O. #77-1 and these implementing procedures, there are significant differences in scope that warrant a separate NPS wetland protection process. First, the 404 permit program regulates only the discharge of dredged or fill material, while Executive Order 11990 covers a much broader range of actions that can have adverse impacts on wetlands, including ground water withdrawals, water diversions, nutrient enrichment, and other examples

listed in Section 4.1.2 of these procedures. Second, the wetland definition used for the 404 permit program (33 CFR 328.3) is narrower than the Cowardin et al. (1979) wetland definition used for NPS compliance with E.O. 11990 (see Section 4.1.1 of these procedures). Therefore, a broader range of aquatic habitat types fall under these procedures than under the wetland procedures of the 404 permit program. Third, the Corps of Engineers has "general permit" provisions that allow many projects affecting wetlands to proceed with minimal review.

Thus, in many cases, the 404 permit program does not meet the wetland protection directives of E.O. 11990 for resources managed by the NPS.

For these reasons, all NPS actions with the potential to have adverse impacts on wetlands (as defined in Section 4.1.1) must comply with D.O. #77-1 and these procedures, and those actions that involve placing dredged or fill material in wetlands or other "waters of the U.S." (as defined in 33 CFR 320-330) must comply with Section 404 of the Clean Water Act as well. In cases where both NPS and Corps of Engineers procedures apply, it is important to avoid duplication of effort by coordinating with the appropriate Corps of Engineers office early in the process of developing alternatives to assure that they are workable under both these procedures and Section 404 regulations. Also, if wetland compensation is necessary (Section 5.2.3 of these procedures), *every effort should be made to assure that the same wetland restoration proposal meets the compensation requirements of both processes.*

3.3 Relationship to Executive Order 11988 (Floodplain Management)

Executive Order 11988 (Floodplain Management) directs federal agencies to avoid adverse impacts upon floodplains and their occupants if there is a practicable alternative. The NPS is further directed to take action to reduce the risk of flood loss, to minimize impacts of flooding on human safety, health, and welfare, and to restore and preserve the natural and beneficial values of floodplains.

NPS D.O. #77-2: Floodplain Management and Procedural Manual #77-2: Floodplain Management established NPS procedures for implementing E.O. 11988. The floodplain procedures require that a floodplain Statement of Findings documenting consistency with E.O. 11988 be prepared for proposed activities that would result in occupation or modification of floodplains or that would result in impacts to floodplain values. Since wetlands are often located within floodplains, such proposed activities may require compliance with both E.O. 11988 and E.O. 11990. In such cases, *the floodplain Statement of Findings discussed in Section VII of Procedural Manual #77-2 and the wetland Statement of Findings discussed in Sections 5.3.4 and 5.3.5 of these procedures may be combined into one Statement of Findings* as long as the requirements for both documents, including all specified signatures, are met.

3.4 Compliance with Other Federal Laws and Regulations

In addition to the above, the NPS must also assure compliance with: 1) the Coastal Zone Management Act, which requires that NPS actions be consistent, to the maximum extent practicable, with approved state coastal zone management programs; 2) Section 10 of the Rivers and Harbors Act, which requires Department of the Army permits for work in navigable waters;

3) the Fish and Wildlife Coordination Act; 4) the Wild and Scenic Rivers Act; 5) the Endangered Species Act; 6) the National Historic Preservation Act; and other relevant laws and regulations governing actions in wetlands and other aquatic environments.

4.0 Scope

4.1 Applicability

4.1.1 Wetlands Subject to Executive Order 11990 and These Procedures

For the purpose of implementing E.O. 11990, any area that is classified as a *wetland* according to the U.S. Fish and Wildlife Service's "Classification of Wetlands and Deepwater Habitats of the United States" (Report FWS/OBS-79/31); Cowardin et al. 1979) is subject to D.O. #77-1 and these implementation procedures. This publication can be downloaded at http://www.fws.gov/wetlands. (Note: The Cowardin classification system forms the basis for the U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) mapping program. Section 5.1 of these procedures discusses the applicability of NWI maps to compliance with E.O. 11990.)

Under the Cowardin definition, a wetland must have one[1] or more of the following three attributes:

1. at least periodically, the land supports predominantly hydrophytes (wetland vegetation);
2. the substrate is predominantly undrained hydric soil; or
3. the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

These three attributes encompass wetland areas that fall into five categories:

1. areas with hydrophytes and hydric soils, such as those commonly known as marshes, swamps, and bogs;
2. areas without hydrophytes but with hydric soils - for example, flats where drastic fluctuations in water level, wave action, turbidity, or high concentration of salts may prevent the growth of hydrophytes;
3. areas with hydrophytes but non-hydric soils, such as margins of impoundments or excavations where hydrophytes have become established but hydric soils have not yet developed;
4. areas without soils but with hydrophytes such as the seaweed-covered portion of rocky shores; and
5. wetlands without soil and without hydrophytes, such as gravel beaches or rocky shores without vegetation.

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[1] This should not be interpreted as advocating a simple "one-parameter approach" to delineating all wetlands. Please see the rest of this section and the following Section 4.1.2 for further guidance on delineating wetlands under the Cowardin definition.

The Cowardin wetland definition encompasses more aquatic habitat types than the definition (33 CFR 328.3) and delineation manual used by the Corps of Engineers for identifying wetlands subject to Section 404 of the Clean Water Act. The 1987 "Corps of Engineers Wetlands Delineation Manual" requires that *all three* of the parameters listed above (hydrophytic vegetation, hydric soil, wetland hydrology) be present in order for an area to be considered a wetland (with some exceptions for "atypical situations" and "problem areas"). The Cowardin wetland definition includes such wetlands, but also adds some areas that, though lacking vegetation and/or soils *due to natural physical or chemical factors* such as wave action or high salinity, are still saturated or shallow inundated environments that support aquatic life (e.g., unvegetated stream shallows, mudflats, rocky shores). Most of these additional shallow aquatic environments, as well as most deepwater habitats, are still regulated as "waters of the U.S." under the 404 permit program. The following section provides guidance for delineating and mapping wetlands on NPS-managed lands so that both Clean Water Act and NPS-regulated wetlands are included.

4.1.2 Guidance for Delineating and Mapping Wetlands to Meet Corps of Engineers and NPS Requirements

U.S. Supreme Court decisions periodically change the types of wetlands that fall under Clean Water Act jurisdiction. The Corps of Engineers responds to these decisions by updating the Section 404 permit regulations and guidance accordingly. The NPS also makes periodic minor changes to its wetland procedures. Therefore, if a proposed NPS action has the potential to have adverse impacts on wetlands, the first step for the NPS or its contractors is to delineate *all natural and artificial wetlands* in the project area according to the following guidance without regard to regulatory jurisdiction. Once this is done, determinations must be made (in consultation with the Corps and the NPS Water Resources Division) regarding how each wetland affected by the proposed actions is treated under *current* Section 404 regulations and NPS wetland protection procedures.

Most wetlands on NPS lands will have all three parameters required by the 1987 Corps Manual. However, NPS adoption of the Cowardin wetland definition requires modified procedures to assure that all wetlands subject to D.O. #77-1 are identified. The following procedures should be used so that wetland delineation and mapping projects on NPS lands will satisfy both the Clean Water Act wetland definition (1987 Corps Manual) and the NPS standard for identifying wetlands (Cowardin et al. 1979):

- For sites with vegetation and soils, use the most recent version (and any approved regional supplements) of the 1987 Corps Manual, including "problem area" and "atypical situation" procedures.

- For naturally unvegetated or non-soil sites, such as many stream channels, tidal mudflats, playas, wave-active shorelines, and so on, use the "limits" of these systems as described in Cowardin et al. (1979) and briefly summarized below. In some cases, modification of the 1987 Corps Manual procedures may be necessary to delineate boundaries for these wetland types. In such cases, *clear evidence of wetland hydrology is always required*. However, the absence of vegetation or hydric soil characteristics due to

natural physical or chemical conditions such as fluvial processes, wave action, or high salinity may make it appropriate to waive the hydrophytic vegetation and/or hydric soil requirements. Such modifications must be explained on data sheets and in wetland delineation/mapping reports.

- Wetland delineation reports should identify which sites qualify as wetlands according to the 1987 Corps Manual and which additional waters qualify as wetlands under the Cowardin system and these procedures. Other "waters of the U.S." that are subject to Corps regulation, such as deepwater habitats, should also be identified.

- At drained sites that no longer meet wetland hydrology criteria, relic hydric soils or relic hydrophytic vegetation are not indicative of current wetlands. However, if such sites are encountered and the hydrologic alterations are likely human-induced, then they should be identified as potential wetland restoration opportunities.

Following is a summary of the limits (boundaries) of Cowardin wetland types:

Riverine wetlands: The landward limits of riverine wetlands are defined on page 7, 2nd column of Cowardin et al. (1979). The wetland/deepwater habitat boundary is described on page 4 (1st paragraph) as a depth of 2 meters at low water, or at the limits of emergent or woody vegetation extending beyond this depth. Dry washes are considered to be wetlands if the substrate is saturated or flooded at some time during the growing season of each year (see part 3 of the wetland definition on p. 3 of Cowardin et al. 1979).

Marine/Estuarine wetlands: The upper limits of these systems are described on pp. 4-5 of Cowardin et al. (1979). The lower limits (boundaries between wetland and deepwater habitats in these systems) are described as the elevation of extreme low water of spring tides (p. 4, 1st paragraph in Cowardin et al. 1979). In other words, if a marine or estuarine area remains flooded during the extreme low spring tide, it is considered subtidal and is therefore a deepwater habitat, not a wetland. Intertidal areas that are exposed by the extreme low spring tide are considered wetlands. (Note: These systems include the splash zones from breaking waves, and may also include areas where wind-enhanced tides periodically trap enough water above the intertidal zone to maintain saline wetland conditions.)

Palustrine wetlands: These wetlands are bounded by upland or by any of the other four systems (p. 10, Cowardin et al. 1979). The transitions between palustrine wetlands and uplands are usually vegetated, so the 1987 Corps Manual can be used to delineate those boundaries. In some cases, such as where high salinity prohibits vegetation establishment, the 1987 Corps Manual may have to be adapted such that only the wetland hydrology and hydric soil parameters are used to determine the upland/wetland boundaries.

Lacustrine wetlands: The limits of lacustrine wetlands are described on p. 9 of Cowardin et al. (1979). The upper limits are either uplands or vegetated wetlands that can be delineated using the 1987 Corps Manual. The lower limits, or boundaries between the lacustrine littoral (wetland) and lacustrine limnetic (deepwater habitat) zones, are where the water depth reaches

2 meters at low water. For reservoirs, it may be necessary to use design or mean high pool elevation data for the upper limit, as appropriate.

4.1.3 Activities Subject to Executive Order 11990 and These Procedures

NPS activities that have the potential to have adverse impacts on wetlands are subject to the provisions of E.O. 11990 as implemented through D.O. #77-1 and these procedures. Such activities may include: 1) acquiring, managing, and disposing of NPS lands and facilities; 2) construction and related development activities; 3) permitting activities as provided for under NPS regulatory authorities; and 4) activities, programs, or planning efforts affecting use of NPS lands.

NPS activities with the potential to have adverse impacts on wetlands must follow the procedures in Sections 5.2, 5.3, and 5.4 of this document (unless such procedures may be waived under Section 4.2 "Excepted Actions"). The basic test for determining if a proposed action will have adverse impacts on wetlands is if the activity has the potential to degrade any of the natural and beneficial ecological, social/cultural, or other functions and values of wetlands (see Sections 5.3.2 and 5.3.3 of these procedures regarding evaluating adverse impacts). Such activities may require compliance due to direct impacts (e.g., placement of fill in a wetland) or due to indirect impacts (e.g., secondary or offsite impacts that reach into wetlands). Examples of activities with the potential to have adverse impacts on wetlands include drainage, water diversion, pumping, flooding, dredging, channelizing, filling, nutrient enrichment, diking, impounding, placing of structures or other facilities, livestock grazing, and other activities that degrade natural wetland processes, functions, or values.

Examples of wetland degradation include modifying flow, circulation, hydroperiod, or other aspects of the hydrologic regime; degrading natural biotic communities and processes including native plant and animal communities, habitat quality, floral and faunal productivity, and natural biodiversity; and degrading social/cultural values such as aesthetics, education, historical values, archeological resources, recreation, and scientific research (see Section 5.3.3).

Section 5.1 (Wetland Inventories), Section 5.5 (Restoring Wetlands Degraded by Human Activities), Section 5.6 (Retaining or Removing Structures and Facilities in Existence Prior to May 28, 1980), and Section 5.10 (Proposals to Lease, Create Easements or Rights-of-Way on, Exchange or Dispose of NPS Lands Containing Wetlands) address procedures applicable to wetland inventories and land use decisions that are not necessarily associated with new adverse impacts on wetlands.

4.1.4 Land Acquisition for Administrative Purposes

Land acquisition primarily for administrative purposes (e.g., future development of housing, administrative facilities, transportation systems, etc.) is subject to the policies and requirements of D.O. #77-1 and these procedures if there is a potential for adverse impacts on wetlands. Requirements to avoid or minimize wetland impacts described in Section 5.2 must be addressed in the land acquisition (for administrative purposes) planning process. The Statement of Findings (Sections 5.3.4 and 5.3.5) for the acquisition process should focus on justifying why no sites with

fewer potential wetland impacts were practicable; however, the wetland compensation requirement (Section 5.2.3) may be delayed until the NEPA compliance documents for the actual facility plans are prepared. If compensation is delayed in this manner, an amended Statement of Findings must be prepared and issued for the specific development plan according to the procedures in Sections 5.3.4 and 5.3.5. This amendment can tier off the acquisition Statement of Findings as much as possible, but must address the specifics of minimizing wetland impacts and required wetland compensation (Section 5.2.3).

4.2 Excepted Actions

This subsection identifies certain types of activities that require modified approaches to achieve the objectives of E.O. 11990 while reducing delay and paperwork. "Excepted actions" described in this subsection are those actions that may be excepted from the Statement of Findings requirements described in Sections 5.3.4 and 5.3.5 and the compensation requirements discussed in Section 5.2.3 of these procedures. *If actions are "excepted" from these two requirements under this subsection, requirements to avoid wetlands and minimize unavoidable wetland impacts, to the extent practicable (Sections 5.2.1 and 5.2.2), still apply and should be discussed in the appropriate NEPA document.*

Exceptions described in the following subsections do not imply exemption from the Clean Water Act (including Section 404 permits for discharge of dredged or fill material in waters of the U.S.), Section 7(a) of the Wild and Scenic Rivers Act, Section 10 of the Rivers and Harbors Act (Corps of Engineers permits for projects in navigable waters), the Endangered Species Act, or other laws, regulations or procedures governing NPS activities.

4.2.1 Potential Exceptions for Certain "Water Dependent" and Maintenance Activities

Certain types of activities cannot accomplish their intended purposes unless they are located in or are carried out in close proximity to aquatic environments (i.e., they are "water dependent"). Following is a list of such actions that *may be excepted* from the Statement of Findings procedures outlined in Sections 5.3.4 and 5.3.5 and the compensation requirement discussed in Section 5.2.3 of these procedures. This list also includes a limited exception (g., below) for maintenance, repair, or renovation (but not reconstruction or expansion) of currently serviceable facilities or structures.

For an action to be excepted from the Statement of Findings and compensation requirements, the conditions and best management practices referred to in Section 4.2.2 below and listed in Appendix 2 must be satisfied. If one or more of these conditions/BMPs are not met, the action reverts to full compliance with D.O. #77-1 and these procedures. The NPS Water Resources Division is available for consultation to help determine if an action should be excepted.

Acreage limits in the excepted actions below apply to “single and complete projects.” Single and complete projects are located on discrete sites and have “independent utility” (are fully functional units by themselves). For example, a park proposes to construct two small canoe ramps on a lake at separate locations 1.5 miles apart, and each ramp is fully functional by itself (not dependent on the other ramp or on later project phases to perform its intended function). In this case, the 0.1

acre threshold in exception "b." below may be applied separately at each canoe ramp because each is a single and complete project.

In a contrasting example, a park proposes to construct a new sewer line that would be buried under three stream channels. In this case, the single and complete project is the entire sewer line, so the threshold in exception "e." below is the cumulative limit of wetland disturbance for the three stream crossings, and not applicable to each individual crossing. This is because each crossing doesn't have independent utility (i.e., isn't functional by itself without being part of the entire sewer line).

Actions that may be excepted from the Statement of Findings (Sections 5.3.4 and 5.3.5) and compensation (Section 5.2.3) requirements:

a. **Scenic overlooks and foot/bike trails or boardwalks**, including signs, where primary purposes include public education, interpretation, or enjoyment of wetland resources and where total wetland impacts from fill placement are 0.1 acre or less (Parking lots, access roads, borrow sites, and other associated facilities can not be excepted.)

b. **Small boat ramps/launches, piers, or docks** with total long-term wetland impact for the entire project (both onsite and offsite) of 0.1 acre or less.

c. **Use and maintenance of unimproved backcountry vehicle stream crossings** (use of stream channels as road *corridors* can not be excepted).

d. ***Minor* stream crossings** using bridges or other structures that completely span the channel and associated wetland habitat (i.e., no pilings, fill, or other support structures in the wetland/stream habitat).

e. **Minor stream crossings for underground utility lines**, including electrical lines, telecommunications cables, or water, sewer, gas or other pipelines, if the cumulative wetland disturbance (stream channel plus non-riverine wetlands immediately adjacent to the channel) totals 0.1 acre (4,356 ft^2) or less. This exception requires that: 1) directional drilling under the stream channel and adjacent wetlands has been evaluated during the NEPA process and determined not to be practicable; 2) restoration of pre-construction contours and elevations, soil/substrate characteristics, and wetland/riparian vegetation is accomplished as part of the project; 3) the project will not result in adverse impacts on surface or ground water hydrology (e.g., no wetland drainage); and 4) best management practices for protection of aquatic life (e.g., siltation controls, measures to protect fish migration and spawning) are implemented throughout the construction and restoration processes.

f. **Installation of scientific measuring devices** such as water level recorders, water quality monitoring stations, small weirs or flumes, or similar devices necessary for monitoring of or research on wetland resources.

g. **Maintenance, repair, or renovation** (but not full reconstruction[1] or expansion) of currently serviceable[2] facilities or structures:

- that were under construction or were completed *prior to* May 28, 1980 (date when original "NPS Floodplain Management and Wetland Protection Guidelines" were published) but whose retention has been reviewed and justified according to Section 5.6 of these procedures, or
- that were completed *after* publication of the May 28, 1980 guidelines (or subsequent revisions, including this Procedural Manual) and for which compliance with them is on record.

This exception allows for *minor* (0.1 acre or less) deviations in the structure's configuration or fill footprint in wetlands due to changes in construction codes, methods, or safety standards (e.g., handicap accessibility), but does not apply to other types of reconstruction/expansion (e.g., road widening to increase capacity, road re-routing) or conversion to other uses that cause new adverse impacts on wetlands.

h. **Actions designed to restore degraded (or completely lost) wetland, stream, riparian, or other aquatic habitats or ecological processes.** For this exception, "restoration" refers to reestablishing environments in which natural ecological processes can, to the extent practicable, function as they did prior to disturbance.

- Short-term wetland disturbances that are directly associated with and necessary for implementing the restoration may be allowed under this exception.
- Conditions 1 and 2 in Appendix 2 may be waived for this excepted action if adverse impacts on hydrology and fauna exceed “minor” but are necessary to achieve restoration objectives. Justification for this waiver must be included in the NEPA document.
- Actions causing a cumulative total of up to 0.25 acres of new, long-term adverse impacts on natural wetlands may be allowed under this exception if they are directly associated with and necessary for the restoration (e.g., small structures).
- Some "artificial wetlands" (see definitions in Section 4.2.3 below) may have been constructed on sites which were originally 100% upland habitat (e.g., wetlands sustained by water pumps or other means). Restoration of such sites to upland habitat may also be considered under this exception.

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[1] Full reconstruction of instream diversions, water intake or outfall structures, or similar, legal and permitted instream structures that are damaged or destroyed by storms, floods or similar events may be allowed under this exception.

[2] “Currently serviceable” means usable as is or with maintenance or renovation, but not so degraded as to essentially require full reconstruction.

4.2.2 Conditions and Best Management Practices for Actions Listed in 4.2.1 to Qualify as Excepted

Appendix 2 presents a set of conditions that must be satisfied and best management practices (BMPs) that must be implemented for a proposed action to qualify for the exceptions in this subsection. *If one or more of the conditions or BMPs cannot be met, then the action reverts to full compliance with these procedures.*

4.2.3 Activities with Adverse Impacts on "Artificial" Wetlands

"Artificial" wetlands are those that have been created on former uplands or in deepwater habitats as a result of human activities. Such wetlands may be *incidental* (e.g., formed due to leakage from irrigation systems or in artificial impoundments created by inadequate road drainage) or may be *intentional* (e.g., associated with constructed ponds or reservoirs in uplands or associated with spoil islands created in deepwater habitats). *For this subsection, constructed ponds and other small intentional artificial wetlands are defined as less than five acres in size, while larger intentional artificial wetlands or reservoirs are five acres or larger.*

Proposed actions in *incidental* wetlands or small *intentional* wetlands can have significant adverse impacts on NPS resources and purposes even though the habitats are artificial. Decisions on these actions must include consideration of the potential loss of aquatic resource functions and values, including those described in Section 5.3.3 of these procedures. These decisions must also take into account NPS management policies allowing preservation of such resources under a number of special circumstances, including:

1. when needed to "maintain the closest approximation of the natural condition when a truly natural system is no longer attainable" (*NPS Management Policies 2006,* Chapter 4.1),

2. for the benefit of threatened or endangered species (*NPS Management Policies 2006*, Chapter 4.4.2.3),

3. for cultural resources management purposes (*NPS Management Policies 2006,* Chapter 5), or

4. when directed by Congress (*NPS Management Policies 2006, Chapter 4.1*).

Proposed actions in incidental artificial wetlands or small intentional artificial wetlands are subject to NPS NEPA compliance procedures. However, actions impacting these types of artificial wetlands *may be excepted* from the Statement of Findings requirements of Sections 5.3.4 and 5.3.5 and the compensation requirements of Section 5.2.3 of these procedures if, after evaluation of impacts on wetland functions and values, the anticipated wetland loss or degradation is determined to be minor (including no adverse impacts on state or federally listed or candidate species or their critical habitats). The NPS Water Resources Division is available for consultation to help determine if an action should be excepted. *Note: This NPS exception does not imply exception from compliance with Section 404 of the Clean Water Act (which does regulate many artificial wetlands) or any other relevant laws, regulations, or procedures.*

Construction, deposition of fill material, and other activities with adverse impacts on larger intentional wetlands/reservoirs are also subject to NPS NEPA compliance procedures and must comply fully with D.O. #77-1 and these procedures (though other exceptions in Section 4.2 may apply).

Artificial ponds, channels, or similar features that are used for the sole purpose of active stormwater, wastewater, or drinking water treatment are not considered wetlands for purposes of these procedures. However, if such systems retain wetland characteristics as defined in Section 4.1.1 of these procedures after they have been abandoned, they revert to the procedures for artificial wetlands discussed previously in this Section.

4.2.4 Emergency Actions

When the NPS performs emergency actions essential to protect property and public health and safety from an immediate threat, modified procedures for compliance with D.O. #77-1 and this manual are necessary. Taking into consideration the need for rapid action in emergency situations, practicable steps to avoid and minimize potential adverse impacts on wetlands must be taken. However, the other procedures described in this document for compliance with D.O. # 77-1 (e.g., Statement of Findings) are not required prior to implementing emergency actions.

After such emergency actions have been completed, restoration actions for wetlands damaged by the emergency action should be implemented as soon as possible. During the next revision of the park General Management Plan or other relevant park planning document, actions that would lessen the frequency of such emergencies or eliminate them entirely should be evaluated and implemented, where practicable.

Note: This exception does not imply exception from the requirements of Section 404 of the Clean Water Act. In order to allow emergency work without delays, each NPS unit should contact the local Corps of Engineers District Office regarding emergency authorization procedures.

5.0 Procedures

D.O. #77-1 (reproduced in Section 2 of these procedures) states the NPS goal to achieve "no net loss of wetlands" in the course of managing NPS resources and developing park management and visitor use facilities and programs. In addition, the Director's Order establishes a longer-term goal to achieve "net gain" of wetland habitat through efforts to restore natural wetlands that have been degraded or lost due to past human activities. These and related policies established in D.O. #77-1 will be met through the following procedures.

5.1 Wetland Inventories

For general park planning and resource management purposes, NPS units should obtain parkwide wetland inventories based on "Classification of Wetlands and Deepwater Habitats of the United States" (FWS/OBS-79/31; Cowardin et al. 1979). In many cases, National Wetlands Inventory (NWI) maps and digital data meeting current standards (based on 1:58,000 scale color infrared aerial photography for most of the country, somewhat smaller scale in Alaska) can serve this

purpose and should be obtained, if available. (NWI maps based on black-and-white, smaller scale photography can be used temporarily in the absence of better products, but should be considered substandard.) Because the NWI uses relatively small scale aerial photography and is based on limited ground truthing, these maps may have significant omissions or misclassifications and should be considered initial tools for avoiding wetland impacts in park planning. Field verifications of NWI maps, enhanced wetland inventories, or site-specific wetland delineation studies will be necessary for more detailed planning and compliance, as explained below.

If it is determined that NWI maps are not adequate for general park planning or wetland management purposes, more detailed "enhanced inventories" employing larger scale imagery and more extensive ground truthing may be necessary. As part of the enhanced wetland inventory process, observable degradation of wetlands and the likely causes (e.g., drainage, filling, mining, nutrient enrichment) should be recorded for use in resource protection and wetland restoration planning. *Enhanced inventories should either use the Cowardin et al. (1979) classification system or be cross-referenced to that system.*

Regardless of the type of wetland inventory data used in general park planning or resource management, site-specific wetland evaluations must be conducted as part of the more detailed project planning process to accurately delineate wetland boundaries, locate any unmapped wetlands, and otherwise assure that projects will not impact wetlands (see Section 5.3.2). *It is critical for this onsite investigation to be conducted in advance of project design to assure that the avoidance and minimization requirements outlined in Section 5.2 of these procedures can be met.*

5.2 Sequence of Avoiding, Minimizing, and Compensating for Wetland Impacts

For proposed development or other activities either located in or otherwise with the potential to have adverse impacts on wetlands (as defined in Sections 4.1.2, 5.3.2, and 5.3.3 of these procedures), the NPS is required to use the following sequence of avoiding, minimizing, and compensating for wetland impacts.

5.2.1 Avoiding Adverse Impacts on Wetlands

In the course of developing project alternatives and implementing actions, the NPS must seek to *avoid* direct or indirect adverse impacts on wetlands and avoid support of activities that would result in such impacts, wherever practicable. (See Section 5.3.1.2 of these procedures for examples of factors to be considered in determining if an alternative is "practicable.")

5.2.2 Minimizing Unavoidable Wetland Impacts

If a proposed action will still have adverse impacts on wetlands even after avoidance measures have been incorporated, the NPS must *minimize* such impacts by designing or modifying the action to reduce wetland degradation or loss and by using the BMPs listed in Appendix 2. Every practicable effort must be made during this process to maintain the integrity of the affected wetlands and their attendant organisms and physical/biological processes.

5.2.3 Compensating for Wetland Impacts

After *avoidance* and *minimization* have been applied to the maximum practicable extent, remaining new wetland degradation or loss must be offset through wetland *compensation*. For the NPS, compensation refers primarily to restoring natural wetland functions in degraded or former natural wetland habitats on NPS lands. It does not refer to creating wetlands where they did not exist previously, except as may be allowed under Chapter 4 of *NPS Management Policies 2006*.

NPS wetland compensation is required as follows:

1. If the adverse impact on wetlands (direct plus indirect impacts as described in Section 5.3.2 of these procedures) from the entire project totals less than 0.1 acres, then wetland compensation is strongly encouraged, but may be waived if the loss of wetland functions is considered by the park/Region and the NPS Water Resources Division to be minor. *A Wetland Statement of Findings is still required for all new adverse impacts on wetlands, regardless of size, unless the action qualifies as "excepted" as defined in Section 4.2 of this manual.* The Wetland Statement of Findings must provide a justification for the proposed compensation waiver, and the waiver must be approved by the NPS Water Resources Division as part of the certification process described in Section 5.3.5.

2. If the adverse impacts on wetlands from the entire project total 0.1 acres or more, then wetland compensation in the form of restoration of degraded or former wetland habitats is required.

For the purpose of wetland compensation, wetland restoration proposals must, *at a minimum*, provide one-for-one (1:1) *wetland function replacement* (i.e., focus on no net loss of wetland functions, not just wetland acreage). Section 5.3.3 of these procedures discusses evaluation of wetland functions for this purpose. In the absence of definitive information needed to specifically address 1:1 wetland *function* replacement, a minimum of 1:1 wetland *acreage* replacement may be used as a surrogate. In the latter case, the focus should be on replacing wetlands of equivalent type and function, to the extent practicable.

Final compensation ratios may need to be greater than 1:1 in cases where: (1) the functional values of the site being impacted are determined to be high and the restored wetlands will be of lower functional value; (2) it will take a number of years for the restored site to become fully functional (e.g., reestablishment of forested wetlands); or (3) the likelihood of full restoration success is unclear. Conversely, the replacement ratio may simply be 1:1 for areas where the functional values associated with the area being impacted are determined to be low relative to the restoration site and the likelihood of fully successful, timely replacement of functions at the restoration site is high. Consultation with Regional Aquatic Professionals and the NPS Water Resources Division regarding compensation proposals and methods for assessing wetland functions is strongly encouraged prior to preparing Statements of Findings, as discussed in Sections 5.3.4 and 5.3.5 of these procedures.

Wetland compensation sites must be on lands managed by the NPS, with the following recommended priority order: 1) within the same wetland system as the impacted wetland; 2) within the same watershed; or 3) in another watershed within the same NPS unit. If no practicable restoration sites can be found within this location sequence, then sites in other NPS units within the Region may be considered. Practicability factors such as those discussed in Section 5.3.1.2 should be considered in determining appropriate compensation sites. For example, lack of opportunities may make local restoration impossible in some cases, and the decision to expand the area of consideration for compensation sites is clear. However, there may be other cases where local restoration sites exist, but factors such as the opportunity to restore a rare or critical wetland type in another watershed may outweigh the value of restoring a more local wetland.

To help achieve the long-term "net-gain" of wetlands goal within the NPS, the costs of wetland compensation are considered project costs. That is, *compensation costs should be factored into project budgets rather than being accomplished using NPS natural resources funding sources.* For example, funding sources for compensatory wetland projects may include Federal Lands Highway Program (FLHP) funds, other construction funds, ONPS funds, Federal Lands Recreation Enhancement Act funds (fee money), or Regional funding sources that are <u>not</u> designated for natural resources management. *Funding sources that are considered <u>unacceptable</u> for compensatory wetland work include Servicewide or Regional natural resource programs such as NRPP, WRD-Competitive, Exotic Plant Management Team projects, and Biological Resource Management Division-Competitive funds.*

In keeping with the NPS no-net-loss of wetlands policy, the NPS Water Resources Division may conduct periodic surveys to verify that compensation projects have been successfully completed.

5.3 The NEPA Process as Modified by Director's Order #77-1 and These Procedures

Actions proposed by the NPS that have the potential to have adverse impacts on wetlands are subject to NPS NEPA procedures (D.O. #12 and the D.O. #12 Handbook), *as supplemented by these wetland protection procedures.*

5.3.1. Identifying and Evaluating Alternatives for Proposed Actions

1. Alternatives presented in EAs and EISs must include:

    a. A "no action" alternative; and

    b. Any *practicable alternatives* for carrying out desired actions such that adverse impacts on wetlands are avoided or minimized in accordance with these NPS wetland protection procedures (Section 5.2).

2. In determining an alternative's "practicability" with respect to E.O. 11990, the NPS must analyze and take into account the following and any other relevant factors:

    a. Effects on natural wetland functions (e.g., fish and wildlife productivity and habitat, threatened and endangered species, vegetation impacts, water purification, streamflow maintenance, and other functions listed in Section 5.3.3 of these procedures) Note: Significance or abundance of the wetland functions in that park unit should be considered, e.g., importance of desert springs and seeps for sustaining wildlife compared to such features in parks with more abundant water resources.

    b. Effects on wetland social values (e.g., aesthetics, historic and cultural values, land use patterns, and other social/cultural values listed in Section 5.3.3)

    c. Economic factors (e.g., costs of space, construction, services, relocation, transportation, and other factors listed in Section 5.3.3)

    d. Existing technology (e.g., available construction methods, equipment, and materials)

    e. Legal/regulatory constraints

3. The "Affected Environment" section of the EA or EIS identifies wetlands that would be impacted by the various alternatives and describes their sizes, locations, types, characteristics, functions, and values. The "Environmental Consequences" section documents the consequences of implementing these alternatives, analyzing the full range of the direct, indirect and cumulative adverse impacts of the various alternatives on wetlands. The impact analyses must include both impacts associated with *direct occupation of wetlands* (e.g., habitat displacement due to placement of fill) *and offsite impacts* (e.g., wetland water tables lowered by ground water pumps or drainage systems, even if those facilities are constructed on uplands). The level of detail needed in these analyses may vary according to the planning stage for the project or action being proposed. For example, standard National Wetlands Inventory maps could provide much of the information needed for park General Management Plans (GMPs) that are programmatic or strategic in nature, whereas enhanced mapping and/or onsite wetland investigations would be needed for GMPs or subsequent plans that identify specific project locations or detailed plans for facilities.

    In cases where the alternatives are associated with existing facilities or activities, the cumulative impact analyses in the EA or EIS must address the impacts that the alternatives would have in concert with these existing developments or activities. For example, the decision to expand an existing facility in a wetland rather than building the facility elsewhere could preclude opportunities to restore wetland functions at the existing site. The analysis should also include the potential for support of future development in wetlands that could result from the alternatives.

5.3.2 Determining if Alternatives are Located in or Could Otherwise Have Adverse Impacts on Wetlands

1. Existing Data Sources for Preliminary Wetland Determinations

Several sources of data and information (a. - e. below) are available to help determine, at an early planning stage, if a proposed activity might be located in or near wetlands. (Note: onsite investigations, as explained in 2. below, are necessary for detailed planning and compliance.)

a. NWI Data: Project planners should consult park databases and files to determine if NWI data or enhanced wetland inventory data (see b. below) are available for a site. The NWI website (www.fws.gov/nwi) has information on the status of NWI mapping for the nation, and can be accessed to download available digital data. USFWS or NPS Water Resources Division Wetlands Program staff can also help determine the status and availability of NWI data.

   As discussed in Section 5.1 of this manual, the NWI uses relatively small scale aerial photography and is based on limited ground truthing. These maps may have significant omissions or misclassifications and should be considered as initial tools for avoiding wetland impacts in park planning. Field verifications of NWI maps, enhanced wetland inventories, or site-specific wetland delineation studies will be necessary for more detailed planning and compliance.

b. Enhanced Inventories: Many parks have conducted enhanced wetland inventories utilizing relatively large-scale imagery and/or intensive ground truthing. The resulting maps or digital data layers may be enhancements of existing NWI maps or they may be entirely independent products. Project planners should consult park and I&M network databases and files to see if enhanced inventories are available for project areas.

c. NPS I&M Vegetation Maps: The I&M Vegetation Mapping Program is a potential source of wetland spatial data for park planning. I&M Program staff may be able to create a crosswalk between the vegetation classification system and the Cowardin classification system for use in determining wetland locations.

d. Natural Resources Conservation Service (NRCS): NRCS soil surveys can be good sources of general information for determining the presence of wetlands. NRCS state or local offices can provide available soil maps and lists of soils that they have determined to be hydric (wetland) soils. This information may also available at http://soils.usda.gov/. If an area is mapped as hydric or as having hydric "inclusions," the area most likely contains wetlands. However, because of scale limitations, limited ground truthing, and the fact that these maps were not developed for purposes of wetland identification, there may be significant omissions. They should, therefore, be used primarily as supplemental information.

e. Other Mapping Programs: Project planners can consult agencies such as the U.S. Army Corps of Engineers (e.g., regarding areas delineated for past 404 permits), the Environmental Protection Agency (e.g., 404 "Advanced Identification" mapping), the National Oceanic and Atmospheric Administration (e.g., National Institute of Marine Fisheries coastal wetland maps), the Natural Resources Conservation Service (e.g., wetland maps for agricultural lands), the state, the county, or comparable sources regarding availability of wetland maps.

2. Determining Wetland Locations and Boundaries for Detailed Planning and Compliance

Regardless of the quality of the above data and mapping sources, when a project enters more detailed planning and compliance stages it is always necessary to conduct onsite investigations to confirm wetland boundaries, correct any misclassifications, and locate any unmapped wetlands. Most NPS natural resource professionals should be able to make the *preliminary* onsite determination that: 1) there clearly are no wetlands in the project area (no potential for direct or indirect adverse impacts on wetlands); 2) wetlands clearly exist in the project area that could be adversely impacted by the proposed activity; or 3) it is unclear if wetlands are present. If 1) is the case, and there is no potential for adverse impacts on wetlands, including secondary or offsite impacts as described in Section 5.3.2.3 below, then this should be documented in the NEPA process, but no further compliance with D.O. #77-1 and these procedures is necessary.

If the preliminary onsite investigation indicates that any part of a proposed activity might cause adverse impacts on wetlands, or the presence of wetlands is not clear, then trained, qualified wetland professionals must delineate wetlands (and other waters that may be regulated by the Corps of Engineers) based on the definitions, classification system, and methods discussed in Section 4.1.1 and 4.1.2 of these procedures. These investigations should be conducted in advance of the project design phase to assure that requirements to avoid and minimize wetland impacts can be met. (Please see recommended minimum qualifications for wetland delineators in Section 5.3.5.2 of this manual.)

It is also important to consult with the Corps of Engineers early on regarding the potential need for a Clean Water Act Section 404 permit for the project. Project planners should contact both the NPS Water Resources Division Wetlands Program staff and the Corps of Engineers for guidance on appropriate wetland delineation methods so that a single delineation study provides the data and information needed to satisfy both procedures. Corps of Engineers regulatory offices can be located via the internet at http://www.usace.army.mil.

3. Determining if an Alternative Could *Otherwise* Have Adverse Impacts on Wetlands

   Even if the information gathered as described under Sections 5.3.2.1 and 5.3.2.2 shows that an alternative is not located in a wetland, it must also be determined if the alternative holds the potential for indirect adverse impacts on wetlands. An alternative has such impacts on offsite wetlands if it:

   a. Supports, encourages, or otherwise facilitates additional development in wetlands; or

   b. Has secondary or offsite effects (e.g., drainage, flooding, pollutant discharge, wildlife disturbance, etc.) that extend into wetlands and have adverse impacts on them.

5.3.3 Evaluating Adverse Impacts on Wetland Functions and Values

1. Examples of wetland functions and values to be considered in this analysis include:

   a. Biotic Functions (e.g., fish and wildlife habitat, floral and faunal productivity, native species and habitat diversity, threatened and endangered species)

   b. Hydrologic Functions (e.g., flood attenuation, streamflow maintenance, ground water recharge and discharge, water supply, erosion and sediment control, water purification, detrital export to downstream systems)

   c. Cultural Values (e.g., aesthetics, education, historical values, archeological values, recreation, interpretation)

   d. Research/Scientific Values (e.g., "reference sites" for research on unimpacted ecosystems)

   e. Economic Values (e.g., flood protection, fisheries, tourism)

   If an alternative is determined to have no direct or indirect adverse impacts on wetlands, this should be documented in the impact analysis for the alternative.

2. Methods for Evaluating Wetland Functions and Values

   Several methods are available (or are being developed) to assess wetland functions and values for a site and to predict which will be degraded or lost (and, therefore, need to be compensated for) if a project is implemented. The NPS Water Resources Division can provide information on current methods.

5.3.4 Public Involvement/Review and Wetland Statements of Findings

1. Distribution of Public Notice Information for EAs or EISs

   Notice regarding public meetings/hearings and EA/EIS review opportunities for projects with the potential to have adverse impacts on wetlands must be targeted to reach individuals and groups affected by or with an interest in the proposal. Public involvement should provide an opportunity to assist in developing and evaluating alternatives, to review and indicate a preference among alternatives, to provide ideas on avoiding, minimizing, and compensating for wetland impacts, and to comment on proposed actions prior to implementation.

   EAs or EISs disclosing adverse impacts on wetlands must be circulated to the appropriate reviewing agencies as outlined in 520 DM 1.8C(4), including but not limited to:

   - U.S. Environmental Protection Agency
   - U.S. Army Corps of Engineers
   - U.S. Fish and Wildlife Service
   - U.S. Natural Resources Conservation Service
   - U.S. Geological Survey
   - Federal Emergency Management Agency
   - Bureau of Reclamation
   - Appropriate state review agencies as determined by E.O. 12372, OMB Circular A-95 (Revised), and other requirements, including coastal or river basin commissions, state coastal zone management administrators and state agencies with responsibility for maintaining water quality in accordance with the Clean Water Act.

2. Environmental Assessments for Proposed Actions with Adverse Impacts on Wetlands

   EAs that reveal adverse impacts on wetlands from proposed actions or their alternatives must be made available for broad public and agency review, consistent with the requirements of D.O. #12 and the D.O. #12 Handbook. An EA that identifies a preferred alternative that will have adverse impacts on wetlands must be accompanied by a separately identifiable draft “Wetland Statement of Findings" (WSOF) that explains why an alternative with such impacts was chosen and that meets the other requirements identified in Section 5.3.5 of these procedures. EA/draft WSOF distribution must include all affected parties, other interested parties or organizations, and the agencies listed in Section 5.3.4.1 of these procedures. The review period is the same as that established in D.O. #12 and the D.O. #12 Handbook for EAs.

   Following this review, the NPS must reevaluate the preferred alternative and its impacts, revise the WSOF as necessary, and issue either a FONSI or a Notice of Intent to prepare an EIS consistent with NPS NEPA procedures. If the final preferred alternative still results in adverse impacts on wetlands and a FONSI is to be issued, a final WSOF meeting the requirements identified in Section 5.3.5 must be attached to the FONSI as a

separately identifiable document. Public notice requirements for the FONSI/WSOF are the same as those established by D.O. #12 and the D.O. #12 Handbook. This notice should indicate that a WSOF documenting compliance with E.O. 11990, D.O. #77-1, and these procedures is included with the FONSI.

If an EA is released without a preferred alternative, then preparation of a WSOF may be delayed until a preferred alternative is identified.

3. Environmental Impact Statements for Proposed Actions with Adverse Impacts on Wetlands

   Draft EISs revealing that proposed actions or their alternatives will have adverse impacts on wetlands must be made available for broad public and agency review under procedures established in NPS NEPA guidance. A draft EIS that identifies a preferred alternative that will have adverse impacts on wetlands must be accompanied by a separately identifiable draft WSOF that explains why an alternative with such impacts was chosen and that meets the other requirements identified in Section 5.3.5 of these procedures. Draft EIS/draft WSOF distribution must include all affected parties, other interested parties and organizations, and the agencies listed in Section 5.3.4.1 of this document.

   Following public and agency review of the draft EIS/draft WSOF and any public meetings/hearings as provided for in D.O. #12, the NPS must reevaluate the alternatives and impacts and revise the documents as necessary. If the preferred alternative in the final EIS still results in adverse impacts on wetlands, a final WSOF must be completed according to the requirements in Section 5.3.5 of these procedures. The final signed WSOF must be attached to the Record of Decision (ROD) as a separately identifiable document.

4. Categorical Exclusions (CE) for Proposed Actions with Adverse Impacts on Wetlands

   There may be cases where proposed actions would have adverse impacts on wetlands and a WSOF is required, but impacts are expected to be no more than minor and not significant under NEPA. If the NPS determines that a CE is the appropriate NEPA pathway for the project, a draft WSOF meeting the requirements identified in Section 5.3.5 of these procedures must still be prepared and distributed for public review and comment. The draft WSOF distribution must include all affected parties, other interested parties or organizations, and the agencies listed in Section 5.3.4.1 of these procedures. Following 30-day public review (or shorter with WRD concurrence), the NPS must consider the public comments, revise the WSOF as necessary, and issue a final WSOF.

5.3.5 Content and Signature Procedures for Wetland Statements of Findings

When an alternative is to be selected for implementation that will result in adverse impacts on wetlands, the FONSI, ROD or CE must be coupled with a *separately identifiable* WSOF as described in Section 5.3.4. (WSOFs may be combined with floodplain SOFs as explained in Section 3.3 of these procedures.) The WSOF documents the impacts of the proposed action on

wetlands, provides the rationale for identifying a preferred alternative that has adverse impacts on wetlands, explains why no alternatives with less wetland impacts were practicable, and otherwise addresses compliance with the policies and requirements of D.O. #77-1 and these procedures.

The Statement of Findings for wetlands must contain:

1. A map at sufficiently large scale to show the locations, boundaries, and types of wetlands at the project site and the aspects of the preferred alternative that would have adverse impacts on them. Wetland mapping must be consistent with wetland definitions and delineation instructions in Sections 4.1.1 and 4.1.2 of this manual.

2. Verification that wetland delineation/mapping work has been performed by a qualified wetland professional. This must include the qualifications of the wetland delineators, their affiliations, and a citation for the wetland delineation product or report. The NPS Water Resources Division strongly recommends the following minimum delineator qualifications: 1) has current "Professional Wetland Scientist" certification through the Society of Wetland Scientists Certification Program, Inc.; or 2) has a certificate of training from a recognized wetland delineation training provider and at least 5 years of experience in wetland delineation. Upon request, Water Resources Division staff can review scopes of work for wetland delineation contracts, help evaluate proposals, and review draft products/reports to confirm technical adequacy.

3. Detailed descriptions of the affected wetlands (i.e., plant species and communities, hydrologic characteristics, wetland classifications, and so on). *Abundance of these wetland types in the NPS unit/area/region must be included in this analysis.*

4. Detailed functional assessments of the affected wetlands, including evaluation of the biological, chemical, hydrologic, geomorphological, recreational, cultural, aesthetic, and other functions and values listed in Section 5.3.3 of these procedures.

5. Full disclosure of the adverse impacts on the wetland habitats, processes, functions, and values at the site (see examples to be considered in Section 5.3.3), and acreages affected, by wetland type.

6. A description of alternatives considered in addition to the preferred alternative.

7. The reasons why the preferred alternative must be located and designed such that it has adverse impacts on wetlands, *and why no non-wetland alternatives or those with fewer wetland impacts were chosen.* A discussion of the various factors and trade-offs considered in arriving at this decision *must* be included.

8. A description of how the preferred alternative was designed to minimize wetland impacts to the greatest extent practicable.

9. A description of the proposed wetland compensation. What wetland area(s) will be restored to compensate for this loss or degradation and maintain consistency with the NPS

"no net loss of wetlands" goal found in D.O. #77-1? The first paragraph of this section should state the total acreage of wetland impact, by type, and the total acreage of restored wetlands, by type, proposed as compensation.

This portion of the WSOF must include:

a. a large scale map that clearly identifies the location and boundaries of the compensation site
b. a description of wetland types and wetland functions to be restored at the compensation site, and the degree to which they replace the types and functions lost at the project site
c. a description of the restoration process (e.g., hydrologic restoration, excavation, grading, structure removal, plantings, etc.)
d. the anticipated schedule for project completion
e. the anticipated time-frame for full functioning of the compensation wetlands
f. monitoring and maintenance requirements and schedule
g. the funding source for the project consistent with the funding source restrictions listed in Section 5.2.3 of these procedures.

As described in the D.O. #77-1 "Responsibilities" section, the Superintendent chooses the preferred alternative, oversees preparation of the WSOF utilizing the wetland technical information developed during the planning process, and signs the "Recommended" line on the final WSOF cover sheet[1]. The Chief of the NPS Water Resources Division then certifies: 1) the adequacy of wetland technical analyses; and 2) consistency with Servicewide implementation of E.O. 11990 and these procedures. This certification is accomplished by signing a "Certification of Technical Adequacy and Servicewide Consistency" line on the WSOF cover sheet. Signature by the Regional Director indicates final approval of the WSOF.

Example WSOFs can be obtained by contacting NPS Water Resources Division Wetlands Program staff or at http://www1.nrintra.nps.gov/wrd/wetlands/wetlanddocuments.cfm.

5.4 Development in Degraded Wetland Sites

Development activities proposed for wetland sites that have been modified or degraded as a result of human activities (but still meet the wetland definition) are considered "new actions" subject to the sequence identified in Section 5.2 of this document and the other policies and requirements of D.O. #77-1 and these procedures. In other words, degraded wetlands should not be treated as preferred development sites simply because they are already in an impacted condition. In cases where there are no practicable alternatives to using such sites for development, actions must be included in the proposals to restore natural wetland processes and functions at the site, to the extent practicable.

[1] Some Regions may establish additional procedures for Regional Aquatic Professionals or Compliance Specialists to provide guidance and review on draft WSOFs prior to signature by the Superintendent and submission to the NPS Water Resources Division. Please check with the Regional Office regarding any such procedures.

5.5 Restoring Wetlands Degraded by Human Activities

Where natural wetland functions have been degraded or lost due to previous or ongoing human activities (e.g., drainage facilities, structures, agriculture), NPS General Management Plans, Resource Stewardship Plans, or other planning documents should outline actions to reestablish environments in which wetland ecological processes can function as they did prior to disturbance, to the extent practicable. Highest priority should be placed on removing such damaging facilities, structures, or activities and restoring pre-existing wetland habitats and processes. Where removing such facilities or activities is not practicable, the NPS should seek ways to minimize and, to the extent possible, reverse the adverse impacts. (See Sections 5.6 and 5.9 regarding procedures for implementing this directive.)

5.6 Retaining or Removing Structures and Facilities in Existence Prior to May 28, 1980

General Management Plans (GMPs) or subsequent planning documents for NPS units should include inventories of structures or facilities in existence prior to May 28, 1980 (original publication date of the NPS Floodplain Management and Wetland Protection Guidelines) that are located in or otherwise have the potential to have adverse impacts on wetlands. These documents should justify and record decisions on the retention or removal of these facilities (see Section 5.9 of these procedures regarding cultural resources). Decisions to retain such facilities should be supported by a discussion of why relocation to a site less damaging to wetlands is not practicable, but do not require WSOFs. Expansion or full reconstruction of such facilities require full compliance with D.O. #77-1 and these procedures, although reconstruction involving no new wetland impacts does not require the wetland compensation described in Section 5.2.3 of these procedures.

5.7 Compliance with the Executive Order 11990 Directive to "Enhance the Natural and Beneficial Values of Wetlands"

Under most circumstances, *NPS Management Policies 2006* do not support "enhancement" of wetland resources beyond natural levels. Therefore, for purposes of implementing E.O. 11990, the term "enhancement" refers to enhancing wetland *values*, where appropriate and practicable, by using wetlands for educational, recreational, scientific, and similar purposes *that do not disrupt natural ecological functions*. The NPS should seek to further enhance wetlands by improving, supporting, and coordinating wetland planning, research, inventory and monitoring efforts, resource management activities, and interpretation in such a manner that the widest range of natural wetland functions and values may be attained.

5.8 Wetland Mitigation Banks

In some cases, such as when authorized inholder access routes or long-term road renovation programs in parks are expected to generate a series of relatively small wetland impacts over time, it may be appropriate to establish wetland "mitigation banks" *on NPS lands* for compliance with these procedures. Mitigation banks are accounting systems in which "credits" for wetland restoration at a site or sites are "banked" and used at a later date as compensation for actions that adversely impact wetlands. Establishing mitigation banks can have significant advantages,

including: 1) compensation sites can be identified and restoration can be accomplished in advance, thereby preventing temporal loss of wetland functions and smoothing project planning and compliance; 2) compensation for a series of small wetland losses can be achieved more efficiently at larger restoration sites where planning, design, implementation, and monitoring can be consolidated; and 3) such larger restoration projects often tend to have increased biodiversity and habitat value compared to smaller, fragmented compensation projects. *The Chief of the NPS Water Resources Division must certify all NPS wetland mitigation banks for use in compliance with these procedures.*

NPS mitigation banks will not satisfy wetland compensation requirements under Section 404 of the Clean Water Act unless they are also certified by the Corps of Engineers. Complications in obtaining such certification often arise because multiple agencies must agree on acceptable mitigation ratios and other administrative details. The NPS Water Resources Division can advise and assist in creating NPS mitigation banks and in obtaining Corps certification, as appropriate.

Consistent with Servicewide policy regarding no-net-loss of wetlands, and with prohibitions against expending NPS funds on non-NPS lands, *only mitigation banks on NPS lands can be used to satisfy the wetland compensation requirements of these procedures.*

5.9 Cultural Resources and Wetland Protection

The NPS preserves, manages, and interprets cultural resources including objects possessing historical, archeological, and architectural significance, some of which may occur in or adjacent to wetlands. Many of these cultural resources are included in, or eligible for inclusion in, the National Register of Historic Places. *NPS Management Policies 2006*, NPS cultural resources Director's Orders and procedures, and specific park management plans give direction for the management of these resources. In addition, NPS actions affecting cultural resources included in, or eligible for inclusion in, the National Register are subject to the provisions of Section 106 of the National Historic Preservation Act of 1966 and the implementing regulations found in 36 CFR Part 800, "Protection of Historic Properties."

In some cases, wetland and cultural resource management objectives may conflict. For example, a park may wish to reconstruct a historic facility or restore a cultural landscape in a wetland area, or may wish to remove historic structures that interfere with wetland management objectives. Rather than dictating a result for wetland/cultural resource management conflicts, this document outlines procedures for documenting the decisionmaking process in accordance with other NPS management policies. For example, these procedures and policies do not say that the NPS must preserve each and every wetland or that the NPS must restore every wetland that has been impacted in the past at the expense of cultural resources. Rather, procedures are established whereby alternatives are developed in accordance with Section 5.2, practicability factors such as those listed in Section 5.3.1.2 are weighed, and decisions that have unavoidable, adverse impacts on wetlands are justified.

5.10 Proposals to Lease, Create Easements or Rights-of-Way on, Exchange or Dispose of NPS Lands Containing Wetlands

When the NPS proposes, at its own discretion, to lease, create easements or rights-of-way on, exchange, or dispose of NPS-managed wetlands to non-federal public or private parties, the NPS must determine if the proposal constitutes a net loss of wetland acreage or functions on NPS lands. If so, then the proposed action is subject to the wetland protection procedures and requirements described in this Procedural Manual, including the Wetland Statement of Findings and wetland compensation requirements.

There are occasional circumstances when actions like these are not proposed by the NPS but instead are non-discretionary, such as when Congress directs the NPS to carry out certain actions through enactment of a specific law. When the NPS complies with that specific law, the applicability of E.O. 11990 and this Procedural Manual to these Congressionally-directed actions depends on the terms of that law. This is generally determined by considering the level of discretion granted to the NPS in the law to carry out the action, and whether its terms are broad enough to provide for a practicable alternative, which is the premise of E.O. 11990. This determination is made on a case by case basis in consultation with the NPS Water Resources Division and the Solicitor's Office.

For either type of transaction (discretionary or directed by Congress), the NPS must: 1) reference in the conveyance those uses that are restricted under identified federal, state, or local wetland regulations; b) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successor, except where prohibited by law.

Appendix 1: Executive Order 11990 - Protection of Wetlands (42 Fed. Reg. 26961)

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America, in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*), in order to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative, it is hereby ordered as follows:

Section 1. (a) Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

(b) This Order does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property.

Sec. 2. (a) In furtherance of Section 101(b)(3) of the National Environmental Policy Act of 1969 (42 U.S.C. 4331(b)(3)) to improve and coordinate Federal plans, functions, programs and resources to the end that the Nation may attain the widest range of beneficial uses of the environment without degradation and risk to health or safety, each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors.

(b) Each agency shall also provide opportunity for early public review of any plans or proposals for new construction in wetlands, in accordance with Section 2(b) of Executive Order No. 11514, as amended, including the development of procedures to accomplish this objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended [42 U.S.C. 4332(2)(C)].

Sec. 3. Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in wetlands, whether the proposed action is in accord with this Order.

Sec. 4. When Federally-owned wetlands or portions of wetlands are proposed for lease, easement, right-of-way or disposal to non-Federal public or private parties, the Federal agency shall (a) reference in the conveyance those uses that are restricted under identified Federal, State or local wetlands regulations; and (b) attach other appropriate restrictions to the uses of

properties by the grantee or purchaser and any successor, except where prohibited by law; or (c) withhold such properties from disposal.

Sec. 5. In carrying out the activities described in Section 1 of this Order, each agency shall consider factors relevant to a proposal's effect on the survival and quality of the wetlands. Among these factors are:

(a) public health, safety, and welfare, including water supply, quality, recharge and discharge; pollution; flood and storm hazards; and sediment and erosion;

(b) maintenance of natural systems, including conservation and long term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources; and

(c) other uses of wetlands in the public interest, including recreational, scientific, and cultural uses.

Sec. 6. As allowed by law, agencies shall issue or amend their existing procedures in order to comply with this Order. To the extent possible, existing processes, such as those of the Council on Environmental Quality, shall be utilized to fulfill the requirements of this Order. [Sec. 6 amended by EO 12608 of Sept. 9, 1987, 52 F.R. 34617, 3 CFR, 1987 Comp., p. 245]

Sec. 7. As used in this Order:

(a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting wetlands.

(b) The term "new construction" shall include draining, dredging, channelizing, filling, diking, impounding, and related activities and any structures or facilities begun or authorized after the effective date of this Order.

(c) The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.

Sec. 8. This Order does not apply to projects presently under construction or to projects for which all of the funds have been appropriated through Fiscal Year 1977, or to projects and programs for which a draft or final environmental impact statement will be filed prior to October 1, 1977. The provisions of Section 2 of this Order shall be implemented by each agency not later than October 1, 1977.

Sec. 9. Nothing in this Order shall apply to assistance provided for emergency work, essential to save lives and protect property and public health and safety, performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146).

Sec. 10. To the extent the provisions of Sections 2 and 5 of this Order are applicable to projects covered by Section 104(h) of the Housing and Community Development Act of 1974, as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decisionmaking, and action pursuant to the National Environmental Policy Act of 1969, as amended [42 U.S.C. 4321 *et seq.*].

Jimmy Carter

Appendix 2: Best Management Practices and Conditions for Proposed Actions with the Potential to Have Adverse Impacts on Wetlands

The following serve as Best Management Practices (BMPs) for NPS actions that may have adverse impacts on wetlands. Additional BMPs may be appropriate depending on local conditions or special circumstances. These also serve as "conditions" that must be met for the actions listed in Section 4.2.1 of these procedures to qualify as "excepted."

1. **Effects on hydrology and fluvial processes:** Action must have only negligible to minor, new adverse effects on site hydrology and fluvial processes, including flow, circulation, velocities, hydroperiods, water level fluctuations, sediment transport, channel morphology, and so on. Care must be taken to avoid any rutting caused by vehicles or equipment.

2. **Effects on fauna:** Action must have only negligible to minor, new adverse effects on normal movement, migration, reproduction, or health of aquatic or terrestrial fauna, including at low flow conditions.

3. **Water quality protection and certification:** Action is conducted so as to avoid degrading water quality to the maximum extent practicable. Measures must be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering the waterway or wetland. Action is consistent with state water quality standards and Clean Water Act Section 401 certification requirements (check with appropriate state agency).

4. **Erosion and siltation controls:** Appropriate erosion and siltation controls must be maintained during construction, and all exposed soil or fill material must be permanently stabilized at the earliest practicable date.

5. **Proper maintenance:** Structure or fill must be properly maintained so as to avoid adverse impacts on aquatic environments or public safety.

6. **Heavy equipment use:** Heavy equipment use in wetlands must be avoided if at all possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.

7. **Stockpiling material:** Whenever possible, excavated material must be placed on an upland site. However, when this is not feasible, temporary stockpiling of excavated material in wetlands must be placed on filter cloth, mats, or some other semipermeable surface, or comparable measures must be taken to ensure that underlying wetland habitat is protected. The material must be stabilized with straw bales, filter cloth, or other appropriate means to prevent reentry into the waterway or wetland.

8. **Removal of stockpiles and other temporary disturbances during construction:** Temporary stockpiles in wetlands must be removed in their entirety as soon as practicable. Wetland areas temporarily disturbed by stockpiling or other activities during construction must be returned to their pre-existing elevations, and soil, hydrology, and native vegetation communities must be restored as soon as practicable.

9. **Topsoil storage and reuse:** Revegetation of disturbed soil areas should be facilitated by salvaging and storing existing topsoil and reusing it in restoration efforts in accordance with NPS policies and guidance. Topsoil storage must be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community.

10. **Native plants:** Where plantings or seeding are required, native plant material must be obtained and used in accordance with NPS policies and guidance. Management techniques must be implemented to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species.

11. **Boardwalk elevations:** Minimizing shade impacts, to the extent practicable, should be a consideration in designing boardwalks and similar structures. (Placing a boardwalk at an elevation above the vegetation surface at least equal to the width of the boardwalk is one way to minimize shading.)

12. **Wild and Scenic Rivers:** If the action qualifies as a water resources project pursuant to Section 7(a) of the Wild and Scenic Rivers Act, then appropriate project review and documentation requirements under Section 7(a) are required.

13. **Coastal zone management:** Action must be consistent, to the maximum extent practicable, with state coastal zone management programs.

14. **Endangered species:** Action must not jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, including degradation of critical habitat (see *NPS Management Policies 2006* and guidance on threatened and endangered species).

15. **Historic properties:** Action must not have adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places.

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