



Finding Of No Significant Impact

Rehabilitation of the Lincoln Memorial Reflecting Pool and Surrounding Area

National Mall and Memorial Parks

The National Park Service (NPS) proposes the implementation of multiple improvements to the Lincoln Memorial Reflecting Pool and Surrounding Area in Washington, D.C. to address structural deficiencies in the Reflecting Pool and to enhance the infrastructure, safety, and pedestrian circulation systems associated with it.

The project area is one of the most popular destinations in the country, having served as the backdrop to some of our nation's most historic events. The monuments, memorials, landscape features, and vistas within the project area constitute some of the most iconic and recognizable images commemorating presidential legacies and war veterans in the country, resulting in millions of annual visitors. Nevertheless, the project area is being used far beyond the capacity for which it was originally designed, and the physical condition of the infrastructure and circulation systems have deteriorated to the level of creating inefficiencies in park management and operations. In addition, several components need to be upgraded to address issues that were not anticipated in the original planning and design of the project area, such as security, accessibility, and nighttime visitation.

As part of this effort, the NPS completed an environmental assessment (EA) that provides an analysis of two alternatives and the resultant impacts, or environmental consequences, on a variety of resource areas. The two alternatives presented in the EA include the no action alternative and the action alternative. The action alternative has several options for design variations that address multiple improvements to rehabilitate and enhance the infrastructure, circulation, accessibility, and historic resources in three locations in the project area: at the elm walks, the Lincoln Memorial east plaza, and at the Reflecting Pool. To the north and south of the Reflecting Pool, the historic Elm walks will be resurfaced, site furnishings will be refurbished and reconfigured and permanent lighting will be installed to enhance public safety and visitor experience. At the west end of the Elm walks, improvements are proposed to integrate accessible pathways between the Reflecting Pool and Lincoln Memorial's east plaza with a permanent vehicular security system that will replace the temporary concrete barriers which were installed in 2008 in the center section of the east plaza. At the Reflecting Pool, upgrades are proposed to repair its structural system, improve its functionality and sustainability, and to formalize the flanking walkways where the lawns have been worn bare by visitors traveling between the World War II and Lincoln Memorials.

This EA was prepared in accordance with National Environmental Policy Act of 1969, as amended (NEPA), its implementing regulations by the Council on Environmental Quality (40 CFR 1500-1508), and Director's Order #12, Conservation Planning, Environmental Impact Analysis and Decision-Making, and accompanying Handbook (DO-12) and was published on December 23, 2009. The associated public comment period extended from that date through January 29, 2010. Subsequent to the publication of the EA, the NPS entered the design development phase of the project and conducted additional design review, engineering evaluations, and financial analysis on each component of the project. These studies helped to inform the NPS on factors not previously considered in the conceptual design phase, which in turn led to modifications and refinements of certain design aspects which generally lessened the impacts from what had previously been described in the original EA.

Specifically, modifications were made to the proposed structural system for the Reflecting Pool to utilize more readily available and less expensive timber piles than the CMC system described in the EA. Both have comparable structural integrity. New piles beneath the new walkways along the Reflecting Pool and

at the lower approachway will eliminate differential soil settlement. In addition, to limit the potential for damage, the existing granite coping around the pool will be removed and reset as the project nears completion. By selecting the modified structural system option, there will be no difference in impacts to park resources beyond what was described in the EA.

Modifications were made to the proposed water system for the Reflecting Pool to enhance the water quality in the Reflecting Pool and to minimize adverse impacts to resources within and around the project area. By selecting the modified water system option, impacts to all resource areas except floodplains (visitor use, public safety, park management and operations, cultural resources, visual resources, water resources, soils, vegetation, and transportation) will be minimized relative to the preferred EA water system option. There will be no appreciably different impact on floodplains above what was analyzed in the EA. Descriptions of the modified options and any changes in the overall impact analysis are addressed in the FONSI and in the attached errata to the EA.

Selected Alternative

The selected alternative is composed of multiple proposed improvements to rehabilitate and enhance the infrastructure, pedestrian circulation, accessibility, and historic resources in three locations in the project area: the elm walks, Lincoln Memorial east plaza, and the Reflecting Pool. Based on the analysis presented in the EA, the NPS has selected Alternative 2 (Option A3, Modified Option B2.1, and Modified Option C) for implementation. Of those options analyzed, only the selected pedestrian circulation system is the same as what was described in the EA (Option A3). Options for the selected structural systems and water system have been modified from what was presented in the EA.

ELM WALKS

There are multiple actions along the elm walks that will affect the site furnishings and pedestrian circulation. The benches, trash receptacles, and lighting fixtures along the length of both elm walks will be reconfigured and moved to the outboard side of the walkways. The benches and trash receptacles will be rehabilitated or replaced in-kind, new permanent lighting fixtures will replace the temporary lighting fixtures, and drinking fountains will be installed at center and both ends of the elm walks. The lighting fixtures will conform to NPS standards and will be consistent with the scale, character, and historic resources in the surrounding area. To support the drinking fountains, several subsurface lateral water supply lines will be installed at several points along both elm walks. These lateral lines will also service several new irrigation valves that will be installed along each elm walk to accommodate site watering and landscape maintenance. In addition, the elm walks will be resurfaced in a material that is consistent with the historic character of the cultural landscape and compatible to the adjacent walkways in the project area.

LINCOLN MEMORIAL EAST PLAZA

At the west end of the elm walks, Option A3 (as described in the EA) will create new ADA/ABAAS-compliant pathways between the Lincoln Memorial east plaza and the lower approachway terrace at the Reflecting Pool. This option will also integrate a new permanent vehicular barrier system to replace the temporary concrete barriers in the center section of the east plaza. The general alignment will incorporate curvilinear paths that complement the existing character of the landscape and join the existing curvilinear walks that lead to the adjacent Vietnam Veterans Memorial and the Korean War Veterans Memorial. The curved pathways will avoid the historic fabric of the lower approachway and will minimally intrude on the elm walks where they intersect. In addition, the lower approachway staircases, landings, and terrace will be rehabilitated to repair damage and wear and to improve public safety. Because of their gradual slope these walks will be universally accessible. There is also the potential to install lighting within the security walls to illuminate the walkways at night.

The perimeter security in this option has been carefully designed to minimize impacts to important viewsheds. This will be accomplished mainly through the use of the Reflecting Pool structure, security walls, and minimal bollards at the transition zones. In order to diminish the visual impact of the security elements from the principal east/west axis, the edge of the Reflecting Pool itself will be designed to serve as a vehicular barrier. Set back on either side, stone security walls will be built behind "ha-ha's," or

landscape trenches, which will reduce the visibility of the walls when viewed from further to the east. The new curved pathways will incorporate stone security walls and revisions to the grade to diminish their visibility as well. Where bollards are required to connect the edge of the Reflecting Pool with the security walls, the bollards will run parallel instead of perpendicular to the main axis so that they are less visible. The bollards which will tie the curved security walls into the existing system of permanent bollards at the east plaza will also be placed in a manner so as to reduce their visibility. The tie-in locations will be out-board of the existing permanent bollard line, allowing for the removal of a number of the already installed permanent bollards in between, thereby reducing further the number of bollards visible from the principal axis.

Reflecting Pool Pedestrian Circulation System

The existing worn dirt paths, or social trails, that flank the north and south sides of the Reflecting Pool will be resurfaced and made into formal 13-foot, 4-inchwide walkways, connecting the World War II Memorial and the lower approachway plaza. The material, color, and pattern of the walkways will blend harmoniously with the adjacent historic features (such as the granite coping around the pool and lower approachway), the features of the World War II Memorial, and the overall visual character of the project area.

Structural System

The NPS identified Option B2.1 as its preferred option in the EA. In this option, a grid of new grouted piles will be installed approximately 40 feet downward, beneath the footprint of the Reflecting Pool, creating soil compression and compaction. Next, two inches of crushed aggregate will be installed over the grid, with a concrete slab poured over that, creating a stable, uniform foundation for the Reflecting Pool and the coping. However, subsequent structural analysis revealed that the existing grade beam which supports the coping has adequate structural integrity to maintain uniform and minimal settlement over the long-term life (100 years) of the Reflecting Pool. As a result, the Selected Alternative has been modified from B2.1 to include the temporary removal and storage of the Reflecting Pool's granite coping in combination with leaving the original coping foundation and timber piles in place, thereby preserving that portion of the original historic fabric. The existing foundation slab beneath the pool will be demolished, and new piles will be driven to bedrock to support the new foundation slab. Since this option relies on bedrock rather than soil to support the Reflecting Pool foundation, differential settlement will be eliminated. A further modification to Option B2.1 utilizes timber piles instead of grouted piles (as described in the EA), because timber piles are reliable, cost effective, verifiable, and are readily available in the region. This modified option will also rubblize the existing foundation slab and leave it in place below the new slab, eliminating the need to haul away several thousand tons of concrete from the project area.

WATER SYSTEM

The NPS selected option combines certain elements of previously considered options that are described in the EA. In the selected option, the water supply will be drawn from the Tidal Basin and screened at the point of intake to eliminate debris. To enhance water quality, the water will be treated and filtered prior to entering the Reflecting Pool, and any backwash from the filtration process will be discharged to the sanitary sewer.

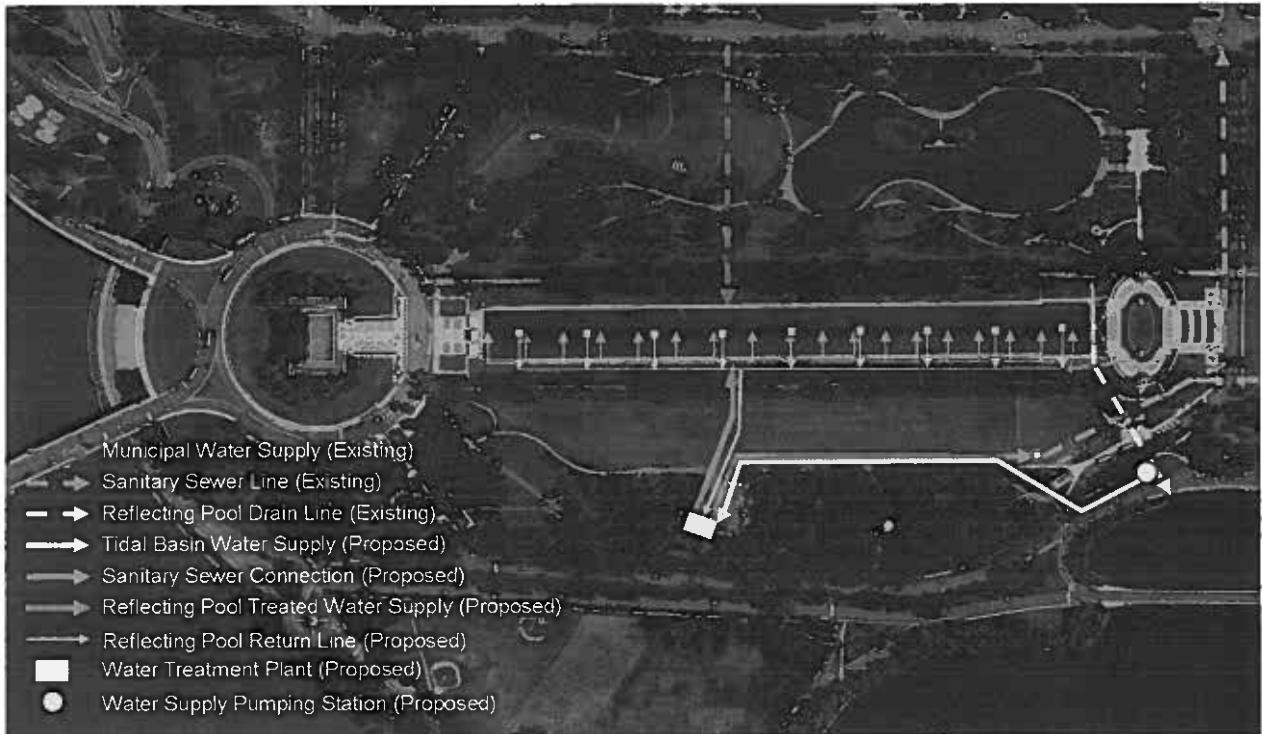
Once the Reflecting Pool is filled, the water will be continuously re-circulated. Any water lost to evaporation will be recharged by capturing and re-treating the groundwater from the World War II Memorial pool¹ and redirecting it to the Reflecting Pool. The municipal potable water supply will serve as the backup source for make up water in the Reflecting Pool should the recaptured groundwater not be

¹ Due to its location and design, the World War II Memorial currently manages a fairly large volume of ground water from its basement mechanical rooms. Rather than discharge that volume into the Tidal Basin, this option will redirect the discharge to the treatment facility for re-introduction into the Reflecting Pool. By utilizing this adjacent water body, the reliance on potable city water for the make-up supply is further reduced.

enough. Once a year, the Reflecting Pool will be emptied and discharged to the Tidal Basin for inspection and cleaning.

The implementation of this option will require the construction of a small subsurface intake feature adjacent to the Tidal Basin to accommodate the pumps and screening equipment. It will also require a water treatment facility within the project area to accommodate the filtration equipment. The water treatment facility will be approximately 40 feet by 60 feet (or 2,400 square feet) and co-located with the U.S. Park Police maintenance area south of Ash Road, between the DC War Memorial and the Korean War Veterans Memorial. The diagram below of the preferred water system option delineates the water system components.

Revised Preferred Water System Option



The Tidal Basin was selected as the preferred intake source due to several factors primarily related to water quality issues associated with the Potomac River. The intake location proposed in the EA in West Potomac Park was approximately 2,500 feet downstream from the Easby Point combined sewer overflow (CSO), one of nine CSOs along the Potomac River that are upstream of the Lincoln Memorial. The project engineers determined that in an average year, the Easby Point CSO would overflow 25 times, with a total overflow volume of 89.58 million gallons. The frequency of these CSO events would have required the NPS to develop a complex system whereby the river intake and the continuous flow within the Reflecting Pool would have to be shut off in advance of any storm events to prevent excess *e coli* and fecal coliform bacteria from entering the pool. In addition, through ongoing consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), several issues related to fisheries habitat and submerged aquatic vegetation were raised which presented challenges to siting an intake structure on the banks of the Potomac without causing damage to the aquatic resources in the area (See Appendix for correspondence).

Whereas the preferred water system option that was analyzed in the EA provided a continuous flow-through of river water, the modified preferred option provides for filtration and recirculation of the water. This option is advantageous because it will ensure better water quality. Subsequent analysis determined that the flow-through option would have a flow rate of 2,500 gallons per minute (gpm) which would be insufficient to properly flush the suspended solids coming from the river water. Increasing the flow rate beyond 2,500 gpm would potentially create perceptible surface movement on the water which would

jeopardize the reflective quality of the pool. In addition, to ensure a constant rate of flow at 2,500 gpm and a once daily turnover of approximately 4.0 million gallons of water, the energy costs associated with constantly running several pumps would be relatively large compared to the life cycle costs of maintaining filtration and recirculation equipment.

The Tidal Basin also became an increasingly attractive option following on-site surveying of the existing infrastructure. In late January 2010, the existing piping between the Tidal Basin and the Reflecting Pool was found to be in good enough condition to be used as an outflow as well as new intake; its location was proximate to the Reflecting Pool eliminating the need to tunnel through West Potomac Park in order to install a new intake.

In addition, it was determined that this water system would have the ability to extend to adjacent water bodies. While the scope of this project is limited to the Reflecting Pool, implementation of this water system could incorporate a valve that would accommodate future expansion of the Tidal Basin intake and water treatment system into Constitution Gardens.

This option would best preserve the natural resources in the project area. By using a renewable water source such as the Tidal Basin to supply the Reflecting Pool, the reliance on the municipal water supply is greatly reduced. In addition, the water lost to evaporation will be re-charged by capturing and re-treating the groundwater from the World War II Memorial pool. By implementing this system, the NPS will eliminate their need for approximately 15 million gallons of municipal water a year².

Other Alternatives Considered

The EA also analyzed the no action alternative and several other options for upgrades and improvements to the structural and water systems of the Reflecting Pool and the pedestrian circulation in the surrounding area.

The no action alternative represents a continuation of the existing operations and maintenance and existing visitor use of the Reflecting Pool, Lincoln Memorial east plaza, and surrounding structures and circulation paths. Along the length of the Elm walks, the pathway, the benches, trash receptacles, and temporary lighting fixtures would remain in their current condition and location, continuing to provide limited visitor access/service but would not change in condition, quality, or volume. The temporary concrete barriers in the center section of the east plaza would remain in place and would continue to provide a secure vehicular barrier to the Lincoln Memorial.

At the Reflecting Pool, the current condition, operation, and maintenance of the circulation and infrastructure, including the structural and water systems, would remain the same. There would be no changes to the existing worn dirt paths that flank the Reflecting Pool. The structural system (foundation slab, perimeter grade beam, granite coping, and joint system) would not be altered and would continue to leak, with limited maintenance as permitted by the current Park schedule and budget. The water source would be furnished by the municipal supply and would be continue to be chemically treated by the NPS to offset the impact of municipally added chemicals which are not compatible to aquatic life. During the twice-annual cleaning and inspection, the Reflecting Pool would continue to be discharged to the Tidal Basin.

² Due to its location and design, the World War II Memorial currently manages a fairly large volume of ground water from its basement mechanical rooms, thus reducing the need to use potable water for make-up supply.

The no action alternative was dismissed from consideration because it would not fulfill the purpose and need of the project, nor would it satisfy the terms of the consultation for the 2008 Lincoln Memorial east plaza security upgrades whereby the NPS would address design concerns, maintenance problems, accessibility, and security needs, including replacement of the temporary concrete barriers.

SITE CIRCULATION OPTIONS AT THE LOWER APPROACHWAY

These options utilize generally the same approach as the Selected Alternative, replacing the temporary concrete barriers at the Lincoln Memorial east plaza with a permanent vehicular barrier system that integrates new curvilinear ADA/ABAAS-accessible paths from the east plaza to the lower approachway. Each option would also allow for some of the existing metal bollards around the Lincoln Memorial Circle to be removed, and the use of grading would be used to reduce the visible portion of security walls. Where they differ from the Selected Alternative is principally with the location and treatment of the security walls on the curved pathways and where they flank the lower approachway and west end of the Reflecting Pool.

Option A1

In this option, a combination of bollards and security walls would be used along the new curvilinear walkways to provide a permanent vehicular barrier system. As shown in Figure 2.6 of the EA, bollards would be used along the inner path of the walkway along the lower approachway, but security walls would be used along the outer edge of the walkways as they descend to the Reflecting Pool. Along these curved security walls, handrails would be required. At the approachway, the lower terrace would be widened and security walls would be built to align with (rather than be set back from) the western edge of the Reflecting Pool. Bollards would be required across the paths between the portions of security walls and Reflecting Pool to complete the line of protection. These bollards would also extend across both elm walks at the intersections of the new walkways which curve out beyond them. This option was not selected because handrails would be required along the security walls and because the alignment of the bollards that flank the Reflecting Pool would be perpendicular to the principal axis and have a greater impact on visual resources than the selected option.

Option A2

In this option, bollards would be used along the entire length of the inner side of the curved walkways. Due to the slope of the walkways, handrails would also be required. At the approachway, the lower terrace would be widened, grade changes and security walls would be used in the area between the elm walks and the Reflecting Pool to complete the permanent vehicular barrier system. However, unlike Option A1, the trenches and walls would be located further to the west, set back from the Reflecting Pool. At the lower terrace, an "L" shaped configuration of bollards would be installed between the security walls and the Reflecting Pool to complete the vehicular barrier. Bollards would also be required running north to south across both elm walks. This option was not selected because the number of new bollards that would be introduced to the project area was deemed unacceptable due to the need for handrails and number and visibility of bollards within the viewshed.

STRUCTURAL REHABILITATION

Option B1

This option would address only the consequences of the structural deterioration. Cracks and deficiencies in portions of the foundation slab, perimeter grade beam, joints, and granite coping would be repaired in place. Structural reports indicate that approximately 20 percent of the Reflecting Pool structural system requires repair. The repairs would take approximately nine months, potentially reducing the impacts to visitor use in the project area. Option B1 was not selected, however, because repair of the Reflecting Pool without addressing the underlying source of the structural problems would be inefficient long term since it would not eliminate water leakage and differential settlement of the foundation.

Option B3

In Option B3, the existing slab and grade beam underneath the coping would be removed and a new structural system would be installed that uses a unified structural system, tying together the foundation

slab, grade beam, coping, and adjacent sidewalk. No new piles would be installed. In this option, the entire Reflecting Pool structure and adjacent walkways would be a monolithic concrete system that would settle uniformly, albeit negligibly, over time. In Option B3, the structural system of the Reflecting Pool would be completely replaced in multiple steps over the course of 21 months. Option B3 was not selected because subsequent structural analysis determined that the piles supporting the perimeter grade beam are in good condition and may remain in place to continue to support the grade beam. This option also had no appreciable advantage over the preferred option but a considerably higher construction cost.

WATER SYSTEM

Option C1

In this option, the water supply would be drawn from the Potomac River. It would circulate with a continuous flow through the Reflecting Pool and discharge to the Tidal Basin. There would be no treatment of the river water in this option. At the point of intake on the banks of the river in West Potomac Park, a new 8' x 16' subsurface electrical vault and a 15 foot by 15 foot pump station would need to be constructed to accommodate the pumping, screening and partial filtration of debris and sediment from the water. The exact location and design of the pump station would be determined during the design process and through the ongoing Section 106 process in which the public and agencies such as the National Capital Planning Commission (NCPC) and the District of Columbia Historic Preservation Office (DC HPO) are consulting parties, but it would be designed to be consistent in style and material with other structures in the surrounding cultural landscape.

From West Potomac Park, a new subsurface 16-inch supply line to the Reflecting Pool would be installed using directional boring techniques; it would extend north, beneath Independence Avenue, SW, toward the Reflecting Pool. The Potomac River as a point of intake was eliminated from consideration for reasons previously described, so this option was revised to incorporate the intake source from Option C3 with the recirculation similar to Option C2.

Option C2

In this option, the water supply would be supplied by the municipal system from DC WASA and discharged into the sanitary sewer. The water would be re-circulated in the Reflecting Pool and would undergo ozone filtration prior to entering the Reflecting Pool. To further enhance water quality, inhibit algae growth, and reduce the need for frequent cleaning, six ultrasonic transducers would be installed in the Reflecting Pool below the surface of the water. These devices are small and would not be visible from above. All pumps, filtration equipment, electrical power sources, and water system controls would be located in four subsurface concrete vaults, each measuring 10 feet by 12 feet and located to the south of the southern elm walk.

Since the municipal system is presently used to fill the Reflecting Pool, the infrastructure for water supply is already in place. However, a new 16-inch pipe and an additional subsurface electrical vault would be installed north of the Reflecting Pool through Constitution Gardens to accommodate pumping and discharge to the sanitary sewer system.

This option was not selected because of the potential visual and sound impacts of the underground vaults located so close to the historic resource, having to maintain those vaults and equipment in a location within the major viewshed, and because the method of filling the Reflecting Pool relied upon using nearly 17 million gallons of potable water a year.

Option C3

In this option, the water supply would be drawn from the Tidal Basin, and it would discharge to the Potomac River. The water would be screened and partially filtered at the point of intake to eliminate suspended solids, sediment, and other large debris from entering the Reflecting Pool. To further improve water quality, ultrasonic transducers would be used to inhibit algae growth.

The point of intake would be at the northwest corner of the Tidal Basin. At this location, an 8 foot by 16 foot subsurface electrical vault and a 15 foot by 15 foot pump station would be constructed to accommodate the pumping and partial filtration of the water. The exact location and design of the pump

station would be determined during the design process and through the ongoing Section 106 process, but it would be designed to be consistent in style and material with other structures in the surrounding cultural landscape. The general location would be between the Tidal Basin and Independence Avenue SW. From the Tidal Basin, a new subsurface 16-inch supply line to the Reflecting Pool would be installed using directional boring techniques; it would extend north, across Independence Avenue SW toward the Reflecting Pool. For discharge, a new 16-inch pipe would be installed at the western end of the Reflecting Pool, extending south across Independence Avenue to West Potomac Park.

This option was not selected because the water in the Tidal Basin is warmer than the Potomac River and it was anticipated that this temperature differential would create obstacles in obtaining a permit for discharge pursuant to the Clean Water Act.

ALTERNATIVES CONSIDERED BUT DISMISSED

There were several other alternatives and options of alternatives considered but rejected and therefore not carried forward for further analysis because they were determined to be unreasonable, had technical or logistic problems, or greater environmental impacts than similar options included in the analysis. Several site circulation options were considered that established new paths within the historic fabric or set back the new walkways away from the Reflecting Pool. Various paving materials for the new walkways were examined such as stone dust, but were dismissed due to significant maintenance concerns. Several security options were considered such as using visual screens for concealing bollards or landscape elements that would collapse under the weight of a vehicle. These were dismissed based on visual impacts, security needs, and potential conflicts with service and emergency response vehicles. Several water system options were considered such as the use of onsite wells, rainwater capture, and natural methods to treat the water, however, none were sufficient to efficiently meet the needs of the project. Several structural options were also considered such as lining the Reflecting Pool with a membrane to prevent water leakage and pouring a new slab over the existing slab, however, these would not be long-term solutions and the Reflecting Pool would continue to crack and leak.

The Environmentally Preferable Alternative

Based on the analysis of environmental consequences of each alternative, the NPS determined that the action alternative, with Options A3, B2.1, and C1, was the environmentally preferable alternative in the EA because it best met the definition established by the U.S. Council on Environmental Quality. However, based on subsequent technical analysis and design development, the NPS determined that the action alternative, with Options A3, modified B2.1, and a modified water system option, is the environmentally preferable alternative.

Option A3 would best preserve the historic resources in the project area as it best maintains the integrity of the character-defining features of the cultural landscape, such as the viewsheds and vistas, historic topography, and historic lower approachway stairs and landings. All options—A1, A2, and A3—have similar effects on natural resources such as vegetation and soils. Options A1 and A2 were not selected because the proposed re-grading in both options would be less consistent with the historic topography adjacent to the lower approachway stairs. In addition, the placement of bollards in both options would have greater impacts than Option A3 on the design and setting of the Reflecting Pool and views associated with it and the Lincoln Memorial.

Option B2 (as modified) would best protect the natural and historic resources in the project area. A comprehensive repair of the Reflecting Pool would restore the structural integrity of this important historic resource, protecting its longevity and reducing the water lost due to leakage. In addition, the addition of formalized walking paths will protect the vegetation (turf) and soils in the project area from further degradation. Option B1 was not selected because repairing the Reflecting Pool in place is an inefficient long term solution which would not eliminate water leakage and differential settlement of the foundation. Option B3 was not selected because subsequent structural analysis determined that the existing piles supporting the perimeter grade beam are in good condition and may remain in place to continue to support the grade beam, thereby preserving more of the historic fabric. The modified Option B2 is preferred over the original Option B2 (as described in the EA) because it utilizes timber piles, which

are non-proprietary and readily available in the region. This modified option will also rubblize the existing foundation slab and eliminate the need to haul away several thousand tons of concrete from the project area.

Option C1 (as modified) is the environmentally preferable alternative because it is the most sustainable and energy efficient option and would best preserve the natural resources in the project area. By using a renewable water source such as the Tidal Basin to supply the Reflecting Pool, the reliance on the municipal water supply is eliminated. In addition, the water lost to evaporation will be re-charged by capturing and re-treating the groundwater from the World War II Memorial pool. By implementing this system, the NPS will eliminate their need for approximately 17 million gallons of municipal water a year³. Option C2 was not selected because it proposed to continue using the municipal water supply to fill the Reflecting Pool. Option C3 was not selected because the water in the Tidal Basin is warmer than the Potomac River and it was anticipated that this temperature differential would create obstacles in obtaining a permit for discharge. The modified Option C1 is preferred over the original Option C1 (as described in the EA) for several reasons. Further consultation revealed that there is sensitive fish species and habitat in the Potomac River that could possibly be affected by the intake at that location. In addition, the existing drainage line to the Tidal Basin was found to be in good enough condition to reuse, which eliminated the need to tunnel through West Potomac Park to provide a new water source for the Reflecting Pool. Finally, the Potomac River intake location was 2,500 feet downstream from the Easby Point CSO, a factor which would adversely affect water quality within the proposed system.

Implementation of these options is preferable over the no action alternative because they best preserve the existing historic features in the project area and enhance visitor use and experience, public safety, and park management and operations.

Mitigation Measures

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures will be implemented as part of the selected action alternative. The NPS will implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and to achieve their intended results. The table on the following page outlines appropriate mitigations that will be employed to minimize impacts to park resources.

³ Currently, the NPS empties and fills the 6.75 million gallon Reflecting Pool twice a year. An additional 1.5 million gallons is lost to leakage and evaporation.

Mitigation Measures of the Selected Alternative	
Resource Area	Mitigation Measures
Visitor Use and Experience	<p>Public information will be made available on the Park website and on signs in the Park to inform visitors of temporary closures of portions of or resources within the project area.</p> <p>Construction activity will be scheduled so it does not coincide with special events that occur on the National Mall or in the project area to the greatest extent possible.</p>
Public Safety	<p>Construction workers and employees will follow an approved health and safety plan which incorporates all applicable regulations.</p> <p>Barriers and signs will be used around construction sites to divert the public away from potentially dangerous situations.</p> <p>Public announcements will be made on the Park website and in the media to alert the public to the construction schedule and locations.</p>
Cultural Resources	<p>Additional interpretation and education appropriate to historic context of the project and the site will be developed.</p> <p>The location and design of the new equipment and small structures required for implementation of water source options will be designed in a way to blend as harmoniously as possible with the existing scale, context, and cultural landscape within and adjacent to the surrounding project area.</p> <p>The gaps in the historically significant concentric row of American elms around Lincoln Memorial Circle will be filled in with new plantings of American elm trees.</p> <p>The construction contractor will undertake extensive measures to protect the historic granite coping stones from damage during the reconstruction of the Reflecting Pool.</p> <p>The NPS's consultation with the DC HPO, the Advisory Council on Historic Preservation (ACHP), and invited consulting parties under Section 106 of the National Historic Preservation Act has resulted in an executed Programmatic Agreement (PA) which documents the actions to avoid, minimize, and mitigate the adverse effects of the project on historic properties. It also establishes a process for continued consultation on a small number of design issues which have not yet been finalized, such as the selection of a paving material for the Reflecting Pool walks.</p>
Visual/Aesthetic Resources	<p>Ongoing review with regulating agencies within the monumental core (DC HPO, NCPD, and CFA) within the design development and Section 106 process will ensure that the proposed options blend as harmoniously as possible with the existing scale, context, and landscape in and adjacent to the project area.</p> <p>Every attempt will be made to time construction activity so it does not coincide with special events that occur on the National Mall or in the project area, thus reducing visual impacts associated with closures of portions of the project area or character-defining resources within it (such as the Reflecting Pool).</p> <p>In the construction permit, the NPS will specify screening that will be used to shield equipment during construction. These shields will partially obscure the equipment where appropriate and possible.</p>
Water Quality	<p>To mitigate against short-term adverse effects during construction, sediment and erosion control measures will be implemented to prevent sediment runoff into adjacent water bodies or nearby storm sewers.</p> <p>NPS will monitor the water quality in the Reflecting Pool to ensure that the quality of discharged water remains within the parameters of the NPDES permits.</p> <p>To the extent practicable, the NPS will drain the Reflecting Pool for cleaning and inspection during the winter months to reduce the volume of bacteria introduced to adjacent water bodies, which is higher in warmer months.</p>
Soils	<p>During construction, exposed soils will be covered with plastic sheeting, jute matting, erosion netting, straw, or other suitable cover material to prevent soil erosion and movement during rain or wind events.</p> <p>Best management practices for erosion and sediment control will be employed during and after construction, including stabilization and re-vegetation after construction is completed.</p> <p>Exposed soils will be stabilized and replanted with vegetation as soon as possible following completion of construction activities.</p> <p>Decorative post and chains could be used to eliminate the further compaction of soils.</p> <p>Erosion containment controls such as silt fencing and sediment traps (e.g., hay bales) will be used to contain sediment onsite.</p>
Vegetation	<p>If feasible, trees removed to accommodate the implementation of proposed actions along north and south of the approach way, the elm walks and east plaza will be relocated, where appropriate, within the project area, and to the maximum extent possible, the gaps in the historically significant concentric rows of elms around Lincoln Memorial Circle would be filled.</p> <p>The NPS will protect the root zones of mature trees within the construction zone by placing fencing around the perimeter of the trees to prevent heavy equipment from compacting the roots or causing damage to the bark.</p>
Utilities & Infrastructure	<p>If subsurface utility lines need to be installed adjacent in tree areas, an arborist will be consulted prior to construction.</p>
Transportation	<p>As part of the construction permitting process, the contractor will submit Traffic Control Plans to the NPS for review and approval prior to the implementation of any changes. The Traffic Control Plans will include measures, such as detour signs, to safely divert traffic during temporary off-peak closures.</p> <p>During construction, trucks will deliver materials and remove debris during off-peak hours. The timing will be coordinated with the Park to reduce impacts on traffic and transportation in the project area.</p>

Why the Selected Alternative will not have a Significant Effect on the Human Environment

The NPS has determined that the action alternative with selected options can be implemented with no significant adverse effects. As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an Environmental Impact Statement (EIS):

Following the release of the EA, modifications to the water system were made to enhance the water quality in the Reflecting Pool and to minimize adverse impacts to resources within and around the project area. By selecting the modified water system option, impacts to all resource areas except floodplains (visitor use, public safety, park management and operations, cultural resources, visual resources, water resources, soils, vegetation, and transportation) will be minimized relative to the preferred EA water system option. There will be no appreciably different impact on floodplains above what was analyzed in the EA.

Visitor use and experience, public health and safety, park management and operations, cultural resources, aesthetics and visual quality, water resources, soils, vegetation, floodplains, and traffic and transportation will experience both beneficial and adverse impacts as a result of implementing the selected modified alternative; however, no significant impacts were identified that will require analysis in an Environmental Impact Statement.

There will be long-term overall beneficial impacts to visitor use and experience resulting from the proposed actions. The new configuration and restoration of site furnishings and improvements to the walking surface along the elm walks will result in long-term beneficial impacts to visitor use. Site circulation improvements as identified in the EA, Option A3 will provide new accessible pathways, increased seating opportunities, and adequate perimeter security, resulting in long-term beneficial impacts to visitor use and experience. There will be long-term negligible adverse impacts to visitor use after construction of the structural system updates has been completed because the demolition and compaction of the foundation slab will occur on site, greatly reducing the need for debris disposal. Water system updates will result in long-term negligible to minor adverse impacts to visitor use and experience because of the construction of a small subsurface intake feature and larger structure to accommodate the filtration and pump equipment. Any impacts to visitor use would cease following the completion of construction.

As identified in the EA, the restoration and improvements to site furnishings and elm walk surfaces will result in long-term beneficial impacts to public safety. Option A3, as described in the EA, will have long-term beneficial impacts to public safety since it would provide safe, accessible paths to the Lincoln Memorial Reflecting Pool and along its coping, ensure universal accessibility, and provide a secure vehicular barrier system. There will be long-term beneficial impacts from the structural system and water system updates because they will result in the resetting of the granite coping, minimization of differential settling between the coping and the Reflecting Pool, and enhancement of water quality in the Reflecting Pool. Overall, the proposed actions will result in long-term beneficial impacts to public safety. There would be minor short-term adverse impacts to visitor use along the elm walks and at the west end of the Reflecting Pool due to the renovation of the lower approachway terrace and resurfacing of the elm walks, but any adverse impacts would cease following construction.

The project will have net long-term beneficial impacts to park management and operations. The proposed site furnishing and elm walk improvements will diminish the cost and maintenance effort resulting in long-term beneficial impacts to park management and operations. Site circulation improvements will have long-term moderate adverse impacts to park management and operations because the new pathways will require additional maintenance and park resources over what currently exists. The proposed structural system updates will result in long-term beneficial impacts because they will increase the long term structural integrity of the pool bottom and coping. The modified selected water system alternative will

result in long-term moderate impacts to park management and operations because it introduces a new system with more equipment than what is currently present.

The proposed actions to the elm walks will result in long-term negligible to minor impacts to cultural resources depending on the design selected for the light standards, and on the size, number, and placement of site furnishings. Option A3, as described in the EA, will have direct, long-term minor adverse effects on the project area's cultural resources. Additionally, although the formal walks flanking the Reflecting Pool will be an improvement to the current dirt paths, these new walkways will have long-term minor to moderate adverse effects on the features of the cultural landscape, notably the historically verdant setting of the Reflecting Pool. Both the structural system and water system updates will have long-term minor adverse impacts on cultural resources because they will introduce new structures to the West Potomac Park Historic District and alter parts of the Reflecting Pool structure. Through consultation with the consulting parties within the Section 106 process, a Programmatic Agreement was completed (See Appendix). This document outlines agreed-upon measures that the signatories have and will continue to take to avoid, minimize, or mitigate the adverse effects resulting from the implementation of the proposed actions in the project area.

The new restoration of site furnishings, improvements to the elm walks, and formalization of dirt pathways adjacent to the Reflecting Pool, as well as improvements in the water quality within the pool will result in long-term beneficial impacts to the aesthetics and visual quality of the project area. As described in the EA, Option A3 would generate long-term negligible to minor adverse impacts because although it would introduce new walkways, there would be a net loss of bollards and fewer visual intrusions to the viewsheds. The structural system updates will have moderate adverse effects to the visual quality of the site during construction, which could be long-term (approximately 21 months in duration), but not permanent. The water system updates as modified will introduce new structures to adjacent sites that will be placed and designed in a manner that would not yield adverse effects above a threshold of minor.

The proposed elm walk and site circulation improvements will have no effect on water quality. The structural system updates will result in long-term beneficial impacts because the repairs will stop the current leakage of water from the Reflecting Pool. The water system option (as modified) will result in long-term beneficial impacts to water quality in the Reflecting Pool because the method of treatment, filtration, and recirculation will substantially reduce the levels of suspended solids, organic waste, and debris that currently adversely affect water quality. The modified option will not adversely affect water quality in the Tidal Basin because the discharge will be cleaner than the intake and the temperature differential will be maintained according to the standards of the Clean Water Act.

There will be long-term beneficial impacts to soils in the project area resulting from the resurfaced elm walks and reconfigured site furnishings, which would discourage the formation of new parallel social trails. The proposed site circulation improvements will result in long-term negligible adverse impacts to soils because of the loss of soil productivity in newly paved areas. The structural option will result in short-term minor adverse impacts to soils during construction. The water system option (as modified) will result in long-term minor adverse impacts to soils because of the construction of the subsurface intake and pump house structure and the new water treatment facility in the USPP maintenance area.

The selected alternative will have long-term beneficial impacts to vegetation because the elm walk resurfacing will result in a reduction of new social trails. Proposed site circulation improvements will have long-term minor adverse impacts to vegetation because the construction of new walkways will require the removal of up to 26 trees. Where feasible, those trees removed to accommodate the implementation of selected alternative will be relocated. In addition, where appropriate, within the project area, and to the maximum extent possible, the gaps in the historically significant concentric rows of elms around Lincoln Memorial Circle would be filled. The structural and water systems updates will result in short-term minor adverse impacts to vegetation during construction because of the presence of construction equipment and disruption of turf. The water system option (as modified) will also have long-term minor adverse impacts to two trees along the south elm walk to accommodate the construction of new subsurface pipes to the Reflecting Pool from the water treatment facility. These pipes, however, will

be located strategically between trees to minimize impact to root systems as best as possible. Long-term minor adverse impacts will also result from disruption to the existing turf and shrubs that occur within the construction footprint in the USPP maintenance area.

The modified selected alternative will change the floodplain functions and values because of the addition of new equipment, small structures, and infrastructure. However, these changes will have negligible impacts on floodplains because they will not substantially affect flood water flows, functions, or values within the area in a measurable or noticeable way.

The proposed structural system updates will have long-term minor adverse impacts to transportation during the construction period, which is expected to last approximately 21 months, because of the presence of equipment and construction vehicles. However, this impact will be minimized by demolishing and compacting the foundation slab on site to eliminate the need for debris removal. Water system updates will result in short-term minor adverse impacts to transportation due to the required partial closure of portions of Independence Avenue SW.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, wetlands, prime farmlands, wild and scenic rivers, or ecologically critical areas:

No wetlands, prime farmlands, wild and scenic rivers, ecologically critical areas, sites sacred to American Indians, or other significant ethnographic resources occur within or adjacent to the Project Area, and none will be impacted by the actions associated with this alternative.

A Statement of Findings (SOF) for floodplains was completed for this project and concluded that the proposed actions would not noticeably change floodplain functions and values, nor would the proposed actions substantially affect flood water flows within the area in a measurable or noticeable way. The existing floodplain designations would remain unchanged. As a result of implementing the Selected Alternative, negligible impacts on floodplains will occur. There will be no long-term adverse impacts to floodplain functions or values resulting from the implementation of the Selected Alternative.

Historic or Cultural Resources

A multitude of cultural resources are located within the project area or adjacent to it and have been included in the defined Area of Potential Effect (APE)⁴, ranging from cultural landscapes, individually listed historic properties, monuments and memorials, historic districts, and statues. Twenty-one individual historic properties and memorials, six cultural landscapes, and one historic district are within the official APE, all of which are enumerated in chapter three of the EA.

The project encompasses nine major NRHP-listed historic properties (the Lincoln Memorial, the Washington Monument and Grounds, the Lockkeeper's House, the Vietnam Veterans Memorial, the Thomas Jefferson Memorial, the Franklin Delano Roosevelt Memorial, the Korean War Veterans Memorial, the World War II Memorial, and West Potomac Park Historic District) and a number of historic resources (the Bulfinch Gatehouses, Constitution Gardens, the Vietnam Women's Memorial, the Reflecting Pool, and the Elm Trees).

Degree to which effects on the quality of the human environment are likely to be highly controversial:

No highly controversial effects in terms of scientific uncertainties as a result of rehabilitation of the Lincoln Memorial Reflecting Pool and surrounding areas were identified during the preparation of the EA or the public comment period. In addition, adverse impacts to historic resources, views, and vistas have

⁴ The APE encompasses NPS reservations 332 (West Potomac Park) and 2 (Washington Monument Grounds) in northwest and southwest Washington, D.C. This area is generally bounded by the Potomac River on the west, Constitution Avenue on the north, 14th Street and Raoul Wallenberg Place on the east, and the Potomac River Railroad Bridge on the south. In addition to these two reservations, the APE also includes the axis between the Capitol Building and the Lincoln Memorial, which extends across the National Mall.

been thoroughly discussed during numerous agency and public meetings, and mitigations provided to minimize adverse effects related to the perception of those effects have been articulated in the EA.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks: No highly uncertain, unique, or unknown risks were identified during either preparation of the EA or the public comment period

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The selected alternative neither establishes a NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration. While the selected alternative does require new construction on the National Mall, the Lincoln Memorial Reflecting Pool and Surrounding Area Rehabilitation was borne out of the necessity to address the structural deficiencies of the Reflecting pool and to enhance the infrastructure, safety, and pedestrian circulation systems in the surrounding areas. The proposed rehabilitation does not come from the desire to introduce new structures on the National Mall.

In addition, the selected alternative was designed in a way to minimize adverse effects to the maximum extent possible which is consistent with other planned or ongoing projects in the study area.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts: Implementation of the selected will have no significant cumulative impacts. As described in the EA, future projects within the project area that could affect these resource areas include the construction of other buildings on the National Mall, including the National Museum of African American History and Culture and the Vietnam Visitor Memorial Center; construction of the United States Institute of Peace; construction of the Martin Luther King, Jr. Memorial on the northwest corner of the Tidal Basin; and the Potomac Park Levee on 17th Street, NW.

There will be long-term beneficial cumulative impacts to visitor use and experience resulting from increased visitor opportunities. However, ongoing maintenance, construction, and closures of certain areas will have short-term minor and negligible impacts to visitor use. The proposed improvements and construction will result in short-term minor adverse impacts to public safety because of possible construction related incidents. The overall cumulative impacts to public safety from the proposed projects will be long-term beneficial because of security improvements and improved walking surfaces.

There will be long-term minor adverse effects on park management and operations resulting from increased maintenance requirements, special events, and other planned actions. However, the net long-term impact to park management and operations will be beneficial because the proposed actions would improve efficiency in maintenance and park management over the long-term life of the circulation system in the Reflecting Pool's structural and water systems.

There will be long term beneficial to long term minor adverse impacts to cultural resources from the proposed projects because all of the actions can be mitigated to remain at or below the minor adverse level, while some actions will benefit the cultural landscape. In addition, there will be long-term minor adverse cumulative impacts to visual resources and aesthetics associated with the proposed actions.

There will be long-term beneficial impacts to water quality resulting from the proposed action and other projects. The proposed actions along with various other stormwater management programs will ultimately have beneficial effects on the water quality of the Potomac River and Tidal Basin.

Cumulative impacts to soils resulting from the proposed project, other projects, and other actions will be short-term minor adverse resulting from events, use, and construction. However, the long-term cumulative impact to soils will be beneficial.

There will be cumulative long-term minor adverse impacts to vegetation from proposed actions resulting from the removal of trees and turf, maintenance, use, and special events. Cumulative impacts, in combination with the negligible impacts on floodplains from the proposed project, would result in short-term negligible adverse impacts to floodplains.

Construction from other proposed projects in combination with the construction from the proposed project will result in short-term negligible to minor adverse impacts to transportation because of certain partial road closures and additional visitors to the project area.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources: As articulated in the EA, the project area is itself a historic resource, and it is adjacent to a multitude of historic resources and objects that are listed on or eligible for the NRHP. As stated above, all adverse impacts to historic properties, including NRHP resources can be mitigated to the minor level. No destruction of significant scientific, cultural, or historical resources will be caused by the action.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: As described in the EA, because of the urban nature of the site and the fact that the proposed activities will be located entirely within previously disturbed or maintained landscapes, no impacts to any state- or federally-listed species are expected from implementation of the selected alternative. On July 7, 2009, the National Capital Region of the NPS sent letters to both the U.S. Fish and Wildlife Service and the District Department of the Environment regarding the potential for any state- or federally-listed species that could be affected by the Lincoln Memorial Reflecting Pool rehabilitation. To date, neither agency has expressed concern that the project would affect endangered or threatened species or its critical habitat.

During the public comment period, the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA NMFS) submitted comments on the EA in reference to spawning and nursery grounds for several species of anadromous fish species, submerged aquatic vegetation (SAV), and short-nosed sturgeon. Their concerns were limited to the proposed options involving water withdrawal or discharge into the Potomac River. Subsequent to NOAA NMFS' comments and the publication of the EA, the NPS entered a design development phase of the project leading to a revised preferred alternative. The revised alternative eliminates the need for any line to the Potomac River; therefore avoiding the impacts to the nursery and spawning habitat for anadromous fish and SAV. In the revised alternative, the water supply will be drawn from the Tidal Basin and discharged back into the Tidal Basin for annual cleaning and inspection of the Reflecting Pool. Additional consultation (Dated February 26, 2010) with NOAA NMFS determined that the Tidal Basin is unlikely habitat for the short-nosed sturgeon, and any affects of the proposed project, if adverse, will be insignificant or discountable, and concurred with the determination that the action being carried forward by NPS is not likely to adversely affect any listed species under NMFS jurisdiction.

Whether the action threatens a violation of federal, state, or local environmental protection law: The selected alternative violates no federal, state, or local environmental protection laws. The Lincoln Memorial Reflecting Pool rehabilitation will be consistent with all laws, regulations and requirements.

Impairment of Park Resources or Values

The NPS has determined that the implementation of the selected alternative will not constitute an impairment to the resources or values of the National Mall and Memorial Parks. This conclusion is based on a thorough analysis of the environmental impacts described in the EA, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in *NPS Management Policies 2006*. As described in the EA, implementation of the NPS selected alternative will not result in impairment of park resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified in the park's management plan or other relevant NPS planning documents as being of significance.

As stated in the Foundation Statement for the National Mall, the purpose of this park is to preserve, interpret, and manage federal park lands in the National Capital; preserve places where important events in U.S. history occurred; provide opportunities for visitor contemplation, celebration, commemoration, citizen participation, recreation, and demonstration; and maintain space for the symbols and icons of our

nation and its ideals (e.g., equality, freedom, and democracy). The Selected Alternative will assist in meeting these purposes by improving and enhancing visitor experience, the efficiency of Park management and operations, and the functionality and sustainability of certain elements at the Reflecting Pool and surrounding area.

While the Selected alternative will be implemented in a manner that respects the historic resources of the Lincoln Memorial cultural landscape and the context of the National Mall, there will be short-term to long-term negligible to moderate adverse impacts on some of the park's resources (cultural resources, visual resources, water quality, soils, vegetation, and floodplains). Adverse impacts will be mitigated to the greatest extent possible. Those impacts that cannot be fully mitigated, however, are not key to the overall natural or cultural resources of the park and will not hamper opportunities to enjoy the park. In addition, while the selected action will affect park resources identified in park management documents as being significant, the impacts that will occur are an unavoidable result of the actions necessary to rehabilitate the Reflecting Pool and surrounding area (i.e., address substantial repairs and structural deficiencies at the Reflecting Pool; enhance public safety; provide universal accessibility; provide permanent physical security; and to restore and protect historic resources).

No impairment to historic districts and structures or cultural landscapes will occur because of the implementation of the selected alternative. The selected alternative will have mainly long-term beneficial visual impacts on the visual character and views and vistas in the project area resulting from new resurfaced walkways, enhanced site furnishings, new lighting fixtures, and a rehabilitated Reflecting Pool. There will be negligible to minor adverse visual effects resulting from a new above ground filtration structure co-located with the U.S. Park Police maintenance facility to the south of the recreational fields. The structure would be outside of popular visitor areas and prominent viewsheds and it would also be obscured from view from Independence Avenue SW by heavy vegetation. Impacts to water resources, including floodplain resources, will be negligible to minor and will conform to permits issued by the EPA that ensure adequate quality in adjacent water bodies is maintained. The impacts to soils are not key to the natural integrity of the park since soils in the project area are mostly comprised of fill material, which is low in organic matter and is not generally biologically productive. Beneficial impacts to soils would result from paving the existing compacted and eroded dirt paths, which would reduce erosion over the long term. In addition, while there will be the loss of several trees, the elm trees around the Lincoln Memorial Circle will be re-established or replaced in-kind, in appropriate locations elsewhere in the project area or on the National Mall.

Public Involvement

In addition to internal and agency scoping, public scoping for the Lincoln Memorial Reflecting Pool Rehabilitation EA began on June 30, 2009, and concluded on August 14, 2009. During this time, a public scoping meeting was held from 6:30pm to 8:30pm on July 9th, at the Old Post Office Pavilion (1100 Pennsylvania Avenue, NW, Washington, D.C.). The purpose of this meeting was to solicit public input on the purpose, need, and objectives of the project, major issues, and potential alternatives. Notice of the public meetings was posted on the Planning, Environment, and Public Comment (PEPC) website (<http://parkplanning.nps.gov/projectHome.cfm?parkId=427&projectId=26512>). In addition, the NPS sent notices of the meeting to individuals and organizations via email.

On January 5, 2010 a second public meeting was held from 5:30 p.m. to 8 p.m. at the Old Post Office Pavilion, 1100 Pennsylvania Avenue NW, Washington, D.C. The purpose of the meeting was to present and discuss the range of proposed actions for circulation, infrastructure, and security improvements at the Lincoln Memorial Reflecting Pool and surrounding area as presented in the EA. This public meeting also served concurrently as the third consulting parties meeting for the Section 106 consultation. Notice of the public meetings was posted on PEPC website, and the NPS sent notices of the meeting to individuals and organizations via email. Public comments were solicited on this scoping effort by mail, email, and online via the PEPC website.

The Section 106 consulting process was conducted concurrently with the EA. The process was initiated by the NPS with letters to the DC HPO and the Advisory Council on Historic Preservation (ACHP) sent

on July 7, 2009. Throughout this project, the Section 106 process and NEPA assessment were closely coordinated, and in some cases, public scoping was used to satisfy the requirement for both processes. For the purposes of Section 106, there were several consulting party meetings held:

In addition to the public meetings required under NEPA and DO-12 pursuant to the EA, several consulting parties meetings were held in conjunction with the concurrent Section 106 process. Consulting parties were invited to these meetings by the NPS via email:

- July 9, 2009 at the Old Post Office Pavilion served as the first consulting parties meeting
- August 31, 2009, site visit at the Lincoln Memorial Reflecting Pool and surrounding areas.
- September 15, 2009, at the NPS National Mall and Memorial Parks Offices at 900 Ohio Drive SW, Washington, D.C..
- The January 5, 2010 public meeting also served as the third consulting parties meeting.
- February 17, 2010 at the NPS National Capital Region, 1100 Ohio Drive SW, Washington, D.C.
- March 17, 2010 site visit at the Lincoln Memorial Reflecting Pool and surrounding areas to view project component proposed materials

The Lincoln Memorial Reflecting Pool Rehabilitation EA was made available for public review and comment on December 23, 2009. In addition, a notice was sent via e-mail to those who were on the original public scoping mailing list and to those that were added after the July 2009 public scoping meeting. The NPS mailed copies via USPS of the EA to federal and District offices, to consulting parties who requested copies, and hard copies of the EA were available for public review at the Martin Luther King Jr. Memorial Library, the Southwest Branch Library (900 Wesley Place SW, Washington, D.C. 20024) and the Southeast Branch Library (403 7th Street SE, Washington, D.C. 20003). A digital copy of the EA was also placed on the PEPC website at: <http://parkplanning.nps.gov/NAMA>.

The comment period on this EA concluded on January 29, 2010. During the public scoping comment period, NPS received 28 pieces of correspondence by mail and through the PEPC website (<http://parkplanning.nps.gov/>), as well as additional public remarks at the scoping meetings. These correspondences resulted in 187 comments primarily regarding the proposed alternatives for the Lincoln Memorial Reflecting Pool Rehabilitation. Other issues raised were editorial or miscellaneous. Any comments on the EA that required changes or clarifications are included in the attached errata. No changes to the selected alternative or the impact analysis were made as a result of public comments.

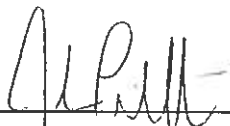
Conclusion

The NPS has selected the proposed modified alternative for implementation, which can occur following NCPC's and CFA's design approval. The impacts that will result from the selected alternative will not impair any park resource or values necessary to the NPS.

The selected alternative does not constitute an action that normally requires preparation of an EIS. The selected alternative will not have a significant effect on the human environment. Negative environmental impacts that could occur are negligible to moderate in intensity. There are no significant impacts on vegetation, floodplains, aesthetics/visual resources, cultural resources, visitor use and experience, public safety, land use/socioeconomics, traffic and transportation, utilities and infrastructure, or park management and operations. The proposed action will not cause highly uncertain or controversial impacts, unique or unknown risks, or significant cumulative effects. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

The selected alternative does not constitute a major federal action that significantly affects the quality of the human environment. Based on the foregoing an EIS is not required for this action and thus will not be prepared. This is a finding of no significant impact.


Recommended:



John Piltzecker
Superintendent,
National Mall and Memorial Parks

3/18/10
Date

Approved:



Margaret O'Dell
Regional Director
National Capital Region

3/22/10
Date

LINCOLN MEMORIAL REFLECTING POOL AND SURROUNDING AREA REHABILITATION PROJECT NATIONAL MALL AND MEMORIAL PARKS AND THE NATIONAL CAPITAL REGION

ENVIRONMENTAL ASSESSMENT – ERRATA

The following changes have been made to the Rehabilitation of the *Lincoln Memorial Reflecting Pool and Surrounding Area Environmental Assessment* (December 2009) *Finding of No Significant Impact (FONSI)* to correct minor statements of fact and update information. Additions to the text are identified by underlines and deletions are marked by ~~strikeout~~ unless otherwise noted.

PURPOSE AND NEED FOR ACTION

1. APPLICABLE FEDERAL LAWS AND REGULATIONS, PAGE 1-9

Information pertaining to the Migratory Bird Treaty Act was omitted from the original EA. A description is provided below.

MIGRATORY BIRD TREATY ACT OF 1918, AS AMENDED 1989

The Migratory Bird Treaty Act protects migratory birds. The original 1918 statute implemented a 1916 Treaty between the U.S. and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Soviet Union (now Russia). Specific provisions in the statute include a Federal prohibition to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." (16 U.S.C. 703). This applies to birds included in international conventions between the U.S. and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and the Russia.

The responsibilities of Federal agencies to protect migratory birds are set forth in Executive Order 13186. US Fish and Wildlife Service is the lead agency for migratory birds. FSA and NRCS are currently working with USFWS to establish an MOU on migratory birds in compliance with EO 13186. The birds protected under this statute are many of our most common species, as well as birds listed as threatened or endangered. View a list of birds protected by the MBTA and other related bird information.

2. IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS, PAGE 1-18

Information pertaining to the status of the Tidal Basin as an estuarine resource was incorrect.

MARINE OR ESTUARINE RESOURCES

While the Tidal Basin can be considered an estuarine resource, no impacts related to either the proposed uptake of water from the Tidal Basin would impact quality or functionality of this particular resource
~~There are no marine or estuarine resources within the project area;~~ therefore, this impact topic was dismissed from further analysis.

3. IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS, PAGE 1-19

Additional information pertaining to migratory birds was added to the dismissal statement for Wildlife or Wildlife Habitat.

WILDLIFE OR WILDLIFE HABITAT

The project area is in a relatively urban setting, surrounded by manicured lawns and landscaping. It is adjacent to heavily used roads with attendant vehicle noise. As a result, wildlife in the project area is limited to adapted urban species, such as raccoons, waterfowl, squirrels, songbirds, and an occasional hawk using the larger trees as a perch. No nesting of raptors is known or expected. No migratory birds will be displaced during nesting season in the vicinity of the work. Although construction-related activities may temporarily displace other wildlife from the area, the proposed action would not result in greater than negligible effects on wildlife or wildlife habitat. Due to the area's urban context, level of human activity, and minimal habitat value, this topic was dismissed from detailed analysis.

ALTERNATIVES

4. Option B2.1 (Modified), Page 2-12

Language added to describe modified Option B2.1.

In this option, the existing grade beam would be left in place since it has adequate structural integrity to maintain uniform and minimal settlement over the long-term life (100 years) of the Reflecting Pool. The granite coping supported by the grade beam would not be removed or reset but would remain in place throughout construction. Since the granite coping is a contributing feature to the Reflecting Pool as a National Historic Landmark, extensive measures would be taken to protect it from damage during construction. These precautions would be further articulated in the construction contract. The existing foundation slab beneath the pool would be demolished, with its rubble left in place. New piles would be driven to bedrock to support the new foundation slab, which would tie into the existing grade beam. Since this option relies on bedrock rather than soil to support the Reflecting Pool foundation, differential settlement would be eliminated. New piles would also be installed beneath the lower approachway terrace and along the new walkways that flank the Reflecting Pool to eliminate differential soil settlement. Since further structural analysis determined that timber piles will have the same expected lifespan as the grouted piles described in the EA, timber piles would be used instead since they are non-proprietary, readily available in the region, and therefore cheaper than the grouted piles.

5. Option C (Modified), Page 2-15

Language added to describe modified Option C.

In the selected option, the water supply would be drawn from the Tidal Basin and screened at the point of intake to eliminate debris. To enhance water quality, the river water would be treated and filtered prior to entering the Reflecting Pool, and any backwash from the filtration process would discharge to the sanitary sewer. To further enhance water quality, ozone filtration would be installed in the Reflecting Pool to abate algae.

Once the Reflecting Pool is filled, the water would be continuously re-circulated. Any water lost to evaporation would be recharged by capturing and re-treating the groundwater from the World War II Memorial pool and redirecting it to the Reflecting Pool. The municipal potable water supply would serve as the backup to supplement the make-up water in the Reflecting Pool. Once a year during inspection and cleaning the Reflecting Pool would be emptied and discharged to the Tidal Basin.

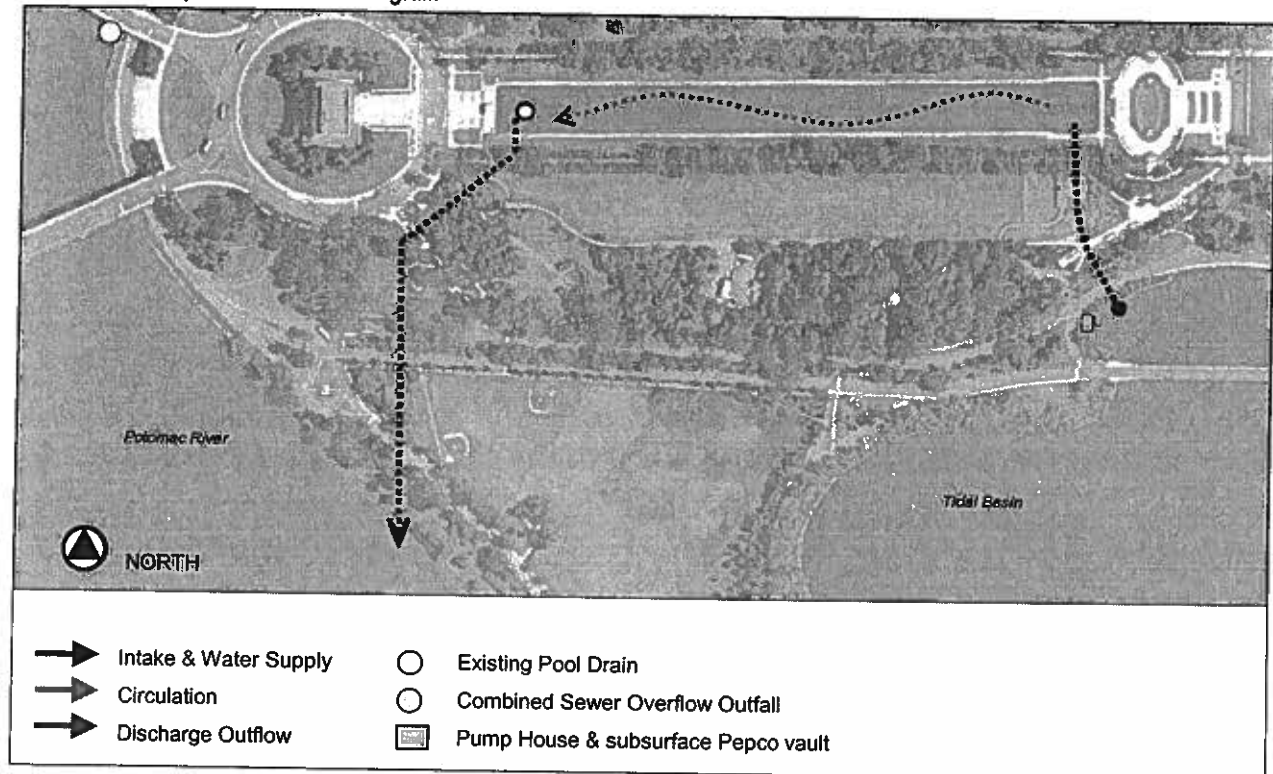
The implementation of this option would require the construction of a small subsurface intake feature adjacent to the Tidal Basin to accommodate the pumps and screening equipment and a water treatment

facility in the project area to accommodate the filtration equipment. The water treatment facility would be approximately 40 feet by 60 feet (or 2,400 square feet) and co-located with the U.S. Park Police maintenance area which is south of Ash Road, between the DC War Memorial and the Korean War Veterans Memorial. The diagram of the selected water system option on of this document delineates the water system components.

6. OPTION C3, PAGE 2-15

In Figure 2.11, the delineation of the water supply and intake and discharge were incorrectly delineated. The revised figure is below:

Figure 2.11 – Option C3 Site Plan Diagram



7. ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD, PAGE 2-19

During the conceptual design process, the NPS also considered and dismissed several design options that were not described in the EA.

Permeable surface for walkways

Stabilized granular paving - The design team explored the use of stabilized granular paving materials such as stone dust, the material used at the National Gallery of Art Sculpture Garden and the U.S. Botanical Garden in Washington, D.C. The maintenance staff at that facility reported that the stone dust was difficult to keep in place and eventually became impermeable, as it packed together and the marble and/or limestone fines in the stone cemented themselves together. This is consistent with the project designer's own experience with stone dust.

Composite material – The design team evaluated the feasibility of using a permeable pavement made of cast in place concrete, asphalt, and stone using various binders. This type of product requires a deep pavement section extending below the frost line with drainage below to ensure that water drains properly

all year round. This system requires vacuuming on a regular basis to allow water to continue to drain through the pipes.

Each option works well in settings where there is labor available to maintain them on a weekly, sometimes daily, basis. However, both are impractical for the NPS to maintain on such a large scale as the 2,000 foot long Reflecting Pool walkways.

Natural methods to filter and clean the Reflecting Pool

Various options including biofiltration, and the use of fish to naturally process the water in the Reflecting Pool were studied, but dismissed due to the unique scale, volume, and context of the Lincoln Memorial Reflecting Pool. Fish could not exist in such a shallow pool and their existence would be threatened in winter months when the Pool freezes.

Biofiltration methods were analyzed, including Hermann Park in Houston Texas. However, the biofiltration system used in the Reflecting Pool in Hermann Park was not technically feasible at the Lincoln Memorial Reflecting Pool because of disparities in depth and context. The Hermann Park Reflecting Pool is six feet deep with a natural bottom; the depth allows the water to maintain a cooler average temperature, which prevents the growth of algae blooms. Since the Lincoln Memorial Reflecting Pool is approximately half this depth, it would be difficult to prevent the growth of algae and maintain good overall water clarity. In addition, Hermann Park does not host a comparable population of Canadian geese, the largest contributor to solid waste Lincoln Memorial Reflecting Pool.

ENVIRONMENTAL CONSEQUENCES

8. Impact Topics

Following the release of the EA, modifications to the water system were made to enhance the water quality in the Reflecting Pool and to minimize adverse impacts to resources within and around the project area. By selecting the modified water system option, impacts to all resource areas except floodplains (visitor use, public safety, park management and operations, cultural resources, visual resources, water resources, soils, vegetation, and transportation) will be minimized relative to the preferred EA water system option. There will be no appreciably different impact on floodplains above what was analyzed in the EA.

9. Visitor Use, Page 4-13

Impacts to visitor use from the modified water system option will be comparable to impacts from the preferred EA option. The associated water treatment facility will be located at U.S. Park Police (USPP) maintenance facility in an area that is removed from popular tourist routes and not within the views or vistas in the project area. Although the treatment and filtration equipment will generate a level of noise commensurate with mechanical equipment that supports pools and comparable water features, the degree of noise will not affect visitor use or experience because the equipment will be located underground or housed in a structure that is located adjacent to a major transportation thoroughfare (Independence Avenue SW) and away from popular tourist areas in the project area.

10. Public Safety, Page 4-18

The modified water system option will result in impacts on public safety impacts that are more beneficial than the preferred EA option due to the revised source of intake from the Potomac River to the Tidal Basin. By eliminating the Potomac River as water source, risks to public health will be minimized due to lower levels of bacteria associated with waterborne diseases such as e coli and fecal coliform. The effects resulting from the construction and operation of the waster treatment facility in the modified option are the same as the preferred EA option.

11. Park Management and Operations, Page 4-24

The water treatment structure in the modified water system option is closer in proximity to the Reflecting Pool than the preferred EA option which located the equipment in West Potomac Park. As a result, impacts to park management and operations will be beneficial since the closer proximity will increase the efficiency of the water pressure and enable more efficient operations for maintenance staff.

12. Cultural Resources, Page 4-35 and 4-46

The impacts to cultural resources will be minimized because the water treatment facility will be located in an already developed area, adjacent to existing structures of no historic significance, outside of the prominent views and vistas in the project area. Due to heavy vegetation, the structure will not be visible from Independence Avenue SW. In addition, the NPS's consultation with the DC HPO, the Advisory Council on Historic Preservation (ACHP), and invited consulting parties under Section 106 of the National Historic Preservation Act has resulted in an executed Memorandum of Agreement (MOA) which addresses the utilization of design reviews to minimize the adverse effect of the project on the historically verdant setting of the Reflecting Pool.

13. Aesthetics and Visual Resources, Page 4-56

The modified water system option will result in impacts on visual resources that are more beneficial than the preferred EA option due the new location of the water treatment structure in an area that is outside of primary views and vistas in an already developed area that is obscured from views off Independence Avenue. The proposed maintenance structure will complement the existing area and will visually blend with the character, color, and texture of the existing USPP maintenance structures.

14. Water Resources, Page 4-62

The modified water system option will result in impacts on water resources that are more beneficial than the preferred EA option primarily due to the elimination of the Potomac River as a point of intake. By using the Tidal Basin and a system that filtration, treatment, and recirculation, the clarity of water to the Reflecting Pool will be enhanced beyond the EA preferred option. In addition, the Reflecting Pool will not be subject to extreme levels of e coli and fecal coliform bacteria that are present in the Potomac River. Finally, by using the Tidal Basin for intake, adverse impacts to fish, sensitive habitat, and submerged aquatic vegetation along the Potomac River will be eliminated.

15. Soils, Page 4-6

The modified water system option will result in impacts to soils that are more beneficial than the preferred EA option due to the siting of the water treatment structure in a location that is closer to the Reflecting Pool than West Potomac Park. By locating the water treatment structure in an already developed area adjacent to the USPP facilities, the disturbance to soils in West Potomac Park to accommodate new water supply pipes will be eliminated and the overall area of disturbance will be minimized.

16. Vegetation, Page 4-72

The modified water system option will result in impacts to vegetation that are equal to the preferred EA option due to the siting of the water treatment structure in a location that is closer to the Reflecting Pool than West Potomac Park. By locating the water treatment structure in an already developed area adjacent to the USPP facilities, the disturbance to turf in West Potomac Park to accommodate new water supply pipes will be eliminated and the overall area of disturbance will be minimized. Several trees adjacent to the USPP facilities will be removed and replaced to accommodate the new structure.

17. Floodplains, Page 4-74

The modified water system option will have no appreciably different impacts on floodplains than the EA preferred option. Although the modified water treatment structure is larger than the option analyzed in the EA, it will create a negligible impact on floodplains in the project area.

18. Traffic and transportation, Page 4-77

The modified water system option will result in impacts to traffic and transportation that are more beneficial than the preferred EA option due to the siting of the water treatment structure in a location that is closer to the Reflecting Pool than West Potomac Park, eliminating the need to cross beneath Independence Avenue to install the new water pipes.

CONSULTATION AND COORDINATION

19. CONSULTATION, PAGE 5-2

On the list of consulting party agencies and organizations, two organizations are incorrectly named.

- | | |
|---|---|
| ▪ ACHP | ▪ Dwight D. Eisenhower Memorial Commission |
| ▪ American Institute of Architects (AIA) | ▪ National Association of Olmsted Parks |
| ▪ American Society of Landscape Architects (ASLA) | ▪ National Coalition to Save Our Mall |
| ▪ CFA | ▪ National Parks Conservation Association |
| ▪ Committee of 100 | ▪ National Trust for Historic Preservation (NTHP) |
| ▪ Cultural Tourism D.C. | ▪ Society of Architectural Historians |
| ▪ DC HPO | ▪ Washington, D.C., Guild of Professional Tour Guides |
| ▪ DC Preservation League (DCPL) | ▪ Washington, D.C., Martin Luther King, Jr., National Memorial Project Foundation |
| ▪ <u>National Capital Planning Commission</u> | |



FLOODPLAIN STATEMENT OF FINDINGS

For the Rehabilitation of the Lincoln Memorial Reflecting Pool and surrounding area

Washington, DC

December, 2009

Recommended:

A handwritten signature in dark ink, appearing to read "John Piltzecker".

2/17/10

John Piltzecker

Date

Superintendent National Mall and Memorial Parks

Concurred:

A handwritten signature in dark ink, appearing to read "Bill Jackson".

02/19/10

for Bill Jackson

Date

Water Resources Division

Approved:

A handwritten signature in dark ink, appearing to read "Margaret O'Dell".

3/22/10

Margaret O'Dell

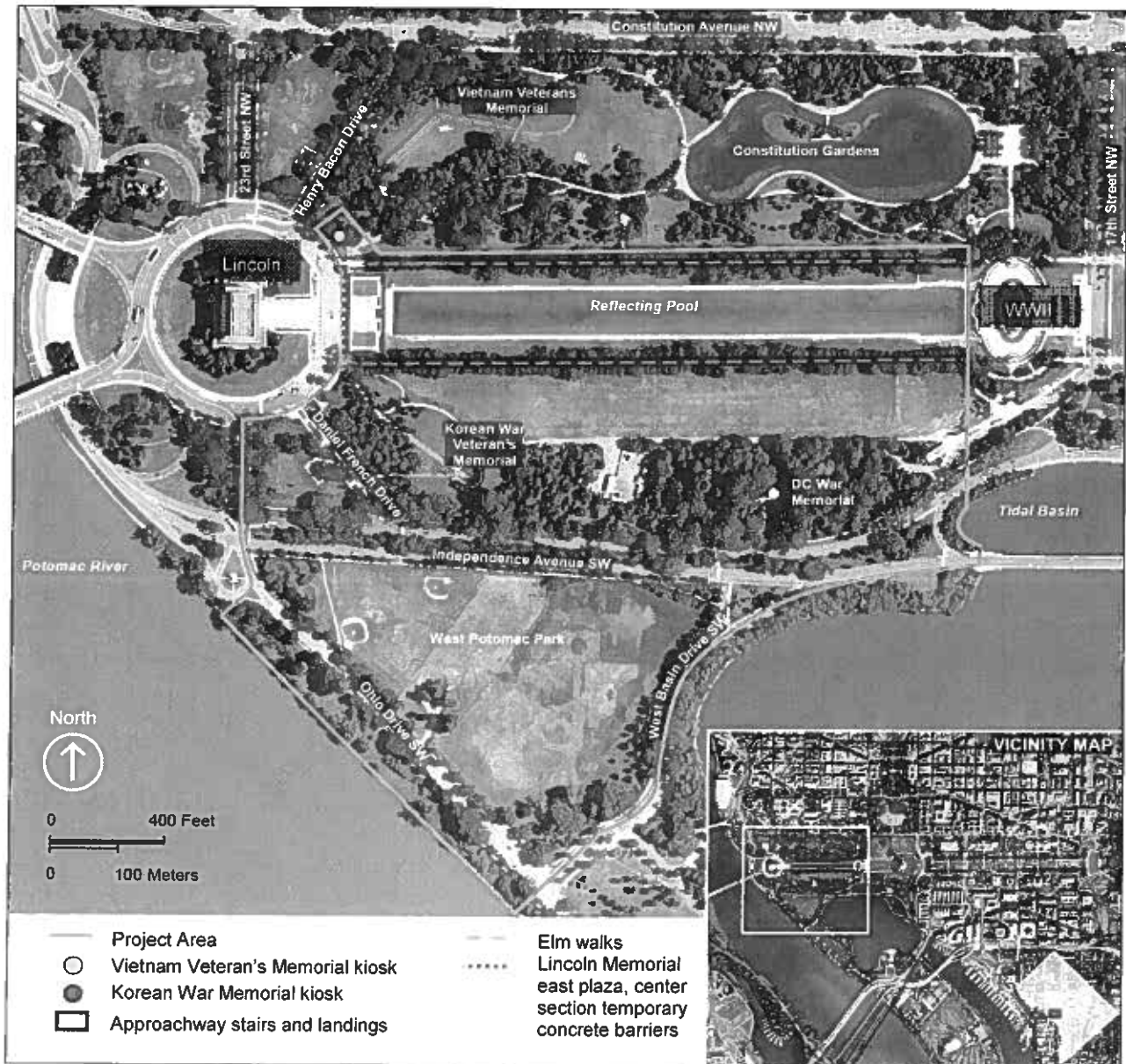
Date

Regional Director – National Capital Region

INTRODUCTION

Executive Orders 11988 (“Floodplain Management”) and 11990 (“Protection of Wetlands”) require the NPS and other Federal agencies to evaluate the likely impacts of actions in floodplains and wetlands. The objectives of the Executive Orders are to avoid to the extent possible the long-term and short-term adverse impacts associated with occupancy, modification, or destruction of floodplains and wetlands and to avoid indirect support of development and new construction in such areas wherever there is a practicable alternative. The purpose of this Statement of Findings (SOF) is to present the rationale for the location of this project in the floodplain, describe the amount of risk associated with the project site, and describe associated flood mitigation plans.

Figure B.1 – Lincoln Memorial Reflecting Pool Project Area



PROJECT DESCRIPTION/SITE LOCATION

The National Park Service (NPS) has prepared an Environmental Assessment (EA) to evaluate a range of alternatives for the rehabilitation of the Lincoln Memorial Reflecting Pool (Reflecting Pool) and surrounding area. The proposed actions are located primarily on the Lincoln Memorial Grounds, but some proposed actions will affect a larger area of impact including portions of West Potomac Park between the east edge of Lincoln Memorial Circle and Ohio Drive SW and West Basin Drive SW to the south. The project location is delineated in Figure B.1. The project area is generally flat and contains the Reflecting Pool, surrounding turf grass areas, rows of historic elm trees, pedestrian paths and furnishings, and the paved plaza to the east of the Lincoln Memorial.

The preferred alternative is composed of multiple proposed improvements for the pedestrian circulation and the rehabilitation of the structural system and water systems.

PEDESTRIAN CIRCULATION

The preferred option uses a combination of security walls and bollards along curved walkways to provide perimeter security and new accessible paths between the Reflecting Pool and the Lincoln Memorial east plaza. Adjacent to the lower approachway terrace, grade changes will be used to reduce the visible height of the security walls adjacent to the Reflecting Pool; these grade changes will be located further to the west within the historic topography and will be set back from the Reflecting Pool. Several other upgrades to pedestrian circulation in the project area will also be implemented:

- Along the elm walks, the site furnishings (lighting fixtures, benches, and trash receptacles) will be refurbished and/or replaced and relocated to the outboard side of the walkways; drinking fountains and site irrigation valves will be installed at various points.
- The elm walks will be resurfaced with either concrete or asphalt.
- The lower approachway staircases, landings, and terrace will be rehabilitated to repair wear and damage and to improve public safety and electrical service will be provided.
- The worn dirt paths that flank the Reflecting Pool will be paved and made into sidewalks. The sidewalks will tie into the existing paths around the World War II Memorial and will be either granite, concrete, or asphalt.
- Subsurface conduit will be installed and capped to accommodate future utility needs at the Vietnam Veteran's and Korean War Memorial kiosks.
- Approximately 18 metal bollards around the Lincoln Memorial Circle will be removed.

STRUCTURAL SYSTEM

The NPS preferred option is closely aligned with Option B2.1, as described in the EA. However, subsequent structural analysis revealed that the existing grade beam has adequate structural integrity to maintain uniform and minimal settlement over the long-term life (100 years) of the Reflecting Pool. The granite coping will not be removed or reset, but will remain in place throughout construction. Since the granite coping is a contributing feature to the Reflecting Pool as a National Historic Landmark, extensive measures will be taken to prevent damage to the coping stones during construction. These precautions will be further articulated in the construction phase of the project. The existing foundation slab will be demolished and compacted in place to eliminate the need to haul away the debris. New timber piles will be driven to bedrock to support the new foundation slab and adjacent walkways, both of which will tie

into the existing grade beam. Since this option relies on bedrock rather than soil to support the Reflecting Pool foundation, differential settlement will be eliminated.

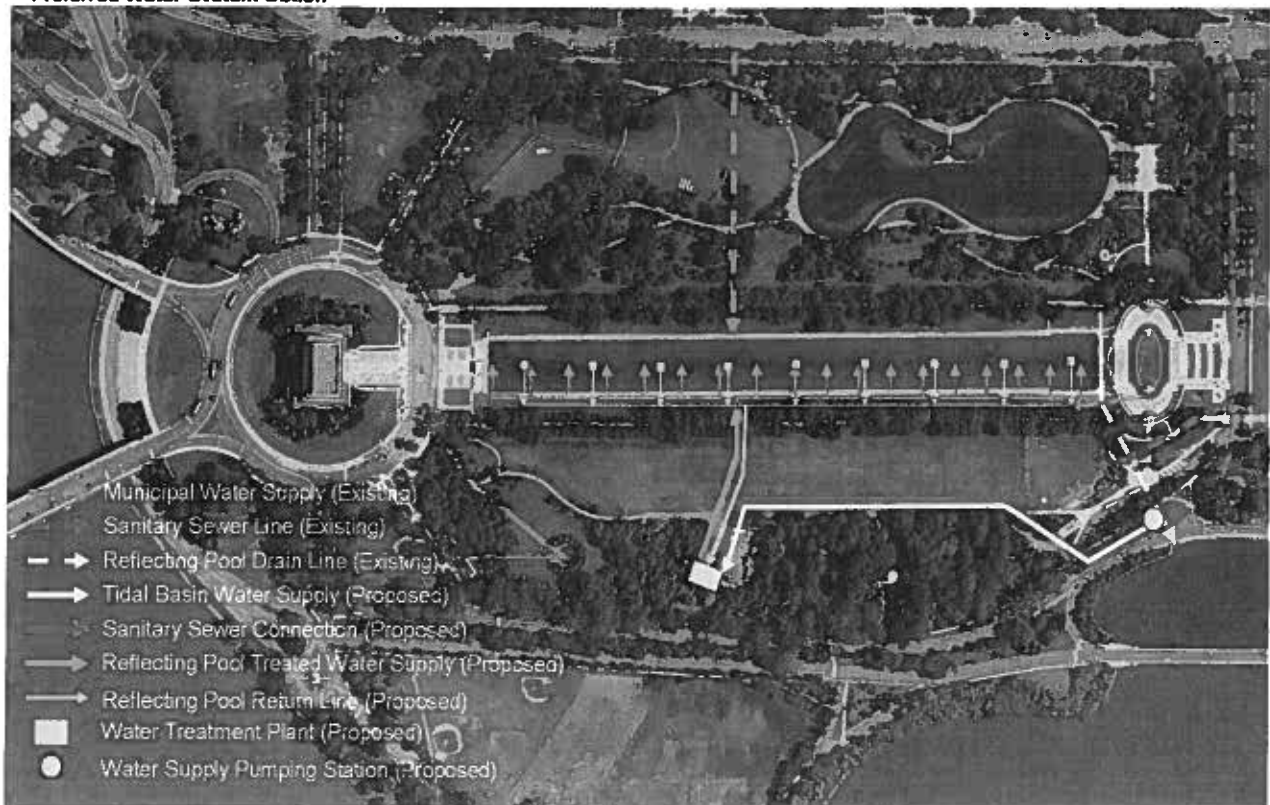
WATER SYSTEM

The NPS preferred option combines certain elements of previously considered options that are described in the EA. In the preferred option, the water supply will be drawn from the Tidal Basin and screened at the point of intake to eliminate debris. To enhance water quality, the river water would be treated and filtered prior to entering the Reflecting Pool, and any backwash from the filtration process would discharge to the sanitary sewer.

Once the Reflecting Pool is filled, the water will be continuously re-circulated. Any water lost to evaporation will be recharged by capturing and re-treating the groundwater from the World War II Memorial pool and redirecting it to the Reflecting Pool. The municipal potable water supply will serve as the backup to supplement the make up water in the Reflecting Pool. Once a year during inspection and cleaning the Reflecting Pool will be emptied and discharged to the Tidal Basin.

The implementation of this option will utilize the existing Tidal Basin discharge line to both discharge and intake water to the Reflecting Pool. It will require the construction of a small subsurface structure adjacent to the Tidal Basin to accommodate the pumps and screening equipment and a larger water treatment facility in the project area to accommodate the filtration equipment. The water treatment facility will be approximately 40 feet by 60 feet (or 2,400 square feet) and co-located with the U.S. Park Police maintenance area which is south of Ash Road, between the DC War Memorial and the Korean War Veterans Memorial and outside of the 100-year floodplain..

Preferred Water System Option



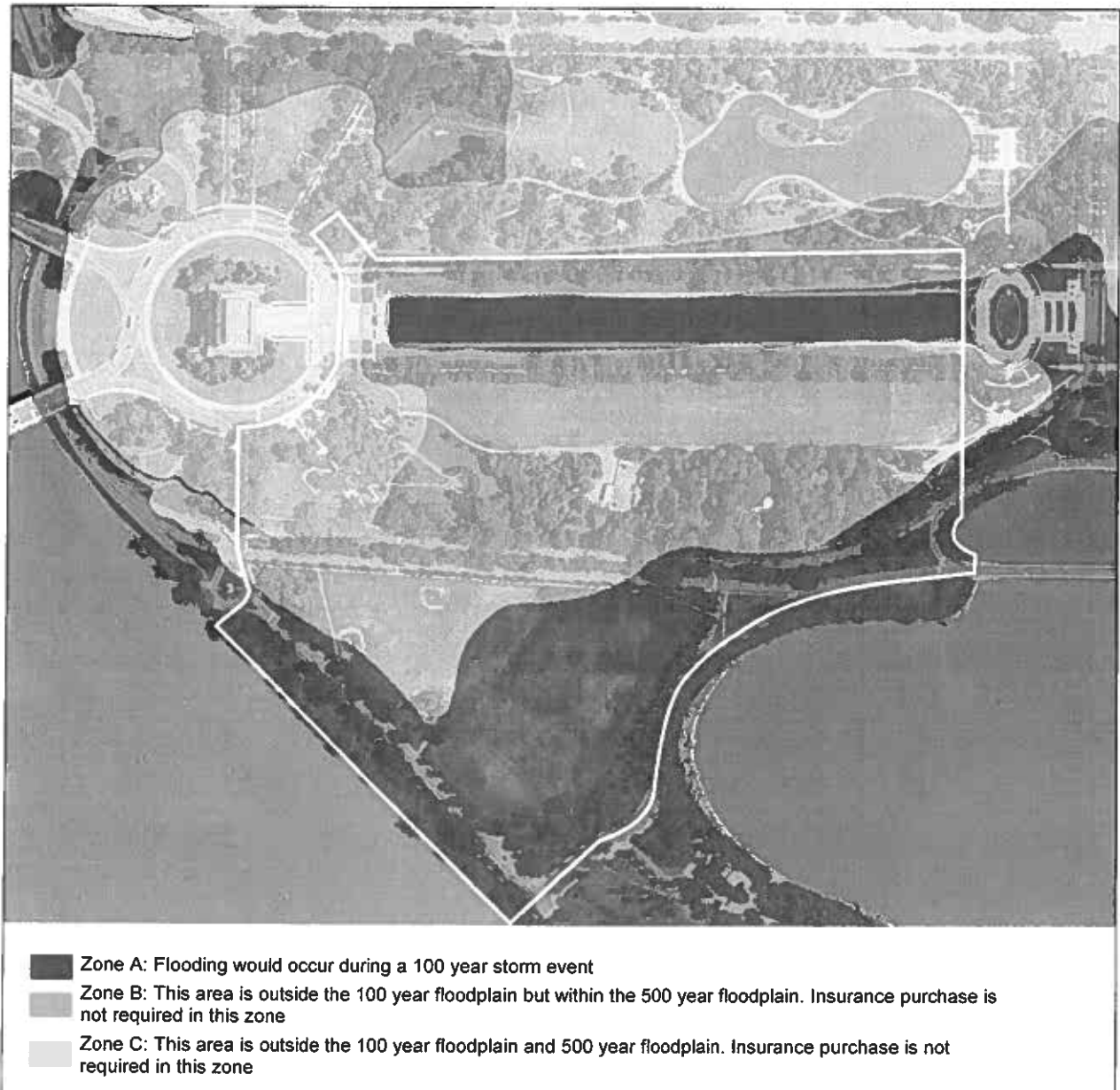
JUSTIFICATION FOR THE USE OF FLOODPLAIN

Portions of the project area are located within designated high hazard floodplains. Although the NPS is under executive order and policy to reduce or eliminate development in floodplains, this is not possible in the project area because the required improvements to Reflecting Pool and surrounding area are located within the 100-year floodplain (per the current FEMA mapping) with a small portion to the southwest corner of the project area located within the 500-year floodplain (See Figure B.2). The proposed improvements constitute maintenance actions necessary for the preservation of public safety, improvements to visitor use and experience, and to restore and protect historic resources. Therefore, although the project must occur within the floodplain, the extent of development, placement of structures, and types of structures would be selected to minimize impacts.

SITE-SPECIFIC FLOOD RISK

The project area within West Potomac Park lies at a low elevation and is relatively flat. The project area, including the north elm walk, Reflecting Pool and Lincoln Memorial east plaza are currently designated as Zone A, within the 100-year flood zone. As witnessed during past storm events, any buildings or other facilities located in this floodplain has the potential to be impacted by flood waters, high winds, and storm surge. To the southwest of the project area, at the western terminus of the southern elm walk, there is a small area designated as Zone B- between the limits of the 100-year flood and 500-year flood.

Figure B.2 –Floodplains in the Project Area



FLOOD MITIGATION PLANS

The proposed improvements do not involve the construction of new buildings or structures; rather, the majority of improvements would involve infrastructure upgrades (structural and utility systems) and the implementation of minor site improvements (reconfiguration of site furnishings, walkway surface treatment enhancements, etc.). The most invasive proposed action involves the reconfiguration of the western termini of the elm walks and the incorporation of accessible pathways with an integrated perimeter security system solution.

During site preparation and construction, efforts to preserve existing vegetation within the floodplain will be undertaken as standard procedure. Any vegetation removed to accommodate the proposed improvements would be replaced in-kind within the flood zone. Floodplain values would be protected to the maximum extent possible and potential flood hazards would be minimized.

SUMMARY

Because the proposed project constitutes enhancements for public safety, visitor use and experience, and historic resources, actions must be carried out within the 100-year floodplain. Specifically, the proposed improvements to the Reflecting Pool and surrounding area are within or adjacent to the 100-year floodplain. Since the proposed improvements must be undertaken at the location of the resources themselves, there are no other practicable siting alternatives that could be reasonably considered for this project. Mitigation and compliance with regulations and policies to prevent impacts to water quality, floodplain values, and loss of property or human life would be strictly adhered to during and after construction. No long-term adverse impacts to floodplain functions or values would occur from the implementation of the Preferred Alternative. Therefore, the National Park Service finds that this project is in compliance with Executive Order 11988: "Floodplain Management" and NPS DO-77-2.

In accordance with Executive Order 11988 for the protection of floodplains, mitigation and compliance with regulations and policies to prevent impacts to water quality, floodplain values, and loss of property or human life would be strictly adhered to during the design and construction of the proposed actions at the Reflecting Pool and surrounding area. The NPS finds that no long-term adverse impacts to the 100-year designated floodplain would occur from the proposed actions.