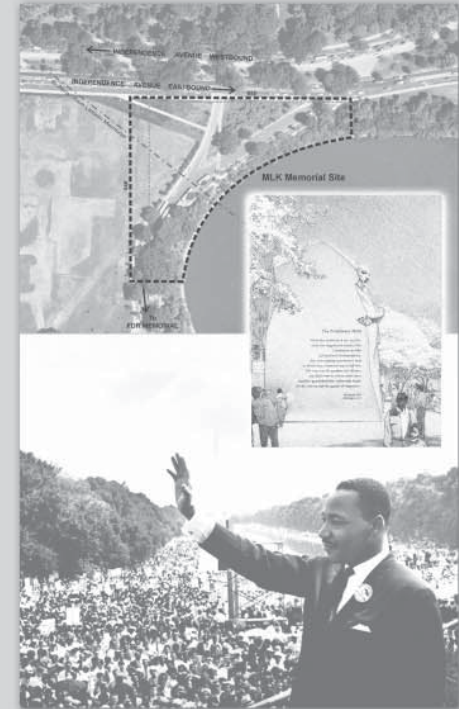


4.0 ENVIRONMENTAL CONSEQUENCES



4.1 Socio-Economic Environment

4.1.1 Land Use

The Site

Proposed Memorial

The proposed Memorial will refine the uses of approximately 3 acres of open park space and one acre of roadway into a coherent, landscaped commemorative space.

The proposed Memorial will require slight modifications to the existing polo field located on the western boundary of the site. This may result in a minor inconvenience and cause shifts in use patterns. However, the remaining open space will remain available for organized recreational activities.

Mitigation

Since the site is Federally-owned, construction and activities associated with the establishment of the Memorial will be conducted pursuant to a NPS permit.

No Action Alternative

Under the No Action Alternative, the site would remain parkland divided by a roadway and would have no impact on land use.

Study Area

Proposed Memorial

The establishment of the Martin Luther King, Jr. Memorial at the approved site would be consistent with other land uses within West Potomac Park and the Monumental Core.



The proposed Memorial will refine the existing open space (shown looking southwest) into a landscaped commemorative space network.

Mitigation

During construction, the contractors should limit their work to an approximately 100-foot wide corridor along the western edge of the site. The site will be fenced-off with a timber board-on-board construction fence for safety and to maintain a pleasant appearance. The work should be phased with the reconstruction of West Basin Drive occurring first to create the Memorial site. The Foundation should phase reconstruction of the roadway and construction of the Memorial so that traffic on West Basin Drive will be maintained at all times. The existing cherry trees should be enclosed within a fenced compound that can only be accessed by the NPS or with the permission of the NPS.

No Action Alternative

Under the No Action Alternative, the study area would remain as Federal parkland and there would be no change to land uses within the study area.

4.1.2 Planning Controls and Policies

The proposed Memorial will comply with the applicable planning controls because it will conform with the established design parameters for height, bulk, number of stories, and open space of the proposed Memorial. The proposed Memorial will also comply with the Commemorative Works Act of 1986 (CWA) standards for placement of memorials in Area I because it qualifies as a work of



The Tidal Basin and West Potomac Park will continue to serve as an area for recreational activities.

“preeminent historical and lasting significance” (P.L. 105-201).

The proposed Memorial will also comply with the applicable sections of the Comprehensive Plan for the National Capital, Federal Elements (1977-1984, updated 1990), as follows:

- The proposed Memorial ensures integration with appropriate landscape settings and architectural backgrounds, as well as

reciprocity with other monuments and with other features of the National Capital.

- As a national memorial authorized by Congress, the proposed Memorial is located within an appropriate area of the Nation’s Capital. Specifically, the proposed location is visually prominent and offers sweeping vistas of the Tidal Basin.
- The proposed Memorial is of exceptional national and international significance; therefore, it is appropriately located within the central monumental area, which includes West Potomac Park.
- The proposed Memorial’s location in the line of leadership between the Lincoln and Jefferson Memorials provides a strong association with its physical location.
- The proposed Memorial is sited and planned to be sympathetic to its location.
- West Potomac Park, as a Monumental and Decorative Park, is an appropriate setting to enhance this public Memorial, as such, the proposed Memorial will protect its fundamental integrity. Under the proposed Memorial, West Potomac Park will continue to serve as an outdoor area for displays and cultural activities, as well as areas for passive and controlled active recreational activities including lunchtime picnics and gatherings.
- The proposed Memorial is compatible with the character of West Potomac Park as an Historic District.
- The proposed Memorial creates a new special precinct within West Potomac Park.
- The proposed Memorial maintains and protects the integrity of form and design of Independence Avenue. The proposed Memorial does not include any unnecessary traffic channelization.
- The proposed Memorial will minimize floodplain fill and grading requirements by using on-site fill material through cut and fill operations.



The proposed Memorial will retain and protect the historic cherry trees.

No Action Alternative

Under the No Action Alternative, the site would not be developed as the proposed Memorial. Therefore, a commemorative work of “preeminent historical and lasting significance” would not be established on this site. The reserve precludes anything but the proposed Martin Luther King, Jr. Memorial.

4.1.3 Demographic and Economic Resources

Demographic and economic conditions are generally affected by a proposed memorial when there are residential or commercial/retail uses on or in the immediate vicinity of the site. Since there is no housing located in the study area, and because the Memorial would be located within an area that consists of and is surrounded by public parkland, the proposed Memorial would not generate any measurable impacts to housing, population, or social conditions.

Since there is no commercial business or retail space in the study area, the proposed Memorial would also not generate any measurable impacts to economic resources, such as employment and fiscal resources. Because the proposed site is Federal property, the proposed Memorial would not contribute to a loss of property tax revenues to the District of Columbia.

Mitigation

No mitigation regarding demographic or economic resources would be necessary for the proposed Memorial.

No Action Alternative

Under the No Action Alternative, the site would not be developed as the proposed Memorial. Since there are no residential or commercial/retail uses on or in the immediate vicinity of the site, the preservation of the site as open parkland would not generate measurable impacts to these resources.

4.1.4 Visitor Use and Experience

Proposed Memorial

Based on the experience of other recent memorials in the Monumental Core, the addition of the proposed Memorial would not likely add substantially to long-term visitation in the Monumental Core. As a destination, the Memorial would likely experience higher than average visitation during the first few years of its existence. In the long-term, however, visitation would likely stabilize at a level similar to other memorials. Accordingly, projected annual visitation in the first year would range from three million to five million persons. Based on current visitation to the Lincoln, Vietnam Veterans, Korean War Veterans, and Franklin Delano Roosevelt Memorials, stabilized annual visitation is projected to average 1.2 million persons. The stabilized visitation figure would range from 2,000 persons per weekday to 5,000 persons on peak weekend days.

The landscaped character of the proposed Memorial would generate a positive impact by enhancing and continuing the commemorative aspect of West Potomac Park and by expanding the character of the adjacent National Mall. The proposed Memorial would also enhance the area through the relocation of West Basin Drive. Currently, West Basin Drive divides the site with wide swaths of asphalt; under the proposed Memorial, the amount of roadway would be consolidated and moved to the periphery of the site, thereby minimizing the visual intrusion and enhancing the visitors' experience of the site. The section of roadway that is being eliminated is the last component of West Basin Drive that was constructed to follow the outline of the Tidal Basin. The remainder of West Basin Drive was either eliminated or relocated by the construction of the Jefferson Memorial and the FDR Memorial, both of which replaced asphalt roadway surfaces with landscaped commemorative areas.

The proposed Memorial would also improve approaches to the site. The approach from the east, such as from the Holocaust Museum

and the Bureau of Printing and Engraving building, is currently characterized by a pleasant walk along the shores of the Tidal Basin or a landscaped drive across the Kutz Bridge. The approach from the west along the Tidal Basin is similarly pleasant. The proposed Memorial, would maintain the canopy of trees, punctuated by views to the nearby memorials. Due to the Memorial's curving footprint and landscaped berm, the visitor would see sporadic glimpses of it between the trees, and the Memorial would gradually be revealed the closer one got to the site. The approach from the north would offer a more dramatic experience as the visitor crossed over Independence Avenue and the space opens up to reveal the entry plaza.

The proposed Memorial would require slight modifications to the existing polo field located on the western boundary of the site. This may result in a minor inconvenience and cause shifts in use. However, the remaining open space will still be available for organized recreational activities.



The roadway of West Basin Drive would be consolidated and moved to the periphery of the site.

Visitor Services

Visitors to the Memorial, particularly families and the elderly, would generate the need for a variety of on-site services, including restroom and interpretive facilities. Given that the nearest restrooms would be located more than 750 and 1,000 feet away at the World War II and FDR Memorials, respectively, numerous Memorial visitors would be inconvenienced and discomforted by a lack of restroom facilities. In addition, Memorial visitors typically desire a bookstore or interpretive ranger or museum space to learn more about the subject matter. However, such facilities would be inconsistent with the design parameters established for the site under a previous NPS policy that emphasized centralized restrooms in the Mall area.

Special Events

Aside from the dedication of the Memorial and annual celebrations of Dr. King's birth and death, it is not anticipated that the Memorial would be the site of numerous special events and demonstrations. However, the size of the site, as well as the arrangement of the Memorial's elements, would accommodate larger groups.

Depending on the context and subject matters of other special events or demonstrations in West Potomac Park or on the Mall, the site may experience some spill-over effect. The proposed Memorial will be subject to NPS regulations governing the use of memorials for special events or First Amendment demonstrations.

During the Cherry Blossom Festival, many events occur at the Tidal Basin adjacent to the site of the proposed Memorial. During construction of the Memorial, some of the festival activities may be negatively impacted. However, it is anticipated that the impacts would be minor and of a short duration and could be addressed by relocating activities elsewhere along the Tidal Basin or temporarily stopping construction to accommodate a ceremony or event.

Cumulative Impacts

The Memorial would enhance the visitor experience of the Monumental Core by reinforcing the sequential movement of visitors from the Jefferson and Franklin Delano Roosevelt Memorials toward the memorials on the Mall. Likewise, the enhanced visitor experience at the site, in combination with other tour experiences at nearby memorials, such as the Lincoln, Jefferson and Roosevelt Memorials and the Washington Monument, would increase visitor knowledge about the important figures in the history of the nation.

Mitigation

Because the Memorial would attract more than 1.2 million visitors per year, restroom facilities should be provided. An attractively designed structure located in the southwest corner of the site would enhance visitor comfort and could also be used to house ranger or interpretive functions. Such a facility should be unobtrusive in scale, with a height similar to the Memorial berm and a footprint of less than 1,750 square feet (approximately 1% of the site area).

Since the site is within an area that is heavily visited by tourists, it is important that the site be carefully maintained. Plans will be developed to prevent dirt or debris from entering the site from roadways or public venues.

During special events (i.e., the Cherry Blossom Festival) impacts will be mitigated by altering pedestrian and vehicular routes for visitors. The Tidal Basin walkway would remain accessible at all times.

No Action Alternative

Under the No Action alternative, visitors would continue to experience the site in its present state as they circulate around the Tidal Basin and visit the nearby memorials.

4.2 Cultural Resources

4.2.1 Archaeological Resources

Proposed Memorial

The proposed Memorial, would have no effect on archaeological resources listed in or eligible for listing in the National Register of Historic Places.

Mitigation

Should any resources be encountered during construction, construction will stop while the appropriate studies are conducted.

No Action Alternative

The No Action Alternative would not modify the existing conditions at the site; therefore, implementation of this alternative would have no impact on archaeological resources at the site.

4.2.2 Historic and Cultural Resources

Proposed Memorial

NPS initiated consultation with the District of Columbia State Historic Preservation Office (SHPO) in March of 1999. This consultation specifically discussed that a Memorial might potentially have an adverse effect on West Potomac Park.

The proposed Memorial would not adversely effect the Tidal Basin. The Tidal Basin would continue as a landscaped waterbody surrounded by cherry trees.



A plaque commemorating the planting of the first cherry trees is located east of the Dr. King Memorial site

The proposed Memorial would not effect the Stone Seawall, which is a contributing structure to the West Potomac Park Historic District. Construction of the Memorial would include a sound and sufficient foundation, such as piles, to prevent pressure from being placed on the seawall.

The proposed Memorial would not adversely effect the Japanese cherry trees, which are contributing elements to the West Potomac Park Historic District. While up to nine recently planted cherry trees may be relocated, no trees will be damaged or lost. Although the proposed Memorial would require modification to the recreation fields, the specific field delineation is not considered to be historic.

In terms of cumulative effects, the proposed Memorial will not adversely effect other memorials in the area. The World War II Memorial, Washington Monument, Lincoln Memorial, Franklin Delano Roosevelt Memorial, and Jefferson Memorial will continue as distinct features within the overall landscape setting.

Mitigation

- The NPS will continue to consult with the District of Columbia Historic Preservation Office (DC-SHPO), the Advisory Council on Historic Preservation, and the NCPC to ensure that the undertaking will meet the Secretary of the Interior's Standards.
- The overall design concept will be subject to review and approval by public agencies prior to implementation, amendment, modification, or refinement.
- Ground surfaces and planting materials will be of the highest quality and appropriate to the historic precedents.

No Action Alternative

The No Action Alternative would not modify the existing conditions at the proposed site; therefore, implementation of this alternative would result in no impact to historic or cultural resources at the site.



Walkway along the Tidal Basin linking FDR Memorial to the MLK Memorial site.



Sidewalks exist along Independence Avenue at the MLK Memorial site.

4.2.3 Visual Resources

Proposed Memorial

The proposed Memorial design received positive comments during informational presentations before the CFA and NCPC. While the Memorial is expected to be an attractive addition to the visual character of the Tidal Basin area, it will undergo design refinements during the approval process. One element of particular concern from the review agencies is the proposed bridge across the Memorial entrance. An additional concern is the mass of the earthen berms that frame the site.

In general, the proposed Memorial would have a positive impact on views from the site to other nearby memorials around the Tidal Basin. The proposed Memorial would preserve the cherry trees, which frame the views toward the Tidal Basin. The panoramic vista to the Jefferson Memorial from the walk surrounding the Tidal Basin, which is a contributing view to the West and East Potomac Parks Historic District, would be enhanced. The proposed Memorial would generate a positive impact on this view by leading visitors to this vantage point and framing the view with a formally-designed landscape.

The historic landscape of West Potomac Park consists of a level topography with seemingly endless expanses of grass stretching from one natural or man-made water body to another. This green plain is punctuated and accentuated by canopy-deciduous trees, embellished with flowering trees, and interspersed with evergreens. The plant palette common to the west side of the Tidal Basin provides the shade and pastoral quality that is the signature of the park and consistent with the American landscape. The few man-made elements are dedicated to the commemoration of our national heroes or events. In this designed setting of historic vistas punctuated with America's icons, a visitor has a visual sense of continuity and communion with our ideals and democratic principles.

Since the existing visual permeability of the site is limited and varies according to the vegetative cover and season, the quality of existing views across the site also varies. With the proposed Memorial, current filtered views to the Tidal Basin from Independence Avenue would be screened, particularly for motorists (as shown in the existing views and visual simulations). However, views through the site would still be available to pedestrians who could experience the entry vista and other views that the Memorial would offer.

Mitigation

The proposed Memorial design concept will be examined and refined to ensure the preservation of the symbolically open and expansive character and continuity of the existing historic landscape of extraordinary significance. The powerful design concept should also acknowledge and respect the larger historic design context within which it would be situated and maintain the spaciousness and



Views of the proposed Memorial site from the Jefferson Memorial (shown above) would include the Lincoln Memorial in the background.

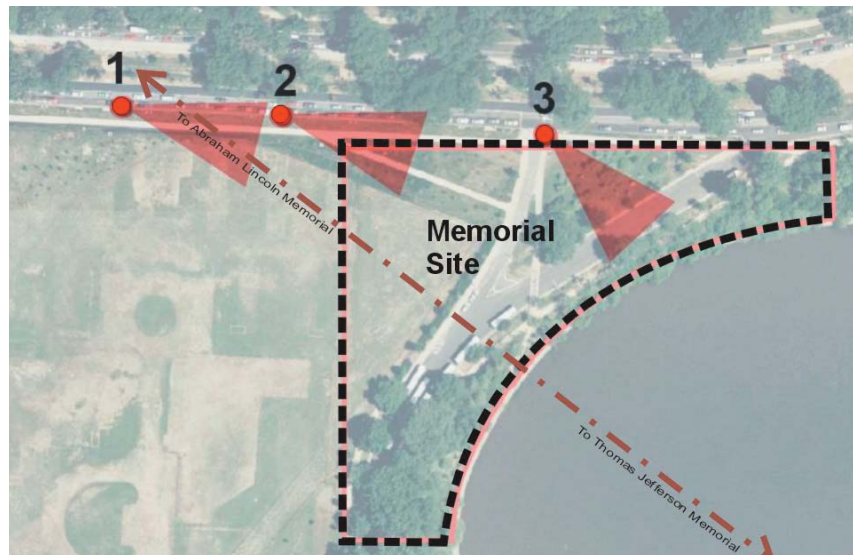
grandeur of the area to the greatest extent practical. This can best be accomplished by:

- Modifying or deleting the bridge across the entry portal to avoid concerns of visual intrusion; and
- Lowering the height and reducing the length of the earthen berm/wall to allow for certain vistas through the Memorial.

Such modifications would also reinforce the prominence of the Mountain of Despair and the Stone of Hope as iconic elements of the Memorial in addition to strengthening the historic landscape.

No Action Alternative

Under the No Action alternative, the site would continue to offer the same views to nearby memorials. Over time, however, the vegetation of the site would likely become more dense and the quality and character of the views from certain vantage points would change.



Key Map showing simulation viewpoints along Independence Avenue.



1a. Existing view from Independence Avenue between Daniel French Drive and West Basin Drive.



1b. Simulated view from Independence Avenue between Daniel French Drive and West Basin Drive.



2a. Existing view from Independence Avenue at the end of the sidewalk next to the polo fields.



3a. Existing view from Independence Avenue and West Basin Drive intersection before relocation.



2b. Simulated view from same point along Independence Avenue as above (now at relocated West Basin Drive).



3b. Simulated view from same point along Independence Avenue as above (at former West Basin Drive intersection).

4.3 Natural Resources

4.3.1 Geophysical Resources

Proposed Memorial

The potential impacts on geophysical resources associated with the proposed Memorial include topography, soils, geology, and groundwater. Predictions on the short-and-long-term impacts to geophysical resources at the proposed site are based on previous and current studies of both the Memorial site and other sites in the vicinity.

West Basin Drive would have to be realigned as part of the proposed Memorial. Currently, West Basin Drive veers east, curving around the polo fields and connecting with Independence Avenue. West Basin Drive would be reconfigured in a straight north/south direction along the western edge of the site and connect with Independence Avenue in a new location. The new road would not, however, alter any of the slopes and contours from the existing conditions.

Cut-and-fill operations would be conducted particularly at the semicircular water wall, the Mountain of Despair, and the Stone of Hope. The slope would be altered starting at the Independence Avenue and traveling down through the Memorial Plaza (elevation eight feet) and ending at the cherry trees to avoid the Tidal Basin edge (elevation four feet'). The Memorial Plaza would consist of hardscape and softscape altering the current road and grass. However, at least 87,120 SF (50%) of the Memorial is to consist of green space.

Surface soils will be reworked and recompacted under structures, paving, and fill. The soils that would be disturbed by the development are likely fill soils that were previously added on the site when the retaining wall for the Tidal Basin was created. Cut-and-fill amounts would be balanced to the extent possible to minimize the need to import or export soils during construction at the site, and no storage

of soil will be allowed on site. Ground settlement that may occur due to cut, fill, and loading would be controlled to an acceptable level by making several adjustments. For example, a new berm might be used, light-weight fill can be used, or air voids can be created in the berm. During construction, temporary impacts to soils from erosion and cut-and-fill methods would try to be minimized by implementation of erosion and sediment control measures.

Geologic resources would be altered by the proposed Memorial. Piles would be driven 45 to 50 feet to reach bedrock and strengthen the stability of the site. The piles and grade beams would be located to provide a sound and sufficient foundation for the Memorial, particularly with respect to the Water Wall, Mountain of Despair, and Stone of Hope. The use of piles and grade beams would also avoid settlement of the berm and eliminate a shear condition for any utilities that may be routed within the berm and pass into the retaining wall. Pre-construction loading of the site may also be incorporated to avoid settlement. This technique was used at the FDR and Korean War Veterans Memorials.

The Memorial site is located adjacent to the cherry trees and walkway along the Tidal Basin of the Potomac River. Based on tidal fluctuations of the groundwater, the site groundwater is connected hydrostatically to the Potomac. Engineers have estimated that the relationship equates to potentially unlimited recharge of the water table by the Potomac River (Mueser Rutledge 2002). The groundwater table is estimated for the site to be approximately three-to five-feet below the surface. Since the construction of the Memorial would involve driving piles 45 feet below the surface, groundwater would be affected. Dewatering, should it be necessary to construct the Memorial, would follow all guidelines set by the EPA and other governing groups. To limit groundwater disturbance to the Tidal Basin Seawall, a slurry wall would be constructed around the perimeter of the site.

Mitigation

- In compliance with NPS and DCRA permitting regulations and standards for soil erosion and sediment control, appropriate measures must be implemented to avoid (or minimize) the potential for sedimentation and contamination impacts to surface waters due to the Memorial.
- To reduce the potential for sedimentation and contamination of surface waters, impervious surface features, such as walking paths and plazas within the Memorial, should be designed to minimize the surface area to the extent possible.
- To reduce erosion and accelerate the growth of vegetation, disturbed areas should be re-vegetated upon the completion of the construction.
- Cut-and-fill amounts should be balanced to minimize the need to import or export soil. However, structural additions to the site should be designed to minimize changes in soil loads.
- Any dewatering must comply with required procedures set by the NPS, EPA, US Army Corps of Engineers, and DCRA.

No-Action Alternative

The No-Action Alternative would not modify the existing conditions at the Memorial site ; therefore, implementation of this alternative would have no impact to geophysical resources.

4.3.2 Water Resources*Surface Water**Proposed Memorial*

The proposed Memorial will result in increased impervious surfaces, therefore, stormwater management will be required under current regulations. The agency that enforces Clean Water laws in the District

of Columbia is the DC Department of Health, Environmental Health Agency (DC-DOH). For disturbance of over 5,000 SF, stormwater management plans will be required for review. This agency also enforces temporary erosion and sediment control during construction.

The temporary construction controls shall include measures that prevent sediment-laden water from entering the Tidal Basin as well as measures that prevent construction debris from entering public streets.

The design of the stormwater management facility shall consider the shallowness of the groundwater, the proximity of the site to tidal influence, the drop in surface elevation, and the incorporation of stormwater management with the landscaping of the site. Underground structures that hold and treat runoff can be considered, but will need to incorporate a pumping scheme since there will not be adequate slope to the Tidal Basin. A non-structural facility that incorporates the landscaping design should be considered.

The proximity of groundwater to the surface may also be an issue. Methods of lowering the groundwater (such as dewatering) need to be investigated and possibly incorporated in the final design.

Mitigation

- The construction contractors will take precaution to minimize sediment-laden water from entering the Tidal Basin by employing adequate erosion and sediment control measures and best practices as required by the EPA, the Army Corps of Engineers, and the DC Water And Sewer Authority (WASA).

No-Action Alternative

The No-Action Alternative would not modify the existing conditions at the Memorial site. Therefore, implementation of this alternative would have no impact to surface water at the site.

Wetlands

Proposed Memorial

The National Wetlands Inventory (NWI) categorizes the Tidal Basin as a Lacustrine unvegetated wetland. The proposed Memorial will not alter or impact the Tidal Basin, and there will be no dredging or filling of wetlands.

Mitigation

- To reduce the potential for sedimentation and contamination of the Tidal Basin wetland, impervious surface features, such as walking paths and hardscape grounds within the Memorial, will be designed to minimize the surface area to the extent possible.
- In compliance with NPS and Department of Consumer Regulatory Affairs (DCRA) permitting regulations and the standards for soil erosion and sediment control, erosion and sediment control measures will be implemented to avoid or minimize the potential for sedimentation and contamination impacts to wetlands from the development of the site.

No-Action Alternative

The No-Action Alternative would not modify the existing conditions at the Memorial site; therefore, implementation of this alternative would have no impact on wetlands.

Floodplains

Proposed Memorial

The proposed Memorial will not adversely impact the floodplain. Due to the lowering of the plaza from the existing level, there would be a negligible net gain in flood storage area.



Stormwater management will be incorporated into the landscaping of the site.

Mitigation

Measures to mitigate the periodic flooding of the Memorial must be incorporated into the design. As a result, the Memorial shall be developed to withstand the impacts of flooding, consistent with Executive Order 11988, Flood Plain Management. The NPS identified the George Mason Memorial development as an excepted action under its compliance procedures for floodplain review in accordance with Executive Order 11988.

No Action Alternative

The no action alternative would not modify the existing conditions at the Memorial site; therefore, implementation of this alternative would have no impact to floodplains.

4.3.3 Vegetation

Proposed Memorial

Construction of the proposed Memorial would involve the disturbance of trees, grasses, and soils on the site, including approximately 85 existing deciduous trees. However, except for one specimen tree, the on-site trees are immature and small, and no habitat of rare, threatened, or endangered species would be disturbed. The existing cherry trees next to the site would be protected during construction. However, depending on slope and alignment, up to 9 cherry trees would be relocated, primarily to allow for a handicapped ramp connecting the Memorial to the Tidal Basin walkway. During construction of the Memorial, extraordinary attempts would be made to maintain clearance around trees using fences and other resources including structural platforms around the base of trees to minimize soil compaction. Upon completion of construction, grassland areas would be revegetated with sod, and substantial trees would be planted, resulting in a net gain in planted woodland on the site. As

planned, the Memorial landscaping would include approximately 45 canopy shade trees, 20 flowering trees, and 30 new cherry trees.

Mitigation

- Construction activities will occur within the boundaries of the site so they would not disrupt cherry trees. In addition, cherry trees will be protected by fencing during construction and will receive special care, including root pruning and mulching.
- During construction, piles will be predrilled and heavy equipment will be strictly confined to areas of proposed development to limit disturbance of vegetation to the minimum extent necessary.
- Should dewatering prove necessary, special irrigation measures will be provided for cherry trees in the vicinity.

No-Action Alternative

The No-Action Alternative would not modify the existing conditions at the Memorial site and would have no impact to vegetation.

4.3.4 Wildlife and Aquatic Life

Proposed Memorial

The proposed Memorial would not disturb rare, threatened, or endangered animal species or any critical faunal habitat. The common wildlife species inhabiting the proposed site would be disturbed or displaced by the proposed Memorial. However, these animals should be readily able to use ample similar habitat and ecosystems located adjacent to or in proximity to the Memorial site. The animal species that are found on the site and similar habitats near the site would not experience a substantial loss of habitat. No aquatic life will be impacted by the proposed Memorial.



To reduce potential erosion and accelerate reestablishment of vegetation, disturbed areas will be revegetated upon completion of construction.

Mitigation

- During the construction of the proposed Memorial, heavy equipment should be strictly confined to areas of proposed development limiting the disturbance of vegetation that affects wildlife.
- Revegetation should be used to remedy the disturbance of vegetation related to construction of the proposed Memorial in order to maintain wildlife on the proposed site.

No-Action Alternative

The No-Action Alternative would not modify the existing conditions at the Memorial site; therefore, implementation of this alternative would have no impact on wildlife.

4.3.5 Hazardous Material

Proposed Memorial

The proposed Memorial would disturb soils by grading, landscaping, and cut-and-fill operations associated with the construction of the proposed Memorial. If there are contaminated soils found on the Memorial site during construction, that soil will be removed, transported, and treated or disposed of with applicable Federal and local regulations for handling contaminated materials.

No hazardous materials would be used during the construction of the proposed Memorial and the relocation of West Basin Drive. In addition, no hazardous materials would be generated during the operation of the proposed Memorial.

Mitigation

Impacts from potential hazardous materials would be reduced to a level below significance by the implementation of appropriate mitigation measures. Collection, transport and disposal/remediation of contaminated soils would be conducted in accordance with Title 40 CFR Volume 23 Part 280 and applicable District of Columbia regulations.

No-Action Alternative

The No-Action Alternative would not modify the existing conditions at the proposed Memorial sites; therefore, implementation of this alternative would have no impacts to hazardous materials.

4.3.6 Air Quality

Proposed Memorial

The impact of the proposed Memorial on ambient air quality would primarily be associated with temporary construction activities on the site. Since parking will be limited and visitors will arrive on foot, Metro, or tour bus, there would be negligible additional long-term motor vehicles and emissions.

EPA has determined specific Federal actions, or portions thereof, to be exempt from the General Conformity Rule of the Clean Air Act Amendments of 1990. Actions are exempt where the total of all reasonably foreseeable direct and indirect emissions (1) would be less than specified emission rate thresholds, known as *de minimis* limits, and (2) would be less than 10% of the area's annual emission budget. The following assessment relies on specific numerical thresholds for individual air pollutant emissions. These thresholds correspond to the *de minimis* levels contained in the General Conformity Rule.

The Washington Metropolitan region is currently designated as a Federal "serious" nonattainment area for ozone. The *de minimis* threshold applicable to this classification are emission rates of 50 tons per year each for volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), the pollutants that are the primary constituents in the formation of ozone.

Construction of the proposal may affect air quality as a result of construction equipment emissions, including transportation of trucks to and from the proposed site; fugitive dust from demolition and earthmoving; and the emissions from vehicles driven to and from the site by the construction workers.

Based on the standard types of equipment that would be needed for the construction of the Memorial, and based on the standard air pollution emission factors (commonly referred to as AP-42), the estimated emissions for the proposed site are predicted to be less than the *de minimis* thresholds and less than 10% of the projected area emissions as in accordance with EPA. Therefore, it may be presumed that construction emissions resulting from the proposed construction will conform with the attainment plan and that there would be no significant local or regional air quality impact.

Mitigation

- Electric power for construction should be provided by available commercial power instead of portable generators, if feasible.
- Water spray will be used on active grading areas and unpaved roads to eliminate visible dust plumes.

No-Action Alternative:

This alternative would not modify the existing conditions at the Memorial site; therefore, implementation of this alternative would have no impact on air quality.

4.3.7 Noise Levels

Proposed Memorial

Through its Noise Control Regulations (Municipal Regulation Title 20, Chapters 30, and 31), the District of Columbia has established maximum permissible sound levels for any sound that emanates from an operation, activity, or noise source at the property line of the site on which the noise source is located. Construction noise levels are addressed in Title 20, Chapter 30, Section 3004.2 of the DC Municipal Regulations, which state that “individual pieces of construction equipment shall be exempt at all time. They shall operate so as to comply with the noise limits established in Section 3102 of this title.” Section 3102 requires that from 7:00 a.m. to 7:00 p.m. on any weekday, construction and demolition noise levels (excluding pile drivers) shall not exceed 80 dB(A) Leq unless granted a variance. From 7:00 p.m. to 7:00 a.m., maximum noise levels of 55, 60, and 65 dB(A) apply for residential, commercial, and industrial areas, respectively, with no averaging time period specified. For construction noise, measurements shall be made 25 feet from the outermost limits of the construction site. No permit for construction or demolition shall be issued until the permit applicant provides written documentation that construction noise will comply with District noise regulations. Although some aircraft noise will be present on the Memorial site, it will not have a major effect on the experience of visitors.

Mitigation

Best management practices (BMPs), compliance with District noise regulations, and other construction procedures should be implemented to minimize construction noise. In addition, construction activities should be temporarily discontinued for ceremonies or special events in the area.



Dust and emissions from construction activities and equipment may temporarily affect air quality on the site.

No Action Alternative

This alternative would not modify the existing conditions at the Memorial site; therefore, implementation of this alternative would have no impact on noise levels.

4.4 Transportation and Urban Systems

4.4.1 Roadway Traffic

The proposed Memorial would require the following changes to the roadway network:

- Relocation of West Basin Drive approximately 100 feet west of its current alignment.
- Redesign and replacement of the intersection and turning functions of West Basin Drive at Independence Avenue.
- Closure of the “spur road” connection, which currently traverses the site from West Basin Drive to eastbound Independence Avenue, and elimination of the on-street parking provided within the site.

The designs for these proposed changes will be undertaken as part of the proposed Memorial, and will involve review, approval, and permitting through NPS, NCPC, CFA, and the various responsible agencies of the District of Columbia.

Traffic generation for the proposed Memorial is closely linked to visitation patterns for the Monumental Core as a whole. However, somewhat higher visitation levels occur upon the initial opening of a particular monument or memorial. Visitation patterns are also influenced by current events, publications, major anniversaries, “simultaneous” commissioning of memorials, and other historical and cultural factors. Major events occurring at newly commissioned memorials would be the subject of special event planning and permitting in accordance with NPS guidelines and requirements.

As part of the preliminary environmental analysis performed for the site selection process, the NPS estimated the following:

- Visitation during the first few years would be higher than average and likely range between 3 to 5 million persons.
- In the long term, visitation is likely to stabilize to the level of

current visitation rates to the Lincoln, Vietnam Veterans, Korean War Veterans, and Roosevelt Memorials.

- Long-term visitation to the proposed Memorial is expected to be about 1.2 million persons annually.

The referenced document cites the NPS experience with the opening of the recent memorials in the Monumental Core, and notes that the Memorial “would not likely add substantially” to visitation within the Monumental Core. The NPS long-term visitation estimates and transportation modal shares (which are forms of travel) data for the area was used to provide generalized estimates of visitor demands. Long-term annual and daily visitation as it relates to traffic generation by travel mode is shown in Table 4.4-1.

No-Action Alternative

This alternative would not modify the existing conditions at the Memorial site and would have no impact on roadway traffic.



Under the proposed Memorial, the existing spur road to eastbound Independence Avenue would be eliminated.

Table 4.4-1

Long Term Visitation Estimates - Dr. King Memorial

Travel Modes	Annually	Avg. Day	Avg. Week-day*	Peak Weekday & Saturday**
Pedestrian/ Bicycle (65%)	780,000	2,135	1,390	3,210
Metrobus/Tour Bus / Transit (5%)	60,000	165	110	240
Tourmobile / Taxi (20%)	240,000	660	430	990
Personal Vehicle (10%)	120,000	330	210	500
TOTAL	1,200,000	3,290	2,140	4,940

* Assumed @ 65% of Average Day

** Assumed @ 150% of Average Day

Source: National Park Service, O.R. George and Associates.

4.4.2 Parking

As noted in the previous section, the predominant mode of visitor access will be by non-motorized means (i.e., walking and bicycling), and by public transportation. Therefore, the proposed Memorial provides only limited parking adjacent to the site. It is anticipated that visitors using personal vehicles would utilize available parking spaces currently provided within the areas of the Washington and Lincoln Memorials, the Ellipse to the north, in the area of the FDR Memorial and West Potomac Park, as well as to the east in the area of East Basin Drive and the Bureau of Printing and Engraving.

Cumulative Impacts

Detailed studies conducted by the NPS in connection with the establishment of the World War II Memorial indicates a parking supply of over 2,000 parking spaces within reasonably convenient walking distance for cultural and recreational trip purposes. As a result, the proposed Memorial would not have adverse cumulative impact on other memorials in the Monumental Core.

Mitigation

Various communication media could be used to inform prospective visitors of parking and access provisions for the Memorial.

No-Action Alternative

This alternative would not modify the existing conditions at the Memorial site and would result in no impact on parking.

4.4.3 Public Transportation

The site is not within easy access of public transportation routes on the WMATA bus system; the closest routes and stops are along Constitution Avenue to the north and along 14th Street to the east. Metrorail access is comparably remote, with the closest station being the Smithsonian at Twelfth Street and Independence Avenue, SW. However, the Memorial site is accessible on both fixed and flexible tour bus routes, as well as by taxi.

Since bus transportation will be an important means of access to the proposed Memorial, the concept plan calls for three drop off/lay-by spaces for buses along West Basin Drive, which would facilitate convenient access, particularly for physically challenged persons.

No-Action Alternative

This alternative would not modify the existing conditions at the Memorial site and would have no impact on public transportation.



The proposed Memorial calls for three lay-by/bus stops along West Basin Drive.

4.4.4 Pedestrian and Bicycle Circulation

The proposed Memorial would respect the integrity of the existing walkways and fully provide for pedestrian connectivity and continuity. The Memorial also respects the integrity of the bicycle trail system, and bicycle racks should be provided as site amenities.



The proposed Memorial would provide improved connections to these existing walkways.

No-Action Alternative

This alternative would not modify the existing conditions at the Memorial site; therefore, implementation of this alternative would have no impact on pedestrian or bicycle circulation.

4.4.5 Stormwater Management

Proposed Memorial

Development of the proposed Memorial would slightly increase the amount of impervious surfaces on the project site, resulting in an increased potential for impacts related to runoff. In order to avoid impacts to the soil and water resources on and adjacent to the Memorial site, stormwater collection and conveyance utilities would be installed on the project site. During construction, erosion and sediment control measures would be implemented to avoid impacts related to stormwater. Overall, the development of stormwater utilities on the project site in association with the proposed Memorial would result in minor positive effect on stormwater management.

No-Action Alternative

Under this alternative, existing conditions of the proposed site would not be modified. Therefore, there would be no impact on stormwater management.

4.4.6 Site Utilities

Proposed Memorial

The utility lines existing on the project site have been determined adequate to support the uses associated with the proposed Memorial. Therefore, development of the proposed Memorial would not require the installation of additional utilities on the project site. The new facilities would be connected to the existing infrastructure for service.

No-Action Alternative

Under this alternative, existing conditions would not be modified; therefore, would have no impact on site utilities.

4.4.7 Community Facilities

Proposed Memorial

The long-term operation of the proposed Memorial would slightly increase the patrol, fire protection, and emergency medical service responsibilities of the US Park Police and the District of Columbia Fire Department, who have jurisdiction for the project site. Public restroom facilities would continue to be available at existing locations in the vicinity of the project site.

No-Action Alternative

Under this alternative, existing conditions would not be modified; therefore, there would be no impact on community facilities.

4.5 Summary of Cumulative Impacts

The effects of the proposed Memorial would be realized in conjunction with the effects of ongoing memorial projects, including the Jefferson Memorial Security Improvements, Lincoln Memorial Circle Rehabilitation and Security Improvements, and the Washington Monument Security Improvements. The proposed Memorial would strengthen the visual and formal relationship between memorials in the vicinity of the project. Over the long term, however, the proposed Memorial would not increase visitation in the project vicinity, and therefore would not generate overall increases in traffic levels. Development of the proposed Memorial would reconfigure the road network in the vicinity of the site, adding to road and traffic flow modifications associated with the other ongoing memorial projects. Given that adequate parking is documented to exist in the vicinity of the proposed Memorial, the project would not be expected to noticeably reduce parking availability. Overall, with the other memorial projects, the proposed Memorial would improve the experience of visitors to Washington, DC.