



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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Office of the Regional Administrator

July 1, 2020

Charles Flint
Superintendent
National Park Service
Jean Lafitte National Historical Park and Preserve
419 Decatur Street
New Orleans, Louisiana 70130-1035

RE: Bayou aux Carpes Clean Water Action Section 404(c) Final Determination
Request for Exception #3 Consistency Determination. (Ref# 1.A.2 (JELA))

Dear Mr. Flint:

This letter is in response to the December 13, 2019 letter from the National Park Service (NPS) proposing a habitat restoration project on approximately four miles of canals within the Bayou aux Carpes unit of the Jean Lafitte National Historical Park and Preserve, Jefferson Parish, Louisiana. The NPS requested that the Environmental Protection Agency (EPA) consider, for approval, the Bayou aux Carpes portion of the Jean Lafitte Canal Backfilling project as consistent with the 1985 Bayou aux Carpes Final Determination (FD) Exception 3. Exception 3 is for "...discharges associated with projects with the sole purpose of habitat enhancement and specifically approved by the EPA."

The Bayou aux Carpes site was the subject of the EPA's October 16, 1985 Clean Water Act (CWA) Section 404(c) FD. The EPA issued the Bayou aux Carpes CWA Section 404(c) FD for approximately 3000 acres of wetlands that comprised the location of a proposed Corps of Engineers (Corps) flood control project, the Harvey Canal-Bayou Barataria Levee Project. The 1985 FD prohibition of discharges of dredged and fill material in the Bayou aux Carpes site was based on the EPA determination that discharges of dredged or fill material into the site would have had unacceptable adverse effects on shellfish beds, fishery areas (including spawning and breeding areas), wildlife, and recreational areas. The EPA had determined that the Bayou aux Carpes site provided valuable habitat for fish and wildlife, contributed organic material that fed fish and shellfish communities in the adjacent estuary, acted as a pollutant filtering mechanism to reduce degradation of water quality in adjacent waters, and provided opportunities for public recreation.

The completion of the original Corps flood control project and subsequent filling activities would have caused the loss of the wetland site and the wildlife habitat it provided to the American alligator, which was threatened in Louisiana, the osprey and the wood duck, which were National Species of Special Emphasis, as well as a number of other species. The loss of the wetland also would have eliminated fisheries habitat utilized by estuarine species of commercial importance, including the blue crab, and recreational value, including the blue catfish. The loss of the wetland site would have eliminated the production and export of detritus consumed by fish species of commercial and recreational importance.

In addition, the site would no longer have been able to filter pollutants and excess nutrients to protect downstream water quality. It was also noted by the EPA in the FD that the significance of these impacts was even greater in the context of wetlands alterations within coastal Louisiana, which had lost over 800,000 acres of land during the 80 years prior to 1985.

The 1985 Bayou aux Carpes CWA 404(c) FD prohibited the discharge of dredged or fill material into waters of the United States, including wetlands within the Bayou aux Carpes site, unless a proposed discharge satisfies one of three exceptions. The FD noted that discharges meeting any of these exceptions “are unlikely to result in significant adverse effects to the aquatic environment as long as they are performed in accordance with these restrictions and as well as any permit conditions which may be imposed by the Corps of Engineers through the permit process.” Per the FD, discharges of dredged or fill material would be allowable for the following three exceptions:

Exception #1: discharges associated with completion of a modified Harvey Canal-Bayou Barataria Levee Project,

Exception #2: discharges associated with routine operation and maintenance of the Southern Natural Gas Pipeline Company, and

Exception #3: discharges associated with projects with the sole purpose of habitat enhancement and specifically approved by EPA.

The NPS’s Jean Lafitte Canal Backfilling project involves reclamation and restoration of 16.5 miles of canals and spoil deposits associated with canal construction within the Barataria Unit of the Jean Lafitte National Historical Park and Preserve. Approximately four miles of this proposed project are within the boundaries of the Bayou aux Carpes CWA 404(c) site. These canals were constructed prior to the establishment of the Barataria Unit in the national park and before the enactment of Clean Water Act provisions for regulating discharges of dredged or fill material into waters of the United States, including wetlands. As the canals were dredged, soil, rock, and other materials were removed and placed alongside the canals, which created spoil banks.

Review of information provided by the NPS, historical records, and field observations shows that these canals and spoil banks contribute to the increased rates of land loss and to the spread of invasive vegetation species. Research has shown that canals and their associated spoil banks can alter hydrology and have both a direct and an indirect role in wetland degradation and loss (Enclosure 1). In this case, the canals within the Bayou aux Carpes site have turned the marsh into open water, and the spoil banks have replaced the marsh with an upland environment. Here, the spoil banks restricted the flow above and below the marsh surface and caused increases in both flooding and drying of marsh behind them. This hydrologic alteration limited the movement and deposition of sediments, nutrients, and aquatic species, which in turn stresses the marsh vegetation, increases subsidence, and leads to marsh deterioration. Other impacts included amplified tidal volumes and increased saltwater intrusion into the freshwater marsh. In addition, the vegetated communities in wetlands adjacent to the canal dredging sites have changed, and the canals and spoil banks are now colonized by exotic species.

Additionally, wetlands such as those in Bayou aux Carpes provide significant benefits to coastal communities by providing protection from flooding, helping to maintain water quality, and providing

habitat for fish and wildlife, including estuarine organisms, wintering waterfowl, and neotropical migrant birds. The loss of these wetland functions due to the construction of the canals continues to adversely impact the wetland resources of the Bayou aux Carpes site. Without adequate reclamation measures, the canals in the Bayou aux Carpes site will continue to stress the site's aquatic resources and values, with continued adverse impacts on the natural hydrology, ecology, water quality, and wetland functions and values.

The December 13, 2019 NPS letter states:

“The objectives of the JELA Canal Backfilling project are to restore and enhance wetland functions and values including hydrology (which includes water, sediment, and nutrient movement), to improve resiliency of park ecosystems in the face of subsidence and climate change impacts (sea level rise and intensified tropical storms), and to avoid or minimize adverse impacts to park resources and values.”

To achieve these objectives, the NPS proposes to degrade approximately four miles of canal spoil banks within the Bayou aux Carpes site (Figure 1 of Enclosure 1) to meet the level of the surrounding wetlands and to partially fill the open water of the canals with the spoil bank and vegetative material. The canals would then be allowed to revert to marsh and shallow water habitat by natural processes, recreating freshwater wetlands. Degrading these spoil banks would be accomplished from the canals and spoil banks using a marsh buggy, barge-mounted excavator, or similar earth-moving equipment. Access to the restoration and reclamation areas would be via canals and/or spoil banks. In consideration of habitat restoration/preservation and potential impacts to navigation and recreation, the NPS may also use one or a combination of these techniques that are identified in the NPS request. The access technique and the kinds of vehicles and machinery to be used will be designed and implemented so as to avoid and minimize wetland impacts. The NPS will utilize all feasible engineering and construction practices and techniques to minimize the potential for impacts to the Bayou aux Carpes wetlands. Decisions by the NPS as to these techniques and practices will be based on existing conditions in the Bayou aux Carpes site at the time of degrading.

EPA Region 6, in coordination with EPA's Office of Water, conducted a review of the information provided by the NPS in the December 13, 2019 letter. Additionally, Region 6 and the Office of Water participated in a February 19, 2020 site visit with the NPS, the State of Louisiana, and the New Orleans Corps District. The EPA also reviewed research that was conducted in the region to investigate the effects to wetlands of canal backfilling and canal spoil bank removal (Enclosure 1). After review of NPS's proposed canal backfilling project and all relevant supporting information, the EPA determines that the discharges associated with the proposed project satisfy Exception #3. The project will benefit the reclamation of approximately four miles of canals and spoil banks within the Bayou aux Carpes site, thereby benefitting the restoration and maintenance of the integrity of the ecological and biological processes of the Bayou aux Carpes aquatic resources.

Therefore, based on the sole purpose and expected benefits of the proposed project to Bayou aux Carpes' wetland habitat, the EPA approves discharges associated with the proposed project. Proposed discharges would not be further restricted or prohibited, provided such discharges are done in compliance with the conditions and best management plans identified in Enclosure 2 and are consistent with the plans and proposal for canal backfilling and spoil bank degradation provided in the

aforementioned NPS submission. Furthermore, it is the responsibility of the NPS to obtain all necessary federal, state and/or local authorizations and conducting all required regulatory coordination and approvals prior to implementing proposed project.

Any discharges of dredged or fill material within the Bayou aux Carpes site that are inconsistent with the December 13, 2019 NPS proposal, or fail to implement the conditions and best management plans provided in this letter, are not approved. The EPA's technical analysis of the proposal (Enclosure 1), the required conditions and best management practices for EPA's project approval (Enclosure 2), and a copy of the 1985 FD (Enclosure 3) are enclosed for your reference.

The EPA appreciates the efforts of the NPS to address the requirements of the 1985 Bayou aux Carpes CWA Section 404(c) FD. We also recognize and appreciate the efforts of the NPS to reclaim and restore the aquatic resources of the Bayou aux Carpes site. If we may be of further assistance, please feel free to contact Mr. Clay Miller in the EPA Headquarters Office of Wetlands, Oceans and Watersheds at (202) 566-1365 or Dr. Raul Gutierrez in the EPA Region 6 NPDES/Wetland Review Section at (214) 665-6697.

Sincerely,



Ken McQueen
Regional Administrator

Enclosures

Enclosure 1

Environmental Protection Agency (EPA)
Technical Analysis of Proposed
U.S. National Park Service Jean Lafitte National Historical Park and Preserve
Bayou aux Carpes Site Spoil Bank Removal and Canal Backfilling Project

Background

As noted in the cover letter, the 1985 Bayou aux Carpes Section 404(c) Final Determination (FD) placed restrictions on the discharge of dredged or fill material into waters of the United States, including wetlands within the Bayou aux Carpes site, unless the proposed discharge is covered under one of the exceptions stated in the FD. The FD provided three exceptions to the prohibition of discharges of dredged or fill material in the Bayou aux Carpes site. Discharges of dredged or fill material would be allowable for:

Exception #1: discharges associated with the completion of a modified Harvey Canal-Bayou Barataria Levee Project,

Exception #2: discharges associated with routine operation and maintenance of the Southern Natural Gas Pipeline Company, and

Exception #3: discharges associated with projects with the sole purpose of habitat enhancement and specifically approved by EPA.

The National Park Service's (NPS) has requested EPA's approval of a proposal to discharge dredged and/or fill material into waters of the US within the Bayou aux Carpes 404(c) site. The proposed discharges are part of a larger proposed project, the Jean Lafitte Canal Backfilling project for wetland habitat restoration and enhancement. The NPS's request is for the EPA to review the proposed project and determine if the project would be consistent with Exception #3.

Proposed Project Description

The NPS Jean Lafitte Canal Backfilling project involves reclamation and restoration of 16.5 miles of canals and spoil deposits associated with canal construction within the Barataria Unit of the Jean Lafitte National Historical Park and Preserve (JLNHPP). The purpose of the proposed project is to restore functions, resources, and values related to hydrology that are affected by canals, spoil banks, and dikes and to increase the resiliency of the JLNHPP ecosystems to subsidence, sea level rise, and storm events.¹

¹ The Jean Lafitte Canal Backfilling project has been approved funding for implementation as part of the Gulf Coast Ecosystem Restoration Council's (Council) Initial Funding Priorities List, which has been developed pursuant to the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act) (33 U.S.C. § 1321(t)(2)). RESTORE Act projects are intended to restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, coastal wetlands, and economy of the Gulf Coast region. The decision by the Council to fund this project is based on the expectation that the proposed Jean Lafitte Canal Backfilling project will restore wetland functions and values including hydrology (water, sediment, and nutrient movement) and improve resiliency of ecosystems in the face of subsidence, sea level rise and extreme storm events. The Council includes the governors of the States of Alabama, Florida, Louisiana, Mississippi and Texas, the Secretaries of the U.S. Departments of Agriculture, the Army, Commerce, Homeland Security, the Interior and the Administrator of the U.S. Environmental Protection Agency.

The canals within the boundaries of the Bayou aux Carpes site were dredged through the marshes of the site for the various purposes of accessing oil and gas drill sites and creating oil and gas pipeline routes. These canals and spoil banks were constructed prior to the establishment of the JLNHPP and before the enactment of Clean Water Act (CWA) provisions for regulating discharges of dredged or fill material into waters of the United States, including wetlands.

As the canals were dredged through the Bayou aux Carpes site wetlands, the soil, rock, and other materials were removed and placed alongside the canals, which created spoil banks. The initial effect of the construction of these canals and spoil banks turned some of the wetlands into open water (e.g., canals) and other wetlands where the spoil was placed turned into an upland environment.

The canals and spoil banks have not only altered the hydrology of the area, in particular the spoil banks restrict water flow above and below the wetland surface and thereby can cause both increased flooding and drying of the wetlands behind the spoil banks, but the alteration caused by these canals and spoil banks can limit sediment deposition, movement of nutrients and aquatic organisms, stress wetland vegetation, increase subsidence, and lead to marsh deterioration. Other significant impacts that can be attributed to the canals are amplification of tidal volumes and increased saltwater intrusion into the freshwater marsh. Additionally, vegetated communities in the wetlands adjacent to the canals have changed and exotic invasive species have colonized the spoil banks. The wetlands of the Bayou aux Carpes site provided habitat for fish, shellfish and wildlife, including estuarine organisms, wintering waterfowl, and neotropical migrant birds. The loss of these wetland functions due to the construction of the canals and spoil banks continues to adversely impact the Bayou aux Carpes site.

Approximately four miles of canals within the Bayou aux Carpes suite are proposed to be backfilled as part of the larger Jean Lafitte Canal Backfill project (Figure 1). The NPS proposes to degrade canal spoil banks within the Bayou aux Carpes site to meet the level of the surrounding wetlands and partially fill the open water of the canals with the resultant spoil bank and vegetative material (Figure 2). The canals would then be allowed to revert to marsh and shallow water habitat by natural processes, recreating freshwater wetlands.

EPA Review for Consistency with FD Exception #3 Determination

For the discharges to be approved under Exception #3, they must be associated with a project with the sole purpose of habitat enhancement, meaning the project will result in habitat enhancement. The EPA reviewed information provided by the NPS and participated in an onsite field investigation. Additionally, the EPA conducted a review of current research on the matter of canal backfilling and spoil bank degradation and what are the expected effects of these activities to wetlands. The following is a list of potential benefits associated with the proposed project.

1. Benefit: Restoration of former wetland habitat.

Research has shown that the immediate benefit of the degradation of the spoil banks will be the conversion of low to moderate quality upland habitat to fresh emergent marsh and cypress swamp wetlands (Abernathy and Gosselink, 1988; Baustian and Turner, 2006; Neill and Turner, 1987).

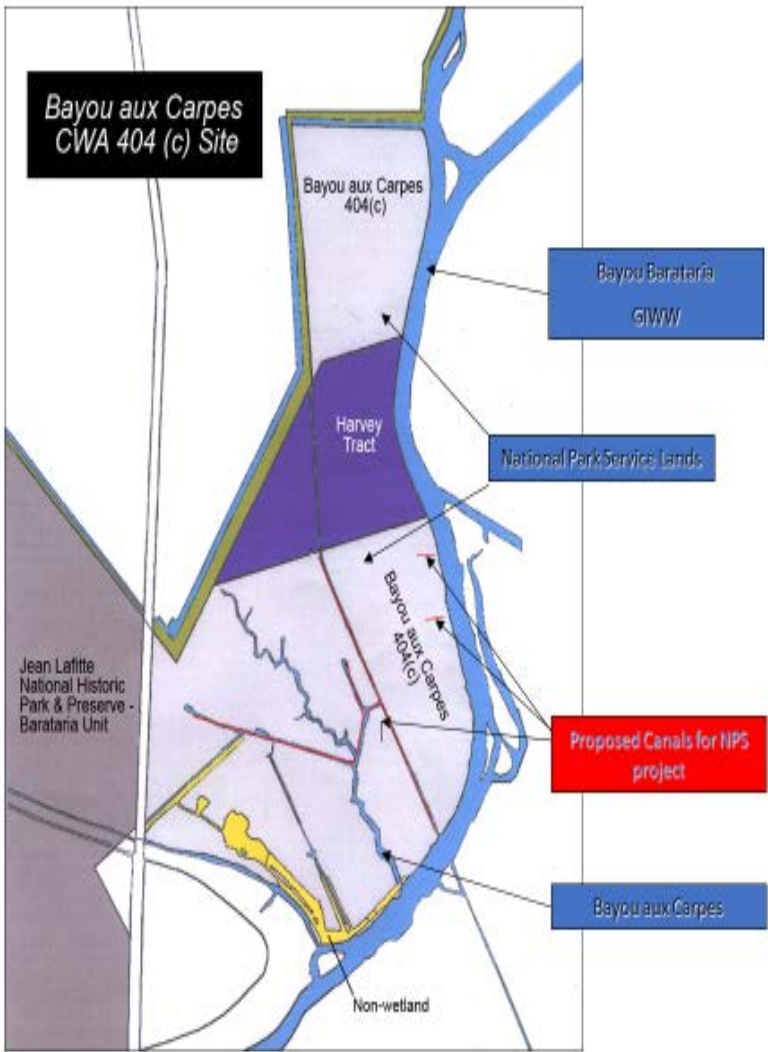


Figure 1: Bayou aux Carpes Clean Water Act 404(c) site. Proposed location of NPS canal backfilling and spoil bank degradation (highlighted in red)..

Typical Canal/Drillslip Cross Section:
Canal Reclamation at Barataria Preserve:
Jean Lafitte National Historical Park and Preserve
Louisiana

National Park Service
U.S. Department of the Interior

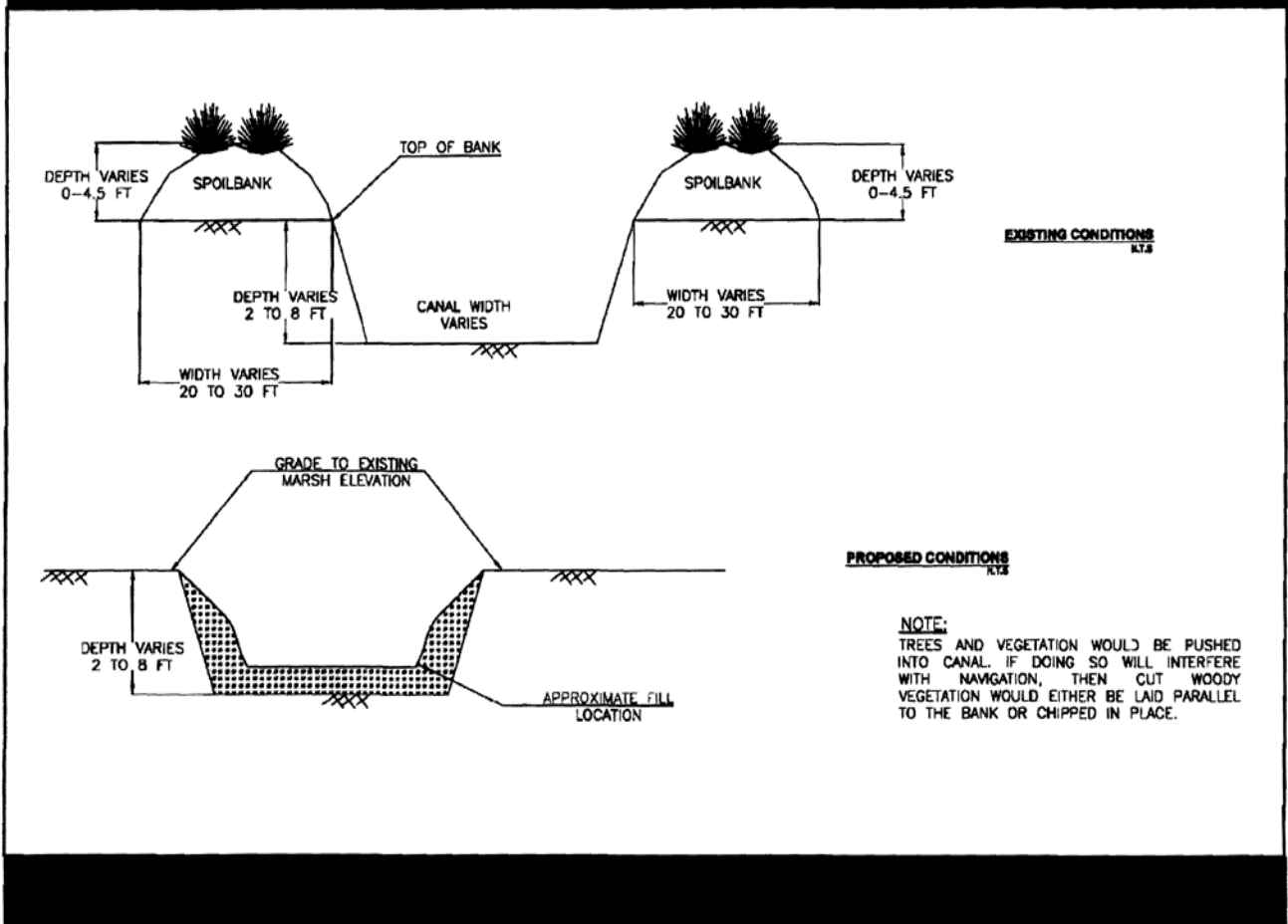


Figure 2: Typical canal/spoil bank cross-section with existing canal and spoil bank conditions and proposed canal conditions with spoil bank removal and canal backfilling.

Research also has shown that where marsh and swamp habitat were present on the sites that are currently covered by spoil material, and these wetland types still exist adjacent to the spoil banks (Craig et al., 1979, Neill and Turner, 1987) and it can be reasonable to deduce that the removal of the spoil material would restore wetlands within the footprint of the spoil banks and increase the extent of adjacent swamp and marsh habitat within the Bayou aux Carpes 404(c) site.

It is also important to note that currently, most of the upland spoil banks are dominated by invasive exotic species, such as Chinese tallow (*Triadica sebifera*), or light-seeded early colonizers such as sugarberry (*Celtis laevigata*) and maple (*Acer drummondii*). Removal of the spoil banks would decrease areas that could be used by invasive and exotic species, allowing for native swamp and marsh species to proliferate, thereby enhancing habitat quality. While there is

some concern regarding mature potential impacts to mature trees of higher quality, such as bald cypress (*Taxodium distichum*) and live oak (*Quercus virginiana*), the NPS plans to work around these specimens and leave them and adjoining spoil material in place to minimize these impacts and retain the ecological benefits these mature trees provide.

2. Benefit: Restoration of hydrologic connectivity.

The removal of spoil banks is expected to improve the hydrologic conditions by allowing natural ingress and egress of water onto adjacent wetlands. The spoil banks act to retain water during and after high water events, causing increased flood duration, which in turn can stress wetland vegetation. Spoil banks can also impede sediment deposition in wetland areas. A decreased in sediment deposition to offset subsidence can result in loss of marsh to open water. Research has shown that the removal of these hydrologic impediments caused by the spoil banks, prolonged flooding of adjacent marsh and swamp habitat will be reduced (Neill and Turner, 1987; Swenson and Turner, 1987), sediment deposition will increase, and subsidence and stress to marsh vegetation will decrease (Baustian and Turner, 2006; Turner, 1987; Turner and McClenachan, 2018). Unimpeded ingress and egress of water onto the adjacent wetlands will ultimately lead to healthier marsh and swamp habitats.

3. Benefit: Improved subsurface effects when surface spoil is removed.

When spoil material is placed on wetland soils, the wetland soils are compressed due to the weight of the spoil material. Pore spaces are reduced, resulting in decreases in water content and subsurface water flow. Thus, hydrologic connectivity, both above- and belowground, are reduced in areas bordered by spoil banks. Baustian and Turner (2006) have shown that the backfilling of canals and the degradation of spoil banks will restore belowground hydrologic conditions () as the overlying weight from the spoil material is reduced or removed. When spoil banks are completely degraded, wetland soils that were compressed under the spoil material show in increase in organic matter, bulk density, and water content (Baustian and Turner, 2006; Neill and Turner, 1987; Turner and McClenachan, 2018). These subsurface benefits will provide habitat benefits not only to the wetland soils under the footprint of the spoil banks but will also restore belowground hydrologic connectivity to adjacent marsh and swamp habitats.

4. Benefit: Partial to complete restoration of wetland habitat in canals.

Though there may not be enough spoil material to completely fill in the canals in the Bayou aux Carpes 404(c) site, the canals will become shallower and marsh edge habitat will be created where the adjacent wetlands transition naturally into the canals. The shallower canals and adjacent transition zone will provide habitat and access to interior wetlands for a variety of wildlife such as waterfowl, fish, and other aquatic species (Baustian and Turner, 2006; Neill and Turner, 1987; Peterson and Turner, 1994). Abernathy and Gosselink (1988) demonstrated that after construction, the shallow canals and ponds that remain within the former channels will resemble natural systems in depth and vegetation and mimic these natural systems in the habitat benefits they provide.

Conclusion

Direct and indirect impacts from canals and spoil banks account for a large percentage of wetlands lost in southern Louisiana (Bass and Turner, 1997; Baustian and Turner, 2006; Turner, 1987; Turner and Rao, 1990). Research suggests the backfilling of canals is a cost-effective way to restore wetlands and

prevent future wetland loss (Neill and Turner, 1987; Turner and McClenachan, 2018; Turner et al., 1994) and will provide habitat enhancement not only in the immediate vicinity of spoil banks and canals, but across the entire Bayou aux Carpes 404(c) site.

After review of information provided by the NPS, participation in an onsite field investigation and review of research pertinent to canal backfilling and spoil bank degradation, it is EPA's determination that the NPS proposal to degrade spoil banks and backfill canals, as described in the NPS December 13, 2019, request, would likely result in habitat enhancement benefits for the Bayou aux Carpes 404(c) site. It is EPA's determination that the NPS proposal is consistent with the 1985 Bayou aux Carpes Final Determination's Exception #3.

Literature Cited

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Enclosure 2

Conditions and Best Management Practices for the Proposed U.S. National Park Service Jean Lafitte National Historical Park and Preserve Bayou aux Carpes Site Spoil Bank Removal and Canal Backfilling Project

The Environmental Protection Agency (EPA) has a long record of protecting the Bayou aux Carpes wetlands. Any approved habitat enhancement activities such as those of the proposed spoil bank removal and canal backfilling project shall not cause more than minimal and temporal water quality degradation of any adjacent wetland, stream, or water body. The EPA determined that the following conditions and best management practices (BMPs) were necessary in order for the Agency to approve this proposed project. These conditions and BMPs must be implemented in order for any discharges of dredged or fill material to comply with the terms of the 1985 Bayou aux Carpes 404(c) Final Determination.

1. To minimize risk and misunderstanding by the National Park Service (NPS) project contractor, NPS should confirm with the contractor an understanding of the scope of the project worksite, per NPS proposal, so as to prevent unnecessary and unapproved impacts to adjacent wetlands either through the unauthorized machinery/equipment access or unapproved discharges of dredged or fill material. Discharges of dredged or fill material are restricted to those canals approved for backfilling per project proposal.
2. During final project design, the NPS shall utilize all feasible engineering and construction practices (as described in the NPS proposal) to minimize the potential for impacts to the Bayou aux Carpes wetlands outside the project footprint.
3. The approved access to the site and the kinds of vehicles and machinery to be used shall be designed so as to avoid and minimize wetland impacts.
4. Prior to project implementation with the Bayou aux Carpes site, the NPS shall confer with the U.S. Fish and Wildlife Service (USFWS) and comply with any specified endangered species requirements identified by the USFWS.
5. The NPS shall be responsible for obtaining all necessary federal, state and/or local authorizations and conducting all required regulatory coordination and approvals prior to implementing proposed project.
6. Throughout the life of the project, the NPS shall ensure that any necessary adaptive construction modifications that significantly deviate from the proposed NPS plan shall be approved by EPA Region 6 prior to implementation.
7. The NPS shall be responsible for ensuring compliance with the terms of this approval, including the conditions and BMPs. NPS shall be responsible for ensuring that all employees and contractors working within the Bayou aux Carpes CWA Section 404(c) site understand the terms and extent of this approval.
8. Any violation of the terms of this approval shall be reported by NPS to the EPA Region 6 by telephone immediately upon discovery, followed by a written report by NPS describing the circumstances and ecological impacts. In this event, all related work activities shall cease until resolution is reached with the EPA.

In the event that the EPA determines during the life of the project that construction of the approved project is causing unanticipated and unacceptable wetland impacts in the Bayou aux Carpes site, the EPA may modify the terms of these conditions and BMPs.

ENCLOSURE 3

Copy of the 1985 Bayou aux
Carpes CWA 404(c) Final
Determination

(attached as PDF file)

