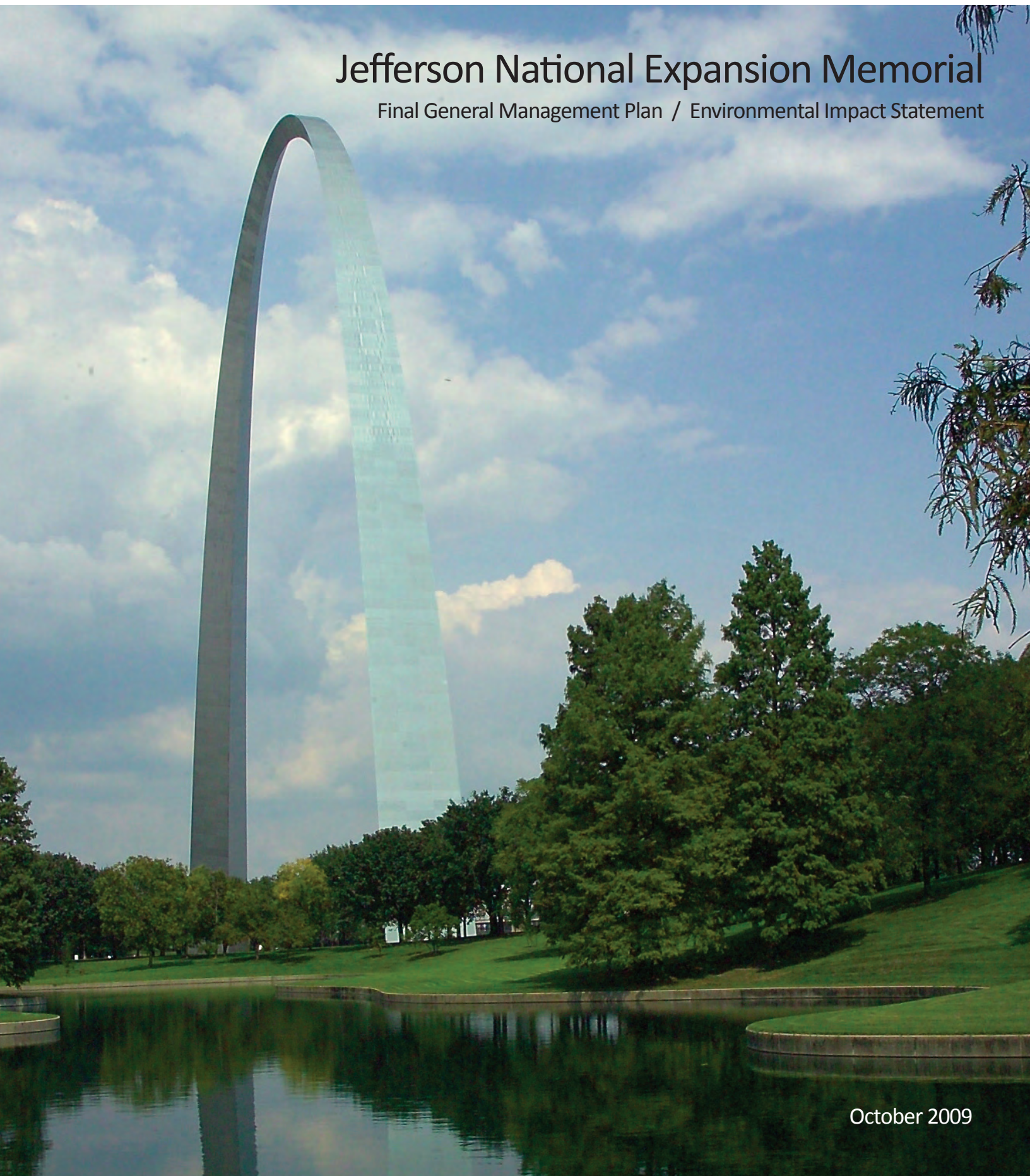




Jefferson National Expansion Memorial

Final General Management Plan / Environmental Impact Statement



Final
General Management Plan / Environmental Impact Statement
Jefferson National Expansion Memorial

St. Louis, Missouri

Jefferson National Expansion Memorial was established December 21, 1935, when President Franklin D. Roosevelt signed an executive order directing the Secretary of the Interior to acquire property and develop the Memorial along the riverfront in downtown St. Louis, Missouri. The Memorial was the first Secretarial designation under the Historic Sites Act of 1935, and has always been administered by the National Park Service (NPS). The Memorial honors the memory of the pioneers of U.S. westward expansion, and its construction served as the central foundation in revitalization efforts for the entire downtown section of St. Louis. The Gateway Arch is an icon within the city, a major tourist destination, and the symbolic portal to the American West.

Between 1939 and 1942, 40 square blocks of condemned buildings were razed to make way for the Memorial. Only the Old Courthouse and the Old Cathedral were saved and still stand. In 1940, the City of St. Louis gave the Old Courthouse to the National Park Service and it was incorporated into the Memorial. Groundbreaking for the Gateway Arch occurred on June 23, 1959, and the structure was completed in October of 1965. The landscape design and Museum of Westward Expansion were completed during the following twenty-five years. Legislation was passed in 1984 and 1992 establishing the Jefferson National Expansion Memorial Addition in East St. Louis, Illinois. Though the legislation authorized an addition of approximately 100 acres, the boundary has yet to be determined and property has yet to be acquired.

The last comprehensive master plan for the Memorial was completed in 1962. This general management plan will help guide the future of the Memorial.

This document examines four alternatives for managing the Memorial for the next 15 to 20 years. It also analyzes the impacts of implementing each of the alternatives. The **no action alternative (alternative 1)** consists of continuing the existing park management and serves as a basis for comparison in evaluating the other alternatives. Three **action alternatives (alternatives 3, 4 and 5)** propose actions that differ from the current management of the Memorial. The action alternatives propose different ways to manage resources and new facilities that would allow new types of visitor uses and amenities. Over the course of planning, alternative 2 was dismissed from consideration after public scoping and further analysis because the benefits of this alternative already existed in or could be incorporated into other alternatives. In this final plan, alternative 3 has been identified as the National Park Service's preferred alternative.

The *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, published in January 2009, was distributed to other agencies and interested organizations and individuals for their review and comment. Following a 60-day public review and comment period, the NPS planning team evaluated comments from federal and state agencies, organizations, and individuals regarding the draft plan. Subsequently, the team incorporated appropriate changes into the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The final plan includes substantive comments on the draft document and the NPS responses to those comments. Following distribution of the final plan, and a 30-day no-action period, a Record of Decision approving the final plan will be signed by the National Park Service Regional Director, in November 2009. The Record of Decision documents the National Park Service selection of an alternative for implementation. With the signed Record of Decision, the approved plan can be implemented, depending on funding and staffing. A Record of Decision does not guarantee funds and staff for implementing the approved plan.

Executive Summary

Jefferson National Expansion Memorial (hereafter referred to as the Memorial) was established by Executive Order in 1935. Part of the national park system, the Memorial consists of the Gateway Arch and grounds - a National Historic Landmark (NHL) - as well as the Old Courthouse and Luther Ely Smith Square. The Memorial is located in downtown St. Louis, on the west bank of the Mississippi River, and consists of 91 acres.

Purpose of the General Management Plan and Environmental Impact Statement

General Management Plans (GMPs) are required of all national park units by law and serve as long-term plans to guide the management and use of park lands. The prior master plan for the site was released in 1962, more than a decade before the completion of key elements of the Memorial grounds, and was completed prior to the enactment of the National Environmental Policy Act, National Historic Preservation Act, and other relevant laws. As such, it was out of date. The development of a GMP for Jefferson National Expansion Memorial is critical for guiding the operations and management of the Memorial over the next 15 to 20 years.

Management Zones

One of the key tools used in planning for units of the national park system is the definition and application of management zones. Management zones can be used to identify how different areas within the Memorial could be managed to achieve resource preservation, provide visitor access and use, and serve operational purposes. Each management zone specifies complementary resource conditions,

opportunities for visitor experiences, and appropriate facilities, and combines these into a possible management strategy that could be applied to locations within the Memorial. As such, management zones give an indication of management priorities for various areas.

Five management zones have been developed for use within the Memorial. These include: Heritage Education and Visitor Amenities, Original Landscape, Orientation, Streetscape/Riverscape, and Service. In addition, a Design Competition Overlay has been applied to the grounds of the Memorial.

The purpose of the **Heritage Education and Visitor Amenities** zone is to provide visitor education, interpretation, orientation, and amenities. This zone is characterized by the cultural resources and visitor facilities that serve the educational and practical needs of the visitor. It is situated so as to have little impact on the National Historic Landmark.

The purpose of the **Original Landscape** zone is to preserve the National Historic Landmark (NHL). The Original Landscape may be rehabilitated, as necessary, as defined by the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (compatible materials, design, and features) only to provide safe visitor access and security.

The purpose of the **Orientation** zone is to provide visitor orientation, enhance visual and physical connectivity, and support Memorial operations. This zone is characterized by visitor orientation, parking, and practical needs. It is situated so as to have little impact on the National Historic Landmark.

The purpose of the **Streetscape/Riverscape** zone is to create visual and physical connectivity between the city streets, the riverfront, and the Memorial. This zone is characterized by the formal, pedestrian-oriented avenues and/or riverfront the visitor passes through when approaching, entering, leaving, or walking by the Memorial.

The purpose of the **Service** zone is to support Memorial operations. Appropriate types of facilities in this zone may include administrative and operational facilities, parking, storage, roads, and security checkpoints.

The purpose of the **Design Competition Area Overlay** is to provide opportunities to explore innovative approaches to revitalizing the Memorial, including enhancing connections to the adjacent cities and introducing new elements while protecting the character defining features of the NHL. The description of the Design Competition Overlay is similar to the Design Competition zone that was described in the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, but has been divided into two separate areas (A and B) with varying degrees of allowable change that could occur as a result of a design competition. The area for the design competition has been enlarged to include sizeable portions of the Memorial that would be managed under the Original Landscape zone. The rationale for including areas zoned Original Landscape in the design competition is to encourage a cohesive design for connectivity both within the Memorial and between the Memorial and the surrounding cities.

Because the Memorial is not currently zoned, management zones only apply to action alternatives (alternatives 3, 4, and 5). The action alternatives each propose a different configuration of the management zones within the Memorial based on the concept for each alternative. In each management zone, the Memorial intends to preserve and protect resources to the greatest extent possible. The National Park Service will not allow an action that would cause the National Historic Landmark to be delisted.

Alternatives and Impacts

The alternatives in this general management plan represent different methods of applying management zones onto the grounds and to facilities and include alternative actions that could be taken at Jefferson National Expansion Memorial. Each of the action alternatives consists of an overall management framework and a concept of how different areas of the Memorial would be managed.

ALTERNATIVE 1: NO ACTION

The no action alternative primarily reflects current conditions and activities at the Memorial. This alternative is provided as a baseline against which to compare the other “action” alternatives. The Memorial would continue to function much the way it does today, and the NPS management of the site would continue to be based upon the 1962 *Jefferson National Expansion Memorial Master Plan Handbook*, which currently guides park managers on the completion and preservation of the Memorial grounds. As funding permits, the National Park Service would continue to look for opportunities to complete unfinished portions of the design, according to *The Secretary of the Interior’s Standards for the Treatment of Historic Properties*, as well as *Guidelines for the Treatment of Cultural Landscapes* and the treatment recommendations of the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010).

Under the no action alternative, no major changes, or new construction projects would be undertaken. Mechanical, electrical, and climatic conditions at the Old Courthouse would continue to cause minor to moderate adverse impacts to the Memorial curatorial resources and museum collections. The appearance of the Memorial grounds would remain unchanged and necessary repairs to landscape elements would continue to be made, creating overall long-term minor to moderate beneficial impacts to the cultural landscape. Natural resources conditions would remain unchanged. The visitor experience would have minor to moderate adverse impacts due to the lack of accessibility and connectivity between the Memorial and the surrounding city, unfriendly streetscapes,

and aging exhibits. Transportation and access would also continue to experience minor adverse impacts due to the lack of accommodation of alternative means of transportation and the separation between the Memorial and public rail transportation lines. The socioeconomic condition would remain unchanged and the lack of focus on planning activities for the East St. Louis Addition would continue to create a minor long-term adverse impact on land use. Minor to moderate adverse impacts to Memorial operations would continue due to current funding constraints.

PREFERRED ALTERNATIVE 3: PROGRAM EXPANSION

In this alternative, the Memorial would be revitalized by expanded programming, facilities, and partnerships. The National Park Service would capitalize on multiple opportunities to expand visitor experience throughout the Memorial. In order to gain the widest breadth of ideas for expanding interpretation, education opportunities, and visitor amenities at the Memorial, a design competition, akin to the 1947 competition, would be initiated by the National Park Service in close coordination with partners. Project funding would not come all at once; it most likely would be provided by partners, donations, and other non-federal and federal sources. Private funding would be required in order to implement the winning entry of the design competition. In addition to considering the “winning” ideas from the competition, the National Park Service would continue the educational and interpretive programs currently offered at the Memorial and expand opportunities for visitors to participate in more interactive experiences across the Memorial grounds. The grounds surrounding the Gateway Arch would be managed in such a way as to accommodate and promote more visitor activities and special events than are currently provided. The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and the riverfront levee.

The National Park Service would use the design competition to seek opportunities to

enhance existing entrances to the Memorial on the north and south, as well as to capitalize on the primary axis between the Old Courthouse and the Gateway Arch with new entrances on the west and east and by establishing a new east portal linking East St. Louis to the Gateway Arch grounds by water taxi. The competition would offer designs for a new external and internal visitor transportation system. The ultimate configuration and use of the south end of the Memorial would be determined by the results of the design competition. It is the agency’s intention that the maintenance facility remain in the current location; however, the Memorial would vacate the area if a design should emerge from the competition that offered a compelling program for the entire south end and could assure the Memorial the same high quality maintenance facility nearby. While the design solutions might include the development of above ground structures within a portion of the designated Design Competition Overlay, the National Park Service would not allow the implementation of a project that would cause impairment to the Memorial, and all of the enhancements would be required to be located in such a manner as to preserve the integrity of the National Historic Landmark and National Register Historic District.

Major long-term adverse impacts to historic buildings and cultural landscapes are avoided. There may be minor adverse to minor beneficial short- and long-term local impacts on historic structures, with minor short term adverse and moderate adverse to major beneficial long-term impacts to the cultural landscape at the Memorial as a result of the Program Expansion alternative. Depending on the locations of design elements and the extent of ground-disturbing activities, impacts on archeological resources could range from minor beneficial to major adverse. Mechanical, electrical, and climatic conditions would be replaced and/or upgraded, creating moderate long-term beneficial impacts to the Memorial curatorial resources and museum collections.

Depending on the results of the design competition, critical habitat for the federally listed Threatened species, decurrent false aster, could be impacted, but any future development that might result from the

design competition would be preceded by a site survey to determine if the species is present within the study area. Consultation with the U.S. Fish and Wildlife Service would be required as part of the design process and prior to any construction.

Alternative 3 would have moderate to major beneficial short-term impacts on visitor use and moderate beneficial long-term impacts due to the development of new facilities. Improvements in barrier-free access and streetscapes are expected to increase connectivity to downtown St. Louis and to have a long-term beneficial impact on the visitor experience. Modification and rehabilitation of exhibits and heritage programs, including more interactive experiences, is expected to improve visitor opportunities, attracting new visitors and encouraging more use of underutilized facilities.

The expected improvements to the flow and circulation of visitors to the Memorial, depending upon the outcome of the design competition, could create moderate long-term beneficial impacts on transportation resources.

Visitation to the Memorial will have a long-term beneficial economic impact due to visitor spending and expenditures associated with operations at the Memorial, though the magnitude is indeterminate at this time. Improvements to streetscapes and connectivity with local neighborhoods are expected to have long-term beneficial impacts on land use within and immediately adjacent to the Memorial. Changes in management in the East St. Louis addition are expected to have long-term beneficial impacts on local land use, though purchase of lands for Memorial expansion in East St. Louis could have a minor, adverse fiscal impact to local government taxing entities.

Memorial operations would be impacted in this alternative and would range from major beneficial to major adverse. Much depends on the outcome of the design competition, and whether the new programs and elements that emerge from the competition come with additional financial resources for operations.

ALTERNATIVE 4: PORTALS

This alternative focuses on revitalizing the Memorial through enhanced visual and physical connections from the surrounding neighborhoods to the Memorial. It features the development of four portals from the north, south, east, and west as formal entrances into the Memorial. Capitalizing on the established visual link between the Old Courthouse and the Gateway Arch, the east-west axis would be strengthened with a new east portal, linking East St. Louis to the Gateway Arch grounds by water taxi, and the creation of an expanded west portal that includes a wide at-grade lid or deck above the recessed highway to provide additional open space. Directly above the lid/deck, two elevated pedestrian bridges would be constructed for visitors to walk between Luther Ely Smith Square and the Gateway Arch grounds. The north portal would be improved at both the northwest plaza (at Memorial Drive and Washington Avenue) and in the vicinity of the MetroLink station at Eads Bridge. The south portal would provide improved visitor access and orientation to the south end of the Memorial grounds and riverfront. Pedestrian at-grade improvements would be made at all major entrances. Further connectivity would be promoted with a new transportation system linking visitor attractions within and outside of the Memorial. The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and the riverfront levee.

The Portals alternative may result in local negligible to moderate long-term adverse and moderate to major long-term beneficial impacts on the cultural landscape at Jefferson National Expansion Memorial. The implementation of the Portals alternative would result in moderate long-term beneficial impacts on curatorial resources and museum collections.

Implementation of alternative 4 may have moderate long-term beneficial impacts

on visitor opportunity and use. Visitor opportunities and use are expected to improve with redesign of exhibits at the Museum of Westward Expansion and the Old Courthouse and development of barrier-free access to the riverfront and museum. Improvements in streetscapes, the introduction of a new transportation system, and a water taxi service are expected to increase connectivity to local neighborhoods in downtown St. Louis and East St. Louis, and have a long-term beneficial impact on visitor opportunities and use. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors is expected to have a minor positive increase on visitation under this alternative. Visitation to the Memorial would have a long-term minor beneficial economic impact due to visitor spending and expenditures associated with operations at the Memorial, though the impacts would be focused within the local geographic area.

Implementation of the Portals alternative would have a long-term moderate beneficial impact on local land use. The expanded facilities would require a commensurate increase in NPS operational resources.

ALTERNATIVE 5: PARK INTO THE CITY

The focus of this alternative is to extend the visitor's experience of the Memorial into the surrounding city. In this alternative the Memorial would be revitalized by emphasizing enhanced services and visual themes that begin and continue into adjacent neighborhoods and areas, and by addressing the transportation and access challenges of the Memorial. The single largest change to the character of the Memorial would be caused by the removal and rerouting of Memorial Drive away from the Memorial between Poplar and Locust Streets. With the removal of this

major thoroughfare from the Memorial's boundary, the edge of the Memorial could be transformed into a series of large pedestrian plazas, which would increase connectivity between the Old Courthouse and the Gateway Arch, all centered on Luther Ely Smith Square. Connectivity would be further promoted with a new transportation system linking visitor attractions within and outside the Memorial. The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and the riverfront levee.

The Park into the City alternative may result in long-term moderate to major beneficial and minor to moderate adverse local impacts on the cultural landscape at Jefferson National Expansion Memorial. The implementation of the Park into the City alternative would result in local moderate long-term beneficial impacts on curatorial resources and museum collections. The Park into the City alternative would have moderate long-term beneficial impacts on visitor opportunity and use. Visitor opportunities are expected to improve with the redesign of exhibits at the Museum of Westward Expansion and the Old Courthouse and development of barrier-free access to the riverfront and the museum. Improvements in streetscapes and the introduction of a new transportation system are expected to increase connectivity to local neighborhoods in downtown St. Louis, and to have a long-term beneficial impact on visitor opportunities and use.

The implementation of alternative 5 would have a long-term moderate beneficial impact on local land use. The expanded facilities would require a commensurate increase in NPS operational resources.

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1.0 Introduction

Introduction

1.1 A GUIDE TO THIS DOCUMENT

This document is arranged to provide the user with a comprehensive understanding of the establishment and early history, present condition, and future potential of Jefferson National Expansion Memorial. The alternatives presented within this document are thoroughly examined against a multi-faceted backdrop that includes: the Memorial's purpose and historical significance; a wide range of environmental, resource, socioeconomic, and fiscal considerations; federal laws, policies, and executive orders; past, current, and projected local and regional development plans and concerns; and the necessary steps for consultation and coordination throughout the development process. At once broad and specific, this document is intended to provide a roadmap for future changes to the Memorial's operation and physical environment.

This *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* is organized into five chapters plus appendices. Each section is described briefly below.

Chapter 1: Introduction describes the context for the entire document. It explains the purpose and need for the plan while also giving a brief overview of the evolution of Jefferson National Expansion Memorial. It explains the foundations which support the National Park Service (NPS) plans for and management of the Memorial (e.g., park purpose, significance, fundamental resources and values, special mandates, and servicewide laws and policies). This chapter touches on potential adjustments to the boundary of the Memorial as well as the

plan's relationship to other planning efforts in the St. Louis region. Finally, it introduces the impact topics being considered in the evaluation of the potential management alternatives for the Memorial and provides a discussion of impact topics that were dismissed from detailed analysis.

Chapter 2: Alternatives discusses four management alternatives, including the preferred alternative and a no action alternative, developed during this planning process, their management zones, and their implementation strategies. It describes five management zones (Heritage Education and Visitor Amenities, Original Landscape, Orientation, Streetscape/Riverscape, and Service) and one Design Competition Overlay that provide the foundation for each of the action alternatives. A summary table comparing the alternatives, with mitigation measures considered for the action alternatives, as well as the rationale behind the selection of the preferred alternative, is included in this chapter.

Chapter 3: Affected Environment describes the resources and operations that would be affected by the various actions proposed in each alternative. These impact topics include cultural resources, natural resources, visitor opportunities and use, socioeconomic, transportation and access, infrastructure, and NPS operations.

Chapter 4: Environmental Consequences analyzes the impacts of implementing the alternatives. It includes analysis of direct, indirect, and cumulative impacts. The chapter addresses the impairment findings, if any, under each of the impact topics.

Chapter 5: Consultation and Coordination summarizes the public involvement efforts, including the scoping phase, of this planning project. It also describes the history of public and agency coordination during the planning effort, and lists the agencies and organizations that received copies of the document. A summary of public and agency comments received on the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* is included in the chapter, as well as responses to those comments.

The Appendices present supporting information for the document, and are followed by bibliographic references, a list of preparers, acronyms, and an index.

1.2 PURPOSE AND NEED FOR THE GENERAL MANAGEMENT PLAN

General management plans (GMPs) are required by law of all national park units and serve as long-term plans to guide the management and use of park lands (Public Law 95-625). The last master plan for the site was released in 1962, more than a decade before the completion of key elements of the Memorial, and was completed prior to the enactment of the National Environmental Policy Act, National Historic Preservation Act, and other relevant laws. As such, it is out of date. The development of a GMP for Jefferson National Expansion Memorial is critical to guide the operations and management of the Memorial over the next 15 to 20 years.

A GMP is an operational blueprint for each park unit within the national park system. It provides the foundation upon which park managers guide programs and set priorities for resource stewardship, visitor understanding and appreciation, partnerships, and facilities and operations for the 15 to 20 years following its publication. All concepts, strategies, and actions in a GMP must be consistent with the NPS Organic Act and the original purpose and significance of the unit's establishment. Federal legislation and NPS policies also govern the plan's parameters and recommendations. The *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* will not resolve all the issues

facing the Memorial, nor will it guarantee funding. The plan identifies desired resource conditions and visitor experiences and the strategies for achieving those conditions. It also identifies general locations in which certain types of activities and development would be appropriate. Specific designs and methods for achieving these conditions are addressed in new or revised implementation plans that will be prepared after the GMP has been completed and approved. Although GMPs provide estimates of costs for proposed activities and development, the completion of a GMP does not guarantee future funding.

In summary, a GMP satisfies statutory and policy requirements and:

- Provides basic direction and management philosophy (Chapter 1).
- Identifies resource and visitor use management strategies and actions (Chapter 2).
- Identifies infrastructure requirements, functions, and locations (Chapter 2).
- Identifies funding and staffing requirements (Chapter 2).
- Examines management considerations and discloses environmental impacts of proposed actions within the broader context of the city and region (Chapters 1 and 4).
- Provides disclosure of the environmental impacts of proposed actions (Chapters 3 and 4).

1.3 OVERVIEW OF JEFFERSON NATIONAL EXPANSION MEMORIAL

Jefferson National Expansion Memorial was the brainchild of Luther Ely Smith, a prominent St. Louis attorney. Smith convinced the city mayor, Bernard Dickmann, and prominent St. Louis businessmen that "...a suitable and permanent public memorial to the men who made possible the western territorial expansion of the United States, particularly President Jefferson," should be built on the St. Louis riverfront.

On December 21, 1935, President Franklin D. Roosevelt signed an executive order providing direction to the Secretary of the Interior for the acquisition and development of Jefferson National Expansion Memorial. The Memorial was the first Secretarial designation under the Historic Sites Act of 1935, and was to be administered by the National Park Service. Between 1939 and 1942 forty blocks of condemned buildings, remnants of the once-proud riverfront district, were razed. Only the Old Courthouse and the Old Cathedral are still standing today. In 1940 the City of St. Louis gave the Old Courthouse, the historic building in which the Dred Scott case began, to the National Park Service, and it was incorporated into the Memorial. Just as progress was being made on the Memorial's development the United States was plunged into World War II, and work on the Memorial was halted.

With the end of the Second World War Luther Ely Smith resumed the project with an architectural competition. Smith felt that the Memorial should include a central feature, "a shaft, a building, or an arch" symbolizing American culture and civilization, "transcending in spiritual and aesthetic values," and attracting visitors from around the globe. Held in two stages, the competition was judged by a jury of seven nationally recognized architectural and design professionals predisposed toward the Modern style, influencing most of the entrants to assume a modern approach to their design submissions. By the deadline of September 1, 1947, 172 entries were received. By secret ballot the panel of seven unanimously chose design number 144, submitted by Eero Saarinen and the design team that included sculptor and artist Lily Saarinen (Eero's spouse), landscape architect Dan Kiley, illustrator J. Henderson Barr, and designer Alexander Girard – and which featured a soaring stainless steel arch.

As funds became available to build the Memorial in 1957, Saarinen redesigned several aspects of the project. Saarinen and Kiley placed the surface structures of the original design - including the museum - underground, and completely revamped the landscape plan. The system of curving, tree-lined walks reflected the shape of the Gateway Arch, and the grounds became a vital part of the overall

design. The Gateway Arch was designed to be viewed from all angles, seen from below and from various distances. It was a monumental outdoor sculpture. Ground breaking for the Gateway Arch occurred on June 23, 1959, and the structure was completed in October of 1965.

At last, Luther Ely Smith's dream was fulfilled in more ways than one. Not only did the Memorial's construction honor the memory of the pioneers of American westward expansion, but it also served as the central foundation of revitalization efforts for the entire downtown section of St. Louis. The Gateway Arch is an icon within the city, a major tourist destination (drawing nearly 2.5 million annual visitors), and a symbolic portal to the West.

1.4 REGIONAL SETTING

Jefferson National Expansion Memorial is located entirely within the urban area of downtown St. Louis, Missouri (see figures 1.1 and 1.2). It was the first urban park within the NPS system to be designated outside of Washington D.C. (NPS 1994). The 91-acre park sits on the west bank of the Mississippi River and occupies forty blocks between Eads Bridge and Poplar Street (NPS 1996a), bounded on the east by Leonor K. Sullivan Boulevard and primarily on the west by Memorial Drive, except for two blocks immediately west of Memorial Drive occupied by Luther Ely Smith Square and the Old Courthouse.

The urban setting of the Memorial is in various stages of redevelopment. According to the City of St. Louis Strategic Land Use Plan (City of St. Louis 2005), three zone designations characterize the area surrounding the Memorial:

- Recreation and Open Space Preservation Area
- Specialty Mixed-Use Area
- Opportunity Area

Jefferson National Expansion Memorial, along with the Gateway Mall that runs axially east-west through the center of downtown St. Louis, has been identified



Figure 1.1 Jefferson National Expansion Memorial Region

by the City as a Recreational and Open Space Preservation Area.

To the west and north of the Memorial is a district primarily identified as a Specialty Mixed-Use Area – in this case a unique mix of uses for preservation and development. A newly developed casino and luxury hotel sits directly north of Laclede’s Landing, a historic nine-block district immediately to the north of the Memorial on the north side of Eads Bridge. The area includes eating and entertainment venues around

Laclede’s Landing which are served by the Memorial’s north parking lot. The Landing formerly served as a steamboat cargo area for vessels traveling the Mississippi River. To the northwest of the Memorial and Laclede’s Landing, the Washington Avenue loft district has also been experiencing a residential, retail, and restaurant resurgence.

Southwest of the Old Courthouse, on land formerly occupied by the old baseball stadium, a five-block mixed-use development project of office, residential, retail, and

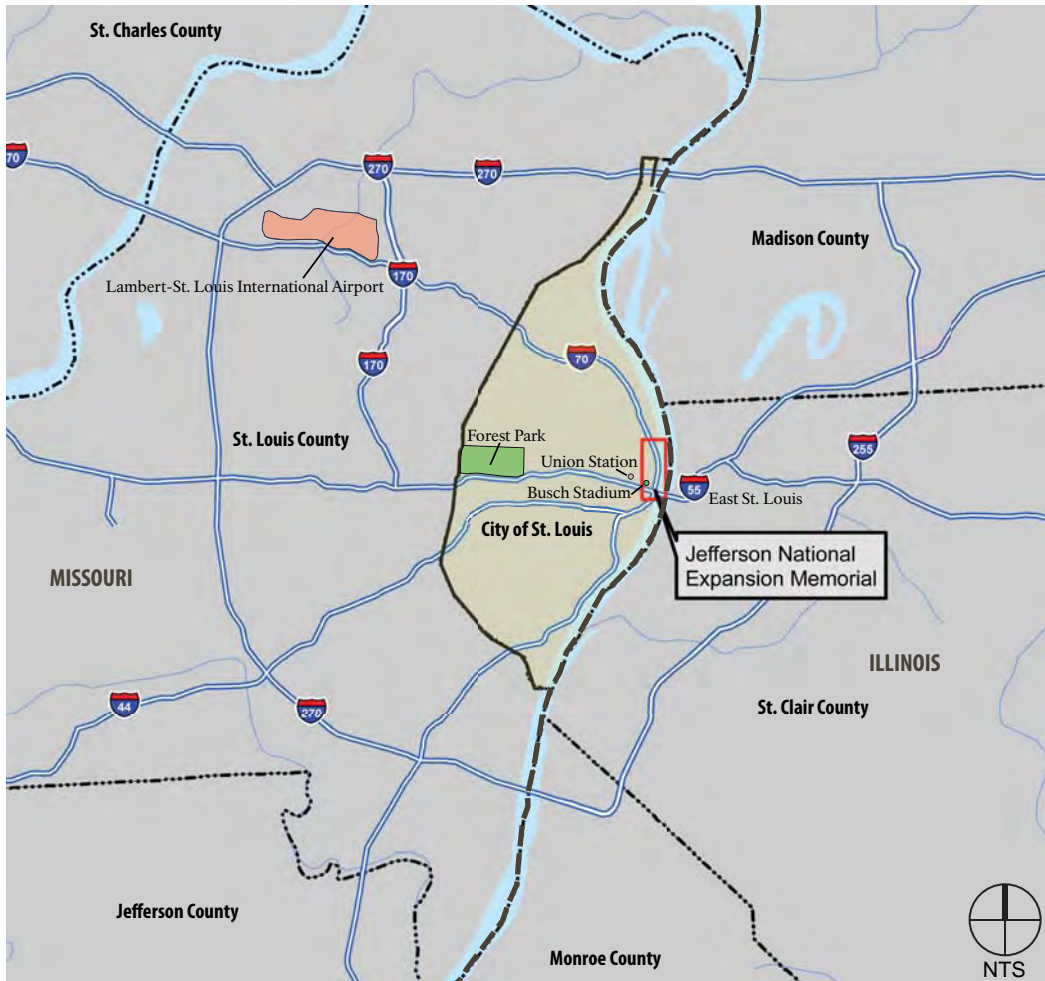


Figure 1.2 Jefferson National Expansion Memorial Location

restaurant uses has been proposed but has recently been delayed.

Immediately south of the Memorial, Chouteau’s Landing has been identified as an Opportunity Area, a “key underutilized location(s) where land use is in transition” (City of St. Louis 2005). One of St. Louis’ oldest districts, Chouteau’s Landing emerged as a pivotal commercial hub during the late 19th and early 20th centuries, manufacturing a diverse array of products ranging from burlap bags to pickles. The area continued to prosper until construction of interstate highway improvements in the 1950s effectively cut the district off from the city and contributed significantly to its economic decline. Efforts are underway to revitalize Chouteau’s Landing; as an example, some 58 acres located a block

south of the Memorial have been slated for mixed-use redevelopment.

Directly across the river in East St. Louis, Illinois, the city’s comprehensive plan (2004), proposes to improve downtown-riverfront linkages and foster mixed-use entertainment/ civic/residential development at the riverfront (through public-private partnerships) as a catalyst for the city’s revitalization.

1.5 FOUNDATION FOR PLANNING AND MANAGEMENT

A fundamental aspect of the general management planning process is a formal statement of the Memorial’s core mission. The foundation for Jefferson National Expansion Memorial is composed of several elements:

- Purpose of the Memorial
- Significance of the Memorial
- Fundamental Resources and Values of the Memorial
- Primary Interpretive Themes
- Special Mandates and Administrative Commitments

Purpose of the Memorial

Every unit within the national park system has an established basis for being. Purpose statements reaffirm the reasons each unit was designated, help reinforce the foundation for future management and use, and provide a rationale against which all proposed actions can be measured. These statements help visitors, cooperating agencies, partners, members of the community, and other users to understand the framework in which Memorial managers make decisions. The following purpose statements have been refined over time and are based on Jefferson National Expansion Memorial’s designation and subsequent legislative history, as well as laws and policies governing the management of all national park system units.

- The Memorial commemorates, through a designed memorial, Thomas Jefferson’s vision of building a unified continental nation and St. Louis’ role as a confluence and gateway of the American westward expansion during the 19th century.
- The Memorial interprets the key individuals and cultural groups involved in exploring, exploiting, and inhabiting the western lands from the Mississippi River to the Pacific Ocean.
- The Memorial preserves the architecturally significant Old Courthouse as the site of the Dred Scott case, which divided North and South over the extension of slavery into the western territories and led to the American Civil War.

Significance of the Memorial

Significance statements capture the essence of the Memorial’s importance to our country’s natural and cultural heritage and historical events that occurred at this location. Significance statements do not inventory resources, but rather describe the unit’s distinctiveness and place the Memorial within its regional, national, and international contexts. Defining significance helps managers make decisions and focus their efforts and funding on preserving the resources and values necessary to accomplish the Memorial’s purpose.

- St. Louis was politically and geographically pivotal in the westward expansion of the United States during the 19th century. Significant historic events associated with westward expansion, exploration, and the fur trade occurred at the site, including the transfer of the Louisiana Territory from Spain to France and then to the United States, the negotiation of numerous treaties removing Indian tribes from their lands, and the provisioning and return of the Lewis and Clark expedition. St. Louis was the starting point for numerous explorers, fur traders, overland pioneers, and others who made the journey west.
- In 1846, Dred and Harriet Scott sued for their freedom from slavery at the Old Courthouse in St. Louis. This historic case, argued in 1847, 1850, 1852, and 1854, resulted in an 1857 U.S. Supreme Court decision which determined that all “people of color,” enslaved or free, could not become citizens of the United States, and removed restrictions on the extension of slavery into the U.S. Western Territories, further dividing the North and South and eventually leading to the Civil War.
- The Old Courthouse is a prime example of mid-19th century Greek Revival civic architecture, utilizing the very latest technological innovations and materials available at the time, including the first cast iron dome completed in the United States.

- The Memorial is recognized globally as an exceptional example of mid-20th century Modern design. The soaring Gateway Arch is one of the world’s great architectural and engineering achievements. It is a tangible symbol of St. Louis’ historical role as the “Gateway to the West,” purposefully located on the footprint of the original 1764 village of St. Louis. The site is recognized as a deliberate built experience, a complete design for a public monument, and a masterpiece composition of integrated structure, landscape, and interpretation.
- The museum objects and archival records in the Memorial’s collection document the westward expansion of the United States and the creation, planning, and building of the Memorial. The collection is used in ongoing research by scholars and staff and is the basis of the historic site’s interpretation programming and museum exhibits.

Fundamental Resources and Values of the Memorial

Fundamental resources and values are closely related to the Memorial’s designated purpose and warrant primary consideration in planning and management, because they are critical to maintaining the Memorial’s purpose and significance. If these resources are allowed to deteriorate, the purpose and/or significance of the Memorial could be jeopardized. A loss or major impact to a fundamental resource or value could constitute impairment, violating the 1916 the NPS Organic Act. The planning team, with assistance from resource specialists and public comment, has identified the following fundamental resources and values for Jefferson National Expansion Memorial:

- Jefferson National Expansion Memorial Gateway Arch and designed landscape – a National Historic Landmark – integrated by a purposeful approach, scale, and aesthetic quality, including the relationship to the river and to the Old Courthouse and corresponding views.
- The Old Courthouse, site of the Dred Scott case and a tangible reminder of intangible concepts such as civil rights, citizenship,

and freedom, as well as an innovative and outstanding example of mid-19th century civic architecture.

- The museum objects and archival records in the Memorial collection, vital to the interpretation and education of the visiting public on the topic of the westward expansion of the United States.
- The iconic, inspirational, and transcendent nature of the Gateway Arch as one of the unique and enduring symbols of national identity.

Primary Interpretive Themes

Primary interpretive themes are the most important stories, concepts, and ideas communicated to the public about the Memorial. They are the core of all educational programs and media provided to visitors. From these themes visitors can form intellectual and emotional connections with Memorial resources and experiences. The following are the most important messages to be communicated to the public about the Memorial:

- Thomas Jefferson’s vision of the West as a land that would foster and sustain democratic values shaped U.S. policy, including the Louisiana Purchase and the Lewis and Clark Expedition, thus enabling the westward expansion of the 19th century.
- The Gateway Arch symbolizes the westward expansion of the 19th century, an unprecedented and rapid migration of people into the trans-Mississippi West which represented hope, opportunity, and promise for some and religious freedom for others, while also causing cultural clashes, environmental destruction, and the taking of land from American Indians.
- The design and scale of the Gateway Arch integrated with its setting elevates the timeless form of an arch into a structure that is among the world’s architectural, artistic, and engineering marvels.
- The Dred Scott Decision was a significant event in United States history which

spotlighted the potential expansion of slavery into the American West and helped exacerbate regional tensions which led to the American Civil War.

- The architecturally significant Old Courthouse was a crucible of change that galvanized the struggle for civil rights, justice, freedom, and equality, and highlighted the rights and responsibilities of citizenship in St. Louis and the United States.
- The American West is both a symbol and a physical reality that attracts people the world over and continues to shape the national identity.
- St. Louis' strategic location near the confluence of the Mississippi and Missouri Rivers made it a logical hub of exploration, commerce, military activity, cultural encounter, and transportation as the United States expanded westward during the 19th century.

Special Mandates and Administrative Commitments

Special Mandates and Administrative Commitments refer to requirements specific to Jefferson National Expansion Memorial. These legislative or judicial requirements and formal agency agreements are often established concurrently with the creation of a unit of the national park system, but can occur at a later date. For Jefferson National Expansion Memorial these include the following:

National Historic Landmark

The Secretary of the Interior designated Jefferson National Expansion Memorial Gateway Arch a National Historic Landmark (NHL) in 1987. The government of the United States designates NHLs as places of exceptional national significance worthy of special protection under the National Historic Sites Act of 1935 and Section 110 (f) of the National Historic Preservation Act (NHPA) of 1966, as amended. The over 62-acre Jefferson National Expansion Memorial Gateway Arch National Historic Landmark

includes the Gateway Arch and surrounding designed landscape.

National Icons and Monuments

As a matter of national security, the Gateway Arch has been designated a National Icon by the Department of Interior. Icons are internationally recognized symbols of national identity that are seen as potential terrorist targets. Increased security and antiterrorism measures have been instituted that will continue to influence management decision-making for the foreseeable future.

Easements, Permits, and Other Agreements

Easements exist for all railroad, street, and highway transportation corridors that cross the Memorial boundaries, as well as utility and communication lines. Separate agreements for utility corridors and maintenance of associated infrastructure exist on a case-by-case basis. An indefinite permit authorized by the US Army Corps of Engineers (USACE) covers NPS buildings, retaining walls, planting areas, and levee roadway along the west bank of the river constructed before December 31, 1963. A cooperative agreement between the Memorial and the City of St. Louis permits redevelopment of the levee by the City and provides for joint control of its use following development. Agreements with Metro Business Enterprises (Metro) cover the operation of the parking garage and Arch tram, and agreements with the Jefferson National Parks Association (JNPA) cover the supplementing of interpretation and education programs through the sale of theme-related books and merchandise. An agreement with the Archbishop of St. Louis provides for cooperation in the preservation and interpretation of the Old Cathedral.

Servicewide Laws and Policies

Many park management directives are specified in laws and policies guiding the National Park Service and are therefore not subject to alternative approaches. For example, there are: laws and policies

concerning management of environmental quality (such as the Clean Air Act, the Endangered Species Act, and Executive Order 11990 “Protection of Wetlands”); laws governing the preservation of cultural resources (such as the NHPA and the Native American Graves Protection and Repatriation Act (NAGPRA)); and laws about providing public services (such as the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA)) — to name a few. In other words, a GMP is not needed to decide, for instance, that it is appropriate to protect endangered species, control exotic species, protect archeological sites, conserve artifacts, or provide for handicap access. Laws and policies already direct the management of these resources. Although attaining some of the conditions set forth in these laws and policies may be affected by funding or staffing limitations, the National Park Service will continue to strive to implement these requirements with or without a new GMP.

Some of these laws and executive orders are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the National Park Service and the General Authorities Act of 1970. Other laws and executive orders have much broader application, such as the Endangered Species Act (ESA) or the NHPA.

The Organic Act (16 USC § 1) provides the fundamental management direction for all units of the national park system:

[P]romote and regulate the use of the Federal areas known as national parks, monuments, and reservations...by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The national park system General Authorities Act (16 USC § 1a-1 et seq.) affirms that while all national park system units remain “distinct in character,” they are “united through their

interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage.” The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, amendments state that NPS management of park units should not “derogate...the purposes and values for which these various areas have been established.”

Public Law 95-625, the 1978 National Park and Recreation Act, requires the preparation and timely revision of GMPs for each unit of the national park system. Section 604 of that act outlines several requirements for GMPs, including measures for the protection of the area’s resources and “indications of potential modifications to the external boundaries of the unit and the reasons therefore.” The NPS Management Policies 2006 reaffirm this legislative directive.

The NHPA of 1966, as amended, is the guiding legislation for the preservation of historic properties. As broadly defined by 36 CFR 800, historic properties are “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.” Maintained by the National Park Service, the National Register of Historic Places is the nation’s official list of cultural resources worthy of preservation (see Appendix A for more information).

Pursuant to Section 106 of the NHPA federal agencies are required to consider the effects of a proposed project on properties listed in, or eligible for listing in, the National Register of Historic Places. In the event that a project may affect a historic property the lead agency must enter into consultation with the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and other interested agencies and individuals to identify historic properties that could be potentially affected, assess potential adverse effects, and resolve the adverse effects through mutually agreed upon mitigation measures.

Section 110 of the NHPA sets out broad historic preservation responsibilities for

federal agencies, ensuring that preservation is fully integrated into ongoing programs. In summary, Section 110 requires that federal agencies such as the National Park Service establish a preservation program in order to identify, evaluate, and nominate properties to the National Register of Historic Places, designate a Federal Preservation Officer, document properties prior to major alteration or demolition, and document any decision that adversely affects listed or eligible properties.

NHLs are afforded a higher standard of protection than other historic properties. Designated by the Secretary of the Interior under the authority of the Historic Sites Act of 1935, NHLs are historic and archaeological sites, buildings, structures, and objects which “possess exceptional value as commemorating or illustrating the history of the United States.” Section 110(f) of the NHPA requires that agencies, “to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark.” In those cases when an agency’s undertaking directly and adversely affects an NHL, the agency should consider all prudent and feasible alternatives to avoid an adverse effect. Where such alternatives appear to require undue cost or to compromise the undertaking’s goals and objectives, the agency must balance those goals and objectives with the intent of Section 110(f). In doing so, the agency should consider: the magnitude of the undertaking’s harm to the historical, archaeological and cultural qualities of the NHL; the public interest in the NHL and in the undertaking as proposed; and the effect a mitigation action would have on meeting the goals and objectives of the undertaking.

The National Park Service has also established policies for all units under its stewardship. These are identified and explained in a guidance manual entitled *Management Policies 2006*. The “action” alternatives (the preferred alternative, plus alternatives 4 and 5) considered in this document must incorporate and comply with the provisions of these mandates and policies.

1.6 PLANNING ISSUES AND CONCERNS

The planning team assembled a list of issues and areas of concern to be addressed in the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The list which follows has been influenced by comments received from the public and other agencies during the public scoping period. These planning issues and concerns form the cornerstone of the plan.

Resource Stewardship / Design Integrity

The plan would continue to provide for the protection of the Memorial’s fundamental resources and values, its status as an NHL, and the design integrity of the Gateway Arch and the landscape around it, while considering alternatives for accommodating a range of visitor uses. The plan would provide guidance for dealing with the impending impact of the emerald ash borer on the Memorial’s ash trees and provide options for the protection of park collections. Issues related to the collections of the Memorial, including the age of the buildings, water damage, safety requirements, inadequate space, and proper accommodations for researchers would also be addressed.

Programs / Visitor Services

The plan would consider a balance of tranquility and open space with increased programming and informal activity supported by appropriate visitor amenities.

Access / Security

The plan would consider ways to improve pedestrian connections from the city into the Memorial, including an appropriate, barrier-free visitor entry sequence that enables effective security and Memorial operation.

Connectivity / Urban Interface

The plan would consider multiple ways to enhance significant views of the Gateway

Arch from multiple points and approach routes and increase opportunities for new and improved connections to adjacent neighborhoods, the riverfront, and the Gateway Mall. Consideration of the Memorial's expansion into East St. Louis would also be addressed in the plan. The plan would address the lack of connection between the Memorial grounds east of Memorial Drive and Luther Ely Smith Square.

Operations

The plan would consider the existing - and forecast the future - maintenance needs of the Memorial under alternative scenarios, as well as accommodate visitor movement throughout the Memorial.

Memorial Boundary

The plan would consider options for new boundary configurations on the East St. Louis side of the river.

1.7 BOUNDARY ADJUSTMENTS

GMPs are required to assess the current boundaries of units for their adequacy and identify potential modifications and the reasons for the proposed changes (Public Law 95-625, the 1978 National Park and Recreation Act). Boundary adjustments should consider any current or future operational issues, as well as the protection of park resources. Jefferson National Expansion Memorial Amendments Act (1992) authorized approximately 100 acres in East St. Louis, Illinois, for inclusion within Jefferson National Expansion Memorial. As of yet, no land has been acquired by the Department of the Interior and the exact configuration of the boundary of this addition has yet to be determined.

This *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* considers a potential boundary adjustment under several of the proposed management alternatives. This potential expansion of the Memorial would include portions of the East St. Louis riverfront. The original concept for Jefferson National Expansion Memorial included both sides

of the river, including the East St. Louis riverfront. Between the late 1960s and the early 1980s the National Park Service, upon direction from Congress and the Secretary of the Interior, conducted suitability and feasibility studies of the East St. Louis riverfront for inclusion in the Memorial. In 1984, the Jefferson National Expansion Memorial Amendments Act was signed into law, authorizing the enlargement of the Memorial to include the east bank of the Mississippi River in East St. Louis, Illinois. In 1992 a new law was signed further amending the 1984 law and officially designating the East St. Louis site as part of Jefferson National Expansion Memorial. While the 1992 law officially designated the East St. Louis expansion or addition, it did not specify a boundary and lands have yet to be acquired or developed.

The National Park Service would expand the Memorial into East St. Louis by establishing a boundary directly across the Mississippi River from the current Memorial, thus incorporating one of the missing features of Saarinen's vision for a Memorial that includes St. Louis, the Memorial, the River, and East St. Louis as one integrated composition. *"The other side of the river - East St. Louis - must be brought into the whole composition. We must make this a great, green park."* -Eero Saarinen, 1961 (Saarinen 1962).

1.8 IMPACT TOPICS CONSIDERED IN THIS PLAN

This plan considers the key resources that contribute to the physical and cultural environment of Jefferson National Expansion Memorial and associated effects relevant to managers responsible for day-to-day operations. In order to properly assess the relative impacts of each proposed management alternative, specific topics that would be affected are evaluated. The following six topics were considered by the planning team as a result of issues raised during public scoping, and specified by policy and law:

- Cultural Resources, including:
- Historic Buildings, Structures, Sites, Objects, and Districts

- Cultural Landscapes
- Archeological Resources
- Curatorial Resources and Museum Collections

Natural Resources, including:

- Vegetation
- Federal Threatened and Endangered Species
- Soundscape

Visitor Opportunities and Use

Transportation and Access, including:

- Vehicular Traffic
- Public Transportation
- Pedestrian and Bicycle Circulation
- Parking
- Water Transportation

Socioeconomics, including:

- Socioeconomics
- Land Use

NPS operations and Partnerships, including:

- NPS operations
- Current Partnerships/Associations

Cultural Resources

This topic considers the cultural resources that are present on the Memorial site and within the surrounding area. Cultural resources include historic buildings, structures, sites, objects, and districts; cultural landscapes; archeological resources; and museum collections. As with all NHLs, the Memorial’s historic resources are vitally important to its existence and purpose.

Natural Resources

The physical and biological resources of the Memorial and its surrounding environment are an important component of the Memorial. The Memorial’s physical setting on the banks of the Mississippi River shape both the visitor experience and surrounding environmental context.

Visitor Opportunities and Use

Visitor opportunities include information, interpretation, and education. Recreational

activities also are considered a part of this topic. Scenic viewsheds and the opportunity to view and experience the Gateway Arch, the Memorial grounds, the Old Courthouse, the Museum of Westward Expansion, and the Arch Tram are central to the visitor experience of the Memorial. Visitor use and experience has been identified as an important issue that could be appreciably affected under proposed alternatives.

Socioeconomics

With Jefferson National Expansion Memorial located in the urban region of St. Louis, Missouri, socioeconomic trends affect the Memorial, and vice versa. The Memorial attracts millions of visitors each year. As individuals and families travel to the area they provide an economic stimulus through their local spending. Given the importance of the Memorial as a regional attraction, the study area for the social and economic considerations is considerably beyond the physical boundaries of the Memorial. Factors such as population, income, land use, and the economic impact of the Memorial are considered.

Transportation and Access

Since the Memorial is located in the center of the St. Louis metropolitan region, it stands at the crossroads of numerous modes of transportation. Access to the Memorial is a vital part of the visitor experience. The downtown location of the Memorial presents both challenges and opportunities for accessing the site. This impact topic examines the transportation access, parking, and circulation patterns at the Memorial, including roadway characteristics, transit patterns, bicycle and pedestrian circulation, and parking options, as well as water-based transportation conditions.

NPS Operations

Each of the actions described in the proposed alternatives would affect the operation and management of the Memorial. Changes in staffing levels, visitor use activities, new facilities, infrastructure improvements, visitor attractions, and an

expanded boundary in East St. Louis all have implications for NPS operations. These changes affect education and interpretation programs and services, curatorial objects management, grounds and facility maintenance and management, law enforcement and security functions, and overall administrative staffing and duties.

1.9 IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION

Some impact topics that commonly are considered during the planning process were not relevant to the development of this *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* because implementing the alternatives would have no impact or a negligible to minor impact on the topic, or because the resource does not occur within the Memorial. These topics are as follows:

Energy Requirements and Conservation Potential

The action alternatives could result in new facilities with inherent energy needs. In the event that new facilities would be built, the National Park Service would assess the energy requirements and conservation potential during design and construction phases. The National Park Service would pursue sustainable practices whenever possible in all decisions regarding NPS operations and facilities management. Because proposals for new facilities in this plan are both general and speculative at this stage in the process, this topic is dismissed from further analysis.

Environmental Justice

Executive Order 12898, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations, was published in February 1994 and requires federal agencies to identify and address disproportionately high and adverse human health or environmental impacts of its programs, policies, and activities on minority and low-income populations. In their guidance document the Environmental Protection Agency (EPA) defines a

community with potential Environmental Justice indicators as one that has a greater percentage of minority or low-income populations than an identified reference community (state or county) (EPA 2004). The EPA guidance defines minority and low-income populations.

The City of St. Louis reported much higher percentages of individuals living in poverty than either St. Louis County or the State of Missouri. The City of St. Louis reported a much higher percentage of individuals that are Black or African American than either St. Louis County or the State of Missouri.

Environmental Justice was dismissed as an impact topic requiring detailed analysis for the following reasons:

- There do not appear to be qualifying populations of minorities or low-income peoples in the areas to be directly affected by the action alternatives.
- NPS staff and the planning team solicited public participation through newsletters, public meetings, and other venues. They gave equal consideration to input from all persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- The alternatives would not result in any disproportionate human health or environmental impacts on minorities or low-income populations and communities.
- The alternatives would not result in any impacts that would be specific to a minority or low-income community.

Prime and Unique Farmlands

In 1980 the Council on Environmental Quality directed federal agencies to assess the impacts of their actions on farmland soils classified by the Natural Resources Conservation Service as prime or unique. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops. Unique farmland is land other than prime farmland that is used for the

production of specific high-value food and fiber crops, as determined by the Secretary of Agriculture. There are no farmlands within Jefferson National Expansion Memorial or the East St. Louis addition. Therefore this topic was dismissed from detailed analysis.

Wild and Scenic Rivers, Ecologically Critical Areas, or Other Unique Natural Resources

The National Park Service manages rivers designated as Wild and Scenic Rivers and maintains the Nationwide Rivers Inventory, which is a register of river segments that potentially qualify as national wild, scenic, or recreational river areas. The segment of the Mississippi River bordering the Memorial is not designated a Wild and Scenic River and is not listed in the inventory. In addition, because the study area has been heavily manipulated by human activity and development, there are no ecologically critical areas or unique natural resources within the bounds of the Memorial or the East St. Louis addition. Potential Threatened or Endangered species have been addressed separately in this plan. For these reasons this topic has been dismissed from detailed analysis.

Sacred Sites

Executive Order 13007, released in 1996, states that “in managing Federal lands, agencies must (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites.” Confidentiality of the site location is also required by this Executive Order. “Sacred site” means any specific, discrete, narrowly delineated location on Federal land that is identified by an American Indian tribe, or individual determined to be an appropriately authoritative representative of an American Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an American Indian religion. Currently there are no known American Indian tribes with ties to the St. Louis area or the general area of the Memorial, but continued efforts to consult with interested groups will be made by the

National Park Service. Because no sacred sites have been documented within the Memorial study area this issue is not discussed further in the environmental impact statement and has been dismissed from further analysis.

Indian Trust Resources

Secretarial Order 3175 and ECM95-2 require bureaus to explicitly address the environmental impacts of their proposed actions on Indian Trust Resources in any environmental document. There are no Indian Trust Resources within Jefferson National Expansion Memorial or the East St. Louis addition. Therefore Indian Trust Resources was dismissed from detailed analysis within this plan.

Ethnographic Resources

Ethnographic resources are defined by the National Park Service as any “site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.” Currently there are no known American Indian tribes with ties to the St. Louis area or the general area of the Memorial, but continued efforts to consult with interested groups will be made by the National Park Service. No ethnographic resources have been documented or known to be associated with the Memorial grounds or the East St. Louis addition. Thus, this topic has been dismissed from detailed analysis. Should any ethnographic resources be identified after the publication of the plan, they would be treated in accordance with the applicable laws and policies, and appropriate consultation would be undertaken.

Climate Change

Global climate change resulting from the accumulation of heat-trapping gases in the atmosphere has the potential to increase risks to human health and to terrestrial and aquatic ecosystems. Critical economic sectors such as agriculture, forestry, fisheries, and water resources also may be affected. Current projections for the Midwest include warmer

temperatures and more severe droughts and floods, which could have a wide range of impacts. All these stresses can add to existing stresses on resources caused by other influences such as population growth, land-use changes, and pollution (EPA 1997).

The primary heat-trapping gases associated with global climate change are carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons. The greatest heat-trapping gas, by volume, is carbon dioxide. One of the main sources of carbon dioxide in the atmosphere is the burning of fossil fuels for transportation and power generation.

Sources of carbon dioxide and other heat-trapping gases within the study area are minimal and include mowers and other landscape equipment used to maintain the Memorial grounds. However, although the Memorial itself does not generate an appreciable amount of heat-trapping gases, visitors to the Gateway Arch do. Visitors from around the world using passenger vehicles that either pass by the Memorial on Memorial Drive or that are used to access the Memorial via the parking structure or the parking lot near the Old Cathedral generate carbon dioxide as their principal waste product. Construction and operation of buildings and structures can also contribute heat-trapping gasses to the atmosphere. Construction equipment also typically burns fossil fuels. Construction materials such as concrete, wood, and steel also require the use of fossil fuels for preparation and transportation. The operation of buildings such as the Museum of Westward Expansion and the Old Courthouse, through the use of heat in the winter, air conditioning in the summer, and electricity throughout the year, can also generate greenhouse gasses.

Generally, visitor use is likely to increase under each of the action alternatives but not to the point where measurable effects from an increase in local carbon dioxide levels would have more than negligible effects on global levels. In addition, any new construction of facilities is too speculative at this point to even guess at the impact to global levels of greenhouse gases. The

National Park Service will assess the impacts of any new construction that may result from this plan in separate environmental documents, and will assess the impacts of those actions on climate change at that time.

Air Quality

Upon review of the actions likely to occur under each of the alternatives, it is unlikely that any alternative would result in a measurable improvement or degradation of air quality within the air shed. The locations of existing emissions would change as parking lots are moved or traffic is rerouted on city streets. It is expected that there would be minor increases in emissions from motor vehicles due to slight increases in the number of motorists needing to drive further or idle engines longer. In addition, pollutant concentrations along Interstate 70 would increase within the tunnel created by the proposed lids under alternatives 4 and 5, or potential lid in alternative 3, but the increased concentrations would be controlled by ventilation systems or other air handling devices. As a result, none of the proposed alternatives are anticipated to have more than a negligible to minor adverse impact on air quality.

Emissions from construction activities would have a minor short-term adverse impact on both local and regional air quality. In order to determine compliance of the alternatives with the General Conformity Rule, the following factors were taken into account:

- The State Implementation Plan for the St. Louis 8-Hour Ozone Nonattainment Area (Missouri DNR 2007b) includes estimates for future construction activities and future growth within the metropolitan area.
- Given normal funding constraints and the 15 to 20 year planning timeframe of this plan, it is assumed that construction of the various elements of each of the alternatives would be spread out over a period of several years.
- Construction activities associated with any of the alternatives (even if all construction were to occur within a single year) are

presumed to be well within the regional emission estimates for future construction.

- Appropriate mitigation measures would be employed to further reduce emissions and local air quality impacts.
- Emissions generated by construction activities on the Memorial are expected to be well below the general conformity *de minimis* limits for ozone nonattainment areas inside an ozone transport region.

It is assumed that the following general air quality mitigation measures would be implemented during construction to reduce potential impacts on air quality:

- Low sulfur fuel would be used in all heavy-duty diesel construction equipment.
- Equipment would be shut down when not in use.
- The construction contractor would manage construction operations in compliance with local and state air quality requirements, including dust suppression, at all times.
- Motor vehicles, including delivery trucks, would not be left idling for periods exceeding five minutes.
- Water would be applied as needed to reduce fugitive dust during earthmoving and site preparation activities.

Based on the factors and mitigation measures outlined above it is assumed that the construction activities associated with any of the alternatives would conform to the region's attainment plan. Therefore the activities described in this document would be in compliance with the requirements of the General Conformity rule. For these reasons air quality is dismissed from further analysis.

Wetlands

Executive Order (EO) 11990, Protection of Wetlands, mandates that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to

preserve and enhance their natural values. Director's Order (DO) 77-1 establishes NPS policies, requirements, and standards for implementing this EO. In addition to the requirements in DO 77-1, NPS activities that involve dredging or the placement of fill in wetlands or other waters of the US must comply with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

The National Wetlands Inventory (NWI) documents that there are at least portions of five wetlands in the study area, with a greater diversity and abundance observed on the east side of the river. A site visit was conducted on October 16, 2008, to verify the wetlands illustrated on the NWI maps. The wetlands shown on the Memorial grounds are the two designed reflecting pools, which are not wetlands as defined by the USACE and EPA, and do not fall under the jurisdiction of the USACE. None of the wetlands illustrated on NWI maps for the East St. Louis addition were observed during the site visit. The presence of these wetlands on the NWI maps is either the result of outdated information or is the result of errors made while interpreting aerial photography when the maps were created. Therefore wetlands have been dismissed from detailed study.

Floodplains

Executive Order 11988, "Floodplain Management," requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with construction within and modifications to floodplains. Federal agencies are to avoid direct and indirect support of floodplain development whenever there is a practicable alternative. Section 4.6.4 of NPS Management Policies 2006 states that the National Park Service will manage for the preservation of floodplain values and minimize potentially hazardous conditions associated with flooding. The NPS Director's Order 77-2 and the accompanying "Procedural Manual" (2003) provide guidance and procedures for implementing floodplain protection and management actions in units of the national park system.

When it is not practical to locate development or human activities on a site outside of the floodplain, the National Park Service will:

- Prepare and approve a Statement of Findings (SOF), in accordance with procedures described in Procedural Manual 77-2: Floodplain Management.
- Take all reasonable actions to minimize the impact to the natural resources of floodplains.
- Use non-structural measures as much as practicable to reduce hazards to human life and property.
- Ensure that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR Part 60).

None of the actions proposed under the alternatives would result in the construction of facilities within the floodplain of the Mississippi River where it is not protected by levees and other flood control devices managed by the USACE. Therefore there will be no impacts to floodplains and this topic is dismissed from further evaluation.

Water Quality

Section 303(d) of the Clean Water Act and EPA regulation 40 CFR Section 130.7(d)(1) require that each state and the District of Columbia submit a Total Maximum Daily Load (TMDL) Priority List to the EPA during even numbered calendar years. A TMDL is the maximum amount of a pollutant that can be introduced into a water body in order for that water body to achieve or remain in compliance with applicable water quality standards. The 303(d) list includes those water bodies and watersheds that exhibit levels of degradation requiring investigation and restoration. Water bodies found on the 303(d) list are subject to TMDL modeling and development. The portion of the Mississippi River that passes through the study area has been placed on the 303(d) list by the state of Illinois for having high levels of fecal coliforms, manganese,

and PCBs (EPA 2006). Missouri has also developed a TMDL for the Mississippi River to reduce levels of chlordane and PCBs in fish tissues (MDNR 2006a).

Section 305(b) of the Clean Water Act requires that local agencies issue a report to the EPA and Congress every two years describing the water quality of 305(b) listed streams. In 305(b) reports, water bodies are categorized based on the degree to which water quality affects the use of the water bodies. According to the 2004 305(b) report for the section of the Mississippi River that passes through the study area, water quality fully supports the use of the river for sustaining aquatic life, but only partially supports the uses of the river as a public water supply and for fish consumption due to PCB and manganese contamination (EPA 2004).

None of the actions proposed in the action alternatives would result in the release of contaminants to the Mississippi River or to ground water in general. It is still too speculative to determine whether any new facilities may have impacts to water quality, but any new facilities will be considered by separate environmental evaluations. Therefore there will be no impacts to water quality and this topic is dismissed from further evaluation.

Soils and Geologic Resources

The characteristics of soils influence the design, construction, and post-construction performance and maintenance of structures and landscapes. Therefore identification and avoidance of problematic soils can decrease project costs in these areas. The Missouri side of the study area (approximately 110 acres) is composed entirely of Urban soils. Urban soils are defined as “soil material having a non-agricultural, man-made surface layer more than 50 cm (20 inches) thick that has been produced by mixing, filling, or by contamination of land surface in urban and suburban areas” (Bockheim 1974, Scheyer and Hipple 2005, USDA SCS 1982). The Illinois side of the study area is composed of 78 percent Orthents soils which are

composed of well-drained, earthy fill material on slopes of five to 35 percent. Neither Urban nor Orthents soils have hydric characteristics (USDA NRCS 2998).

Geotechnical studies were previously conducted on the south end of the Memorial grounds to identify building constraints for the maintenance facility, and on the East St. Louis addition to determine the potential presence of hazardous materials. The geotechnical study completed for the new maintenance facility on the Memorial grounds only covered the areas immediately under and around that facility. However, previous land use practices in the area indicate that similar results could be expected at other locations within the Memorial grounds. Rubble-type fill was encountered at all of the boring and test pit locations, ranging in depth from six to 35 feet below the ground surface. These materials are likely the result of the destruction of former buildings on the site that were demolished prior to the construction of the Gateway Arch and Memorial grounds. Below the rubble, a six-to 10-foot-deep layer of loess (wind-blown sediments) was present at several sample locations. Alluvial deposits one -to 12-feet-deep were located directly below the fill, or loess when present. The residual soils, generally consisting of soft to medium stiff, silty clay with varying amounts of rock fragments, were located at a depth of 32 to 35 feet below the ground surface at three sample locations.

The original surficial deposits for the East St. Louis addition consisted of floodplain deposits (e.g., silt, sand, and gravel) deposited by the Mississippi River and its tributaries (Willman et al. 1975). Fill material including cinders, coal, bricks, and wood was encountered during the geotechnical survey to a depth of 20 feet, although most fill was observed in the upper four feet of the sample profile. Depth to limestone or dolomite bedrock ranged from 50 to 200 feet (NPS 1997).

Because the type of soils that may be impacted are either artificial fill or typical soils that have no significant characteristics, this topic was dismissed from further consideration.

Wildlife

The natural resources study area is within a highly urbanized landscape. Other than the Mississippi River, which offers no riparian habitat on the west bank of the river, there are no natural areas that might serve as corridors for wildlife to access the Memorial grounds. The Memorial grounds consist of well-maintained turf areas beneath an overstory of ash, oak, pine, and cypress trees. There is little cover and few sources of food available for wildlife other than tree seeds and acorns. The Illinois side of the river offers more open or forested habitat, but these areas are fragmented by roads, railways, industrial uses, and other development. Wildlife habitat within the East St. Louis addition is also very limited.

While the parks within the study area appear to offer little habitat, the Mississippi River is a major corridor for migratory birds. The St. Louis chapter of the National Audubon Society forged an agreement with the National Park Service to turn off the lights that illuminate the Gateway Arch during the spring and fall migration, as these lights may interfere with birds' ability to navigate at night. However, no other impacts to wildlife are expected from the action alternatives, so this topic was dismissed.

1.10 RELATIONSHIP OF THE GENERAL MANAGEMENT PLAN TO OTHER PLANNING EFFORTS

NPS Management Plans and Studies

Jefferson National Expansion Memorial has a number of plans and strategies for lands and programs inside the NPS boundary that have influenced or would be influenced by this *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The following is a summary of the related plans prepared by the National Park Service and considered most relevant to the GMP planning process, including a general description of plan policies and recommendations relevant to the Memorial.

JEFFERSON NATIONAL EXPANSION MEMORIAL CULTURAL LANDSCAPE REPORT

The Cultural Landscape Report (CLR) documents the Memorial's landscape and analyzes its character-defining features. It describes the landscape resources, their condition, and overall character of the Memorial grounds. This report also documents the evolution of the Saarinen-Kiley plan and its implementation by the National Park Service. It describes the significance of the landscape, assesses resources and features, delineates between contributing and non-contributing resources and features, prescribes future treatment of those resources and features, and assesses the overall integrity of the property. Completed in 1996, the report is being updated in 2009/ 2010 (NPS 1996a and NPS 2010).

ASSET MANAGEMENT

The NPS is developing a national program for managing structures and facilities (assets) in park system units. This program calls for development of an asset management plan for each park unit. Such plans are designed to enable park managers to prioritize, schedule, and fund maintenance and repair work. They also include techniques to manage gaps between needed and anticipated funding, such as "mothballing" or even disposing of lower priority assets. The Memorial's asset management plan would follow guidelines of the national program, including guidance for compliance with the NEPA (1969), Sections 106 and 110 of the NHPA, and other applicable laws and policies.

COLLECTIONS MANAGEMENT

National park units with sizeable collections are directed to prepare plans for the management and storage of park collections. Jefferson National Expansion Memorial has prepared a Resources Management Plan (1990) and a Collections Storage Plan (1991) to provide necessary guidance for the Memorial. The purpose of the Resources Management Plan is to provide guidance for the protection, management and maintenance of the park's cultural resources in general, and the purpose of the Collections Storage Plan is to make recommendations for upgrading

the conditions under which the collection is housed in order to meet NPS standards. The plans are flexible decision-making tools which will be updated, revised, and supplemented to meet the needs of the park and visiting public.

City and Regional Plans

As an urban national park, Jefferson National Expansion Memorial is surrounded by relevant planning processes and development in St. Louis, Missouri and East St. Louis, Illinois. Contemporary and current plans for areas around the Memorial have been reviewed to make certain proposed actions within the alternatives in this document are not in conflict. Current plans for areas around the Memorial may be influenced by this document. These relevant plans and studies were reviewed by the planning team.

ST. LOUIS STRATEGIC LAND USE PLAN

The St. Louis Strategic Land Use Plan, implemented in 2005, is a planning foundation upon which further planning and development initiatives will build. It is meant to provide a broad framework for future investments into the City of St. Louis. Future planning initiatives may include public improvement plans, neighborhood level plans, and rezoning (City of St. Louis, 2005).

ST. LOUIS GATEWAY MALL MASTER PLAN

The Gateway Mall Master Plan establishes a comprehensive vision to help unify the park space that forms the Gateway Mall, which runs between Market and Chestnut Streets from the Old Courthouse (at Broadway) to St. Louis Union Station at 21st Street. At its center the Mall widens to the north, encompassing four additional city blocks. The plan defines a design framework and is meant to facilitate future implementation and long-term management of the Gateway Mall (City of St. Louis 2007a).

EAST ST. LOUIS, ILLINOIS, COMPREHENSIVE PLAN

East St. Louis' long range plans are laid out in its 2004 Comprehensive Plan. The plan highlights: economic development; housing; open space; natural and cultural resources; land use; land development regulations,

including circulation; and infrastructure. It also highlights the importance of economic stimulus associated with downtown and riverfront development. The proposed future land uses for the East St. Louis riverfront include an entertainment/civic/residential district, a transit-oriented development surrounding the MetroLink station, and a primary greenway along the river with a connection to downtown.

The East St. Louis Guiding Planning Principles, listed in the Comprehensive Plan, are to:

- Ensure strong linkages between the riverfront and the downtown core.
- Ensure downtown planning is coordinated with riverfront redevelopment.
- Ensure a clear identity for the downtown that reflects the local community’s commercial and housing needs.
- Ensure protection of historic and cultural resources, particularly in the immediate downtown, and promote adaptive re-use options.
- Ensure land use regulations are updated to support the proposed development (City of East St. Louis 2004).

ST. LOUIS DOWNTOWN DEVELOPMENT ACTION PLAN

The St. Louis Downtown Development Action Plan, written in 1999, included a master plan to help revitalize downtown St. Louis within a five- to seven-year timeframe, which is still the viable operating basis for planning. The plan builds on the 1993 Downtown St. Louis Strategic Plan and focuses on the following areas for revitalization: Laclede’s Landing/Riverside North District, Washington Avenue Loft District, Old Post Office/Central Business District, and the Gateway Mall/Arch Grounds District. The goals of the Downtown Development Action Plan include:

- Define a guiding vision directing the sense of place and design for downtown.

- Strengthen downtown’s role as a place that engages, empowers, and celebrates its diverse population.
- Reinforce the value of downtown as an Urban Center for the region.
- Develop detailed physical design and implementation plans for the downtown and its districts.
- Develop a development program and phasing strategy (Downtown Now! 1999).

ST. LOUIS DOWNTOWN STREETSCAPE GUIDELINES

The St. Louis Downtown Streetscape Guidelines help define standards for the pedestrian environment in the portion of downtown St. Louis identified by the St. Louis Downtown Development Action Plan. The standards focus on environment, intimacy, and identity and are organized into six sections: furnishings, lighting, paving, planting, signage, and civic art. These six sections address materials, design, characteristics, image, and application criteria (Downtown Now! 2000).

LEGACY 2035

The Legacy 2035 plan is the fourth major update of the metropolitan region’s transportation plan, originally adopted in 1994. The plan recognizes that transportation investments improve quality of life and aims to use those investments as a means for achieving the region’s social, economic, and environmental goals. It is a long-range vision for the development of the greater St. Louis region’s surface transportation system.

The plan’s focus areas are:

- Preservation of existing infrastructure.
- Safety and security in travel.
- Congestion management.
- Access to job opportunities.
- Sustainable development.
- Efficient movement of goods (East-West Gateway Council of Governments 2007a).

CONFLUENCE GREENWAY MASTER PLAN

The Confluence Greenway Master Plan covers a 200-square-mile system of parks,

conservation, and recreation areas that includes the downtown St. Louis area. The plan's goals include establishing trails along both the Illinois and Missouri sides of the Mississippi River that would provide connections to the river and to interpretive and cultural attractions (Confluence Greenway 2001).

**UPPER MISSISSIPPI RIVER
COMPREHENSIVE PLAN**

The Upper Mississippi River Comprehensive Plan was developed by the USACE as a comprehensive plan and integrated strategy to reduce flood damage on the Upper Mississippi River System. The plan also addresses other components of floodplain management such as environmental stewardship and recreational opportunities (US Army Corps of Engineers 2006).

**RIVERFRONT DEVELOPMENT AND
THE ARCH CONNECTOR: A REPORT
TO THE MAYOR**

The Riverfront Development and the Arch Connector Report, prepared by the Danforth

Foundation, proposes alternatives for redevelopment of the St. Louis riverfront near Jefferson National Expansion Memorial. The Report provides alternatives for redevelopment, a proposal for improved pedestrian connections, and budget projections (Danforth Foundation 2007).

**BUILDING THE RIVER RING:
A CITIZEN-DRIVEN REGIONAL PLAN**

Building the River Ring was developed by the Great Rivers Greenway District to plan for, promote, and help fund an interconnected system of greenways, parks, and trails in the St. Louis region. This trail system will highlight the region's waterways and other natural areas and connect three counties and two states. It is a long-range plan that will be updated every five years as progress is made and local communities identify connections to be made and integrated into the River Ring.

Table 2.1 Management Zones

Management Zones	Heritage Education and Visitor Amenities	Original Landscape	Orientation	Streetscape/Riverscape	Service
Purpose	Provide visitor education, interpretation, orientation facilities and amenities.	Preserve National Historic Landmark (NHL) status.	Provide visitor orientation, enhance visual and physical connectivity, and support Memorial operations (parking).	Create visual and physical connectivity between the city streets, riverfront, and the Memorial.	Support Memorial operations.
Resource Condition	<ul style="list-style-type: none"> This zone is characterized by the historic resources and visitor facilities that serve the educational and practical needs of the visitor. Situated in such a manner as to have little impact on the NHL. Character-defining features of historic structures and landscapes are preserved. Historic structures and landscapes may be rehabilitated as defined by the <i>Secretary of the Interior's Standards for the Preservation of Historic Properties</i> (compatible materials, design and features) to accommodate compatible uses, provided that alterations do not destroy character-defining features. 	<ul style="list-style-type: none"> This zone is characterized by the NHL as designated, the integrity of which is preserved. The NHL may be rehabilitated as necessary, as defined by the <i>Secretary of the Interior's Standards for the Preservation of Historic Properties</i> (compatible materials, design, and features) to provide safe visitor access and security, provided that alterations do not destroy character-defining features. The landmark design and significance would be preserved and maintained to evoke contemplation and inspiration. 	<ul style="list-style-type: none"> Situated in such a manner as to have little impact on the NHL. Character-defining features of historic structures and landscapes are preserved. Historic structures and landscapes may be rehabilitated as defined by the <i>Secretary of the Interior's Standards for the Preservation of Historic Properties</i> (compatible materials, design, and features) as necessary to accommodate compatible use, provided that alterations do not destroy character-defining features. 	<ul style="list-style-type: none"> Managed in such a manner as to enhance the urban interface with the Memorial and to create a visual and physical thematic identity compatible with the NHL. This zone affords the opportunity for site enhancements that both revitalize the street scenes and riverfronts and provide appropriate transition from the adjacent urban areas and riverfronts to and from the Memorial. 	<ul style="list-style-type: none"> This zone is characterized as the support zone for Memorial operations and visitor functions. Situated in such a manner as to have little impact on NHL. Historic structures and landscapes may be rehabilitated as defined by the <i>Secretary of the Interior's Standards for the Preservation of Historic Properties</i> as necessary, to accommodate Memorial operations, provided that alterations do not destroy character-defining features.
Visitor Experience	<ul style="list-style-type: none"> Priority is on educating and conveying Memorial interpretive themes to visitors. Many opportunities for interpretation and education programs. Personal visitor research opportunities. Moderately self-directed. Provides orientation. Frequent visitor-to-visitor and visitor-to-staff contacts. Time commitment varies, but typically 30 minutes to four hours. 	<ul style="list-style-type: none"> Visitors connect with and appreciate the sights, sounds, and activities intended by the Memorial designers. Opportunities for self-directed learning. Opportunities for some passive and active recreation. Primarily self-directed. Accessible and secure. Frequent visitor-to-visitor contacts (although less than in the Heritage Education and Visitor Amenities zone) and occasional visitor-to-staff contacts. Time commitment varies, but typically 30 minutes to two hours. 	<ul style="list-style-type: none"> This zone is a transitional zone characterized by visitor orientation and wayfinding, parking, and practical visitor needs Primarily self-directed. Functional, safe, and enjoyable. Frequent visitor-to-visitor and visitor-to-staff contacts. Time commitment is typically 10 to 30 minutes. 	<ul style="list-style-type: none"> This zone is characterized by the formal, pedestrian-oriented avenues and/or riverfronts the visitor passes through when approaching, entering, leaving, or walking by the Memorial. Considerable pedestrian activity and movement. Primarily a visual experience. Self-directed. Safe and enjoyable. A transitional zone and therefore no time commitment. 	<ul style="list-style-type: none"> Incidental; this zone supports Memorial operations and visitor functions necessary to manage and visit the Memorial. This zone is subservient to the overall purpose and significance of the Memorial. Primarily for the conduct of Memorial business and/or to provide visitor and staff parking.
Associated Facilities	<ul style="list-style-type: none"> Appropriate types of facilities may include interior and exterior interpretive exhibits, museums, library, archives, theaters, classrooms, restrooms, benches, visitor centers, tram/transit facilities, a multimodal transit center, security checkpoints, food service, and staff offices. Buildings, non-historic additions, and other development would be compatible within the cultural landscape. Buildings and other development may be used for visitor or administrative purposes. Types and levels of services and activities are necessary and appropriate for the Memorial and visitors. 	<ul style="list-style-type: none"> Appropriate types of amenities and landscape elements may include accessible walkways, overlooks, ramps, benches, wayside exhibits, informal/formal plantings, exterior lighting, and security checkpoints. Outdoor lighting provides adequate illumination for visibility while minimizing light pollution or interfering with the Memorial lighting. 	<ul style="list-style-type: none"> Appropriate types of facilities may include restrooms, benches, signage, orientation exhibits and kiosks, tram/transit facilities, parking, and a multimodal transit center. Appropriate commercial services may include limited convenience concessions and shuttle services. Buildings, non-historic additions, and other development would be compatible with the landscape. 	<ul style="list-style-type: none"> Appropriate types of facilities may include lighting, signage, wayside exhibits, plantings, accessible walkways, site furnishings, and food service (temporary/seasonal). Outdoor lighting provides adequate illumination for visibility while minimizing light pollution or interfering with the Memorial lighting. Appropriate commercial services may include limited convenience concessions, shuttle services, and guided services such as vehicle, boat, and bicycle tours. 	<ul style="list-style-type: none"> Appropriate types of facilities may include administrative and operational facilities, parking, storage, and security checkpoints. Buildings and other development are used for administrative functions that support the operation and maintenance of the Memorial and visitor parking.

Table 2.2 Design Overlay

	Design Competition Overlay	
Overall Goal	Provide opportunities to explore innovative solutions and sensitive approaches for revitalizing the Memorial and improving physical and thematic connections.	
Common Requirements	<ul style="list-style-type: none"> • All proposed changes and additions to the Memorial will follow the <i>Secretary of the Interior’s Standards for the Preservation of Historic Properties</i> to fit into the overall landscape of the NHL, making certain that alterations do not destroy character-defining features, as well as be subject to NEPA and NHPA compliance. • All changes and additions to the Memorial will be designed to improve the visitor experience/enjoyment. • All proposed changes and additions will be compatible with the long term goals of the underlying management zones (Figure 2.3). • Universal design and sustainability will be encouraged for all new design proposals. 	
Design Competition Area	Area A	Area B
Features and Additions	<ul style="list-style-type: none"> • Provide opportunities to explore sensitive and innovative approaches to revitalizing the Memorial by enhancing visual and physical connectivity between the cities, and riverfronts to the Memorial, and by introducing new elements and features. • Types and levels of service and activities are necessary and appropriate to serve the educational, functional, and orientation needs of the visitor. • Situated in areas of the Memorial that can accommodate more intensive design elements while still minimizing impacts to the NHL. • Appropriate types of facilities may include, but are not limited to: interior and exterior interpretive exhibits, museums, theaters, classrooms, visitor orientation facilities, transit facilities, food service, restrooms, site furnishings, staff offices, streetscape improvements, and parking. 	<ul style="list-style-type: none"> • Provide opportunities to explore sensitive design solutions for landscape features and amenities that will revitalize the Memorial and improve connectivity and accessibility. • Characterized by the sensitive rehabilitation of the designed landscape to serve the experiential needs of the visitor. • Situated in areas of the Memorial that require less intensive design elements to ensure impacts to the NHL are minimized. • Appropriate types of amenities and landscape elements may include, but are not limited to: wayside exhibits, accessible walkways, informal/formal plantings, fountains, site furnishings, and exterior lighting.

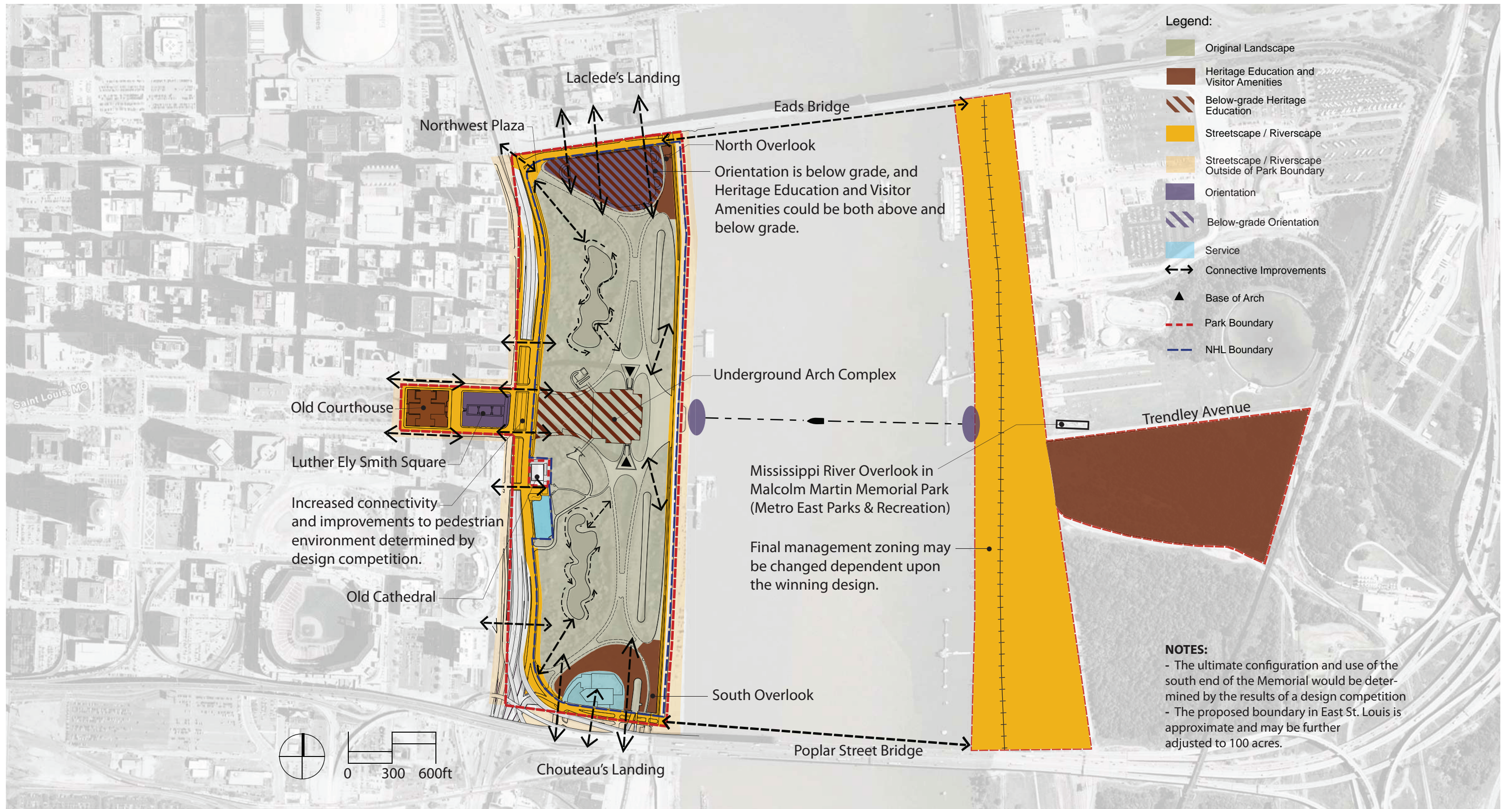


Figure 2.2 Management Alternative 3: Program Expansion

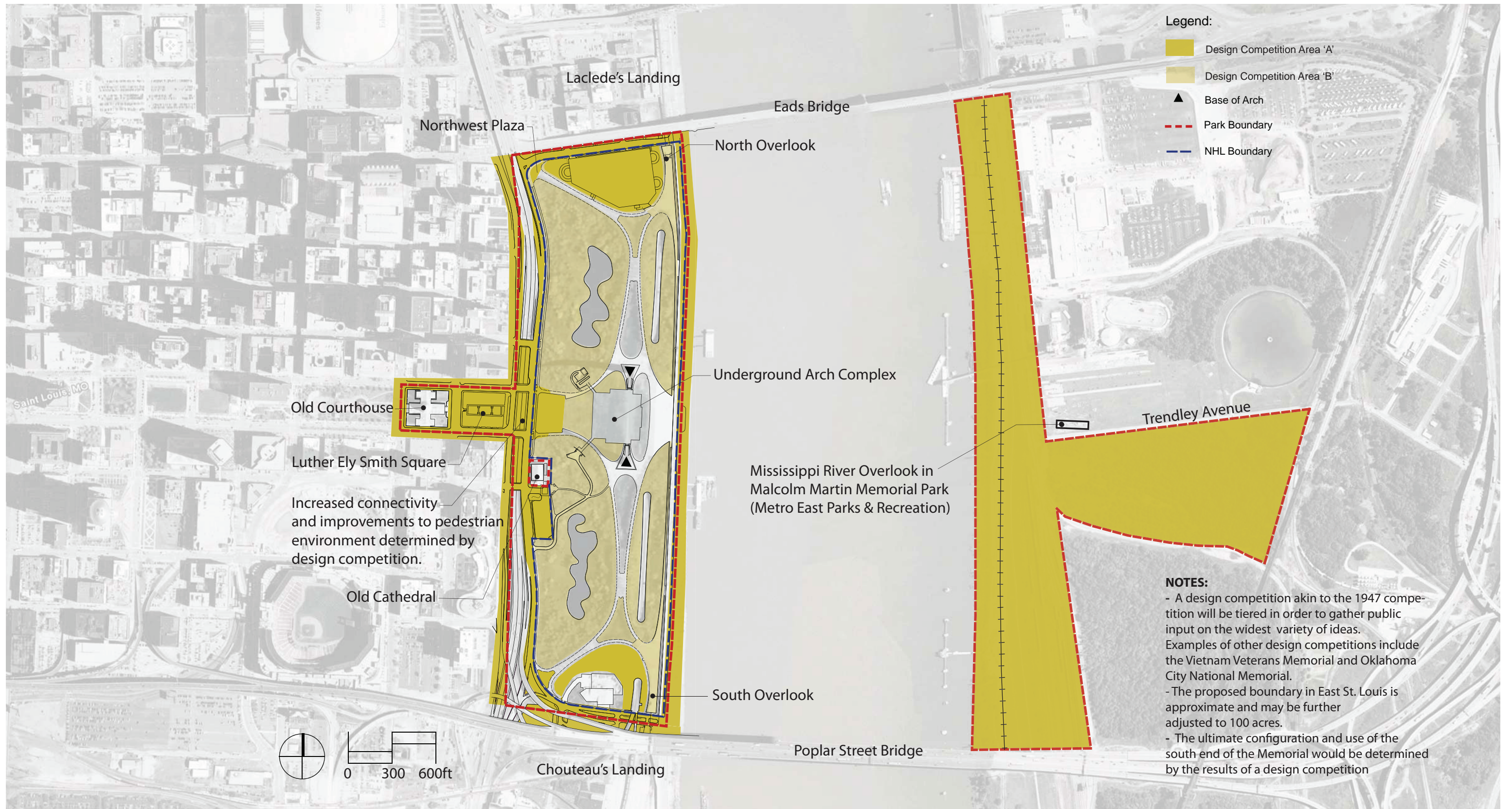


Figure 2.3 Design Competition Areas for Management Alternative 3: Program Expansion

Table 2.4 Alternatives Comparison

Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City																																
Concept																																			
The Memorial would be managed much as it is today. The Memorial would be primarily accessed by car and Metro from the north at Eads Bridge, and from the west at the Old Courthouse.	The Memorial would be revitalized by expanded programming, facilities, and partnerships. The National Park Service would capitalize on multiple opportunities to expand visitor experience throughout the Memorial. A design competition akin to the 1947 competition would be held in order to generate the widest breadth of ideas possible to revitalize the Memorial grounds and expand interpretation, education opportunities, and visitor amenities.	The Memorial would be revitalized by opening four gateways (north, south, east, and west) to enter the Memorial, featuring a new main west entry into the Museum of Westward Expansion that includes a nearly three-block, at-grade lid centered on the Old Courthouse and two elevated pedestrian bridges. Visitors would access the Memorial from the east via commercial water taxi from East St. Louis, Illinois.	The Memorial would be revitalized by extending the visitor's experience of the Memorial into downtown St. Louis and the surrounding neighborhoods and East St. Louis by the provision of parking, services, and visual themes that would begin and continue into adjacent neighborhoods and areas.																																
Percent of Each Management Zone in the Alternatives																																			
	<table border="1"> <caption>Alternative 3: Program Expansion Management Zone Percentages</caption> <tr><th>Management Zone</th><th>Percentage</th></tr> <tr><td>Original Landscape</td><td>35%</td></tr> <tr><td>Heritage Education and Visitor Amenities</td><td>15%</td></tr> <tr><td>Streetscape / Riverscape</td><td>44%</td></tr> <tr><td>Service</td><td>2%</td></tr> <tr><td>Orientation</td><td>4%</td></tr> </table>	Management Zone	Percentage	Original Landscape	35%	Heritage Education and Visitor Amenities	15%	Streetscape / Riverscape	44%	Service	2%	Orientation	4%	<table border="1"> <caption>Alternative 4: Portals Management Zone Percentages</caption> <tr><th>Management Zone</th><th>Percentage</th></tr> <tr><td>Original Landscape</td><td>39%</td></tr> <tr><td>Heritage Education and Visitor Amenities</td><td>17%</td></tr> <tr><td>Streetscape / Riverscape</td><td>37%</td></tr> <tr><td>Service</td><td>2%</td></tr> <tr><td>Orientation</td><td>5%</td></tr> </table>	Management Zone	Percentage	Original Landscape	39%	Heritage Education and Visitor Amenities	17%	Streetscape / Riverscape	37%	Service	2%	Orientation	5%	<table border="1"> <caption>Alternative 5: Park into the City Management Zone Percentages</caption> <tr><th>Management Zone</th><th>Percentage</th></tr> <tr><td>Original Landscape</td><td>35%</td></tr> <tr><td>Heritage Education and Visitor Amenities</td><td>29%</td></tr> <tr><td>Streetscape / Riverscape</td><td>36%</td></tr> </table>	Management Zone	Percentage	Original Landscape	35%	Heritage Education and Visitor Amenities	29%	Streetscape / Riverscape	36%
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Streetscape / Riverscape	36%																																		
Resource Stewardship / Design Integrity																																			
<ul style="list-style-type: none"> The National Park Service would preserve the NHL; the full range of fundamental resources and values would be protected. 																																			
<ul style="list-style-type: none"> Opportunities to complete portions of the design, as documented in the master plan, begun in 1960, approved in 1966, and centered on the 1962 Master Plan Handbook—contingent on project approval and funding. 	<ul style="list-style-type: none"> Sensitive rehabilitation of the designed landscape and structures while protecting the integrity of the Memorial. 																																		
<ul style="list-style-type: none"> The National Park Service would continue to protect natural resource values in support of cultural landscape integrity. 																																			
	<ul style="list-style-type: none"> Increased opportunities for natural resource protection and enhancement in East St. Louis addition. 																																		
<ul style="list-style-type: none"> Museum collections storage would remain at Old Courthouse. 	<ul style="list-style-type: none"> Museum collections storage would be moved to expanded Museum of Westward Expansion. 	<ul style="list-style-type: none"> Museum collections storage would be moved to new education and research facility at south end of the Memorial. 																																	
Program / Visitor Services																																			
<ul style="list-style-type: none"> Current programs and special events continue. 	<ul style="list-style-type: none"> The grounds surrounding the Gateway Arch would accommodate and promote increased visitor activities and special events. 																																		
<ul style="list-style-type: none"> Exhibits at the Old Courthouse and Museum of Westward Expansion would remain as they are today. 	<ul style="list-style-type: none"> Exhibits would be redesigned to provide more interactive experiences for visitors and programming at the Old Courthouse and would be both renovated and expanded at the Museum of Westward Expansion. 	<ul style="list-style-type: none"> Exhibits would be redesigned to provide more interactive experiences for visitors and programming at the Old Courthouse and at the Museum of Westward Expansion. 																																	

Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Program / Visitor Services			
<ul style="list-style-type: none"> The Old Courthouse and the Museum of Westward Expansion would remain as they are today; exhibits and other educational and interpretive programs as provided. Luther Ely Smith Square would be maintained; walks, seasonal plantings, trees, lawn, and benches would be provided. The north end of the Memorial would remain as a multi-story parking garage above- and below-grade. The south end of the Memorial would remain primarily a service area, housing the Memorial's maintenance facility. The North and South Overlooks would be managed as originally designed. Limited food service (vending) would be available in the existing Museum of Westward Expansion. The parking lot at the Old Cathedral would remain unchanged and continue to provide parking. 	<ul style="list-style-type: none"> The Museum of Westward Expansion would be renovated to expand its size and better accommodate its associated functions, and would incorporate a new pedestrian entrance on Memorial Drive. In addition to the Old Courthouse, the Museum of Westward Expansion would be zoned to allow for new (or expanded) educational/cultural facilities, as well as north and south ends of the Memorial, including the North and South Overlooks. Luther Ely Smith Square would be zoned to include visitor orientation and services. Significant portions of the Memorial, as well as the East St. Louis addition, are included in the Design Competition Overlay. The two Design Competition Areas in the overlay provide opportunities to explore sensitive and innovative approaches to revitalizing the Memorial and to enhance multiple types of Memorial amenities and visitor services. A visitor transportation system would be provided that links visitor facilities within the Memorial as well as visitor facilities outside of the Memorial. Expanded vending could be accommodated in the expanded Museum of Westward Expansion and possibly elsewhere at the Memorial. The parking lot at the Old Cathedral would be addressed in the design competition to improve aesthetics and visual compatibility while preserving landscape integrity. 	<ul style="list-style-type: none"> The Museum of Westward Expansion would be renovated to expand its size and better accommodate its associated functions, and would incorporate a new pedestrian entrance on Memorial Drive. In addition to the Old Courthouse, the Museum of Westward Expansion would be zoned to allow for new (or expanded) educational/cultural facilities. Luther Ely Smith Square would be zoned to include visitor orientation and services, practical needs, and parking below-grade. The north end of the Memorial Grounds would be renovated for visitor orientation and services, and parking would be accommodated below-grade. A visitor transportation system would be provided that links visitor facilities within the Memorial as well as visitor facilities outside of the Memorial. The south end of the Memorial would remain primarily a service area, housing the Memorial's maintenance facility. The North and South Overlooks would be renovated for heritage education and visitor amenities. Food service could be accommodated in the new education /cultural facilities as well as portable carts, including at Luther Ely Smith Square and North and South Overlooks. The existing parking lot at the Old Cathedral would be redeveloped with new underground parking and the surface renovated as a planted area compatible with the Memorial landscape. 	<ul style="list-style-type: none"> In addition to the Old Courthouse and the Museum of Westward Expansion, two areas would be zoned to allow for new educational/cultural facilities: the north end and the south end. The north end of the Memorial would be renovated for visitor contact and orientation and for heritage education and as a multimodal gateway below grade. A visitor transportation system would be provided that links visitor facilities within the Memorial as well as visitor facilities outside of the Memorial. The south end of the Memorial would be renovated for new education and research center. North and South Overlooks would be managed as original landscape. Expanded vending could be accommodated in the existing Museum of Westward Expansion. Luther Ely Smith Square could accommodate portable food carts. The parking lot at the Old Cathedral would be eliminated and replaced with planted area compatible with the Memorial landscape.
Access / Security			
<ul style="list-style-type: none"> Barrier-free routes from the Memorial grounds to the riverfront would not exist within the Memorial. 	<ul style="list-style-type: none"> Barrier-free routes from the Memorial grounds to the riverfront would be established within the Memorial. 		
<ul style="list-style-type: none"> Perimeter security and public safety issues would continue to be addressed to the level required for an icon park. 			
<ul style="list-style-type: none"> The existing entrances to the visitor center and Museum of Westward Expansion would not meet codes for barrier-free access. Visitor screening for security to the visitor center under the Gateway Arch would be accommodated at current entrances. 	<ul style="list-style-type: none"> Access into the visitor center and potentially expanded Museum of Westward Expansion could be incorporated into a new entrance near Memorial Drive. Visitor screening for security into the visitor center under the Gateway Arch would be improved either with a redesigned entrance in the current location or with a new entrance near Memorial Drive. 	<ul style="list-style-type: none"> Access into the visitor center and Museum of Westward Expansion would be incorporated into a new entrance to the facility on Memorial Drive. Existing entrances into the visitor center and Museum of Westward Expansion would be renovated to meet current access codes, or provided for near the current location. Visitor screening for security into the visitor center under the Gateway Arch would remain at current entrances or in close proximity to the existing entrance of the visitor center and would be added to a new entrance on Memorial Drive. 	<ul style="list-style-type: none"> Accessibility into the visitor center and Museum of Westward Expansion would be renovated to meet current codes. Visitor screening for security would remain at the current entrance or in close proximity to the existing entrance of the visitor center under the Gateway Arch.
<ul style="list-style-type: none"> All new facilities would incorporate accessibility and heightened security design requirements. 			
Connectivity / Urban Interface			
<ul style="list-style-type: none"> Connectivity between Old Courthouse and Gateway Arch would remain as it is currently; pedestrians would cross Memorial Drive at grade. 	<ul style="list-style-type: none"> Increased connectivity between the Old Courthouse and Gateway Arch would be explored in the design competition. Proposals might include one or two elevated bridges, improved at-grade pedestrian crossings across Memorial Drive, or a civic plaza and lid above the recessed interstate. A one- or three-block wide portion of Memorial Drive could be closed to vehicular traffic. 	<ul style="list-style-type: none"> Increased connectivity between Old Courthouse and Gateway Arch at Luther Ely Smith Square would be provided with the construction of two pedestrian bridges over Memorial Drive, a nearly three-block at-grade lid centered on the Courthouse, and pedestrian at-grade improvements at Pine and Walnut streets. 	<ul style="list-style-type: none"> Increased connectivity between Old Courthouse and Gateway Arch at Luther Ely Smith Square would be provided by removing and rerouting Memorial Drive traffic northbound and southbound and by renovating the vacated corridor of Memorial Drive into a series of large civic/ community plazas.

Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Connectivity / Urban Interface			
<ul style="list-style-type: none"> The National Park Service would continue to coordinate with the City and State to enhance the pedestrian environment. 	<ul style="list-style-type: none"> The National Park Service would coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and other streets adjacent to the Memorial including Leonor K. Sullivan Boulevard, Memorial Drive, and the riverfront levee. The National Park Service and partners would coordinate with the City and State to increase connectivity along and across Memorial Drive/I-70 corridor. A seasonal water taxi would be established linking the east and west units of the Memorial. 	<ul style="list-style-type: none"> The National Park Service would coordinate with the City and State to increase connectivity between adjacent neighborhoods with improvements to the at-grade crossings at Washington Avenue and the NW Plaza and at Walnut and Pine streets (across Memorial Drive) for two additional linkages to the Memorial grounds, and with visual and physical linkages to Laclede's and Chouteau's Landings. A seasonal water taxi would be established linking the east and west units of the Memorial. 	<ul style="list-style-type: none"> The National Park Service would coordinate with the City and State to increase connectivity between adjacent neighborhoods with improvements to the at-grade crossing at Washington Avenue and the NW Plaza and with visual and physical linkages to Laclede's and Chouteau's Landings.
<ul style="list-style-type: none"> Partner with the City of St. Louis and the State of Missouri to unify streetscape along Gateway Mall and streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and Memorial Drive. 			
<ul style="list-style-type: none"> Partner with the City of St. Louis and the State of Missouri to unify streetscape along Gateway Mall and streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and Memorial Drive. 	<ul style="list-style-type: none"> Proactively encourage compatible riverfront improvements on the west and east sides of the Mississippi River. Sustain and develop partnerships to provide the National Park Service a means for working closely with adjacent stakeholders and enhance the visitor experience in the East St. Louis addition. 		
Operations			
<ul style="list-style-type: none"> The Memorial's maintenance facility would remain at the south end of the Memorial. 	<ul style="list-style-type: none"> The Memorial's maintenance facility would most likely remain at the south end of the Memorial. However, the ultimate configuration and use of the south end of the Memorial would be determined by the results of a design competition. 	<ul style="list-style-type: none"> The Memorial's maintenance facility would remain at the south end of the Memorial. 	<ul style="list-style-type: none"> The Memorial's maintenance facility would be moved outside the Memorial boundary.
<ul style="list-style-type: none"> Visitor parking at the north end of the Memorial would remain; would encourage parking proximate to Memorial for oversized vehicles. Parking for Old Cathedral patrons would remain. 	<ul style="list-style-type: none"> Visitor parking would remain at the north end of the Memorial. The main parking garage may be renovated through the design competition. The location of maintenance operations would also be determined through design competition. 	<ul style="list-style-type: none"> Visitor parking at the north end of the Memorial would remain. Garage would be reconstructed to allow for some moderate amount of oversized RV parking. Parking would be relocated to a new underground facility at the Old Cathedral and the surface would be renovated to improve bus drop-off and enhance visual quality. Luther Ely Smith Square would be redeveloped to provide visitor orientation, including underground parking. The visitor transportation system operations and maintenance facility would be located off-site. 	<ul style="list-style-type: none"> Visitor parking at the north end of the Memorial would be eliminated; visitor parking would be accommodated outside the Memorial at existing facilities. Parking would be eliminated at the Old Cathedral and the surface would be renovated to improve bus drop-off and to enhance visual quality. The visitor transportation system operations and maintenance facility would be located off-site.
Memorial Boundary			
<ul style="list-style-type: none"> The 91-acre boundary of the Memorial would remain unchanged on the west side; the National Park Service would retain the authorization to establish a boundary in East St. Louis in the future. The focus would remain west of the Mississippi River. 	<ul style="list-style-type: none"> The 91-acre boundary of the Memorial would remain unchanged on the west side; The boundary of the Memorial would be amended to add acreage in East St. Louis (approximately 100 acres). Potential acquisition would be by willing seller only. Total boundary: 191 acres. Partner with landowners to manage the riverfront for compatible visual context and development (viewshed), and to provide for visitor services in conjunction with Metro East Parks and Recreation District. Include the acreage in East St. Louis in the design competition in order to collaborate with the public and designers in determining a vision for the area. 	<ul style="list-style-type: none"> The 91-acre boundary of the Memorial would remain unchanged on the west side; The boundary of the Memorial would be amended to add acreage in East St. Louis (approximately 70 acres). Potential acquisition would be by willing seller only. Total boundary: 161 acres. Partner with landowners to manage the riverfront for compatible visual context and development (viewshed), and to provide for visitor services in conjunction with Metro East Parks and Recreation District. 	<ul style="list-style-type: none"> The 91-acre boundary of the Memorial would remain unchanged on the west side; The boundary of the Memorial would be amended to add acreage in East St. Louis (approximately 100 acres). Potential acquisition would be by willing seller only. Total boundary: 191 acres. Partner with landowners to manage for compatible visual context and development (viewshed) and to provide for visitor services, heritage education, and natural resource protection.
Estimated Full Time Equivalent staff			
166.5	228.5	248.5	240
Estimated capital costs in millions			
\$0	\$305.4	\$368.5	\$379.4

Table 2.5 Impacts

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on Cultural Resources				
Historic Buildings, Structures, Sites, Objects, and Districts	The implementation of the no action alternative would result in negligible impacts to historic buildings, structures, sites, objects, and districts.	Within the Memorial boundary, there may be negligible to minor short- and long-term local adverse impacts on the Gateway Arch, and potential minor beneficial to minor adverse long-term local impacts on the Old Courthouse. In addition, there may be minor short- and long-term adverse local impacts on the Grand Staircase and short- and long-term minor beneficial to minor adverse local impacts on the North and South Overlooks. Outside of the Memorial, there may be negligible to minor beneficial short- and long-term local impacts on the Old Cathedral, and short- and long-term minor beneficial to minor adverse local impacts on Eads Bridge. Finally, there may be negligible to minor long-term local adverse impacts on various historic structures and districts that have a visual relationship with the Gateway Arch grounds, including the Laclede's Landing Historic District, the J. Kennard Carpet Company Building, the Missouri Athletic Club Building, the Mississippi Valley Trust Company Building, the International Fur Exchange, the Security Building, and Pet Plaza. There would be no adverse effect under Section 106.	Within the Memorial boundary, there would be negligible to minor adverse short- and long-term local impacts on the Gateway Arch. There would also be potential negligible to minor short- and long-term local adverse impacts and long-term minor beneficial impacts on the Old Courthouse. In addition, there would be minor short- and long-term local adverse impacts on the Grand Staircase, and negligible to minor short- and long-term local adverse impacts on the North and South Overlooks. Outside of the Memorial, there would be long-term minor to moderate beneficial impacts on the Old Cathedral, and long-term minor adverse to minor beneficial impacts on Eads Bridge. There could also be long-term negligible to minor adverse local impacts on the Missouri Athletic Club Association Building and the J. Kennard and Sons Carpet Company Building. There would be no adverse effects under Section 106 and no impairment of historic buildings, structures, sites, objects, and districts.	Within the Memorial boundary, there would be minor short- and long-term adverse impacts on the Gateway Arch. There would also be potential minor short- and long-term adverse impacts and minor beneficial long-term impacts on the Old Courthouse. In addition, there would be minor short- and long-term adverse impacts on the Grand Staircase. Outside of the Memorial, there would be short- and long-term minor adverse to minor beneficial impacts on Eads Bridge. There could also be long-term negligible to minor adverse local impacts on the Missouri Athletic Club Association Building and the J. Kennard and Sons Carpet Company Building, as both have visual connections to the north end of the Memorial. Further, there may be negligible to minor long-term local adverse impacts on the Crunden-Martin Manufacturing District and St. Mary of Victories Church. Under Section 106, there would be no adverse effects to these historic resources. In addition, there would be no impairment to historic buildings, structures, sites, objects, and districts as a result of the Park into the City alternative.
Cultural Landscapes	The no action alternative would have minor to moderate long-term local beneficial impacts to cultural landscapes. Under Section 106, there would be no adverse effect on the Memorial landscape. In addition, there would be no impairment of the historic landscape as a result of the no action alternative.	The implementation of the Program Expansion alternative could result in minor short-term adverse and moderate adverse to major beneficial long-term impacts to the cultural landscape at the Memorial. There could be an adverse effect under Section 106; however this would not lead to impairment of the cultural landscape.	The Portals alternative may result in local negligible to moderate long-term adverse and moderate to major long-term beneficial impacts on the cultural landscape at Jefferson National Expansion Memorial. There could be an adverse effect under Section 106, but this would not lead to impairment of the cultural landscape.	The Park into the City alternative may result in long-term moderate to major beneficial and minor to moderate adverse local impacts on the cultural landscape at Jefferson National Expansion Memorial. Thus, there could be an adverse effect under Section 106, but this would not lead to impairment of the cultural landscape.

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on Cultural Resources				
Archeological Resources	<p>The no action alternative would consist of minor to moderate ground disturbances resulting in negligible, local and regional, long-term adverse impacts to archeological resources. There would be no cumulative impacts. Under Section 106, there would be no adverse effects to archeological resources. In addition, there would be no impairment to archeological resources as a result of the no action alternative.</p>	<p>Overall, the Program Expansion alternative would have local or regional, long-term impacts ranging from minor beneficial to major adverse, depending on the level of ground disturbance. Thus, there could be an adverse effect under Section 106. The ground-disturbing activities in this alternative may encounter significant archeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). The range of potential impacts under this alternative are due, in part, to the lack of specific information regarding the exact nature and location of physical actions which would be identified through the design competition. These impacts would need to be further refined as the elements and locations are finalized. Elements of this alternative that would not disturb the ground or would be adjusted to avoid archeological sites would have no adverse impact (no adverse effect) on archeological resources, and may have a minor local or regional, long-term beneficial impact if the resources remain preserved below the surface.</p>	<p>Overall, the Portals alternative would have local, long-term impacts on archeological resources that could range from minor beneficial to major adverse. Under Section 106, these would range from no adverse effects to adverse effects. Adverse effects on archeological resources could be avoided through mitigation and by having cultural resource observers present during ground-disturbing activities in areas likely to contain archeological resources. Mitigation of impacts would ensure that there would be no impairment of archeological resources. Activities occurring on the western portion of the Memorial grounds are expected to have a greater likelihood of encountering archeological resources since the original historic grade is near the surface in this area. If archeological sites were discovered during construction activities, and the sites were recorded, such findings could yield beneficial information regarding the history or prehistory of the area. The recording and/or preservation of previously undiscovered sites would be considered a beneficial impact.</p>	<p>Overall, the Park into the City alternative would have local long-term impacts ranging from minor beneficial to major adverse. Under Section 106, these would range from no adverse effects to adverse effects. Adverse effects on archeological resources could be avoided through mitigation and by having cultural resource observers present during ground-disturbing activities in areas likely to contain archeological resources. Mitigation of impacts would ensure that there would be no impairment of archeological resources. Activities occurring on the western portion of the Memorial Grounds are expected to have a greater likelihood of encountering archeological resources since the original historic grade is near the surface in this area. If archeological sites were discovered during construction activities, and the sites were recorded, such findings could yield beneficial information regarding the history or prehistory of the area. The recording and/or preservation of previously undiscovered sites would be considered a beneficial impact. Out of all of the alternatives, the Park into the City alternative has the lowest potential for an adverse impact on archeological resources because it has fewer components that may cause large disturbances in areas with high archeological sensitivity. The impacts identified for this alternative are a result of ground-disturbing activities which may encounter significant archeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). The range of potential impacts under this alternative is due, in part, to the lack of specific information regarding the location of the maintenance facility. These impacts would need to be further refined once the location for the maintenance facility has been identified.</p>

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on Cultural Resources				
Curatorial Objects and Museum Collections	Overall, short-term, long-term, and cumulative impacts to curatorial resources and museum collections would be minor to moderate, adverse and local. There would be no impairment of curatorial resources and museum collections as a result of the no action alternative.	The implementation of the Program Expansion alternative would result in moderate long-term beneficial impacts on curatorial resources and museum collections. There would be no impairment of curatorial resources and museum collections as a result of the Program Expansion alternative.	The implementation of the Portals alternative would result in moderate long-term beneficial impacts on curatorial resources and museum collections. Relocation of collections to the new facility would result in a short-term risk of impacts that could range from negligible to moderate adverse impacts on curatorial resources and museum collections. There would be no impairment of curatorial resources and museum collections as a result of the Portals alternative.	The implementation of the Park into the City alternative would result in local moderate long-term beneficial impacts on curatorial resources and museum collections. Relocation of collections to the new facility would result in a short-term risk of impacts that could range from negligible to moderate adverse impacts on curatorial resources and museum collections. There would be no impairment of curatorial resources and museum collections as a result of the Park into the City alternative.
Impacts on Natural Resources				
Vegetation	Under the no action alternative, there would be no new construction or change to management or maintenance policies within the study area and no cumulative impacts to vegetation communities. There would be no impairment of Memorial resources.	Potential impacts on vegetation communities range from moderate beneficial to moderate adverse. Final design entries would undergo additional environmental review by the National Park Service to determine the impacts of various design alternatives with greater specificity. Long-term beneficial impacts would result from the removal of invasive species; however, there would be a short-term temporary disruption of the successional habitat community. No impairment of Memorial grounds resources is anticipated from this alternative.	The Portals alternative would have negligible to moderate long-term beneficial and short-term minor to moderate adverse impacts on the vegetation communities of the East St. Louis addition. Long-term beneficial impacts would result from the removal of invasive species; however, there would be a short-term temporary disruption of the successional habitat community. Overall, the Portals alternative would have a beneficial impact on vegetation communities within the study area.	The Park into the City alternative would have long-term beneficial to short-term moderate adverse impacts on the vegetation communities of the East St. Louis addition. Long-term beneficial impacts would result from the removal of invasive species; however, there would be a short-term temporary disruption of the successional habitat community. Overall, the Park into the City alternative would have a minor to moderate beneficial impact on vegetation communities within the study area.
Threatened and Endangered Species	Since there would be no additional development, loss of habitat, or changes in maintenance or management practices that may disturb decurrent false aster populations on the east side of the river, there would be no impact to this threatened species and no impairment of Memorial grounds resources within the study area.	Until the design competition is completed, there would be no additional development, loss of habitat, or changes in maintenance or management practices in the near-term in decurrent false aster population areas on the east side of the river. Any future development that might result from the design competition would be preceded by a site survey to determine whether or not the species is present. If the species and any critical habitat are present, the USFWS would be consulted. Thus, impacts on this threatened species are unlikely and no impairment of Memorial grounds resources within the study area would occur.	There would be no additional development, loss of habitat, or changes in maintenance or management practices in the near term in areas that may disturb decurrent false aster populations present on the east side of the River. Any future development that may occur along the east bank of the Mississippi River would be preceded by a site survey to identify the exact location of the species and any available habitat to be protected. Thus, there would be no impact on this threatened species and no impairment of Memorial resources within the study area.	There would be no additional development, loss of habitat, or changes in maintenance or management practices in the near term in areas that may disturb decurrent false aster populations present on the east side of the River. Any future development that may occur along the east bank of the Mississippi River would be preceded by a site survey to identify the exact location of the species and any available habitat to be protected. Thus, there would be no impact on this threatened species and no impairment of Memorial resources within the study area.

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on Natural Resources				
Soundscape	<p>The no action alternative could result in minor short-term adverse impacts to noise from construction activities associated with pedestrian and streetscape improvements at the Memorial. There would also be continuing minor long-term adverse noise impacts from the existing maintenance activities. There would be no impairment of the soundscape of the Memorial from this alternative.</p>	<p>There would be minor short-term adverse impacts and minor adverse to moderate beneficial long-term impacts on the soundscape of the Memorial. These impacts would not impair the soundscape of the Memorial.</p>	<p>The Portals alternative would have minor short-term adverse impacts on the soundscape from the construction of the pedestrian enhancements, streetscape improvements, riverfront improvements, pedestrian bridges over Memorial Drive, a nearly three-block lid over I-70, accessible ramps to the riverfront, recreational vehicle parking area, below-grade parking areas at Luther Ely Smith Square and the Old Cathedral, below-grade visitor orientation facilities, and the expanded underground Museum of Westward Expansion. There would also be continuing minor long-term adverse impacts on the soundscape from existing maintenance activities. Implementing a water taxi and visitor transportation system would result in minor long-term adverse impacts on the soundscape.</p> <p>The addition of the nearly three-block lid over I-70 may have a minor to moderate long-term beneficial impact on the soundscape of the Memorial grounds, potentially improving visitor experience of the Memorial. There would be no impairment of the soundscape of the Memorial resulting from this alternative.</p>	<p>The Park into the City alternative would have minor short-term adverse impacts on the soundscape of the Memorial from the construction of the pedestrian enhancements, streetscape improvements, riverfront improvements, and pedestrian plaza on Memorial Drive, and accessible ramps to the riverfront, education, and research facility, and multimodal transit center. There would also be continuing minor long-term adverse impacts on the soundscape from the existing maintenance activities. Moving the grounds maintenance facility off the Memorial grounds and implementing a visitor transportation system would result in minor long-term adverse impacts on the soundscape. Increased special events programming would result in minor to moderate short-term adverse impacts on the soundscape of the Memorial.</p> <p>The removal of traffic from Memorial Drive and the creation of the pedestrian plaza would have a minor to moderate beneficial impact on the soundscape of the Memorial grounds, likely improving visitor experience. However, the rerouting of traffic through downtown St. Louis would result in minor to moderate local increases in traffic noise on downtown streets. Overall, there would be no impairment of the soundscape of the Memorial, and there may be an improvement of the current soundscape of the Memorial if all elements of this alternative are implemented.</p>

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on Visitor Opportunity and Use				
Visitor Opportunities and Use	<p>The no action alternative is expected to have a moderate adverse long-term local impact on visitor experience and use. With a lack of barrier-free access points to the Memorial, some visitors are discouraged from visiting the site. In addition, without any modification or rehabilitation to exhibits and education programs such as the introduction of new technology, it is expected that visitors would continue to come to the Memorial mainly for the tram ride and would fail to utilize other facilities (museum and Old Courthouse). This management action would be expected to continue to attract one-time visitors (or repeat visitors after several years). Unfriendly streetscapes to and from the Memorial into downtown would be expected to have a long-term adverse impact on visitor experience, as visitors would be less likely visit other downtown attractions. In addition, some local residents and employees would be less likely to visit the Memorial.</p>	<p>Implementation of the Program Expansion alternative would likely have moderate to major beneficial short-term impacts on visitor use and moderate beneficial long-term impacts. The development of new elements as a result of the design competition could encourage significant increases in visitation of new attractions at the Memorial. Minor short-term adverse impacts could result from disruptions caused by construction or crowding during peak periods. In addition, modification and rehabilitation of exhibits and heritage programs, including more interactive experiences would improve visitor opportunities, attract new visitors, and encourage more use of underutilized facilities. Improvements in streetscapes, the introduction of a new transportation system, and a water taxi service are expected to increase connectivity to local neighborhoods in downtown St. Louis and East St. Louis and have a long-term beneficial impact on local visitor opportunities and use.</p>	<p>Implementation of alternative 4 may have moderate long-term beneficial impacts on visitor opportunity and use. Visitor opportunities and use are expected to improve with the redesign of exhibits at the Museum of Westward Expansion and the Old Courthouse. Visitor experiences are expected to improve with the development of barrier-free access to the riverfront and museum including a new entrance on Memorial Drive. Improvements in streetscapes, the introduction of a new transportation system, and a water taxi service are expected to increase connectivity to local neighborhoods in downtown St. Louis and East St. Louis, and have a long-term beneficial impact on visitor opportunities and use. There could be short-term adverse impacts due to crowding during peak periods.</p>	<p>Implementation of the Park into the City alternative would have moderate long-term beneficial impact on visitor opportunity and use. Visitor opportunities are expected to improve with the redesign of exhibits at the Museum of Westward Expansion and the Old Courthouse. Visitor experiences are expected to improve with the development of barrier-free access to the riverfront and the museum. Improvements in streetscapes and the introduction of a new transportation system are expected to increase connectivity to local neighborhoods in downtown St. Louis, and to have a long-term beneficial impact on visitor opportunities and use.</p>
Impacts on Transportation and Access				
Transportation and Access	<p>The no action alternative would result in short- and long-term minor adverse transportation impacts at the Memorial.</p>	<p>The Preferred alternative could result in moderate to major long-term beneficial impacts on the transportation resources of the Memorial. This determination derives from the expected improvements to the flow and circulation of visitors to the Memorial. Depending upon the outcome of the design competition, changes to the roadway network in downtown St. Louis resulting from a potential closure of a portion of Memorial Drive, could reduce the beneficial impacts to vehicular circulation. However, gains accrued to other modes of transportation from a potential closure of Memorial Drive could offset the adverse impact to vehicular traffic, resulting in an overall moderate long-term beneficial impact to transportation and access.</p>	<p>The Portals alternative would result in minor to major long-term local beneficial impacts on transportation on and around the Memorial. This determination is due to significant improvements to pedestrian circulation and parking resources, as well as the implementation of a visitor transportation system. However, there could be moderate short-term and minor to moderate long-term impacts to vehicular circulation on Memorial Drive.</p>	<p>The Park into the City alternative would result in moderate to major long-term beneficial impacts on transportation on and around the Memorial. This determination is due to the significant improvements to pedestrian circulation and transit enhancements, particularly the implementation of a visitor transportation system. This finding assumes that the loss of on-site parking is considered a benefit to the overall visitor experience of the Memorial, rather than a hindrance.</p>

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on Socioeconomics				
Socioeconomics	<p>Management of the Memorial would not significantly change from current conditions under the no action alternative. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area. Under this alternative, visitation to and operation of the Memorial would continue to have a long-term minor to moderate local beneficial economic impact to the region.</p>	<p>Management of the Memorial under the Program Expansion alternative would focus on increasing programming, facilities, and partnerships. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors would increase with the additional programming and elements of this alternative. Visitation to the Memorial would have a long-term beneficial economic impact on the St. Louis metropolitan area due to visitor spending and expenditures associated with operations at the Memorial, although the precise impact cannot be determined. Cumulative impacts from other projects and planning activities have the potential to increase visitation to the Memorial and the downtown, which would have a minor beneficial impact on downtown retailers and businesses. Businesses near the Memorial could experience minor, adverse impacts due to changes in traffic patterns and on-street parking with the potential closing of Memorial Drive. Purchase of lands for park expansion in East St. Louis could have a minor, adverse fiscal impact to local government taxing entities.</p>	<p>Management of the Memorial and the East St. Louis addition would focus on improving physical and visual connections from the surrounding neighborhoods. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors is expected to have a minor beneficial increase in visitation under this alternative. There could be a moderate beneficial impact from the provision of a visitor transportation system. Visitation to the Memorial would have a long-term minor beneficial economic impact due to visitor spending and expenditures associated with operations at the Memorial, though the impact would be focused within the local geographic area. Cumulative impacts from other projects may increase visitation to the Memorial and downtown, which would have a minor beneficial impact on downtown retailers and businesses. Purchase of lands for park expansion in East St. Louis could have a minor, negative fiscal impact to local government taxing entities.</p>	<p>Management of the Memorial would focus on extending the visitor's experience at the Memorial and into downtown St. Louis. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors is expected to generate a minor positive increase in visitation. Visitation to the Memorial would have a long-term minor to moderate beneficial economic impact due to visitor spending and expenditures associated with operations at the Memorial. Impacts would be largely focused within a small geographic area near the Memorial, but may be expanded if a visitor transportation system travels near other important downtown sites and businesses. Cumulative impacts from other projects and planning activities have the potential to increase visitation to the Memorial and downtown, which would have a minor beneficial impact on downtown retailers and businesses. Purchase of lands for park expansion in East St. Louis could have a minor, negative fiscal impact to local government taxing entities.</p>
Land Use	<p>The no action alternative is expected to have a minor long-term adverse impact on local land use. With a lack of focus on planning activities in East St. Louis, the National Park Service may lose the ability to influence future land use in the East St. Louis addition. Also, under this alternative, the National Park Service would not make any substantial changes in land use on the Memorial.</p>	<p>The Program Expansion alternative could have both beneficial and adverse impacts on land use. The alternative would implement various changes in land use including development of new facilities, improvements in connectivity with downtown St. Louis, and changes in management of the East St. Louis addition. Improvements to streetscapes and connectivity with local neighborhoods would have long-term beneficial impacts on land use within and immediately outside the Memorial. Changes in management in the East St. Louis addition would have long-term beneficial impacts on local land use.</p>	<p>Implementation of the Portals alternative is expected to have a long-term moderate beneficial impact on local land use. While the development of a new barrier-free entrance to the underground museum would have adverse impacts in the loss of green space, those impacts are expected to be localized to that specific area of the Memorial grounds. Beneficial impacts are expected to occur with the development of a nearly three-block deck of Memorial Drive and pedestrian walkways, improving compatibility of the Memorial with adjacent major roadways. Moderate beneficial impacts would also occur with the expansion of the Memorial's boundary into East St. Louis, encouraging compatible development with Metro Parks and other potential partners.</p>	<p>Implementation of The Park into City alternative is expected to have a long-term moderate beneficial impact on local land use. The rerouting of Memorial Drive has the potential to generate long-term moderate beneficial impacts on land uses in and around the Memorial. Eliminating on-site parking would allow the Memorial to expand opportunities for heritage education and visitor amenities. This action may also cause parking facilities downtown to be utilized more efficiently. Moderate beneficial impacts would also occur with the expansion of the Memorial's boundary into East St. Louis, which would encourage compatible development with Metro Parks and other potential partners.</p>

Impact Topic	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
Impacts on NPS Operations				
Impacts on NPS Operations	Ongoing impacts (long-term minor to moderate local and adverse) would continue.	If funded, the long-term impacts of the Program Expansion alternative in general would be negligible and the specific addition of a new entrance into the Museum of Westward Expansion would be moderate to major and beneficial. The long-term impacts of the Program Expansion alternative would be moderate to major long-term adverse if funding for NPS operations remains the same without a commensurate increase. Much depends on the outcome of the design competition, and whether the new programs and elements that emerge from the competition come with additional financial resources for operations.	If funded, the long-term impacts of the Program Expansion alternative in general would be negligible and the specific addition of a new entrance into the Museum of Westward Expansion would be moderate to major and beneficial. The long-term impacts of the Portal alternative would be moderate to major and adverse if funding for NPS operations remains the same without a commensurate increase. The expanded facilities would require a commensurate increase in NPS operational resources.	If funded, the long-term impacts of the Program Expansion alternative in general would be negligible and the specific addition of a new curatorial facility would be moderate to major and beneficial. The long-term impacts of the Park into the City alternative would be moderate to major and adverse if funding for NPS operations remains the same without a commensurate increase. The expanded facilities would require a commensurate increase in NPS operational resources.



2.0 Alternatives

Alternatives

2.1 INTRODUCTION

This chapter describes four potential management alternatives for Jefferson National Expansion Memorial, including the preferred alternative. Through an intensive public involvement process, the alternatives were revised and narrowed from five to four, with the elimination of alternative 2 at the preliminary alternatives phase, Summer 2008. The preferred alternative was further revised based on public comments received on the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The resulting alternatives illustrate how the Memorial might look and function in the future and how the visitor experience could change.

The revised alternatives are described in detail in this chapter. Each is consistent with the Memorial's purpose, significance, and fundamental resources and values. Alternative 1: No Action provides a baseline for comparing the alternatives and the environmental consequences of implementing each of the "action" alternatives. The "action" alternatives include alternative 3: Program Expansion, alternative 4: Portals, and alternative 5: Park into the City.

Before introducing the vision and management approaches for each alternative, this chapter describes the proposed management zones developed as part of this plan, which are applied geographically to the Memorial in each of the alternatives. Specific actions that would affect Memorial resources, visitor experiences, opportunities and activities, and NPS operations are described for each alternative, followed by a discussion of the associated costs and staffing required to implement

each alternative. A description of a proposed boundary modification in East St. Louis is provided for each alternative.

Following the descriptions of each of the alternatives, another section addresses implementation of the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, which includes funding, user capacity, and the generation of subsequent implementation plans. The chapter concludes with a discussion of mitigation measures needed for each of the alternatives, as well as a description of the environmentally preferred alternative and rationale behind the identification of the preferred alternative. Tables that compare the alternatives and delineate expected impacts are also included.

2.2 MANAGEMENT ZONES

One of the tools used in planning for units of the national park system is management zoning. Management zones are descriptions of desired conditions for the resources and visitor experiences at the Memorial. These zones identify how different areas in Jefferson National Expansion Memorial could be managed to achieve resource preservation, provide visitor access and use, and serve operational purposes. Each management zone also specifies the appropriate facilities to achieve the desired conditions. The management zones identify the range of potential appropriate resource conditions, visitor experiences, and facilities for the Memorial that fall within the scope of the Memorial's purpose, significance, and special mandates. As such, management zones give an indication of the management priorities for various areas. Each of the action alternatives

has an overall management concept and a description of how different areas of the Memorial would be managed.

Five management zones have been developed for use within the Memorial. Because the Memorial is not currently zoned, management zones only apply to action alternatives (alternatives 3, 4, and 5). The action alternatives presented later in this chapter each propose a different configuration of the management zones within the Memorial based on the concept for each alternative. In every management zone, the Memorial intends to preserve and protect resources to the greatest extent possible and would not allow an action that would cause the National Historic Landmark (NHL) to be delisted. A description for each management zone is provided in the following sections. An overview table comparing the purpose of each zone and how each zone would manage resources, desired visitor experiences, and associated facilities follows the written descriptions.

Heritage Education and Visitor Amenities Zone

The purpose of the Heritage Education and Visitor Amenities zone is to provide visitor education, interpretation, orientation, and amenities. This zone is characterized by the cultural resources and visitor facilities that serve the educational and practical needs of the visitor. It is situated so as to have little impact on the National Historic Landmark. In this zone, the character-defining features of historic structures and landscapes are preserved or rehabilitated to provide safe visitor access and security. Historic structures and landscapes may be rehabilitated as defined by the *Secretary of the Interior's Standards for the Preservation of Historic Properties* (compatible materials, design, and features) to accommodate compatible use, provided that alterations do not destroy character-defining features. A secondary purpose of this zone is to provide space for administrative activities.

The primary goals of the visitor experience in this zone are conveying Memorial interpretive themes and educating visitors. This zone also provides orientation, many opportunities for interpretation, education programs, and

research activities. It is moderately self-directed and frequent visitor-to-visitor and visitor-to-staff contacts are expected. The visitor time commitment for this zone varies, but is anticipated to be approximately 30 minutes to four hours.

Appropriate types of facilities in this zone may include interior and exterior interpretive exhibits, museums, library, archives, theaters, classrooms, restrooms, benches, visitor centers, tram/transit facilities, a multimodal transit center, security checkpoints, food service, and staff offices. Buildings, non-historic additions, and other development would be compatible within the cultural landscape and may be used for visitor or administrative purposes.

Original Landscape Zone

The purpose of the Original Landscape zone is to preserve the integrity of the National Historic Landmark. This zone is characterized by landscape features as envisioned by the Saarinen-Kiley design team. The NHL may be rehabilitated as necessary, as defined by the *Secretary of the Interior's Standards for the Preservation of Historic Properties* (compatible materials, design, and features) to provide safe visitor access and security, provided that alterations do not destroy character-defining features.

In this zone the visitor experience is primarily self-directed. There are opportunities for passive and active recreation as well as opportunities for self-directed learning. This zone is accessible and secure and there are frequent visitor-to-visitor contacts (although less than in the Heritage Education and Visitor Amenities zone) and occasional visitor-to-staff contacts. The visitors are able to connect with and appreciate the sights, sounds, and activities intended by the Memorial designers. The landmark design and significance would be preserved and maintained to evoke contemplation and inspiration. The visitor time commitment in this zone varies, but is anticipated to be approximately 30 minutes to two hours.

Appropriate types of amenities and landscape elements in this zone may include barrier-free walkways, overlooks, ramps, benches,

wayside exhibits, informal/formal plantings, exterior lighting, and security checkpoints. The outdoor lighting provides adequate illumination for visibility, while minimizing light pollution and interference with the Memorial lighting.

Orientation Zone

The purpose of the Orientation zone is to provide visitor orientation, enhance visual and physical connectivity, and to support Memorial operations. This zone is characterized by visitor orientation, parking, and practical needs. It is situated so as to have little impact on the NHL. Its character-defining features of historic structures and landscapes are preserved. The historic structures and landscapes in this zone may be rehabilitated as defined by the *Secretary of the Interior's Standards for the Preservation of Historic Properties* (compatible materials, design, and features) as necessary to accommodate compatible use, provided that alterations do not destroy character-defining features.

The visitor experience in this zone is primarily self-directed orientation and wayfinding. It is a transitional zone that is functional, safe, and enjoyable. There are frequent visitor-to-visitor and visitor-to-staff contacts. The visitor time commitment in this zone is typically 10 to 30 minutes.

Appropriate types of facilities in this zone may include restrooms, benches, signage, orientation exhibits and kiosks, tram/transit facilities, parking, and a multimodal transit center. Appropriate commercial services may include limited convenience concessions and shuttle services. Buildings, non-historic additions, and other development in this zone would be compatible with the cultural and physical landscape.

Streetscape/Riverscape Zone

The purpose of the Streetscape/Riverscape zone is to create visual and physical connectivity between the city streets, the riverfront, and the Memorial. This zone is characterized by the formal, pedestrian-oriented avenues, and/or riverfront the visitor passes through when approaching, entering,

leaving, or walking by the Memorial. This zone is managed so as to enhance the urban interface with the Memorial, and to create a visual and physical thematic identity whose treatments are compatible with the NHL. This zone affords the opportunity for site enhancements that both revitalize the street scenes and riverfronts and provide appropriate transitions from the adjacent urban areas and the riverfronts to and from the Memorial.

The visitor experience in this zone is primarily visual. It is self-directed, safe, and enjoyable. Although there is considerable pedestrian activity and movement, it is a transitional zone and therefore does not require visitor time commitment.

Appropriate types of facilities in this zone may include lighting, signage, wayside exhibits, plantings, accessible walkways, site furnishings, and food service (temporary/seasonal). Outdoor lighting provides adequate illumination for visibility, while minimizing light pollution and interference with the Memorial lighting. Appropriate commercial services may include limited convenience concessions, shuttle services, and guided services such as vehicle, boat, and bicycle tours.

Service Zone

The purpose of the Service zone is to support Memorial operations. This zone is characterized as the support zone for Memorial operations. It is situated so as to have little impact on the NHL, and thus uses compatible materials and design, and is well maintained. In this zone, historic structures and landscapes may be rehabilitated as necessary, as defined by the *Secretary of the Interior's Standards for the Preservation of Historic Properties* to accommodate Memorial operations, provided that alterations do not destroy character-defining features.

The visitor experience in this zone is incidental, as its function is to support Memorial operations and visitor functions. This zone is subservient to the overall purpose and significance of the Memorial. It is a functional zone that is used primarily to conduct Memorial business and provide visitor and staff parking. Visitor parking is provided

only for visitors on official business with Memorial administration.

Appropriate types of facilities in this zone may include administrative and operational facilities, parking, storage, roads, and security checkpoints. Buildings and other development are used for administrative functions that support the operation and maintenance of the Memorial and visitor parking.

Design Competition Area Overlay

The above management zones describe the desired condition the National Park Service is working to achieve and/or maintain in any given area of the Memorial over the long term.

The plan also includes a separate element for use in the design competition. Because the design competition is a discrete action in the short-term and not a long-term management philosophy, an overlay has been developed to provide more details on the requirements and goals of a competition in the short-term, and still express the long-term goals for managing the Memorial. Within the Design Competition Overlay, new features and elements may be constructed, provided those features and elements meet the intent of the underlying management zones for the next 15-20 years.

The overlay is further described under alternative 3: Program Expansion.

2.3 ALTERNATIVES

The alternatives in this general management plan are alternative methods of applying the prescriptive management zones on the grounds and to facilities, and include alternative actions that could be taken at Jefferson National Expansion Memorial. Each of the action alternatives described below consists of an overall management concept and a description of how different areas of the Memorial would be managed.

In June 2008, the National Park Service released a set of five preliminary alternatives outlining potential management scenarios for Jefferson National Expansion Memorial. Based on public review and comment, alternative 2 was considered and dismissed. The rationale for the elimination of this alternative is described in Section 2.10. The remaining three preliminary action alternatives, including the preferred alternative, were revised based on public review and comment and are described in detail in this chapter.

The alternatives were developed through an intensive public involvement process, described in detail in the “Public Involvement, Including Scoping” section in Chapter 5. The preferred alternative was further revised based on public comments received on the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, described in detail in the “Comments and Responses to Comments, on the Draft Plan” section in Chapter 5.

The four alternatives are designated as follows: alternative 1: No Action, alternative 3: Program Expansion, alternative 4: Portals, and alternative 5: Park into the City.

The concept of the no action alternative is a continuation of current management and trends and is required by the National Environmental Policy Act (NEPA). The purpose of the no action alternative is to establish a baseline for comparing the impacts of existing actions with those proposed. The inclusion of the no action alternative is also helpful in understanding why the National Park Service or the public may believe that certain future

changes are necessary or advisable. The no action alternative implies that no change in activity would be undertaken and that existing management strategies would be sustained. No action is a viable management alternative and may be considered for future management.

The action alternatives are new proposals that differ from the current management of the Memorial. The action alternatives present different ways to manage resources and visitor use and propose new facilities and infrastructure improvements. The three action alternatives embody a range of what the public and the National Park Service want to see accomplished with regard to cultural and natural resource conditions, visitor opportunities and use, transportation and access, and NPS operations.

The alternatives focus on what resource conditions and visitor uses and experiences/opportunities should be at Jefferson National Expansion Memorial rather than on details of how these conditions and uses/experiences should be achieved. Thus, the alternatives do not include many details on resource or visitor use management. More detailed plans or studies would be required before most conditions proposed in the alternatives are achieved. The implementation of any alternative also depends on future funding and staffing and environmental compliance. This plan does not guarantee that this funding would be forthcoming. The plan establishes a vision of the future to guide day-to-day and year-to-year management of the Memorial, but full implementation could take many years.

The National Park Service would continue to follow existing agreements and agency mandates, laws, and policies noted in Chapter 1, regardless of the alternatives considered in this plan. Actions or desired conditions not mandated by policy, law, or agreements can differ among the alternatives.

The alternatives described on the following pages, each of which is consistent with maintaining the Memorial’s purpose, significance, and fundamental resources and values, present different choices for how to manage resources, visitor use, and facilities within the Memorial.

2.4 ALTERNATIVE 1: NO ACTION

Overall Vision

The no action alternative primarily reflects current conditions and activities at the Memorial. This alternative is provided as a baseline against which to compare the other “action” alternatives.

The Memorial would continue to function much the way it does today, and the NPS management of the site remains based upon the 1962 final Jefferson National Expansion Memorial Master Plan Handbook, which guides park managers on the completion and preservation of the Memorial grounds. As funding permits, the National Park Service would continue to look for opportunities to complete unfinished portions of the design, according to the *Secretary of the Interior’s Standards for the Preservation of Historic Properties* and the treatment recommendations of the *Cultural Landscape Report for Jefferson National Expansion Memorial (rev.2010)*.

Management Zones

As the concept of management zoning is applied in NPS general management plans, zones are *prescriptive* of the desired conditions park managers are trying to achieve. Management zones, in essence, are a set of goal statements that describe the future condition of resources and visitor experiences for the specific park. Because the Memorial was not zoned in the past and because no explicit prescriptive management direction was applied, there is no management zoning for the no action alternative.

Cultural Resources

Efforts to preserve the NHL and the Old Courthouse (listed within the Memorial National Register of Historic Places historic district) would continue, and management would consider the Memorial’s fundamental resources and values in decision making for operations. In addition, the National Park Service would continue to preserve natural resource values in support of cultural landscape integrity.

The look of the Memorial grounds and overlooks (the NHL) would remain on the whole unchanged, although repairs and maintenance of site walkways, benches, and plantings to their original crisp finish would be accomplished over time. The Old Courthouse and its associated landscape would continue to look much as it does today. Routine maintenance and repairs to the façade and interior of the Old Courthouse and landscape would be done as needed to keep the structure in good condition. Luther Ely Smith Square would retain its current form, with seasonal plantings, trees, lawns, walks, and benches.

The museum collections and archives currently housed at the Old Courthouse would remain in a temperature-controlled storage facility when not on exhibit in the Museum of Westward Expansion or in the Old Courthouse. Access to the collections and archives by researchers, the public, and staff would continue to be accommodated in the library as staffing permits.

Natural Resources

The emerald ash borer and other threats to the predominant species of ash trees would be responded to with direction provided in the *Cultural Landscape Report for Jefferson National Expansion Memorial (rev. 2010)*. The alignment and spacing of the trees is a character-defining feature of the Memorial and would be a priority for treatment. The no action alternative would not result in any changes to natural resources at the Memorial.

Visitor Opportunities and Use

The Memorial currently offers more than 5,000 programs each year. Educational groups and other organized tour groups make up the bulk of special programming at the site, and 154,000 Memorial visitors participate in these activities annually. In addition, one to four special events are provided on the Memorial grounds each year. Under the no action alternative, these educational and interpretive programs would continue to be provided to the same extent in this alternative, and the exhibits at the Old Courthouse and the Museum of Westward Expansion would remain as they are today.

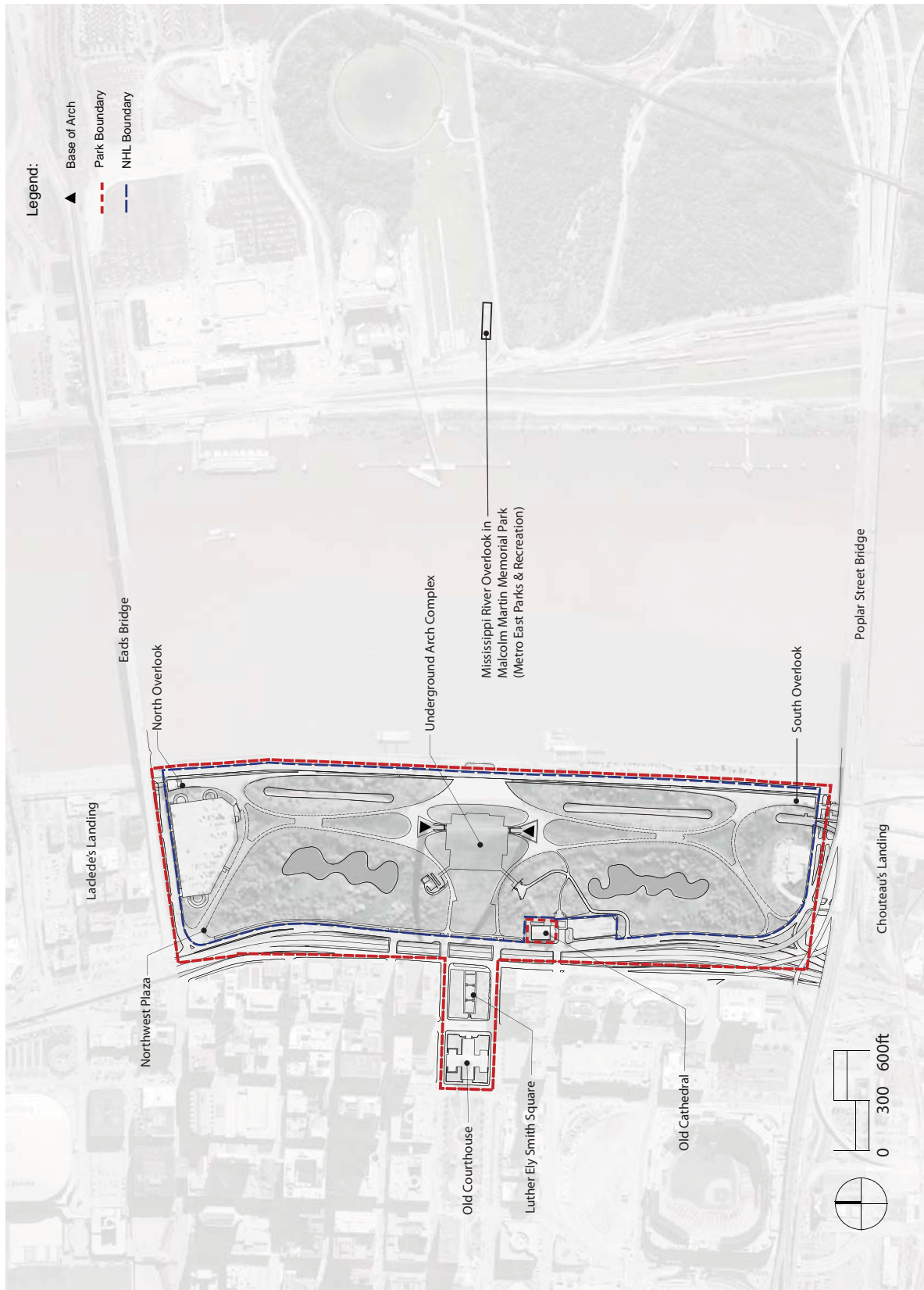


Figure 2.1 Management Alternative 1: No Action

Transportation and Access

Presently, access to the Memorial is primarily from the north at Eads Bridge via car and Metro and by pedestrians from the west at the Old Courthouse. Current connections between the Old Courthouse and the Gateway Arch are the at-grade crossings at Memorial Drive. Under the no action alternative visitors would continue to access various parts of the Memorial in the same manner. Visitor parking would continue to occupy the multi-story Arch Parking Garage at the north end of the Memorial on Washington Avenue, as would barrier-free accessible parking occupy the parking lot adjacent to the Old Cathedral. No accommodations for oversize vehicle parking would be planned, but such facilities would continue to be available at a short distance from the Memorial.

Continuing current practice, the National Park Service would attempt to enhance the pedestrian environment, primarily to increase public safety, in collaboration with the City and State. As funding allows and priorities dictate, the National Park Service would continue in partnership with the City of St. Louis to unify the streetscape along the Memorial's boundary including the Gateway Mall and Leonor K. Sullivan Boulevard. Under a long-standing agreement, the National Park Service would work with the City of St. Louis to proactively encourage compatible riverfront improvements on the west bank of the Mississippi River.

At present there are no barrier-free routes from the Gateway Arch grounds to the riverfront within the Memorial and the existing entrances to the visitor center and the Museum of Westward Expansion do not meet code for barrier-free access. Under this alternative, barrier-free accessible routes from the Gateway Arch to the riverfront would not be provided and the entrances under the Gateway Arch would not be updated to meet the Americans with Disabilities Act/ Architectural Barriers Act Accessibility Standard (ADA/ABAAS). Visitor screening for security under the Gateway Arch would continue to be accommodated at the current building entrances.

NPS Operations

The Memorial's operations would remain the same. The limited food items and drink vending currently offered in the existing visitor center under the Gateway Arch would be maintained. The maintenance facility for the Memorial would remain at the south end of the site on Poplar Street.

The National Park Service would continue to sustain existing partnerships for the provision of educational and interpretive programs, visitor services, riverfront development, and transportation.

Proposed Boundary Adjustments

The no action alternative proposes no changes to the current 91-acre Memorial boundary. The Memorial's focus would remain on the west side of the Mississippi River, though the National Park Service retains the authorization to establish a boundary of approximately 100 acres on the East St. Louis riverfront in the future (Appendix A).

Staffing and Costs

The staffing level under the no action alternative would continue to be 166.5 FTE (full-time equivalent staff positions). Staffing from partners currently accounts for an additional 110 FTE, and would be assumed to remain at that rate and continue to be key contributors to NPS operations. In this alternative, current staff levels would remain at approximately 16 administrative FTE; 48.5 interpretive FTE; 34 facilities and grounds management and maintenance FTE; and 68 law enforcement FTE.

The Memorial has proposed several projects related to accessibility, security, and technology improvements, but those projects have not been funded. They would be undertaken only if funding were to become available. There are therefore no one-time capital costs in this alternative. Deferred maintenance costs of the no action alternative are estimated at \$22.0 million. Annual operating costs under this alternative would be \$10.35 million. These costs are summarized in Table 2.3, which follows the description of alternative 5.

These cost estimates are in 2009 dollars and are provided for comparison to other alternatives only; they are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a midpoint in a possible range of costs. Presentation of these costs in this plan does not guarantee future NPS funding. Project funding would not come all at once; it would likely take many years to secure and may be provided by partners, donations, or other non-federal sources. Although the Memorial hopes to secure this funding and will prepare itself accordingly, the Memorial may not receive enough funding to achieve all desired conditions within the timeframe of the this plan (the next 15 to 20 years).

2.5 PREFERRED ALTERNATIVE 3: PROGRAM EXPANSION

(See Section 2.12 for an explanation of the preferred alternative identification process.)

Overall Vision

The Memorial would be revitalized by expanded programming, facilities, and partnerships. In this alternative, the National Park Service would capitalize on multiple opportunities to expand the visitor experience throughout the Memorial. In order to achieve the widest breadth of ideas for increasing interpretation, education opportunities, and visitor amenities at the Memorial, a design competition, akin to the 1947 competition, would be initiated by the National Park Service. The National Park Service would work in close coordination with partners, specifically with the adjacent cities and states, to include viable designs for an expanded Memorial in East St. Louis, Illinois, as well as for adjacent commercial development areas outside the Memorial boundaries on the St. Louis side of the river. Holistic planning of park connections and uses through the design competition would provide for a unified Memorial-downtown-riverfront environment.

In addition to the design competition, the National Park Service would continue the educational and interpretive programs currently offered at the Memorial and expand opportunities for visitors to participate in more interactive experiences across the Memorial. The grounds surrounding the Gateway Arch would be managed in such a way as to accommodate and promote more visitor activities and special events than are currently provided.

Design Competition

The major action of this alternative would be a design competition. The goals of the competition remain the same as in the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, including the primary goal: to gather a wide range of ideas for the revitalization of the Memorial. The revised preferred

alternative emphasizes improvement of the north and south portals and the creation of new east and west portals, providing physical and/or thematic connections to downtown St. Louis, the riverfront, adjacent commercial development areas and the expanded Memorial in East St. Louis.

While partners would be involved throughout the process, the National Park Service has sole authority over NPS lands and would be the ultimate decision maker on proposed new designs within the existing Memorial boundaries. The following are the design competition goals:

- Protection of historic and cultural resources of the Memorial;
- Increased connectivity between the Old Courthouse and the Gateway Arch (including any combination of a single elevated deck, multiple bridges, and improved at-grade pedestrian crossings across Memorial Drive);
- Increased and improved connectivity between the Memorial, downtown St. Louis, the riverfront, the adjacent commercial districts of Laclede's and Chouteau's Landings and the expanded Memorial in East St. Louis;
- Increased opportunities, through programs and facilities, for the public to be more engaged with the primary themes and stories of the Memorial;
- Increased opportunities for the public to feel more welcomed to the Memorial with the provision of amenities and services that support a safe and enjoyable experience; and
- Operational efficiency and effectiveness for the Memorial's operation in a sustainable manner.

The National Park Service would select a competition advisor in consultation and coordination with partners, and would then develop a detailed competition program outlining the rules and parameters of a competition, in accordance with agency

policies. All registered participants would receive a competition program (manual) - prepared by a professional design competition advisor/administrator - that outlines the Memorial's foundation statement (see Chapter 1), site description, and specific parameters to which design entries should adhere. The manual would include a detailed description of the character-defining features of the National Historic Landmark for the Gateway Arch and Memorial grounds. All entries would be required to demonstrate how their design preserves those same features.

The largest change to the preferred alternative from the draft document to the final document is the removal of the Design Competition zone from the list of management zones for the Memorial. Management zones describe the desired condition the National Park Service is working to achieve and/or maintain in any given area of the Memorial over the long term. The design competition is now being treated as an overlay in order to define the competition as a discrete, short-term action, not a long-term management philosophy. Within the Design Competition Overlay, new features and elements may be constructed, provided those features and elements meet the intent of the underlying management zones for the next 15-20 years and those alterations do not destroy character-defining features. The preferred alternative map (Figure 2.2) shows management zones that indicate the long-term goals, above and below ground, throughout the Memorial, and should be used by competition entrants as guidance. These zones would be in place before, during and after the competition, and demonstrate National Park Service commitment to protecting the fundamental resources and values of the Memorial consistent with the mission of the National Park Service. A second map (Figure 2.3) shows the locations of the Memorial that would be included in the geographic scope of the design competition.

The boundaries and scope of the design competition have been adjusted in the final plan based on public review and comment on the *Draft Jefferson National Expansion*

Memorial General Management Plan and Environmental Impact Statement, and will be further refined based on the findings in the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010) and in consultation with the cities of St. Louis and East St. Louis, and the Missouri and Illinois State Historic Preservation Officers to determine the size of the competition area outside the Memorial. .

The description of the Design Competition Overlay is similar to the Design Competition zone that was described in the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, but has been divided into two separate areas (A and B) with varying degrees of allowable change that could occur as a result of a design competition. Any design changes would be required to protect the character-defining features of the NHL. Design Competition Area A permits the greatest degree of change. Examples of elements that could be suggested to entrants include a west entrance and pedestrian plaza, an orientation/parking facility, and water taxi terminals.

The area for the design competition has been enlarged to include sizeable portions of the Memorial that would be managed under the Original Landscape zone. Most of the added area would fall under Design Competition Area B, which permits a lesser degree of change than Area A. The rationale for including areas zoned Original Landscape in the design competition is to encourage a cohesive design for connectivity both within the Memorial and between the Memorial and the surrounding cities. An example of an Area B element that would be suggested to competition entrants is barrier-free access between the Memorial grounds and the riverfront. In both areas, changes must not detract from the integrity of the Memorial in such a way as would threaten its designation as a NHL.

All proposed designs will be subject to intense scrutiny under the *Secretary of the Interior's Standards for the Preservation of*

Historic Properties as part of consultation under Sections 106 and 110 of the National Historic Preservation Act, as amended. Near the close of the competition, the finalists would go through further consultation and environmental review in order to disclose the impacts of the proposals before a winning selection was made.

To guarantee that critical elements of the original design are preserved, while at the same time providing ample opportunity for new and innovative design changes, the National Park Service would:

- carefully place the Design Competition Overlay to ensure the protection of the character defining features of the NHL;
- carefully develop parameters and criteria for the design competition program; and
- approve the selected winning design.

The National Park Service would use the design competition to seek opportunities to enhance existing entrances to the Memorial on the north and south, as well as to capitalize on the primary axis between the Old Courthouse and the Gateway Arch with new entrances on the west and east by establishing a new east portal linking East St. Louis to the Gateway Arch grounds by water taxi, and by improving the pedestrian connection between downtown St. Louis, the Old Courthouse and the Gateway Arch grounds on the west. The competition would offer designs for a new external and internal visitor transportation system. Designs would be required to retain the existing maintenance facility at the south end of the Memorial. While the design solutions might include the development of above ground structures within Design Competition Area A, the National Park Service would not allow the implementation of a project that would cause impairment to the Memorial, and all of the enhancements would be required to be located in such a manner as to preserve the integrity of the NHL and National Register Historic District.

Management Zones

The concept of management zoning, as applied in NPS general management plans, suggests that zones are *prescriptive*. Management zones describe the desired conditions park managers are trying to achieve. Management zones are, in essence, a set of goal statements that describe the future condition of resources and visitor experiences for a specific park. The management zones for this alternative have been revised from the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* after a thorough analysis of public comments and a reevaluation of the effects zoning is likely to have on the character-defining features of the NHL (topography, spatial organization, views and vistas, buildings and structures, vegetation, circulation, and water features), and the ability of the National Park Service to manage the entire Memorial in a fashion consistent with the laws, regulations, and policies directing national park management. The Design Competition zone described in the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* has been dropped as a management zone and changed to an overlay to delineate its use for a discrete short-term activity. In areas where the Design Competition zone had been placed, other zones have been prescribed in order to show the long-term management goals for the area.

Although the area in East St. Louis is likely to remain in private ownership for some time, the National Park Service applies management zones on these lands to indicate its intention for the area, should the boundary be expanded and agreements negotiated with willing private landowners.

HERITAGE EDUCATION AND VISITOR SERVICES

A range of improvements at the west, north and south portals, and at the overlooks, would be managed according to the guidance established in the Heritage Education and Visitor Services zone. Any physical changes to the North and South Overlooks would be required to take into consideration their contribution as character-defining features to the NHL. Allowable

improvements to the North and South Overlooks could range from portable or temporary site amenities to minor permanent structural or facility improvements, if those permanent alterations could be accomplished without diminishing the overall integrity of the NHL. The primary purpose of this zone is to provide visitor education and interpretation programming and a variety of appropriate services and amenities to enhance visitor experience.

In addition to the areas open for a design competition, the Old Courthouse and the existing Museum of Westward Expansion are managed under the Heritage Education and Visitor Services zone to provide for enhanced visitor education, interpretation, orientation facilities, and amenities.

The area in East St. Louis along Trendley Avenue would be managed under Heritage Education and Visitor Services to provide opportunities for similar and complimentary programming and services on the east side of the Mississippi River.

ORIGINAL LANDSCAPE

The area west of the riverfront and encompassing the majority of the designated NHL, with the exception of the north and south ends of the Memorial and overlooks, would be zoned Original Landscape to preserve the National Historic Landmark.

ORIENTATION

Luther Ely Smith Square and a portion of the subsurface area at the north end of the Memorial would be managed under the Orientation zone. The Orientation zone is established to relay the physical and thematic connectivity goal from the edge of the Memorial further into the site and also to provide for a more structured introduction to the site and limited visitor services. Passenger transit stations for the seasonal water taxi are zoned Orientation to allow for the development of services and facilities at these locations, providing visitor orientation and enhancing visual and physical connectivity to and within the Memorial.

STREETSCAPE/RIVERSCAPE

The edges of the Memorial and a one- or three-block area of Memorial Drive would be zoned Streetscape/Riverscape to emphasize

the NPS intention of managing these areas as transitional spaces between the Memorial grounds and adjacent commercial development areas. The National Park Service has and would continue to coordinate with the City and State before, during, and after the design competition to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and the riverfront levee.

The majority of the area in East St. Louis, between Front Street and the river's edge, would be managed under Streetscape/Riverscape.

SERVICE

Though the area at the south end of the park is included in the design competition, the existing maintenance facility would be maintained in the current location and managed under the Service zone, in order to capture the benefits of the relatively new building while allowing for additional uses in the surrounding area. This decision is consistent with the agency's stewardship goals for sustainability. However, if a design should emerge from the competition that offered a compelling program for the entire south end and could provide the same high quality maintenance facility nearby, the National Park Service would reluctantly, yet willingly vacate the area in favor of the selected design. The Old Cathedral Parking Lot would also be zoned Service.

Cultural Resources

The National Park Service would preserve the character-defining features of the NHL and Saarinen-Kiley designed landscape and structures and protect the Old Courthouse (listed within the Memorial National Register of Historic Places historic district) and the full range of fundamental resources and values through guidelines provided within the competition program. Though the Memorial grounds would remain primarily unchanged, sensitive rehabilitation efforts that incorporate the winning design entry and other actions of the National Park Service, in accordance with the *Secretary of the Interior's Standards for the*

Preservation of Historic Properties, may change specific aspects of the Memorial grounds and overlooks (e.g. the replacement of Rosehill ash with another tree species) as guided by the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010).

The appearance of Luther Ely Smith Square would likely be transformed, as focus would be given to establishing a greater connection between the Old Courthouse and the Gateway Arch. Any alterations to the Square or to Memorial Drive would preserve/should respect the east-west axis.

The Old Courthouse and its associated landscape would continue to look much as it does today, prior to completion of a Cultural Landscape Report for the Old Courthouse. Maintenance and repairs to the façade and interior of the Old Courthouse and landscape would be undertaken as needed to keep the structure in good condition. Any changes to the exterior of the historic Old Courthouse structure and landscape would be completed in accordance with the treatment recommendations of the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010), the *Secretary of the Interior's Standards for the Preservation of Historic Properties*, and *Guidelines for the Treatment of Cultural Landscapes*.

A renovated Museum of Westward Expansion under the Gateway Arch is included in the proposed action. The renovated facility would be constructed below ground to maintain the surface appearance of the cultural landscape and would include a new pedestrian entrance near Memorial Drive. Additionally, the renovated museum would be designed to meet NPS standards for the exhibition and preservation of museum objects. As part of this renovation, a new state-of-the-art collections storage and research facility would be constructed to upgrade collections storage and improve public and staff access to museum objects and archives, provided that available technologies could be utilized to ensure the facility would be flood-proof and meet NPS standards for collections storage.

Natural Resources

Because of the nature of the Memorial, the National Park Service would manage natural resource values primarily in support of cultural landscape integrity within the original Memorial boundary. The emerald ash borer and other threats to the predominant species of trees lining the walkways would be addressed with direction provided in the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010). The alignment and spacing of the trees is a character-defining feature of the Memorial and would be a priority for treatment.

The National Park Service would preserve and enhance the natural resources of the expanded boundary on the east side of the Mississippi River (East St. Louis) while providing for new visitor uses. The decurrent false aster (*Boltonia decurrens*) is a federally-designated Threatened plant species that inhabits moist, sandy floodplains along the Illinois and Mississippi Rivers. There are known populations of the decurrent false aster in St. Clair County, Illinois, and there is potential habitat for this species along the east bank of the Mississippi River within the project study area. Surveys for this species would be conducted prior to any construction within potential habitat areas.

Visitor Opportunities and Use

In the preferred alternative, the National Park Service would continue much of the same programming directed at educational groups and organized tour groups, strengthen the educational and interpretive program currently offered at the Memorial for all types of visitors, and expand the number and variety of opportunities for visitors to participate in new interactive experiences. A renovated Museum of Westward Expansion, including exhibits designed to encourage more interaction, would provide greater educational opportunities for visitors. Additionally, the exhibit space at the Old Courthouse would be renovated and the exhibits redesigned to more actively engage visitors.

The grounds surrounding the Gateway Arch would accommodate and promote more activity

and special events. This would be facilitated with the addition of a potential civic plaza closed to vehicular traffic in the area of Memorial Drive. The limited food service currently available in the existing visitor center under the Gateway Arch would be expanded and possibly provided elsewhere at the Memorial.

Transportation and Access

Improved access to the Memorial is a major priority for this plan. Design competitors would need to provide solutions that improve the physical and thematic connections to downtown St. Louis, the riverfront, and adjacent commercial development areas; and between the Old Courthouse and the Gateway Arch, between the existing Memorial grounds and the expanded Memorial boundary in East St. Louis, and between the riverfront and adjacent downtown neighborhoods, like Laclede's and Chouteau's Landings.

Proposals for increased connectivity might include one or two elevated bridges, improved at-grade pedestrian crossings across Memorial Drive, or a civic plaza and lid above the recessed interstate. In the revised preferred alternative, a one- or three-block-wide portion of Memorial Drive could be closed to vehicular traffic. If closed, traffic from Memorial Drive would be routed east and west on Chestnut and Market Streets, or Pine and Walnut Streets, north on 4th Street, and south on Broadway. Further connectivity would be promoted with a new transportation system linking visitor attractions within and outside of the Memorial.

The design competition parameters would include the continuation of on-site passenger vehicle visitor parking at the Memorial, and could be expanded to provide for oversized recreational vehicles. Design competitors would be encouraged to incorporate multiple functions at the main parking garage (parking, visitor orientation, visitor amenities, and a multi-modal transit station) on the Memorial's north end, while improving access and connectivity between the Memorial, the MetroLink Station, Laclede's Landing, the riverfront, and the Northwest Plaza in a

manner that preserves the character-defining features of the cultural landscape. Parking next to the Old Cathedral would remain in the preferred alternative and would be addressed in the design competition to improve aesthetics and visual compatibility while preserving landscape integrity. Ultimately, the design, configuration, and location of parking and pedestrian transit facilities would be determined as a result of the design competition.

The preferred alternative was modified by incorporating the visitor transportation system from alternative 4: Portals. The proposed visitor transportation system would provide a shuttle service around the Memorial, down to the riverfront and out to surrounding locations within the City of St. Louis to enhance the ability of visitors to safely and conveniently access the Memorial. The proposed seasonal water taxi would provide visitors an opportunity to cross the Mississippi by boat and further connect the Memorial to East St. Louis.

The National Park Service would continue to work with the City of St. Louis to proactively encourage compatible riverfront improvements on the west bank of the Mississippi River and would initiate similar partnerships with the City of East St. Louis and others on the east bank of the Mississippi River.

The National Park Service would coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard, Memorial Drive, and the riverfront levee. Pedestrians using the Arch/Laclede's Landing MetroLink station would be provided an improved, accessible, and more direct path from the base of the Eads Bridge into the Memorial. As a part of the preferred alternative, the National Park Service, along with the City of East St. Louis, the State of Illinois, and participating landowners, would develop an aesthetically compatible riverfront promenade between the Eads and Poplar Street Bridges in order to provide visitor access to both sides of the river. The National Park Service would continue to support the efforts

of the Great Rivers Greenway and its partners to develop a pedestrian connection to the south of the Memorial so that visitors might be able to circuit both east and west portions of the Memorial.

Under the preferred alternative, barrier-free routes within the Memorial would be established. Those new routes and the possible new entrance to the visitor center and the Museum of Westward Expansion would be designed to meet ADA/ABAAS. Visitor screening for security under the Gateway Arch would be improved with either a redesigned entrance in the current location or with a new entrance near Memorial Drive.

NPS Operations

The Memorial's operations would likely change under the preferred alternative as a result of a design competition. Additional support operations and associated staffing will directly correlate with proposed new activities and facilities. New visitor orientation facilities would be added under this alternative as part of enhanced entry portals into the Memorial.

The ultimate configuration and use of the south end of the Memorial would be determined by the results of a design competition. It is the agency's intention that the maintenance facility remain in the current location; however, the Memorial would vacate the area if a design should emerge from the competition that offered a compelling program for the entire south end and could assure the Memorial the same high quality maintenance facility nearby. The National Park Service would continue to sustain existing partnerships for the provision of educational and interpretive programs, visitor services, riverfront development, and transportation, and would develop new partnerships to similarly manage the East St. Louis addition.

Potential Boundary Modifications

Based on current congressional authorization (Appendix A), the National Park Service proposes to expand the 91-acre boundary of

the Memorial by approximately 100 acres in East St. Louis. These lands, once within the boundary, could be managed in cooperation with the current landowners or acquired by the National Park Service. Any parcels would be acquired only through willing seller or donation. The intention of the National Park Service would be to include these lands within the design competition so as to collaborate with the public and designers in determining a vision for the area. Streetscape/Riverscape and Heritage Education and Visitor Amenities management zones have been applied to East St. Louis to delineate the NPS intent for future management of the expanded Memorial. Although the area in East St. Louis is likely to remain in private ownership for some time, the National Park Service applies management zones on these lands to indicate its intention for the area, should the boundary be expanded and agreements negotiated with willing private landowners.

Staffing and Costs

The staffing level under alternative 3 would be 228.5 FTE (full-time equivalent staff positions). The current staffing level is 166.5 FTE. The increase of 62 FTE would be necessary to staff new facilities, provide resource protection to lands in East St. Louis, and administer additional partnership and commercial services agreements. In this alternative new staff, would add 3 administrative FTE, 15 interpretation FTE, 21 facilities and grounds management and maintenance FTE, and 23 law enforcement FTE. Staffing from partners currently account for 110 FTE, but would be assumed to increase in order to remain commensurate with the level of operations of this alternative, and continue to be key contributors to NPS operations.

The one-time capital costs of this alternative would be \$305.4 million. Deferred maintenance costs of alternative 3 would remain at \$22.0 million, but are subject to change based on the design competition proposals. Annual operating costs under this alternative would be \$14.7 million. These costs do not include any new facilities or programming that would result from the

design competition. Staffing levels and annual operating costs are estimated to be the minimum that would be required to implement this alternative. These costs are summarized in Table 2.3, which follows the description of alternative 5.

The full costs of this alternative would not be known until the results of the design competition are completed. The estimates provided represent only the discrete quantifiable elements and therefore establish the minimum, or starting, baseline for total cost. The final cost will likely increase above estimates provided in this report, based on the final design proposals. The cost estimates are represented in 2009 dollars and are provided

for comparison between plan alternatives only; they are not to be used for budgeting purposes. Presentation of these costs in this plan does not guarantee future NPS funding. Project funding would not be available all at once; it would most likely be provided by partners, donations, and other non-federal and federal sources.

Private funding would be required in order to conduct a design competition and to implement any selected design. Although the Memorial hopes to secure this funding and would prepare itself accordingly, the Memorial may not receive enough funding to achieve all desired conditions within the timeframe of this plan (the next 15 to 20 years).

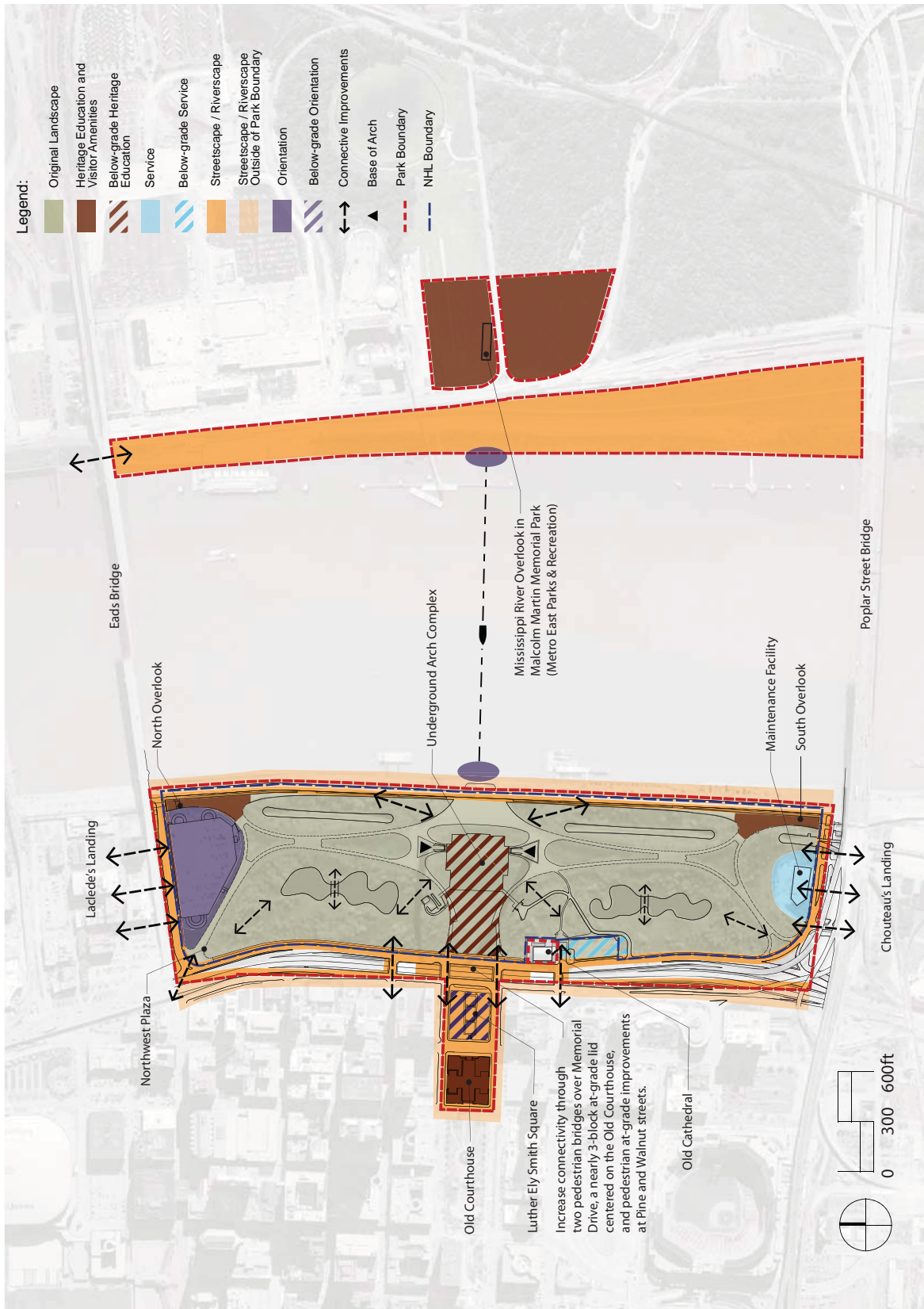


Figure 2.4 Management Alternative 4: Portals

2.6 ALTERNATIVE 4: PORTALS

Overall Vision

This alternative focuses on revitalizing the Memorial through enhanced visual and physical connections from the surrounding neighborhoods to the Memorial. It features portals from the north, south, east, and west as formal entrances into the Memorial. Capitalizing on the established visual link between the Old Courthouse and the Gateway Arch, the east-west axis would be strengthened with a new east portal linking East St. Louis to the Gateway Arch grounds by water taxi, and the creation of an expanded west portal that includes a wide at-grade lid or deck above the channelized interstate to provide additional open space. Directly above the lid/deck, two elevated pedestrian bridges would be constructed for visitors to walk between Luther Ely Smith Square and the Gateway Arch grounds. The north portal would be improved at both the northwest plaza (at Memorial Drive and Washington Avenue) and in the vicinity of the MetroLink station at Eads Bridge. The south portal would provide improved visitor access and orientation to the south end of the Gateway Arch grounds and riverfront. Pedestrian at-grade improvements would be made at all major entrances. Further connectivity would be promoted with a new transportation system linking visitor attractions within and outside of the Memorial. The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and the riverfront levee.

Management Zones

The Memorial would be primarily zoned Original Landscape to preserve the integrity of the entire National Historic Landmark. The Old Courthouse and the visitor center, the Museum of Westward Expansion (underground), and portions of East St. Louis are zoned for Heritage Education and Visitor Amenities to provide for enhanced visitor education, opportunities, and amenities. The edges of the Memorial on the north, south, and

west and along the riverfront in East St. Louis are zoned Streetscape/Riverscape to improve visual and physical connections between city streets, the riverfront, and the Memorial and to provide revitalization opportunities in the transitional zone between the Memorial and adjacent city neighborhoods. Luther Ely Smith Square and the north end of the Memorial and passenger transit stations for the seasonal water taxi are zoned Orientation to allow for the rehabilitation of these locations with the provision of visitor orientation services and facilities. The very south end of the Memorial is zoned Service to show continuance of the Memorial's maintenance facility in that location.

Within the expanded boundary in East St. Louis, the Streetscape/Riverscape zone provides for future development of the river's edge as a pedestrian oriented avenue, providing visual linkages to the rest of the Memorial on the other side of the Mississippi River. The Heritage Education and Visitor Amenities zone is situated to illustrate the NPS intention to cooperatively work with Metro East Parks and Recreation and others on the practical and educational needs of visitors. Although the area in East St. Louis is still in private ownership, the intention is to show how the National Park Service would like to manage the area, should the boundary be expanded and agreements with private landowners be negotiated.

Cultural Resources

Cultural resources at the Memorial would be managed in such a way as to preserve and protect these important resources. The fundamental resources and values of the Memorial would be protected. Significant cultural resources within the Memorial grounds would remain on the whole unchanged, although sensitive rehabilitation of the designed landscape and structures would be allowed to improve accessibility and security and to offer a modest increase in heritage education, provided the integrity of the National Historic Landmark is preserved.

In the renovation of the Museum of Westward Expansion under the Gateway Arch, a new, state-of-the-art storage facility

for collections and archives would be provided to better address the current conditions of Memorial collections and archives and to best meet NPS standards related to the curation of these resources. The expanded facility would be located below-ground to maintain the surface appearance of this portion of the cultural landscape and a new pedestrian entrance would be constructed near Memorial Drive. The new entry would be located in such a manner as to not disrupt the open visual axis of the cultural landscape between the Gateway Arch and the Old Courthouse.

The Old Courthouse and its associated landscape would continue to look much as it does today, although the exhibits would be rehabilitated. Routine maintenance and repairs to the façade and interior of the Old Courthouse and landscape would be undertaken as needed to keep the structure in good condition. Any changes to the historic structure and landscape would be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for the Treatment of Cultural Landscapes*.

Luther Ely Smith Square would continue to function as an open green space park, but the look would be likely transformed as the entire square would be rehabilitated to include subterranean visitor services. The North and South Overlooks would be rehabilitated to provide better visitor orientation, education, appropriate and necessary visitor amenities, and potential restrooms.

Natural Resources

On the east side of the Mississippi River (East St. Louis) the National Park Service would preserve and enhance the natural resources of the expanded boundary while providing for new visitor uses. The emerald ash borer and other threats to the predominant species of ash trees would be responded to with direction provided in the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010). The alignment and spacing of the trees is a character-defining feature of the Memorial and is a priority for treatment.

The decurrent false aster is a federally designated Threatened plant species that inhabits moist, sandy floodplains along the Illinois and Mississippi Rivers. There are known populations of the decurrent false aster in St. Clair County, Illinois, and there is potential habitat for this species along the east bank of the Mississippi River within the project study area. Surveys for this species would be conducted prior to any construction within potential habitat areas.

Visitor Opportunities and Use

Under this alternative many of the same programs directed to educational groups and organized tour groups would continue. Visitor activities, programs, and services would be expanded to provide more opportunities, conveniences, and services than are currently provided at the Memorial. The exhibits at the Old Courthouse and in the Museum of Westward Expansion under the Gateway Arch would be redesigned to engage visitors in more interactive participation. An expanded and renovated Museum of Westward Expansion including a new state-of-the-art storage facility for collections and archives would provide greater educational opportunities for visitors.

Transportation and Access

Opportunities for visitors to access the Memorial from multiple entry points would be enhanced with the improvements proposed in this alternative. The intent of this alternative is to provide four primary portals for visitors between the Memorial and surrounding environs. The enhanced connections are intended to improve visitor safety, accessibility, and visitor experience. Centered on the axis between the Gateway Arch and the Old Courthouse, a nearly three-block-wide lid would be constructed over the channelized Interstate highway along with two elevated pedestrian bridges between the Memorial grounds and Luther Ely Smith Square. The lid would provide, in essence, three square plazas framed by Memorial Drive on the east and west, and Pine, Chestnut, and Walnut Streets on the north and south. These plazas (zoned Streetscape/Riverscape) would be used as transitional places between the city and the

Memorial grounds and could provide space for additional visitor services and amenities.

Luther Ely Smith Square would be zoned to provide for a total rehabilitation of the landscape to include visitor orientation and services such as site information, parking, and restrooms. The area at the north end of the Memorial would be renovated to provide visitor orientation and services. Connections between the Memorial and the Arch/Laclede's Landing MetroLink station would also be improved to provide a more direct and accessible route between these two locations. Street level pedestrian connections would be improved at all major crossings providing safe, accessible, formal entryways into the Memorial.

Visitor parking at the north end of the Memorial grounds would remain but the Arch Parking Garage would be reconstructed to place all parking facilities below grade and to allow for a moderate amount of oversized recreational vehicle parking, while providing orientation services as well on upper levels (though still potentially underground). Parking could also be installed underground at Luther Ely Smith Square. The parking lot adjacent to the Old Cathedral would be reconstructed as a new underground facility, with the surface renovated to enhance visual compatibility with the Memorial landscape and to provide improved bus/shuttle drop-off and pick-up.

The proposed visitor transportation system would provide a shuttle service around the Memorial down to the riverfront and out to surrounding locations within the City of St. Louis to enhance the ability of visitors to safely and conveniently access the Memorial. The proposed seasonal water taxi would provide visitors an opportunity to cross the Mississippi by boat and further connect the Memorial to East St. Louis.

The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and Memorial Drive. The National Park Service would

continue to work with the City of St. Louis to proactively encourage compatible riverfront improvements on the west bank of the Mississippi River and would initiate similar partnerships with the City of East St. Louis and others for assistance with the design and management the East St. Louis addition.

Under this alternative, barrier-free routes from the Memorial grounds to the riverfront would be established. Those new routes and the new entrances to the visitor center and the Museum of Westward Expansion would be designed to meet ADA/ABAAS. Visitor screening for security under the Gateway Arch would move to the new entrance and would be provided for in a comfortable and expedient manner. The new entrance would not preclude use of the original entrances beneath the Gateway Arch legs, but would direct the majority of visitors to a new universally accessible entrance that would better meet security screening requirements and would provide a largely sheltered entryway. Any new facilities developed under this alternative would include barrier-free access and meet heightened security requirements.

NPS Operations

New visitor facilities would be added under this alternative for orientation at the north end of the Memorial, beneath Luther Ely Smith Square (partially or mostly underground) and at both the passenger transit terminals for the new water taxi, and for interpretation and visitor services at both overlooks and in East St. Louis. In addition, the Museum of Westward Expansion would be greatly expanded to provide visitors more interactive exhibits and programming. The expanded and renovated Museum of Westward Expansion also would include a new storage facility for collections and archives. The North and South Overlooks would be zoned and renovated for Heritage Education and Visitor Amenities. Facilities at the overlooks could include educational exhibits, visitor contact stations, spaces designed for educational programs, restrooms, and food service. Regardless, the design of the overlooks would appear symmetrical, in order to maintain the symmetry of the Saarinen-Kiley design.

The East St. Louis addition could potentially include a pedestrian riverwalk, wayside exhibits, a visitor contact facility, restrooms and transit hub to provide visitors an easy transition between the water taxi, riverwalk, MetroLink, and personal vehicles. The limited food items and drink vending currently available in the existing visitor center under the Gateway Arch would be expanded and food service could be provided in the new orientation facilities at the north end of the Memorial grounds, as well as at Luther Ely Smith Square, the overlooks, and the East St. Louis addition.

The Memorial's maintenance facility would remain at the south end of the Memorial grounds.

The National Park Service would continue to sustain existing partnerships for the provision of educational and interpretive programs, visitor services, riverfront development, and transportation, and develop new partnerships to similarly manage the East St. Louis addition.

Proposed Boundary Modifications

Based on the two acts of Congress authorizing and establishing an expansion of the Memorial boundary (Appendix A), the National Park Service proposes to expand the 91-acre boundary of the Memorial by approximately 70 acres in East St. Louis. These lands, once within the boundary, could be managed in cooperation with the current landowner or acquired by the National Park Service. Any parcels would be acquired only through willing seller or donation. The possible expansion of the Memorial boundaries in East St. Louis would include portions of Malcolm Martin Memorial Park and property immediately south and west of this park, on axis with the Gateway Arch across the river in St. Louis.

Staffing and Costs

The staffing level under alternative 4 would be 248.5 FTE (full-time equivalent staff positions). The current staffing level is 166.5 FTE. The increase of 82 FTE would be necessary to staff new facilities, provide resource protection to lands in East St. Louis, and administer additional partnership and commercial services agreements. In this alternative, new staff would add 5 administrative FTE, 17.5 interpretation FTE, 24.5 facilities and grounds management and maintenance FTE, and 35 law enforcement FTE. Staffing from partners currently account for 110 FTE, who would remain key contributors to NPS operations.

The one-time capital costs of this alternative would be \$368.5 million. Deferred maintenance costs of this alternative would be reduced to approximately \$19.0 million due to proposed actions that would change or eliminate some infrastructure needs at the existing museum. Annual operating costs under this alternative would be \$26.1 million. These costs are summarized in Table 2.3, which follows the description of alternative 5.

These cost estimates are in 2009 dollars and are provided for comparison to other alternatives only; they are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a midpoint in a possible range of costs. Presentation of these costs in this plan does not guarantee future NPS funding. Project funding would not come all at once; it most likely would be provided from partners, donations and other non-federal sources and federal sources. Although the Memorial hopes to secure this funding and would prepare itself accordingly, the Memorial may not receive enough funding to achieve all desired conditions within the timeframe of this plan (the next 15 to 20 years).

2.7 ALTERNATIVE 5: PARK INTO THE CITY

Overall Vision

The focus on this alternative is to extend the visitor's experience of the Memorial into the surrounding cities. In this alternative the Memorial would be revitalized by emphasizing enhanced services and visual themes that begin and continue into adjacent neighborhoods and areas, and by addressing the transportation and access challenges of the Memorial. The single largest change in the look and feel of the Memorial would be caused by the removal and rerouting of Memorial Drive away from the Memorial between Poplar Street and Locust Street. With the removal of this major thoroughfare from within the Memorial boundary, the edge of the Memorial could be transformed into a series of large pedestrian plazas, increasing connectivity between the Old Courthouse and the Gateway Arch, centered on Luther Ely Smith Square. Further connectivity would be promoted with a new transportation system linking visitor attractions within and outside the Memorial. The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial, including Leonor K. Sullivan Boulevard and the riverfront levee.

Management Zones

The north and south ends of the Memorial would be zoned to allow for new educational/cultural facilities and visitor amenities. The Memorial would be primarily zoned Original Landscape. The Old Courthouse, the visitor center and the Museum of Westward Expansion (underground), the north and south ends of the Memorial, and portions of East St. Louis would be zoned Heritage Education and Visitor Amenities to provide for new educational/cultural facilities and enhanced visitor amenities. The edges of the Memorial would be zoned Streetscape/Riverscape to improve visual and physical connections between city streets, the riverfront, and the Memorial and to provide revitalization opportunities in the transitional area between

the Memorial grounds and adjacent city neighborhoods. The Streetscape/Riverscape zone includes the reclaimed Memorial Drive, Luther Ely Smith Square, and the riverfront in both St. Louis and East St. Louis.

Within the East St. Louis addition, the Streetscape/Riverscape zoning would provide for the future development of the river's edge as a pedestrian oriented avenue, providing visual linkages to the rest of the Memorial on the other side of the Mississippi River. The Heritage Education and Visitor Amenities zone would be situated to illustrate the NPS intention to cooperatively work with Metro East Parks and Recreation and others on the practical and educational needs of visitors. Although the area in East St. Louis is still in private ownership, the intention is to show how the National Park Service would like to manage the area, should the boundary be expanded and agreements with private landowners be negotiated.

Cultural Resources

Cultural resources at the Memorial would be managed in such a way as to preserve and protect these important resources. The fundamental resources and values of the Memorial would be protected. Significant cultural resources within the Memorial grounds would remain on the whole unchanged, although sensitive rehabilitation of the designed landscape and structures would be allowed to improve accessibility and security, and to offer a modest increase in heritage education, provided the integrity of the National Historic Landmark is preserved.

Museum collections and archives would be moved into a state-of-the-art storage space to better address the current conditions and to best meet NPS standards related to the preservation of these resources when not on exhibit in the Museum of Westward Expansion or in the Old Courthouse. This facility would be located within a newly designed and constructed education and research facility at the south end of the Memorial.

The Old Courthouse and its associated landscape would continue to look much as it does today, although the exhibits would

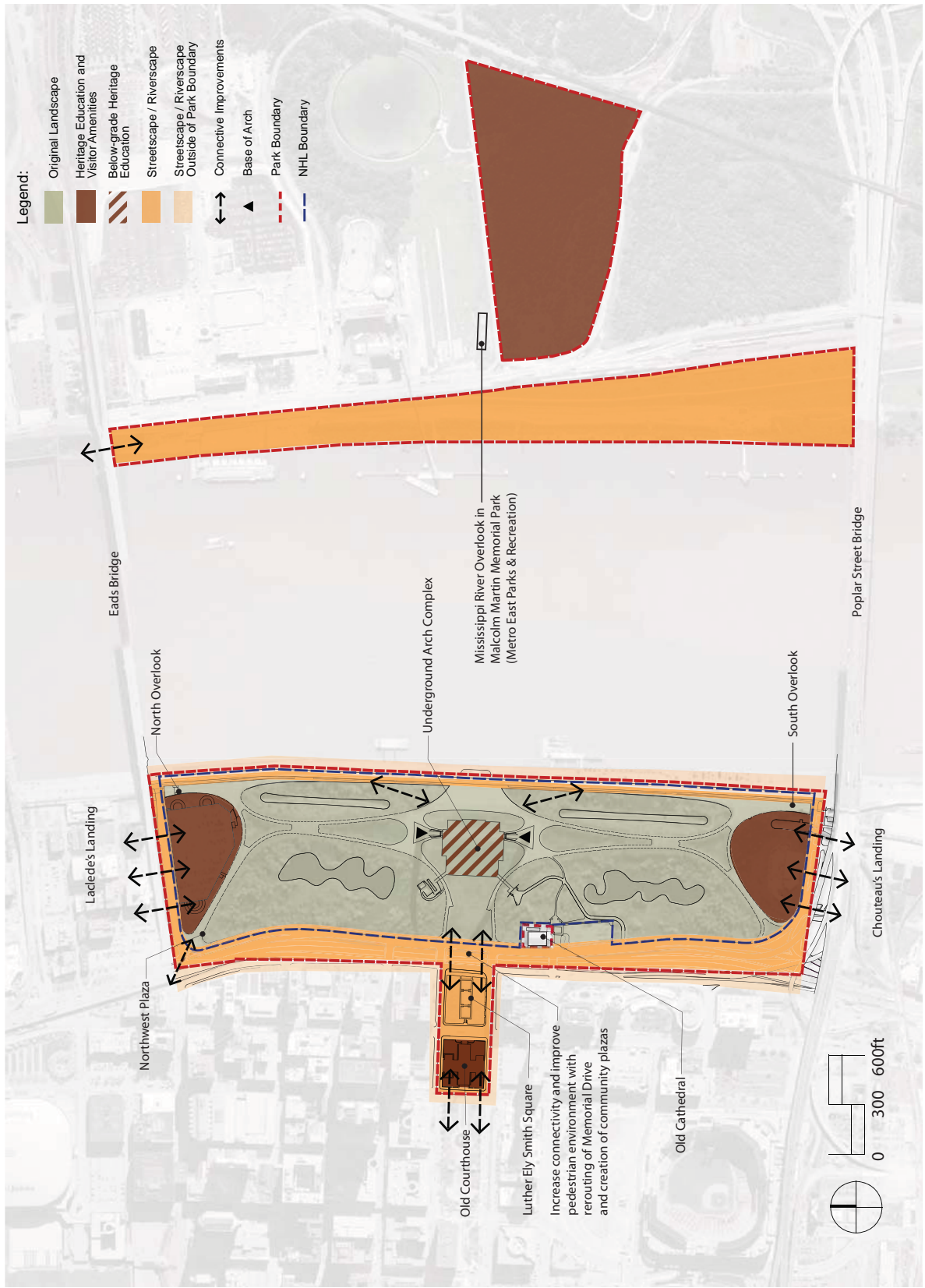


Figure 2.5 Management Alternative 5: Park into the City

be rehabilitated. Routine maintenance and repairs to the façade and interior of the Old Courthouse and landscape would be undertaken as needed to keep the structure in good condition. Any changes to the historic structure and landscape would be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and *Guidelines for the Treatment of Cultural Landscapes*.

Luther Ely Smith Square would continue to function as an open green space park but the look would likely be transformed as the entire square would be zoned Streetscape/Riverscape allowing for rehabilitation.

Natural Resources

On the east side of the Mississippi River (East St. Louis addition) the National Park Service would preserve and enhance the natural resources of the expanded boundary while providing for new visitor uses. The emerald ash borer and other threats to the predominant species of ash trees would be responded to with direction provided in the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010). The alignment and spacing of the trees is a character-defining feature of the Memorial and is a priority for treatment.

The decurrent false aster is a federally designated Threatened plant species that inhabits moist, sandy floodplains along the Illinois and Mississippi Rivers. There are known populations of the decurrent false aster in St. Clair County, Illinois, and there is potential habitat for this species along the east bank of the Mississippi River within the project study area. Surveys for this species would be conducted prior to any construction within potential habitat areas.

Visitor Opportunities and Use

Under this alternative many of the same programs directed to educational groups and organized tour groups would continue, along with an increase and expanded range of visitor activities, programs, and services than are currently provided at the Memorial.

The exhibits at the Old Courthouse and in the Museum of Westward Expansion under the Gateway Arch would be redesigned to provide visitors more interactive experiences. A new state-of-the-art curatorial storage facility for collections and archives would provide greater educational opportunities for visitors. The grounds surrounding the Gateway Arch would be managed in such a way as to accommodate and promote more visitor activity and special events than are currently provided.

The new education and research facility would provide programs for students and organized groups of all ages as well as provide space for students, historians, and researchers to better access the vast array of historical documents and architectural objects housed in the Memorial's collections. This new facility would be located at the south end of the Memorial to help distribute visitors to this less used portion of the Memorial.

Transportation and Access

The single largest change in the look and feel of the Memorial would be caused by the rerouting of Memorial Drive away from the Memorial between Poplar Street and Locust Street, utilizing 4th Street northbound and Broadway Street southbound. These streets and the surrounding street grid potentially have adequate capacity to accommodate the re-routed traffic, but this would need to be confirmed through further study. With the removal of this major thoroughfare from within the Memorial boundary, the edge of the Memorial could be transformed into a series of large pedestrian plazas, thereby increasing connectivity between the Old Courthouse and the Gateway Arch, centered on Luther Ely Smith Square.

At the north end of the Memorial the existing Arch Parking Garage would be renovated and converted to accommodate a new visitor orientation and heritage education center providing greater visitor educational opportunities. This same location would serve as the central hub for a multimodal portal and transit center that would provide a transportation system linking visitor attractions within the Memorial to sites outside

of the Memorial boundary. Because parking would be removed at this location, this new transportation system would provide a more accessible means for visitors to connect with the Memorial and outside sites, integrating the Memorial and city experiences for visitors. Opportunities for the visitor to access the Memorial from adjacent neighborhoods at multiple entry points would be enhanced with the improvements proposed in this alternative. The intent of this alternative is to provide a seamless flow for visitors to and from the Memorial grounds. The enhanced connections are intended to improve visitor safety, accessibility, and the visitor experience.

Under this alternative on-site visitor parking would be eliminated at the north end of the Memorial and adjacent to the Old Cathedral. Visitors would be directed to use existing parking lots and garages outside the Memorial and would either walk to the Memorial or make use of the new transportation system. An improved bus/shuttle drop-off and pick-up would be added adjacent to the Old Cathedral.

The National Park Service would actively coordinate with the City and State to enhance the pedestrian environment around the Memorial by developing a unifying streetscape along the Gateway Mall and the other streets adjacent to the Memorial including Leonor K. Sullivan Boulevard, Poplar and Washington Streets, and Memorial Boulevard. The National Park Service would continue to work with the City of St. Louis to proactively encourage compatible riverfront development on the west bank of the Mississippi River and would initiate similar partnerships with the City of East St. Louis and others for assistance with the design and management of the East St. Louis addition.

Similar to alternative 4, barrier-free routes from the Gateway Arch grounds to the riverfront would be established, and existing entrances to the visitor center and the Museum of Westward Expansion would be redesigned to meet the Americans with Disabilities Act (ADA)/ Architectural Barriers Act Accessibility Standards (ABAAS). Visitor screening for security under the Gateway Arch would remain at the current entrances or in close proximity to the existing entrance of the visitor

center. All new facilities developed under this alternative would include barrier-free access and heightened security requirements.

NPS Operations

New visitor facilities would be added under this alternative for interpretation and visitor services at the north and south ends of the Memorial and in East St. Louis. The new education and research center at the south end of the Memorial would include a new storage facility for collections and archives. Development in East St. Louis could potentially include a pedestrian riverwalk, wayside exhibits, a visitor contact facility, restrooms, and a transit hub to provide visitors an easy transition between the water taxi, riverwalk, MetroLink, and personal vehicles. The limited food items and drink vending currently available in the existing visitor center under the Gateway Arch would be expanded and food service could be provided in the new orientation facilities at the north end of the Memorial as well as at Luther Ely Smith Square and the East St. Louis addition.

The Memorial's maintenance facility would be moved off-site to make way for the new education and research center.

The National Park Service would continue to work with the City of St. Louis to proactively encourage compatible riverfront improvements on the west bank of the Mississippi River and would initiate similar partnerships for the east bank of the Mississippi River. The National Park Service would sustain existing partnerships for the provision of educational and interpretive programs, visitor services, and transportation service for the Gateway Arch tram. The National Park Service would develop new partnerships in support of the new education and research center, the multimodal transit center, and the management of the East St. Louis addition.

Potential Boundary Modifications

Based on the two acts of Congress authorizing and establishing an expansion of the Memorial boundary (Appendix A), this alternative proposes to expand the 91-acre boundary

of the Memorial by approximately 100 acres in East St. Louis. These lands, after being added to the boundary, could be managed in cooperation with the current landowner or acquired by the National Park Service. Any parcels would be acquired only through willing seller or donation. The possible expansion of the Memorial boundaries in East St. Louis would include a portion or portions of Malcolm Martin Memorial Park and the property immediately south and west of this park on axis with the Gateway Arch to the west bank of the river in St. Louis.

Staffing and Costs

The staffing level under alternative 5 would be 240 FTE (full-time equivalent staff positions). The current staffing level is 166.5 FTE. The increase of 73.5 FTE would be necessary to staff new facilities, provide resource protection to lands in East St. Louis, and administer additional partnership and commercial services agreements. In this alternative, new staff would add 5 administrative FTE, 17 interpretation FTE, 27 facilities and grounds management and maintenance FTE, and 24.5 law enforcement FTE. Staffing from partners currently account for 110 FTE, who would be key contributors to NPS operations.

The one-time capital costs of this alternative would be approximately \$379.4 million. Deferred maintenance costs of this alternative would be reduced to approximately \$ 17.0 million due to proposed actions that would change or eliminate some infrastructure needs at the Memorial maintenance facility, Old Cathedral parking lot, and bus/shuttle drop-off zone. Annual operating costs under this alternative would be \$26.3 million. These costs are summarized in Table 2.3, which follows the description of alternative 5.

These cost estimates are in 2009 dollars and are provided for comparison to other alternatives only; they are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a midpoint in a possible range of costs. Presentation of these costs in this plan does not guarantee future NPS funding. Project funding would not come all at once; it most likely would be provided from partners, donations, and other non-federal sources and federal sources. Although the Memorial hopes to secure this funding and would prepare itself accordingly, the Memorial may not receive enough funding to achieve all desired conditions within the timeframe of this plan (the next 15 to 20 years).

	Alternative 1: No Action	Alternative 3: Program Expansion	Alternative 4: Portals	Alternative 5: Park into the City
One-Time Capital Costs ¹	\$0	\$305,403,631*	\$368,541,633	\$379,378,600
Deferred Maintenance ²	\$22,000,000	\$22,000,000*	\$19,000,000	\$17,000,000
Annual Operating Costs ³	\$10,354,865	\$14,703,250*	\$26,102,040	\$26,267,295
Staffing (FTE) ⁴	166.5	228.5	248.5	240

All costs are presented in 2009 dollars; boundary expansion costs are not included

Table 2.3 Cost Comparison

Table 2.3 Notes:

*Costs for alternative 3 do not include new costs that would result from the design competition. Staffing levels and annual operating costs are estimated at the minimum that would be required to implement this alternative, and could be higher. *The full costs of the preferred alternative would not be known until the results of a design competition were completed. The estimates provided are projected minimum costs.*

1. One-time capital costs include new construction and the associated costs for proposed new structures, facilities, and landscape improvements. The no action alternative does not include funding for any new capital investment projects. Unfunded projects include accessibility improvements, security improvements, and exhibits renovations. Land acquisition costs for the proposed boundary expansion are not included for any alternative.
2. Deferred maintenance costs are those needed to improve Memorial assets (structures and facilities) to a good condition based on NPS standards and calculating tools. Deferred maintenance is reduced in alternatives 4 and 5 due to proposals to eliminate facilities that currently have deferred maintenance needs.
3. Annual operating costs are the total annual costs for maintenance and operations associated with each alternative. Included are all costs related to maintenance (e.g., utilities, materials, supplies, and leasing) and visitor services, law enforcement, resource management, and administration operations (including staff salaries and benefits). Costs for the no action alternative are based on the current budget and partnership assistance. The costs shown do not account for any annual escalation due to cost of living increases or other economic factors.
4. Total full-time equivalents (FTE) are the number of staff required to maintain Memorial assets and provide acceptable visitor services, protection of resources,

and other operational support. Most full-time equivalent staff would likely be NPS employees. However, managers would explore opportunities to work with partners, volunteers, and other federal agencies to assist in the effective and efficient management of the Memorial. Volunteers and partnership activities currently account for 110 FTE, and are assumed to remain at that rate. Those hours might be in addition to or instead of NPS employees.

The following applies to all costs presented in this general management plan:

- The costs are presented as estimates intended for alternative comparison purposes only and are not appropriate for budgeting purposes.
- The cost estimates are presented in 2009 dollars.
- The cost estimates were developed using industry standards to the extent available and they represent the total costs of projects. However, due to cost estimating uncertainty, actual costs could be as much as 30% lower or 50% higher than noted.
- Actual costs would be determined at a later date and would take into consideration the design of facilities, identification of detailed resource protection needs, changing visitor expectations, and the final decision of a preferred management proposal.
- Initial construction was assumed to occur in year one.
- Approval of the General Management Plan does not guarantee funding or staffing for proposed actions.
- Project funding would not come all at once; it would likely take many years to secure and may be provided by partners, donations, or other non-federal sources.
- Some proposals may not be funded within the life of this plan and full implementation may occur many years into the future.

2.8 IMPLEMENTATION OF THE GENERAL MANAGEMENT PLAN

Introduction

The implementation of the approved General Management Plan (GMP) would be managed and administered by the National Park Service at the local and regional level. The Memorial's superintendent has wide discretion to prioritize actions needed to implement the plan. Actions – whether projects or policies – are any variety of program activities or development projects that occur as an outcome of the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. Allowable actions are outlined first in the description of the management zones and subsequently in the narrative text of the final selected alternative. The narrative does not attempt to describe a definitive list of actions that could result from the selected alternative. Rather, the descriptions of the allowable actions are meant to illustrate the far edge of the continuum of potential actions. Although the National Park Service would be responsible for implementing the General Management Plan, any number of actions could be carried out by the National Park Service alone or in partnership with others.

The implementation of the approved plan would depend on future funding. Approval of the plan does not guarantee the funding needed to implement the plan would be forthcoming, and indeed, full implementation of the approved plan could be many years in the future. The implementation of the approved plan also could be affected by other external and internal factors. Some parts of implementation plans are prepared for parks in response to NPS policies. As well, once the plan has been approved, additional legislation, additional feasibility studies, and more detailed planning and appropriate environmental documentation may be required before any proposed actions can be appropriately finalized and carried out. These more detailed plans would develop from the General Management Plan through the description of specific actions managers are intended to take in order to achieve desired conditions and long-term goals.

Implementation Funding

The *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* provides the framework for deciding which alternative, and thereby which future projects, is chosen for implementation. While this plan provides a justification for future funding proposals, it does not guarantee any future funding. Many actions would be necessary to achieve the desired conditions for historic buildings and structures, the cultural landscape, education opportunities, and facilities as envisioned in this plan. The National Park Service intends to request funding to achieve these desired conditions; although the Memorial hopes to secure this funding and would prepare itself accordingly, the Memorial may not receive enough funding to achieve all desired conditions. Because NPS funding may be insufficient to accomplish the goals set by the plan, Memorial managers need to continue to pursue other options, including expanding the service of volunteers, drawing upon existing and new partnerships, and seeking alternative funding sources, including the philanthropic community. Many people care deeply about their national parks (and the Memorial in particular), and these people are likely to continue to offer assistance in meeting NPS goals that matter most to them. Many potential partner groups exist whose missions are compatible with that of the Memorial, and these groups are likely to offer to work with the Memorial for mutual benefit. Even with assistance from supplemental sources, Memorial managers may be faced with difficult choices when setting priorities. The General Management Plan provides the framework within which to make these choices.

The cost figures shown here and throughout the plan are intended only to provide an estimate of the relative costs of alternatives. The National Park Service and industry cost estimating guidelines were used to develop the costs (in 2009 dollars) to the extent possible, but the estimates should not be used for budgeting purposes. Specific costs may be determined in subsequent, more detailed planning and design exercises, and would consider the design of facilities, identification

of detailed resource protection needs, and changing visitor expectations. Actual costs to the National Park Service may vary depending on if and when the actions are implemented, and on contributions by partners and volunteers.

Key Implementation Plans to Follow This General Management Plan

COMPREHENSIVE INTERPRETATION
Staff at the Memorial were in the process of updating the Memorial's Comprehensive Interpretive Plan just prior to undertaking the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. At the conclusion of this planning effort, the National Park Service will resume the development and implementation of a comprehensive interpretive plan that incorporates the goals for interpretation and education generated here. The emphasis will be on providing information, orientation, and interpretive services in the most effective manner possible through the use of both personal (involving authorized staff) and non-personal (not involving staff) services, including state-of-the-art technologies, as appropriate. The National Park Service will cooperate with partners, other governmental agencies, educational institutions, and other organizations to enrich interpretive and educational opportunities locally, regionally, and nationally.

STRATEGIC PLAN

Every five years, each unit of the national park system updates its Strategic Plan. The Strategic Plan for Jefferson National Expansion Memorial was last updated in 2007. The objectives of the Strategic Plan derive from the Memorial's General Management Plan and other program management plans. The Strategic Plan makes decisions about which of the desired conditions identified in those plans should be the highest priorities in the foreseeable future and usually addresses a three to five years time span. Based on current local conditions such as threats to resources, opportunities for collaboration, and agency priorities, the Strategic Plan looks for the best fit between priorities. Information in a strategic plan is used to compile NPS

achievements and to meet requirements of the Government Performance and Results Act of 1993 (GPRA).

ACCESSIBILITY

The National Park Service is committed to providing universal accessibility to each of its park units, and to modifying historic structures to meet Architectural Barriers Act Accessibility Standards, which apply to federally funded facilities. In addition, the Americans with Disabilities Act applies to places of public accommodation and commercial facilities, as well as state and local government facilities, which include places adjacent to the Memorial. The Saarinen-Kiley concept for the Memorial was to physically connect the Gateway Arch grounds with the Mississippi riverfront, which has been accomplished with the completion of the Grand Staircase in 2003. In order to more fully incorporate the Memorial into the surrounding areas, provide better accessibility around the Memorial grounds, and bring the entrances to the underground facilities up to current standards, an accessibility plan will be developed. This plan would provide park managers with a means to prioritize scheduling and funding for the design and construction of multiple aspects of the work. The plan will follow agency guidance for compliance with the ADA, the ABAAS, the National Environmental Policy Act, Sections 106 and 110 of the National Historic Preservation Act, and other applicable laws and policies.

User Capacity Management

General management plans for national park system units must address user capacity management. The National Park Service defines user capacity as the type and level of use that can be accommodated while sustaining the quality of a park unit's resources and visitor opportunities consistent with the purposes of the park unit.

User capacity management involves establishing, monitoring, evaluating, and implementing (managing visitor use) desired conditions to ensure that Memorial values are protected. The premise of user capacity management is that any use of public lands results in some level of impact that must be

accepted; therefore, it is the responsibility of the National Park Service to determine what level of impact is acceptable and what management actions are needed to keep impacts within acceptable limits. Instead of simply tracking and controlling user numbers, NPS staff manages the levels, types, and patterns of visitor use and other public uses as needed to preserve the condition of the resources and quality of the visitor experience. The monitoring component of this process enables NPS staff to evaluate the effectiveness of management actions and provides a basis for informed management of public use.

With limited staff and budget, NPS managers must focus on areas of marked concern and/or clear evidence of impacts. This means monitoring should generally take place when conditions are approaching or currently violating standards, conditions are changing rapidly, specific and important values are threatened by visitation, and/or the impacts of management actions taken to address impacts are uncertain.

Because Jefferson National Expansion Memorial is an urban park and a nationally and internationally recognized icon, high levels of visitation are expected and consistent with the purpose of the Memorial. As such, the grounds were generally designed to accommodate an influx of pedestrian traffic. Most of the standards applied to the Memorial are dictated by physical capacity, fire code, and general health and safety needs.

This plan addresses user capacity in the following ways:

- It outlines management zones that provide the foundation for user capacity management. The management zones prescribe desired resource conditions, visitor experience opportunities, and types of facilities to support the resource conditions and visitor experiences for different areas.
- It describes the Memorial's most pressing use-related resource and visitor experience concerns. This helps NPS managers focus limited resources on specific potential

indicators and determine what kinds of baseline information to collect.

- It identifies potential indicators that could be monitored as needed in the future to determine if desired conditions are not being met due to unacceptable impacts from public use.
- It outlines representative examples of management actions that might be used to avoid or minimize unacceptable impacts from public use.
- It identifies specific geographic areas for special monitoring attention.

The last steps in the user capacity process, which will continue indefinitely, involve monitoring the Memorial's resources and visitor experience opportunities and taking management actions as needed to minimize impacts. If new use-related resource or visitor experience and safety concerns arise in the future, additional indicators and standards would be identified as needed to address these concerns.

INDICATORS AND STANDARDS

Indicators are specific measurable resources or social variables that can be measured to track changes in conditions caused by public use. Indicators are measured for assessment of progress toward attaining a specified desired condition. Standards mark the measurable point at which an indicator changes from an acceptable condition to an unacceptable condition. Standards define the maximum acceptable level of adverse impact on the indicators. Standards for each indicator would be derived from baseline conditions and Memorial design, as well as NPS guidelines and standards. For this General Management Plan, standards are not established; rather, this plan sets forth qualitative descriptions of the desired conditions the National Park Service would achieve for resources and visitor experiences. Once standards were established, or if on-the-ground conditions degrade as a result of regular visitor use, special events, or natural events, specific management actions would be taken to improve conditions.

POTENTIAL USER CAPACITY INDICATORS AND RELATED MANAGEMENT ACTIONS

The following indicators and potential management actions have been developed for managing visitor use at Jefferson National Expansion Memorial. Resource and visitor experience monitoring would be used as part of this process and if new knowledge is gained or visitor use patterns differ substantially from those projected, these indicators would be modified.

VEGETATION AND OTHER RESOURCES (ALL ZONES)

Lawn and turf conditions are most affected by the amount and frequency of use which may disturb these resources. A certain degree of wear and tear occurs and is expected to occur on the Memorial grounds through normal visitor use; therefore, maintenance of these resources is programmed regularly. The frequency and intensity of large concentrations of visitors often creates adverse impacts to turf and vegetation in the form of damage or loss. This is primarily seen in the spring and summer with regular high volumes of use and crowded special events. During natural events associated with Mississippi River flooding, social trails often develop through planted beds on the hillsides leading from the Memorial grounds to the river, creating resource damage in the form of erosion and trampling of vegetation. Vegetation management also tiers from treatment recommendations in the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010).

Indicator: Creation of social trails, erosion, and trampled vegetation.

Management Action: Management actions that may be considered to avoid or minimize impacts to these resources include creating barrier-free routes from the Memorial grounds down to the riverfront, directing visitors to other designated areas or facilities, the use of temporary fencing during flood events to prevent damage to resources as soon as visitors are observed cutting through planted beds, with removal occurring at the subsidence of flood events, repairing and reestablishing damaged vegetation, and the issuance of citations.

Indicator: Damage to trees as a direct result of concentrated use due to special events.

Management Action: Management actions that may be considered to prevent or minimize impacts include managing access to certain areas with natural barriers, redistributing use to lesser used areas or off-peak times, rehabilitating some sites, requiring special use permits to include payment for damage to vegetation clause as a result of special events, and the issuance of citations

Indicator: Bare ground or damaged turf due to normal, heavy, or concentrated use.

Management Action: General provisions for maintenance during and following scheduled events are programmed and typically incorporate soil nourishment, seeding, and replacement of sod. Temporary fencing is an effective management technique used during special events to direct visitors to desired locations along designated pedestrian thoroughfares, and to minimize social trails from developing or excessive pedestrian traffic from occurring in areas not capable of withstanding high levels of foot traffic.

2.9 MITIGATION MEASURES FOR THE ACTION ALTERNATIVES

In the legislation that created the National Park Service, Congress charged the agency with managing lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (*National Park Service Organic Act*). As a result the National Park Service routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of NPS resources. To ensure that implementation of the action alternatives protects unimpaired natural and cultural resources and the quality of the visitor experience, a consistent set of mitigative measures would be applied to actions proposed in this plan. The National Park Service would prepare appropriate review (i.e., those required by the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and other relevant legislation) for these future actions. As

part of the environmental review the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable. The implementation of a compliance-monitoring program would be considered to stay within the parameters of National Environmental Policy Act and National Historic Preservation Act compliance documents, and U.S. Army Corps of Engineers Section 404 and Section 10 permits. The compliance-monitoring program would oversee these mitigative measures and would include reporting protocols.

The following mitigative measures and best management practices would be applied to avoid or minimize potential impacts from implementation of the alternatives. These measures would apply to all alternatives.

Cultural Resources

The Memorial staff would work with the Missouri and Illinois State Historic Preservation Officers (SHPOs) on management strategies for all types of cultural resources, including minimizing adverse impacts resulting from visitor use. All mitigation measures would be undertaken in consultation with the Missouri and Illinois SHPOs and the Advisory Council on Historic Preservation. The Memorial's resources would be managed according to federal regulations and NPS standards and guidelines. Management would restrict visitor access in all instances where visitor use appears to adversely affect resources or conflicts with the Memorial's purpose and significance.

BUILDINGS, STRUCTURES, SITES, OBJECTS, AND DISTRICTS

All buildings, structures, sites, objects, and districts in the Memorial have been inventoried and evaluated using the criteria of the National Register of Historic Places. Not all of these structures and landscapes have been fully documented and submitted to the Keeper of the National Register. Until that action has occurred, however, all properties listed in or appearing to meet National Register criteria would be treated as though they are listed. The National Park Service and SHPOs would consult on strategies for the protection, stabilization, and treatment of

cultural resources such as the Gateway Arch, the Old Courthouse, Eads Bridge, and the Old Cathedral. All actions would be guided by Director's Order 28, Cultural Resources Management Guideline, the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, and other NPS and agency policies and regulations. Archeological data recovery would precede and be completed before physical intervention into any archeological resource, including sites associated with historic structures.

The National Park Service would preserve and protect, to the greatest extent possible, resources and values that reflect the modern architecture and designed landscape of the Memorial, and the adjacent Mississippi riverfront and urban districts surrounding the Memorial. Specific mitigative measures would include the following:

- Completion of the update to the Cultural Landscape Report for the National Historic Landmark, identifying treatments to ensure the preservation of the NHL. (*Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010)).
- Complete any required documentation, including the possible completion of a cultural landscape report for the Old Courthouse grounds and identify treatments to ensure the preservation of the courthouse environs.
- Rehabilitate and/or restore cultural landscape resources within the Memorial to the extent feasible. This could entail incorporating new additions using compatible design.
- Wherever possible, locate projects and facilities in previously disturbed or existing developed areas.
- Whenever possible, modify project design features to avoid affecting cultural resources. New developments would be relatively limited and would be located on sites and blend with cultural landscapes. If necessary, use the designed topography and vegetation to minimize impacts on cultural landscapes.

- Strictly adhere to NPS standards and guidelines on the display and care of artifacts.

ARCHEOLOGICAL RESOURCES

The Archeological Resources Protection Act of 1979 requires that all federal land managers develop plans for surveying lands under their control to determine the nature and extent of archeological resources on those lands. Funding for a comprehensive survey has been requested and site-specific surveys continue to be conducted in the interim. As appropriate, archeological surveys and/or monitoring would precede any construction. Known archeological resources would be avoided to the greatest extent possible. If archeological resources listed in or eligible for listing in the National Register could not be avoided, an appropriate mitigation strategy would be developed in consultation with the SHPOs and, if necessary, associated American Indian tribes. If during construction previously undiscovered archeological resources are uncovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented, and an appropriate mitigation strategy developed in consultation with the Missouri and Illinois SHPOs.

Natural Resources

LIGHTSCAPE

Outdoor lighting for new or rehabilitated facilities would incorporate the need for personal safety while providing innovative solutions that enhance the aesthetics of the Memorial. Lights would also be shielded and/or directed downward to minimize impact on the night sky.

SOUNDSCAPE

Standard noise abatement measures would be implemented, as appropriate, during Memorial operations and construction activities. Examples include: scheduling activities so that impacts are minimized, use of the best available noise control techniques, use of hydraulically or electrically powered tools, and situating noise-producing machinery as far as possible from sensitive uses or resources.

THREATENED AND ENDANGERED SPECIES

Mitigative actions would occur during normal Memorial operations as well as before, during, and after construction to minimize immediate and long-term impacts to rare, threatened, and endangered species. These actions would vary by specific project and area of the Memorial affected. Surveys would be conducted, as appropriate, for threatened and endangered species and species of concern before ground-disturbing activities are undertaken. Potential impacts on the decurrent false aster, a federally designated Threatened species, are analyzed in detail in this document (see Chapter 4). Conservation measures would be undertaken to reduce potential impacts on this federally listed species as needed and would be implemented in consultation with the U.S. Fish and Wildlife Service. Conservation measures would be required if activities expected to have impacts beyond those addressed in this document are initiated, and if additional occurrences of recurrent false aster or any other federally designated Threatened and Endangered species are identified within the Memorial. Should any of the above events occur, renewed discussion and consultation with the U.S. Fish and Wildlife Service would focus on development of specific conservation measures to reduce potential impacts on these species and/or designated critical habitat. Such conservation measures would be based on the recommendations provided by the U.S. Fish and Wildlife Service.

WATER RESOURCES

All state and federal regulations would be followed, and best management practices would be utilized. To prevent water pollution during construction measures such as erosion control, the minimization of discharge to water bodies, and the regular inspection of construction equipment for leaks of petroleum and other chemicals would be implemented.

WETLANDS

A search of the Natural Resources Conservation Service (NRCS) wetlands database and subsequent field survey did not result in the identification of wetlands at the Memorial (see Chapter 3). Hence, a statement of findings for wetlands has not been

prepared. If wetlands are identified within the Memorial in the future, all facilities would be located to avoid wetlands, if feasible, and best management practices would be implemented to ensure construction-related impacts are minimal and to prevent long-term impacts on water quality, wetlands, and aquatic species from displacement of soils. If avoiding wetlands is not feasible, other actions would be taken to comply with Executive Order 11990 (Protection of Wetlands), the Clean Water Act, and Director's Order (DO) 77-1 (Wetland Protection).

Visitor Safety and Experiences

During construction of visitor facilities and parking areas the National Park Service would implement a traffic control plan, as warranted, to maintain safe and efficient traffic flow during construction. Strategies to reduce adverse impacts of construction on visitor safety and experience would be undertaken. Outdoor lighting for new or rehabilitated facilities would incorporate the need for personal safety while providing innovative solutions that enhance the aesthetics of the Memorial.

Relationships with the Surrounding Communities

During the future planning and implementation of the approved management plan the National Park Service would work with the surrounding metropolitan communities and governments to further identify potential impacts and mitigative measures.

Sustainable Design and Aesthetics

Projects would avoid or minimize adverse impacts to natural and cultural resources. Development projects (e.g., buildings, facilities, utilities, and roads) and reconstruction projects (e.g., road reconstruction, building rehabilitation, and utility upgrades) would be designed to work in harmony with the surroundings, particularly National Register of Historic Places properties. Projects would reduce, minimize, or eliminate air and water nonpoint-source pollution. Projects would be

sustainable whenever practicable, by recycling and reusing materials, by minimizing energy consumption throughout the lifespan of the project. All new facilities should strive to be certified by the U.S. Green Building Council. Leadership in Energy and Environmental Design (LEED™) certification provides independent, third-party verification that a building project meets the highest green building and performance measures.

2.10 ALTERNATIVES AND ACTIONS DISMISSED FROM FURTHER CONSIDERATION

The planning team considered another alternative and its attendant actions for managing the Memorial, but these were eliminated from further analysis. These ideas and the reason for their omission are described below.

Concept

Alternative 2, the Connections alternative, was intended to revitalize the Memorial by focusing on programmatic solutions to “connect” the Memorial and the City of St. Louis. Exhibits at the Old Courthouse and the Museum of Westward Expansion would have been redesigned and current programs augmented by an increase in special events. The greatest differences between this alternative and those advanced are the renovation of the parking structure completely below grade with a “green” roof and the small East St. Louis addition without any future acquisition of lands. Improvements in the physical connection of the Old Courthouse, Luther Ely Smith Square, and the Memorial grounds would have been at street level and incorporated traffic calming measures. The Memorial maintenance facility would have remained at its current location.

Rationale

After public scoping and further analysis by the planning team, the benefits of this alternative, with the exception of the “green” roof on the Arch Parking Garage, already existed or were incorporated into the other

alternatives (resource preservation, additional programming, and retaining the Memorial maintenance facility at its current location). The planning challenges identified in this alternative (pedestrian safety concerns with the at-grade crossing and lack of visitor amenities) were better addressed in other alternatives, which were retained after scoping and moved forward into the final plan.

2.11 THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) require that an agency identify the alternative that is considered to be environmentally preferable. According to CEQ guidance (*Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, 23 March 1981), the environmentally preferable alternative is "... the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (Q6a). For the National Park Service, the no action alternative can be considered in identifying the environmentally preferable alternative. Thus, the environmentally preferable alternative at Jefferson National Expansion Memorial is that which best meets these goals.

Alternative 5: Park into the City has been identified as the environmentally preferable alternative for this study because it is the alternative that would best protect, preserve, and enhance historic, cultural, and natural resources, especially in regard to enhancing the physical resources. While alternative 1 would simply cause the least damage to the biological and physical environment because it represents little change over current conditions, most damage resulting from alternative 5 would be short-term and would result in an overall enhancement of Memorial resources. Alternative 1 would not enhance the Memorial above the existing conditions. Additionally, short-term effects would generally not adversely affect resources central to its listing as a National Historic Landmark and National Register District, but would

create long-term beneficial effects of these same resources by realizing many of the original design concepts for the Memorial as a whole.

Alternatives 3, 4, and 5 would focus on revitalizing the Memorial through increased connections with the surrounding neighborhoods. All of the three action alternatives, would preserve important cultural and natural features of the Memorial equally well. Overall, alternative 5 would most successfully balance natural and cultural resources with the enhanced use of the Memorial. Alternative 3 was not considered environmentally preferable because of the greater amounts of ground disturbance, and potential for impacts to archeological resources due to the enlargement of the Museum of Westward Expansion and potential excavation for building an above or below ground structure in Luther Ely Smith Square. Alternative 4 was not considered environmentally preferable because of the greater amounts of ground disturbance, and potential for impacts to archeological resources due to the enlargement of the Museum of Westward Expansion, the construction of a new visitor facility under Luther Ely Smith Square, and placing the parking lot next to the Old Cathedral underground.

2.12 RATIONALE FOR IDENTIFICATION OF THE NPS PREFERRED ALTERNATIVE

The National Environmental Policy Act (NEPA) established a national policy to "...encourage a productive and enjoyable harmony between man and his environment..." in order to promote efforts that would prevent or eliminate damage to the environment, stimulate human health and welfare, and enrich public understanding of the ecological systems and resources important to the nation. NEPA directs Federal decision makers to incorporate environmental information (natural, cultural, and socioeconomic resources) into agency decision making, in order to better understand the consequences of taking Federal actions.

The CEQ then established regulations requiring agencies to identify the alternative that is considered to be environmentally preferable, but did not require the Federal agency to adopt the environmentally preferable alternative as the agency's preferred alternative. Agencies have wide latitude in making difficult judgments to discuss its preferences among the alternatives considered based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors including any essential considerations of national policy which were balanced by the agency in making its decision and state how those considerations entered into its decision. When the public and agencies are clearly faced with a choice, the decision maker and others must consider whether the decision is in accordance with the congressionally declared policies of the act.

In this instance, the National Park Service considered a no action alternative and three action alternatives, each of which provided different scenarios for meeting the purpose and need objectives of this plan (stated in Chapter 1). In addition to the impact topics discussed at some length, and the planning issues which generated the need for this plan,

the National Park Service also took into consideration the strong local preference for riverfront redevelopment and downtown economic stimulus.

The original competition and construction for the Gateway Arch led to a revitalization of the downtown area sixty years ago. Another design competition on a national scale would give the National Park Service an excellent opportunity to connect the Memorial to the American public in a multiplicity of ways. It would benefit the agency with ideas from a wide spectrum of creative design professionals toward resolving the Memorial's greatest challenge of continuing to make a physical, emotional, and intellectual connection with the visiting public. The National Park Service believes that a design competition would once again serve as a catalyst for civic and economic rebirth.

For these reasons the National Park Service has identified alternative 3 as the preferred alternative, rather than alternative 5, which is the environmentally preferable alternative. The National Park Service believes the identification of alternative 3 is in accordance with the congressionally declared policies of the National Environmental Policy Act.



3.0 Affected Environment

Affected Environment

3.1 INTRODUCTION

This chapter describes the existing environment at Jefferson National Expansion Memorial. The discussion is focused on resources that could potentially be affected by the implementation of any of the alternatives and provides a baseline for the subsequent evaluation of impacts documented in Chapter 4. Specific topics in this chapter are included based on the requirements of federal law, executive orders, and regulations, as well as issues raised during the public scoping process.

The topics within this chapter are discussed in the following order:

- Cultural Resources
- Natural Resources
- Visitor Opportunities and Use
- Transportation and Access
- Land Use
- Socioeconomics
- National Park Service Operations

This order was established based on the importance of the topic and the potential degree of impacts. Topics dismissed from detailed study include those that would have negligible to minor impacts on the resources based on proposed actions. These topics are discussed in Section 1.9.

3.2 CULTURAL RESOURCES

This section documents the cultural resources that are present at the Memorial and within the surrounding area. Cultural resources at Jefferson National Expansion Memorial include historic buildings, structures, sites, objects, and districts; cultural landscapes; archeological resources; and curatorial resources and museum collections.

History of the Site and Development of the Memorial

PREHISTORY

For many centuries, populations have concentrated in the central Mississippi River Valley. The confluence of the Mississippi and Missouri rivers, near present-day St. Louis, provided an abundance of resources and habitats for prehistoric people. Prehistoric sites are generally concentrated in the uplands and marginal zones with easy access to rich resources in the floodplain marshes, forests, and prairies.

The prehistory of the St. Louis region generally is divided into four main cultural periods: the Paleoindian Period (10,000 B.C.-8,000 B.C.), the Archaic Period (8,000 B.C. to 6,000 B.C.), the Woodland Period (600 B.C.-800 A.D.), and the Mississippian Period (1000-1400 A.D.). The Paleoindian Period is associated with nomadic hunting and gathering people; the Archaic Period is characterized by the diversification and refinement of subsistence strategies, by increased sedentism, population growth, trade networks, and the construction of the earliest identified earthen mounds in the area (NPS 1986a). The Woodland Period has been defined by more population density and the establishment of large settlements, expanded use of resources and interregional trade in cultivated foods and exotic items, and new technology, specifically the widespread adaptation of pottery manufacture and use.

The Mississippian Period marked a transition to intensive agricultural production based on maize cultivation, consumption, and storage. More sophisticated political and socioeconomic organization resulted from expanded, dense settlement with broad

trade and communication networks and greater accumulation of material goods. Settlements throughout the area known as the American Bottom had multiple mounds, including the area of St. Louis. Of the “town-and-mound complexes,” the Cahokia site in eastern Illinois (within ten miles of St. Louis) was the largest Mississippian community and the largest prehistoric site north of Mexico. From A.D. 900-1400, Cahokia was a major center of the Mississippian cultural tradition. As many as 40,000 people lived in the ancient city (Primm 1981).

After 1250 A.D., the cultural significance and influence of Cahokia diminished. Cultural centers shifted to the south, trade networks ceased, large settlements were abandoned, and population declined. When European settlers arrived, the Native American population consisted of Illini Confederacy tribes, with between six and seventeen tribes or bands, including the Cahokia and Tamaroa, who lived in the immediate vicinity. Members of other tribes who lived to the west of the area, particularly the Missouri and Osage, ventured into the locality to hunt and exploit riverine resources (Primm 1981; Costa 2000).

THE CITY OF ST. LOUIS

The Spanish were the first European explorers to enter the central Mississippi River Valley. Yet the French explorers led the way to early Euro-American settlements. In 1682, Robert Cavalier, Sieur de La Salle claimed the Mississippi River Valley through to the Gulf of Mexico for the French, naming it Louisiana. In 1686, the first European settlement on the Mississippi was established at Arkansas Post. By 1699, Cahokia, Illinois was founded as a mission to the Illini Indian tribes who lived there. Soon, other settlements sprang up for religious, trade or farming purposes, including Kaskaskia (1703), New Orleans (1718), Fort de Chartres (1718), Prairie de Rocher (1722), and Ste. Genevieve (c. 1735). As a result of the French and Indian War and the 1763 Treaty of Paris, France ceded its land holdings east of the Mississippi to England, and its land to the west to Spain. Merchant Pierre Laclède Liguist and his “stepson” Auguste Chouteau traveled northward from New Orleans to establish a fur trading post along the Mississippi River under exclusive rights (Primm 1981). They selected a site on the west side of the river, protected from river flooding

by a limestone bluff to build the village of St. Louis. The site included the current Memorial grounds. The village was organized in a typical French colonial layout with a grid pattern of streets, a public square on the riverfront and outlying agricultural lots. By 1770, there were 115 houses in the village (NPS 1954).

In 1800, the Spanish ceded the Louisiana Territory back to France, and in turn the French sold the Louisiana Territory to the U.S. in 1803. U.S. authorities arrived in 1804 and a military presence was established. After the arrival of the Americans, St. Louis continued to develop as an important fur trading center and port along the river, with flatboats and keelboats dominating the transportation of goods. Lewis and Clark embarked on their famous expedition in 1804 and returned two years later to St. Louis to much fanfare. By 1817 the first steamboat arrived in St. Louis, marking the beginning of an era of waterway expansion. Additionally, stagecoach lines developed, connecting St. Louis to more locations. By 1808, there were approximately 1,000 people in the city of St. Louis; by 1820, the population had tripled (NPS 1954). In 1823, the town was incorporated as a city.

Between 1804 and 1840, the built environment of St. Louis reflected its population boom. Large civic buildings were constructed, as well as the first Catholic Cathedral in 1818, and the second Cathedral, still standing adjacent to the Memorial grounds, in 1834. St. Louis also saw its share of high-style architectural centers including the Old Courthouse, constructed beginning in 1839. Into the 1830s, the population continued to grow, creating perpetual overpopulation and a strain on city infrastructure. With immigrants constantly pouring through St. Louis in order to follow pioneering routes to the West, St. Louis became a true gateway.

By the 1840s, St. Louis had two brickyards supplying building materials for over 1,000 new houses built each year. Despite the transition to brick and cast iron building technology, the disastrous Great Fire of 1849, which began on a riverboat, destroyed 20 city blocks. Although the Cathedral and the Old Courthouse were spared, the majority of the riverfront lots were rebuilt in the 1850s. The city took the

opportunity to improve and expand the wharf and civic centers. The streetscape redeveloped with classical and elaborated architecture, popularly used on five- and six-story commercial buildings and hotels, creating a more monumental and permanent urban character (Sandweiss 2001). By the late 1850s, St. Louis was connected by rail and stagecoach to several points to the East and to western and southern Missouri.

After the Civil War, St. Louis further developed its transportation infrastructure. River traffic had been disrupted during the war, and railroads had taken precedence nationwide as the favored mode of transport for passengers and freight. The city was reliant on ferries and steamboats to transport goods across the river from Illinois, and river traffic was continually congested. Chicago, with its excellent rail links to the east and west, took precedence over St. Louis as the premiere city of the Midwest. In order to try to recapture its former importance as the region's leading city and transportation center, some forward-thinking residents of St. Louis supported the construction of the Eads Bridge, providing a critical link between the rail lines on the east and west sides of the Mississippi River. Expansion of railroad facilities continued into the 1880s with the introduction of elevated tracks along the levee in 1882.

While St. Louis grew in area and in population, the old city center along the riverfront, bypassed by traffic over the Eads Bridge, fell into decline. Higher rents and inaccessibility deterred new commercial development in the riverfront area. The riverfront district streets were too narrow for streetcars, thus the expansion of the streetcar system attracted development in other parts of the city. In the 1890s, the conditions of the district propelled suggestions for its redevelopment, potentially to include a monument to Thomas Jefferson or to celebrate the centennial of the Louisiana Purchase (NPS 1954).

While St. Louis continued to grow rapidly into the 20th century, the Civic League advocated for "City Beautiful" redevelopment incorporating parks, parkways, and grand civic centers, and the City Planning Commission organized in 1907 attempted to create a plan

for the city center (Primm 1981; Tranel 2007). Attempts were unsuccessful, and the inner city remained a blighted area. Further deterioration of the buildings and levee district persisted until the 1930s.

ESTABLISHMENT OF THE MEMORIAL

In 1933, Luther Ely Smith, a prominent lawyer in the city, came up with a plan for a memorial along the riverfront, envisioning a structure that was "transcending in spiritual and aesthetic values." Viewed both as an improvement to the downtown and as a means to create jobs during the Depression, city leaders embraced the idea and established the Jefferson National Expansion Memorial Association (JNEMA). The following year, the project garnered federal support with the authorization of the United States Territorial Memorial Commission. In 1935, President Franklin D. Roosevelt signed Executive Order 7253, authorizing the Secretary of the Interior to acquire and develop Jefferson National Expansion Memorial on the site of Old St. Louis. The riverfront parcel was the country's first National Historic Site as designated under the Historic Sites Act of 1935 (NPS 1996a).

Over the next several years, significant milestones were met in the definition and development of the Memorial. A superintendent, John Nagle, was named and an office was opened in St. Louis in 1936. Nagle began by ordering his team of historians to study the value of the existing buildings on the site. They defined the purpose of the Memorial as commemoration of the westward expansion of the U.S., with emphasis on the Louisiana Purchase. As a result, Nagle viewed the only buildings on the site worthy of preservation to be the Old Courthouse, the Old Rock House, and the Old Cathedral. By 1942, the majority of the buildings on the site had been razed, clearing the way for the new memorial.

COMPETITION FOR THE MEMORIAL

In 1947, the JNEMA announced a national design competition for the Memorial. Luther Ely Smith asked George Howe, a prominent Philadelphia architect, to serve as a professional advisor on the process. The competition program included the following elements: an architectural memorial or memorials to Thomas Jefferson; preservation



Figure 3.1 Eero Saarinen, Stage One Submission, Plan View, 1947.

of the site of Old St. Louis; landscaping; an open-air campfire theater; recreation or reproduction of a few typical old buildings; a museum interpreting the movement west in the United States; a living memorial to Jefferson’s vision of greater opportunities for men of all races and creeds; recreational facilities on both sides of the river; parking facilities; relocation of the railroad tracks through the site; and placement of an interstate highway. The submissions were also directed to address the relationship between the Memorial area and the cities of St. Louis and East St. Louis.

The competition booklet, including the background, rules, and regulations, was released to the public on May 30, 1947; by the deadline three months later, the JNEMA had received 172 entries. After three days of deliberation, five finalists were selected for the second phase of the competition. Among the finalists was a collaborative design team

headed by Eero Saarinen of Saarinen, Saarinen and Associates, with Dan Kiley identified as landscape architect. Eero Saarinen, the son of modern architect Eliel Saarinen, grew up within the artistic community at the Cranbrook Academy in Michigan where he developed his theories on modern design and views on the integration of architecture, landscape architecture, and art. Dan Kiley studied landscape architecture at Harvard in the 1930s, where he was exposed to modernism through the work of architect Walter Gropius. The design conceived by Saarinen and Kiley featured a monumental steel and concrete arch set within a wooded landscape, a symbolic expression of the “Gateway to the West” (NPS 1996a).

Following several changes to the program, the JNEMA solicited the second round of submissions. After deliberation, the Saarinen-Kiley design was chosen unanimously. The concept envisioned an arch in the form of

an inverted catenary curve along the edge of the riverfront beside the levee. Placed slightly off the center of the axis with the Old Courthouse, the Gateway Arch was intended to frame an unobstructed view between the historic building and the river. As conceived by Saarinen and Kiley, the landscape was designed as an urban forest dominated by one or two tree species. Built features were to include a theater, a pioneer village exhibit, a museum devoted to architecture, a second museum devoted to history, and two restaurants. The final jury report detailed why the Saarinen-Kiley design was selected: “It contains intrinsically the very features aspired to by the Program... a memorial, a park, balanced harmony, and fine groupings of buildings... The entire concept, full of exciting possibilities for actual achievement, is a work of genius, and the memorial structure is that of high order which will rank it among the nation’s greatest monuments” (NPS 1996a).

Although Saarinen and Kiley were awarded the design for the Memorial in 1948, it would be more than a decade before construction began. The delay was due both to funding issues and challenges presented by the railroad tracks that ran through the site. During this time, the Memorial grounds were used as a municipal parking lot, routinely accommodating as many as 3,500 cars per day (NPS 1996a).

EVOLUTION OF THE DESIGN

Over the next eleven years, the Memorial design evolved. The issue of how to handle the railroad on the site was ultimately central to the changes in the design, and in 1957 a revised plan was presented to the National Park Service (NPS). The new scheme placed the railroad tracks in two open cuts, with three short tunnels at the north and south and near the center of the site. The Gateway Arch was relocated from along the levee to a site higher on the bluff, on axis with the Old Courthouse. The tracks then ran in a tunnel between the river and the monument, with a grand staircase envisioned to connect the Gateway Arch to the riverfront.

Beyond resolving the railroad issue, the 1957 plan, created together by Saarinen and Kiley, presented a new vision for the Memorial. While the concept of the Gateway Arch in a

wooded landscape remained unchanged, the balance of the site was unified and the modern form and geometry of the curved Gateway Arch was reiterated in the paths that cut through the landscape. Allées of trees bordered the walkways and ran through Luther Ely Smith Square, framing the view between the Old Courthouse, the Gateway Arch, and the river. In contrast to the modern formal elements of this design, “romantic forested areas” with lagoons and winding paths were envisioned northwest and southwest of the Gateway Arch (NPS 1996a). Finally, the Museum of Architecture and the pioneer village, both included in the competition entry, had been removed. Saarinen stated about their revised plan: “The spirit of this new design is the same as that of the design which won the national competition 10 years ago. The Arch – the major element of the plan – is in fact unchanged from that of the original design and only in the plan of the Memorial, the setting for the approaches to the Arch and the placement of other buildings on the site have changes been made... We feel that we have now related all the major elements of the Park to each other in a more unified way” (Architectural Record 1957).

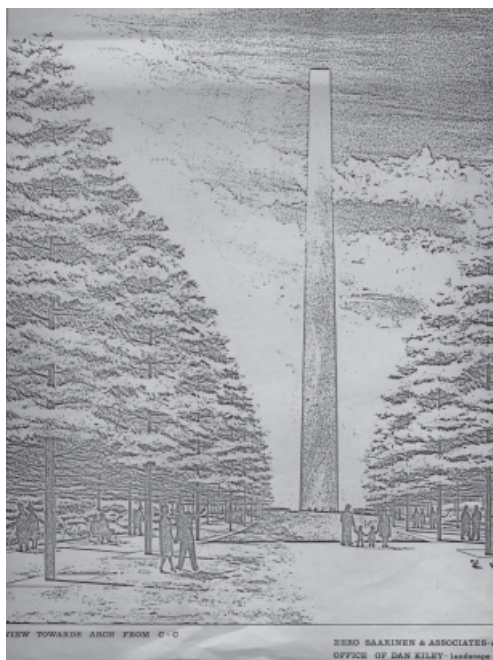


Figure 3.2 Office of Dan Kiley, Perspective Image, watercolor, December 1962.

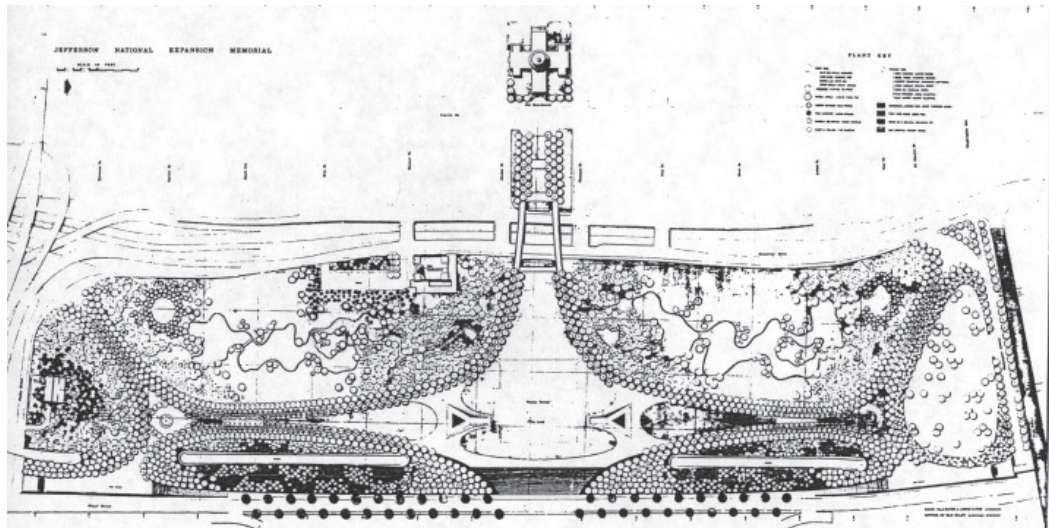


Figure 3.3 Office of Dan Kiley, Final Conceptual Planting Plan, 1964, approved by NPS, February 1966.

Further refinements were made to the design through the development of the NPS master plan for the site, released in 1959. Saarinen and the National Park Service together concluded that the Museum of Westward Expansion should be placed below-grade, so as not to interrupt the modern setting for the Gateway Arch. The only buildings left on the site were to be the Old Courthouse, the Old Cathedral, and the Old Rock House. Ultimately, the Old Rock House was dismantled for relocation, due to the construction of the railroad tunnels, but was never reconstructed. On-site parking was to be restricted to the north and south ends of the site.

DETAILED DEVELOPMENT OF THE LANDSCAPE DESIGN AND CONSTRUCTION OF THE MEMORIAL

Construction of the Memorial began in 1959, with the groundbreaking for the Gateway Arch and excavation for the railroad tunnels. By early 1963, the first stainless steel section of the Gateway Arch was in place, and in 1965 the structure was complete. Between 1963 and 1967, a unique transportation system was installed within the Gateway Arch that allowed visitors to be transported to an observation deck at the top of the structure. The Museum of Westward Expansion was constructed

beneath the Gateway Arch—as envisioned by Saarinen in the revised plan—between 1974 and 1976.

While construction of the Memorial was underway, Kiley’s development of a detailed planting and landscape plan began in earnest. Although several schemes were considered for the planting plan, each concept juxtaposed an open area around the base of the Gateway Arch with wooded areas outside of the major axes. In 1961, major events shaped the progress of the landscape plan: budget constraints emerged and Saarinen died suddenly. Although the original Saarinen-Kiley concept that juxtaposed meadow and forest remained, the dense woodlands were scaled back. Instead of filling the majority of the site, closely spaced trees lined the walkways, framing views of the Gateway Arch. Kiley selected the tulip poplar due to its soaring height, large trunk, and fast rate of growth; this species bordering the paths would provide the forested effect that Kiley desired (NPS 1996a). A variety of tree species, including both flowering and canopy trees, were planned for the areas around the north and south reflecting ponds. Kiley’s final planting plan was approved by the National Park Service in 1966.

In the years that followed, the essential concept of the Saarinen-Kiley plan was adhered to with only slight deviations. The National Park Service reconsidered using some of the tree species Kiley had specified. The most significant change to the plan was the substitution of the Rosehill white ash for the tulip poplar along the walkways. In addition, the National Park Service decided to construct the grand staircase in two phases, beginning with the outer sections and then finishing with the center. The pedestrian overpasses, studied by Saarinen and later investigated by the architectural firm HOK (Hellmuth, Obata and Kassabaum), have yet to be implemented. Saarinen's and Kiley's plans for Luther Ely Smith Square, including allées of trees framing the view between the Old Courthouse and the Gateway Arch, were not carried out. Instead, a temporary design completed in 1951 by the city of St. Louis remains (NPS 1996a).

Although some of the landscape elements prescribed by Saarinen and Kiley were not fully realized, their concept is clear. The monumental modern Gateway Arch works in concert with the modern landscape, as the guiding geometry—the catenary curve—appears in the staircase and the paths along the north-south axis. The curve is balanced by the strong axial relationship between the Old Courthouse, the Gateway Arch, and the river. The urban forest, envisioned by Saarinen and Kiley from the earliest planning stages, stands in contrast to the meadow at the base of the Gateway Arch. In its totality, Jefferson National Expansion Memorial expresses the unique Saarinen-Kiley vision for the site.

Historic Buildings, Structures, Sites, Objects, and Districts

The following discussion inventories historic buildings, sites, structures, objects, and districts within the Memorial boundary. The locations of these elements are identified in Figure 3.4.

JEFFERSON NATIONAL EXPANSION MEMORIAL

Jefferson National Expansion Memorial was nominated to the National Register of Historic Places in 1966 and accepted in 1977. The listing identifies the property as a historic

Historic Property Definitions

The National Park Service uses a series of definitions to categorize historic properties, and these are derived from the National Register of Historic Places and the *Secretary of the Interior's Guidelines for the Treatment of Historic Landscapes*. These definitions will be employed in this document:

- **Building:** a structure created principally to shelter any form of human activity, such as a barn, house, church, or hotel.
- **Site:** the location of a significant event; a prehistoric or historic occupation or activity; or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value, regardless of the value of the existing structure.
- **Structure:** a functional construction usually made for purposes other than creating human shelter, such as tunnels, bridges, oil wells, or dams.
- **Object:** primarily artistic in nature, or relatively small in scale and simply constructed. Although an object may be moveable by nature or design, it is associated with a specific setting or environment, including sculptures, boundary markers, or statues.
- **District:** possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development, such as a college campus, central business district, fort, or sprawling ranch.
- **Landscape:** a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values (NPS 1990).

district and includes the entire grounds of the Memorial, paying particular attention to three historic structures: the Gateway Arch, the Old Courthouse, and the Old Cathedral. It identifies the property's period of significance as extending from 1935, when the Memorial was established, through 1966 when the nomination was drafted. The nomination lists the status of the property as a "work in progress."

In 1987, the property was designated a National Historic Landmark (NHL). The Memorial was thought to be so important and transcendent in its design elements that the designation was made prior to the expiration of the usual 50-year waiting period, under the exception in the criteria that states, "a property achieving national significance within the past 50 years [may be designated] if it is of extraordinary national importance." The boundaries of the NHL are slightly different than the previously designated historic district, including the portion of the Memorial east of Memorial Drive, between Poplar Street and Eads Bridge. The nomination identifies the property's period of significance as spanning from 1947, when the Saarinen- Kiley competition entry was selected, through the date that the major construction was complete in 1986.

THE GATEWAY ARCH

The Gateway Arch, the centerpiece of the Memorial design, was conceived by Eero Saarinen in 1947 as a symbolic gateway to the West. Although the placement of the Gateway Arch and the design of the grounds evolved over the next several decades, the original design of the Gateway Arch endured with little change. An inverted, weighted catenary curve, the Gateway Arch soars 630 feet from its base on a bluff above the Mississippi River. It is constructed of a series of stacked triangular stainless steel sections with a stressed steel skin. The latter feature allows the exterior materials to carry the structural load without major interior framing. Inside the legs of the Gateway Arch, a unique transportation system carries visitors to an observation deck at the top of the monument.

Entrance ramps at the base of the Gateway Arch lead into the subterranean Museum of Westward Expansion and visitor center.

Conceived by Saarinen and Kiley in 1959, their placement beneath the Gateway Arch solidified the Saarinen-Kiley concept of a unified landscape. The museum was designed by Aram Mardirosian and completed in 1976. In addition to the museum gallery, the complex includes a lobby, visitor loading areas for the Gateway Arch's transportation system, and two theaters—North (later Tucker) Theater and South (later Odyssey) Theater. Additions to the visitor center and museum have included the American Indian Peace Medal Exhibit, two museum stores, and a ticket purchasing area.

The Gateway Arch is significant for its commemoration of Thomas Jefferson's role in the nation's westward expansion. In addition, it is significant as a triumph of architecture and engineering. It conveys modernist precepts, using the latest materials and sculptural forms available in the late 1950s and early 1960s to develop a design that specifically responds to the site and fully integrates architecture and landscape architecture. As stated in the significance statement of the NHL nomination, "Its structural system had never been attempted before on so massive a scale. Its highly complex and subtle design based on a weighted catenary is unique in architecture. The Arch is a symbolic architectural expression of such simplicity and modernity that even today . . . it still seems avant-garde."

THE GATEWAY ARCH GROUNDS

The Gateway Arch is sited within a distinctly modern landscape. The product of a collaboration between Saarinen and Kiley, the landscape complements, enhances, and echoes the graceful lines of the structure. The two men applied geometrical precepts and classical landscape design elements to create a setting that is both spectacularly and subtly appropriate. The scale, impact, and design of the grounds constitute an essential mooring for the world-famous Gateway Arch.

THE NORTH AND SOUTH OVERLOOKS

The scenic overlooks were designed to provide visitors with a vantage point from which to view the Mississippi River. They were also originally intended to house museums devoted to the role of the railroad and the river in regional transportation. Although the museums were never realized, the overlooks

reflect the Saarinen-Kiley concept and thus contribute to the significance of the National Historic Landmark.

GRAND STAIRCASE

The Grand Staircase provides both a physical and a visual connection between the Gateway Arch and the Mississippi River. Mirroring the curve of the Gateway Arch, the staircase is a symbolic representation of the movement of settlers through St. Louis, the gateway to the West. Although the relationship between the treads and risers was modified in its final design, it is representative of the Saarinen-Kiley concept and is in its original location. It thus contributes to the significance of the National Historic Landmark.

RAILROAD TUNNELS

The north and south railroad cuts and three tunnels were designed by Saarinen, and were important components of his concept for the site. Constructed between 1959 and 1962, the entrances to the tunnels are curved, reflecting the geometry of the Gateway Arch. The north tunnel (548 feet long), the center tunnel (960 feet long) and the south tunnel (360 feet long) carry the railroad through the site in conjunction with the open north and south cuts, which have poured concrete walls and are 720 feet and 840 feet long, respectively. The railroad tunnels and concrete floodwalls, reflecting the Saarinen-Kiley design concept, contribute to the significance of the National Historic Landmark.

THE OLD COURTHOUSE

The Old Courthouse was constructed in several phases between 1839 and 1862. The three-story Greek Revival brick and stone structure is cruciform in plan and has large classical porticoes on all four elevations. A central rotunda is capped by a Renaissance Revival cast iron dome and lantern. The lightweight cast iron structure of the dome was patented by the architect, William Rumbold. It was one of the first uses of this engineering technique in the United States. The same materials were used, in conjunction with a different patent, in the dome of the U.S. Capitol Building in Washington, D.C., which was built concurrently with the Old Courthouse dome. The St. Louis project was the first cast iron dome to be completed in

the U.S. The inside of the dome is decorated with elaborate murals. The surrounding reproduction sidewalks and fence have also been identified by the National Park Service as contributing to the interpretation of the Old Courthouse.

The building's period of significance spans from 1839 through 1930. It is significant both for its architectural and engineering merits, and also as the site of important historic events. Early in its history, the courthouse was a public gathering space for people planning their travel west. More notably, the structure was the site of the historic Dred Scott case in which Scott, a slave, sued for and was awarded his freedom. Freedom was later taken away from the Scotts by an appeal to the Missouri Supreme Court, and the case was ultimately decided by the U.S. Supreme Court in *Dred Scott v. Sandford* in 1857. In the infamous decision of the court, persons of color were denied citizenship. Slavery in the Western territories was deemed to be a property right that could not be extinguished by legislation.

THE OLD COURTHOUSE SUNDIAL

Constructed of bronze, copper, iron, and granite, the Old Courthouse sundial is the only surviving detached exterior feature associated with the courthouse. The circular bronze sundial face has Roman numerals and is protected by a copper cover. The National Park Service has determined that the object is eligible for listing in the National Register as a contributing element to Jefferson National Expansion Memorial. Its period of significance corresponds with that of the Old Courthouse.

Cultural Landscapes

BACKGROUND

Jefferson National Expansion Memorial was acknowledged initially for the significance of its outstanding architecture and engineering and for its memorialization of the nation's westward expansion. The landscape was recognized in early documentation as a vital part of the Memorial, but a detailed documentation of the significance of its landscape design was lacking for many years. To rectify this gap in the history of the designed landscape, the National Park Service, in collaboration with landscape architects

Gina Bellavia and Gregg Bleam, undertook a Cultural Landscape Report, published in 1996. The Cultural Landscape Report provided a detailed history of the designed landscape and its character-defining features, an inventory and condition assessment of existing landscape features, and an updated significance of the Memorial to include the designed landscape. The CLR is currently being updated to reflect current conditions at the Memorial. The Cultural Landscape Report provides the basis for the majority of the information contained in this section of the report.

SIGNIFICANCE

According to the National Register nomination for the site, Jefferson National Expansion Memorial is nationally significant because it memorializes the nation's expansion to the west as well as the people who undertook this expansion, including Thomas Jefferson. St. Louis, Missouri, the nexus of westward expansion and the region's economic center in the 19th century, was the natural choice for the Memorial's location. The Memorial is also significant for the magnificent and unique Gateway Arch designed by Eero Saarinen. The Gateway Arch and its significance are discussed in detail above under Historic Buildings, Structures, Sites, Objects and Districts.

The Memorial is also significant as the work of master designers (both architect and landscape architect) and for its importance as a work of landscape architecture. Learning from Walter Gropius and other modern architects while at Harvard in the 1930s, Dan Kiley was at the forefront of modern landscape design. His participation in Jefferson National Expansion Memorial represented his first major national project and was part of a close collaborative relationship with Eero Saarinen that lasted until Saarinen's death. Other important projects on which the two collaborated include Dulles Airport and the J. Irwin Miller residence in Columbus, Indiana. The Miller House was designated a National Historic Landmark in 2000.

The Saarinen-Kiley concept embodies important principles of modern design – the use of modern materials, simple, geometric forms, and design integration. The latter is of particular importance at the Memorial. While Saarinen developed the overall vision for the

site, including the Gateway Arch and the visual relationships between the monument, the Old Courthouse, and the river, Kiley was a part of the design team from the outset. He took Saarinen's vision a step further, defining a landscape that in its simplicity reflects the simplicity of the Gateway Arch. His specification of a dominant species of tightly spaced trees served to accent the simple form of Saarinen's Gateway Arch. The Gateway Arch and the landscape are knitted together to form a single modern fabric that defines the Memorial.

The period of significance for the Memorial's landscape is 1947-1986, beginning the year Saarinen won the competition and ending the year that major construction was considered complete. The beginning of the period of significance is marked by the sponsorship of the national design competition by the Jefferson National Expansion Memorial Association. Saarinen created a team of five—architect, landscape architect, draftsman, aesthetic designer, and sculptor—and this team was chosen from a large field of competitors for their design of a monumental symbolic arch. The construction of the Memorial did not begin until 1959, and the major features actually realized were not all in place until 1986.

Kiley's involvement with the project ended after the National Park Service accepted his design development drawings in 1966. Several offices—including the NPS landscape architecture offices in the San Francisco Planning and Service Center and the Denver Service Center, as well as the St. Louis firm of Harland Bartholomew and Associates—later contributed construction documents to the project; and so the design details for the Memorial evolved over many years and represented the work of many individuals. All subsequent designers were required by the National Park Service to respect the overriding design concepts expressed in the drawings of Saarinen and Kiley. The geometrically ordered planting plan was an essential component of the Kiley landscape design and is characteristic of many of his major works; and that aspect of the design was retained. The integrity of the landscape, or in other words, the landscape's ability to

convey its historic significance, is measured by the degree to which it resembles the vision set forth by Saarinen and Kiley. Though some details in the landscape design were not specified or were changed due to budgetary or practical considerations, the overall concepts of the Saarinen-Kiley plan are evident at the Memorial today (Hughes 1999).

LANDSCAPE CHARACTERISTICS

Landscape characteristics are part of a classification system for describing and analyzing the landscape's physical qualities. According to the National Park Service, landscape characteristics are "processes and physical forms that characterize the appearance of a landscape and aid in understanding its cultural value" (NPS 1998a). When a particular feature existed at the time of the landscape's period of significance and also retains integrity to that period, then it enhances the landscape's significance. The National Register Bulletin *How to Apply the National Register Criteria for Evaluation* states that "integrity is the ability of a property to convey its significance. . . . Historic properties either retain integrity (convey their significance) or they do not. . . . The retention of specific aspects of integrity is paramount for a property to convey significance." The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association. The Memorial landscape possesses integrity of all seven aspects.

The classification system for landscape characteristics includes broad categories such as natural and constructed setting, spatial organization, topography, buildings and structures, constructed water features, circulation, vegetation, views and vistas, and small-scale features. Landscape characteristics that enhance the historic character of the Memorial are those that were determined to retain integrity to the period of significance of the landscape (1947-1986). Key features are discussed below.

THE NATURAL AND CONSTRUCTED SETTING

MISSISSIPPI RIVER The Mississippi River dominates the natural setting of the Memorial. It is essential to the conception of the city as a gateway. Although the

river is prone to seasonal flooding, it contributes to the integrity of the Memorial's historic landscape.

WEST OF THE RIVER The urban fabric that surrounds the Memorial on the north, west, south, and east sides is also an important feature. Eads Bridge, a National Historic Landmark, borders the Memorial to the north. Constructed in the 19th century as a rail bridge to connect St. Louis and East St. Louis, it is representative of the role commerce played in the establishment of the city of St. Louis. Laclede's Landing is located north of Eads Bridge. This district retains the warehouse/industrial architectural style and early street grid that once characterized the St. Louis riverfront. The portion of downtown St. Louis west of the Memorial and north of the Old Courthouse is characterized by a mixture of low, mid, and high-rise turn-of-the-century and contemporary buildings, within a tightly spaced urban grid. The area west of the Memorial and south of the Old Courthouse is less dense and is dominated by large modern buildings. West of the Old Courthouse, the greensward of the Gateway Mall provides views east that include the Old Courthouse and the Gateway Arch. South of the Memorial, Chouteau's Landing is made up of a series of late 19th to early 20th century warehouse buildings, two to six stories in height. An elevated railroad trestle cuts through the district, running above a portion of South First and Second Streets. Views of the river from Chouteau's Landing are obscured by the levee, and views of the Memorial grounds and the Gateway Arch are partially blocked by the highway ramps coming off of the Poplar Street Bridge. East of the Memorial, Leonor K. Sullivan Boulevard provides access to the riverfront trails, businesses, and parking.

Other important features in the setting of the Memorial on the west side of the river include the Old Cathedral, an active Catholic church with its associated parking lot, and the railroad tracks which are maintained through a perpetual easement with Terminal Railroad Association. Overall, the land uses on the west side of the river that surround the site contribute to the significance of the landscape.

EAST OF THE RIVER The East St. Louis addition is made up of roadways, and a large, densely wooded parcel. A levee borders the area to the west, obscuring views of the Gateway Arch and the Memorial grounds. Railroad tracks run just east of the levee, and Front Street divides the levee and the tracks from the eastern portion of the East St. Louis addition. Martin Memorial Park is located to the north of the potential East St. Louis addition to Jefferson National Expansion Memorial. It contains a large circular water impoundment and fountain as well as a viewing platform which is on axis with the Gateway Arch.

South of Malcolm Martin Memorial Park is a wooded area. A portion of this area is contained within the East St. Louis addition. It is characterized by dense trees, shrubs, and grasses and is encircled within a fence. Abandoned rail lines and roadways cut through this landscape.

The landscape north of the East St. Louis addition is largely industrial. It is dominated by the Cargill plant and its associated grain elevator/conveyor belt. Located on Front Street, these structures are visible across the river from the Memorial grounds. Additional low scale industrial buildings are located north and east of the Cargill plant. At the north end of this area, along the water, is the Casino Queen, a sprawling casino and hotel complex. While the built landscape on the east side of the river does not enhance the integrity of the Memorial, the open space within Malcolm Martin Memorial Park maintains the critical view to the Memorial from East St. Louis.

TOPOGRAPHY

The Memorial landscape was created with a substantial amount of imported fill material that raised its elevation more than sixty feet above the Mississippi River. From a generally flat expanse of land near the Gateway Arch, the ground rises to the north and south of the site, with designed landforms near the railroad to hide the tracks, and near Memorial Drive where berms have been created paralleling the highway. The topography drops dramatically at the east edge of the site, where the Grand Staircase provides access to the river. The site's lower elevations are located at the service

areas. The site's topographic depressions, in part contained by retaining walls, provide access to underground tunnels and the visitor center. Constructed overlooks, approximately 54 feet higher in elevation than Leonor K. Sullivan Boulevard, create the high points at the north and south ends of the site.

The topography was an essential component of the Memorial's design, and was carefully sculpted. The designed landforms fulfill both a functional requirement (to hide the railroad tracks and service areas) and an artistic vision. The ponds, overlooks, and berms orchestrate views and provide drainage as well as defining spaces within the Memorial. The designed topography of the ground plane contributes to the spatial definition of the Memorial landscape by enhancing the monumental nature of the Gateway Arch, and by creating important distinctions between it and the service areas on the periphery, the railroad tracks, and the more intimate pond areas to the north and south.

SPATIAL ORGANIZATION

The spaces at the Memorial emphasize a contrast between the open monumentality of the Gateway Arch landscape and the overlooks with their long vistas, and the more enclosed human-scale spaces under the trees. A major organizing relationship in the spatial order of the site is the axial connection between the Gateway Arch and the Old Courthouse; this east-west axis orchestrates a view from the city towards the Mississippi River.

The north-south alignment of the site's pathways organizes movement throughout the Memorial. The path system was designed to connect important places within the Memorial, and to provide carefully directed views towards the Gateway Arch. The tightly spaced trees along the paths create a canopy that encloses the pedestrians in a setting with a more intimate scale.

Symmetry is another important organizing feature of the landscape. The curving pathways, allées of trees, irregular ponds, and structures are ordered such that the northern portion of the grounds mirrors the southern end. This symmetry enhances the formality established by the major north-south and east-west axes.



The Old Courthouse as viewed from Luther Ely Smith Square.



View west from Malcolm Martin Memorial Park towards the Arch grounds.



Looking west on North Second Street in Laclede's Landing.



View from the top of the Gateway Arch showing conditions along the East St. Louis riverfront.



The Cargill grain elevator and its conveyor belt.



Site topography is used near the railroad to hide the tracks.



Sculpted landscape forms near the Gateway Arch and ponds.



East-west axis connecting the city to the Mississippi River through the Gateway Arch.



View north towards the Gateway Arch from the south end of the Memorial.



Dense enclosure created by ash tree plantings.



A view of the Gateway Arch as seen from east of the levee in East St. Louis.

The pond areas provided an informal and varied spatial character; though generally open in feeling, the pond areas were nevertheless planted with scattered tree massings that provide the area with smaller intimate places.

The major concepts of the Memorial—the historical importance of the movement from east to west, and the city’s crucial relationship to the river—are expressed through the spatial organization of the design. In addition, the designed contrast between the monumental spaces of the Gateway Arch environs and the intimate spaces in the urban forest continue the trajectory of the narrative essential to the story of westward expansion.

VIEWS AND VISTAS

ESSENTIAL AXIAL VIEWS The east-west axis through the Memorial was conceived by Eero Saarinen and Dan Kiley early in their design at the insistence of the competition judges and is a key organizing principle of the landscape. The expansive vista connects the Old Courthouse, the Gateway Arch, and the Mississippi River, emphasizing the symbolic form of the arch as a gateway to the West. From the base of the Gateway Arch, views of the Old Courthouse are framed by the trees that border Luther Ely Smith Square. Due to the sculpted berm between the Gateway Arch and Memorial Drive, the base of the Old Courthouse is obscured.

The view east from the Old Courthouse through the Gateway Arch to the river is framed by high-rise buildings on Chestnut and Market Streets, and by the rows of trees that run along the edges of Luther Ely Smith Square. The simple geometry of the pathways through the square reinforces the visual axis, carrying the eye through the landscape to the Gateway Arch and the river. The strength of this axis serves to unify the Memorial grounds into a single composition that includes constructed elements, such as the Gateway Arch and designed landscape, as well as natural features such as the Mississippi River.

Similar to the east-west axis, the north-south axis and associated views were key elements of the Saarinen-Kiley design. Heavily controlled by path alignments and plantings, the direct views towards the Gateway Arch from either

the north or south emphasize the immense verticality of the monument. These views were consistent organizing principles throughout the evolution of the Memorial’s design and are important contributing elements to the historic landscape. Views north and south from the base of the Gateway Arch are dominated by the rows of ash trees; due to topography and vegetation, the structures at the north and south ends of the Memorial are not visible.

The designed views and vistas, both east-west and north-south, are critical to the Saarinen-Kiley concept, working in concert with and enhancing the spatial organization of the site. The views help establish crucial connections between the Memorial, the city, and the river. They also control visitors’ perception of the Gateway Arch by framing its immense size and sculptural qualities. The important axial relationships of the Memorial design are enhanced, in part, through the designed views and vistas that provide perspective on the symmetry of the landscape.

ADDITIONAL VIEWS AND VISTAS The view west from East St. Louis is also important to the character of the historic landscape. Critical to the understanding of the Memorial as a gateway to St. Louis and further west, the view of the Gateway Arch is partially obscured by the levee on the east side of the river. The viewing platform in Malcolm Martin Memorial Park provides unobstructed views of the Gateway Arch and the Memorial grounds.

The views from the north and south reflecting ponds were shaped by the designed topography and plantings. The groupings of trees and contrasting open areas were intended by Saarinen and Kiley to obscure views from certain vantage points, but to allow dramatic views of the Gateway Arch from other points around the ponds. These views reflect the design concept and thus contribute to the significance of the landscape.

The North and South Overlooks were designed by Saarinen and Kiley to provide expansive views of the Mississippi River and the Gateway Arch. These views illustrate the variety and complexity of the Memorial’s

urban landscape - the soaring Gateway Arch, the expanse of the Mississippi River, the industrial uses on the river's east bank, and the Memorial's urban forest. As such, they are important elements within the cultural landscape.

BUILDINGS AND STRUCTURES

The Gateway Arch, the Old Courthouse, the Museum of Westward Expansion, the North and South Overlooks, the Grand Staircase, and the North and South Railroad Tunnels are contributing features to the historic landscape. They are discussed in detail above under *Historic Buildings, Structures, Sites, Objects, and Districts*. The Old Cathedral is discussed in detail in Appendix C.

VEGETATION

The original Saarinen-Kiley design called for a single-species planting along the pathways of the Memorial. Through the placement of triple rows of closely spaced trees, Saarinen and Kiley created an urban forest within the bounds of the Memorial. As Saarinen and Kiley intended, the use of a single species serves to unify the landscape. Although they specified tulip poplar trees along the Memorial's paths, the National Park Service replaced the design's planting concept for the tulip poplars with a new tree: the Rosehill ash. The habit of the Rosehill ash is substantially different from that of a tulip poplar; the rounded habit of the ash does not fully replicate the tall upright character of the tulip poplar. Many of the trees have been replaced in kind since 1981, but because the dominant species planting—and the planting alignment—survive from the design concept, the planting is a contributing feature of the historic landscape. This design of the urban forest is a perfect marriage between the narrative of westward expansion and modernism: the simplified palette of trees and their geometrical alignment unify the planted landscape with the Gateway Arch into a designed whole and are crucial to the character of the landscape.

Circles of bald cypress trees were part of the planting design concept in the Saarinen-Kiley plan beginning in 1947. These two circles, one in the northwest and one in the southwest quadrant of the Memorial, were originally

designed to be interpretive areas thick with trees. In the final planting, the circles contained far fewer trees than indicated in the original design. Despite the reduction in the number of bald cypress trees, these circles were key features in the Saarinen-Kiley concept.

In contrast to the other single-species plantings throughout the Memorial, the service area plantings are diverse and include maple, hawthorn, zelkova, honeylocust, mugo pine, and wintercreeper. There were some plant substitutions from the original design, though the intent is the same: these plantings are intended to shield the view towards the service areas and to discourage visitors from entering the service areas. Canadian hemlock was substituted with black pine, and the groundcover of Bulgarian ivy was removed and replaced with sod. Wintercreeper is also now used as a groundcover.

The grass lawn was conceived by Saarinen and Kiley to stand in contrast to the dense plantings along the pathways. The open lawn at the base of the Gateway Arch enhances the structure's monumentality and allows for the view corridor between the Old Courthouse, the Gateway Arch, and the river. The openness of the grassy areas further serves to accentuate the sculpted nature of the landscape.

CIRCULATION

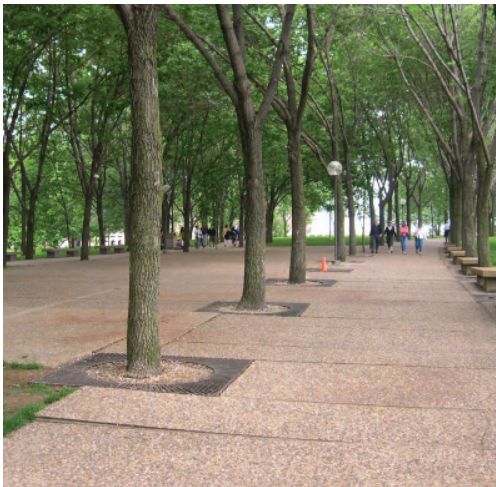
The sidewalks that traverse the site are important elements of the Saarinen-Kiley design, as they shaped visitor movement through the landscape. The location and alignment of walks strengthened the north-south axis of the landscape, orchestrated views towards the Gateway Arch, and reflected the basic geometry of the structure, thus creating unity in the overall design. The alignment of the walks was constructed as the plan intended, but the NPS landscape architects chose the materials of exposed aggregate concrete. There are almost five miles of walkways inside the Memorial, and more than two miles outside the Memorial. The organization of the path system in the Memorial enhances the spatial organization and the designed views of the site. These landscape characteristics are a unified whole, united by the organizing geometry of the catenary curves and axes at the site.



View from the base of the Gateway Arch west towards the Old Courthouse.



View east from Kiener Plaza along the east-west axis.



Pathway south of the Gateway Arch with lines of ash trees.



Memorial Drive on the west side of the Memorial grounds.



Bald cypress circles on slope.



North reflecting pond.



Concrete steps and granite ramps leading to the underground visitor center.



View of Luther Ely Smith Square and the Old Courthouse.



Concrete benches along walks.

Leading to the Museum of Westward Expansion are entrance ramps and architectural features which were designed by Saarinen and Kiley and constructed in the 1960s. These ramps and features enter the visitor center and the Museum of Westward Expansion at the base of the Gateway Arch. Constructed originally of terrazzo, the ramps were later rebuilt in 1983 with granite slabs. The Grand Staircase, another landscape feature that is categorized under the subject of circulation, is discussed above under *Historic Buildings, Structures, Sites, Objects, and Districts*.

Saarinen and Kiley conceptually planned the Old Cathedral parking lot as part of the original Memorial. The lot was to be located south of the Old Cathedral, although its details, other than a planting bed on the west side of the lot, were not designed as part of the plan. The parking lot was constructed in 1961 and was redesigned in 1994 to include a new bus drop-off location and additional accessible parking spaces. Although identified in the Cultural Landscape Report as being a contributing element, the National Park Service has determined that the parking lot does not express a specific Saarinen-Kiley design concept. As such, it is not considered to be a contributing feature to the significance of the historic landscape.



Light standard with globe luminaire.

Of the exterior roads and pedestrian overpasses, only the exterior roads were ever built. Washington Avenue, Poplar Street, Wharf Street (renamed Leonor K. Sullivan Boulevard), and Third Street Expressway (or Memorial Drive) contain the Memorial as they were designed to do. Although Washington Avenue was relocated to the north when the Arch Parking Garage was built in 1986, other roads have retained their designed path. The exterior roads are over two miles in length, and there is curbing along their perimeter. They are considered contributing elements of the historic landscape.

Saarinen and Kiley intended the pedestrian overpasses to bridge Memorial Drive and to provide connections between the Gateway Arch landscape and the Old Courthouse. They created multiple alternatives that included both single and double bridge crossings; however, these structures were never constructed. Without the pedestrian connections, Memorial Drive physically and visually separates the Gateway Arch from Luther Ely Smith Square and the Old Courthouse.

Although a parking garage at the north end of the site was studied by Saarinen and Kiley, and was identified within the Cultural Landscape Report as being a contributing element, the National Park Service has determined that the structure does not fully represent the Saarinen-Kiley concept. As such, it is now not considered to be a contributing feature to the significance of the historic landscape. However, its general site location and scale are considered in keeping with the Saarinen-Kiley concept.

CONSTRUCTED WATER FEATURES

The north and south reflecting ponds (or lagoons) were part of the final Saarinen-Kiley concept for the Memorial. Located slightly to the west of the Gateway Arch, the ponds are on axis with each other and stretch northwest and southwest from the Gateway Arch bases. Each pond sits within a slight topographic depression. The original design for the ponds showed deeply incised and irregular borders, creating intimate spaces on their banks. The ponds were also to include small islands on their northern ends, which were to be connected to the landscape by means of narrow footbridges. Neither pond,

as constructed, was as large as originally designed by Saarinen and Kiley, nor did they include the islands and footbridges. Their edges were much simplified, and the surrounding planting was also reduced. The redesign took place in 1969 under the NPS designers. Nevertheless, they are important elements of the Saarinen-Kiley concept. Their placement away from the immediate Gateway Arch landscape provides separate and intimate spaces that contrast with the more monumental spaces near the Gateway Arch. In addition, their stylized curving edges are in keeping with the modern design of the landscape and enhance the overall character of the design.

SMALL-SCALE FEATURES

The Saarinen-Kiley team created designs for benches in the Memorial in 1960. The design detail showed ten-foot-long benches, built with limestone seats set on a limestone block with a concrete foundation, and tied together with steel dowels. These benches were designed as part of the levee development, though it is not known whether they were ever installed on the levee. More than ten years later, a landscape architect at the Denver Service Center of the National Park Service redesigned the benches with almost identical proportions, though to be made of concrete. These redesigned benches were initially placed on the east side of each rest area, and then in a later phase seven more were added to the west side. Eventually, additional benches of this design were added to the landings of the Grand Staircase. Benches of an entirely different design—metal frame with iron slats—were installed in Luther Ely Smith Square at an unknown date.

The Saarinen-Kiley team also designed a light standard for the Memorial, but it was never implemented. The original plans for the Memorial did not show proposed lighting locations. The Denver Service Center of the National Park Service proposed new plans and details for the lighting at the Memorial that included a twelve-foot-tall light with globe luminaire. These lights were installed in two phases: first along the north-south axis in 1974, and then throughout the rest of the site several years later. The lights were placed along the sidewalk edges, approximately

ninety feet apart. The small-scale features at the Memorial are character-defining features of the landscape.

LUTHER ELY SMITH SQUARE

Luther Ely Smith Square is included within the Memorial boundary. The square, a park with a sunken garden of rectangular beds flanked by allées of trees on its north and south sides, was designed in 1951 by a landscape architect on the City staff. It was intended to be a temporary beautification of the parcel, until the Memorial was implemented.

Saarinen and Kiley conceived of the parcel as an extension of the Memorial east of Memorial Drive, providing a critical connection between the Old Courthouse and the Gateway Arch. According to this concept, the allées of uniform trees that characterize the east side of the Memorial grounds were to continue through the square, framing the critical east-west view to the Gateway Arch and the river. In addition, pedestrian connections were to be provided from the square over Memorial Drive to the Memorial grounds. However, this design was never implemented.

Although the current design of the square includes allées of trees, they are not uniform, nor are they continuous with the ash trees east of Memorial Drive. They effectively narrow the view corridor from the Old Courthouse to the Gateway Arch. In addition, the garden's sunken form was not part of the Saarinen-Kiley design; it disrupts the spatial continuity Saarinen and Kiley envisioned along the east-west axis. Thus, it is not representative of the Saarinen-Kiley concept, nor is the design historically significant in its own right.

Area of Potential Effects

An initial step in the Section 106 process is to determine the area within which historic properties would be affected or are likely to be affected. The Area of Potential Effects (APE) as defined by 36 CFR 800.2 represents “the geographic area within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist.”

For the purposes of this section, the APE for historic buildings, structures, sites, objects,

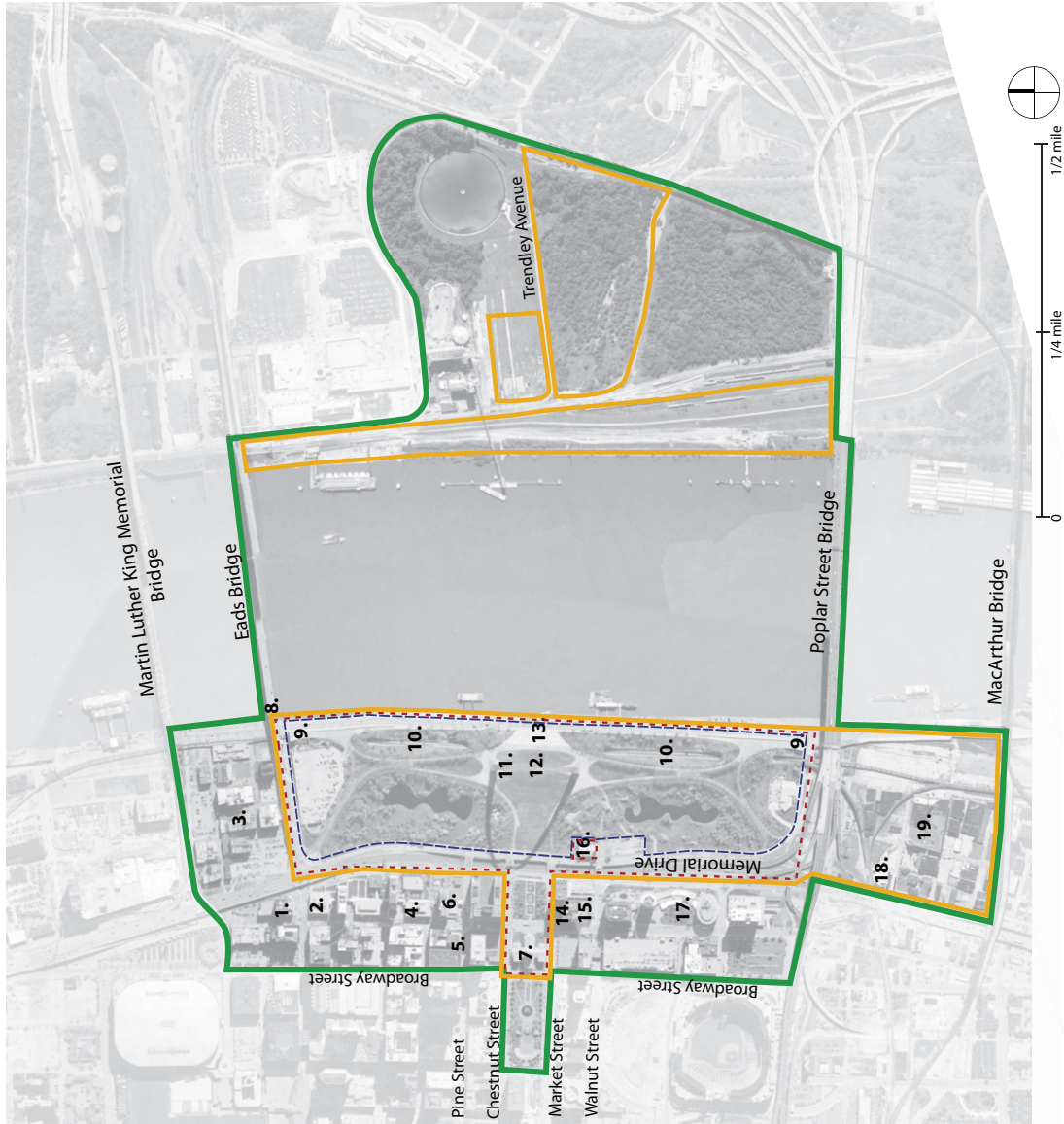
districts, and cultural landscapes includes the area that could be directly or indirectly affected by each of the alternatives. As illustrated in Figure 3.4, the APE includes areas that are bounded by Broadway Street south of Market Street to Interstate 64, east on I-64 to Interstate 55, south on I-55 and Third Street to Chouteau Avenue, north along the west side of the river to the Poplar Street Bridge, east across the bridge following I-55/64 to the rail lines that run to the northeast crossing Trendley Avenue and continuing to the rail line that curves to the west and passes north of the Cargill grain elevator to Front Street, turning north on Front Street to Eads Bridge, west across Eads Bridge to the riverfront, north along the river to Martin Luther King Memorial Bridge, west along the Bridge and its associated access drive to Convention Plaza, west on Convention Plaza to North Broadway Street, south on Broadway Street to Chestnut Street, west on Chestnut Street to Seventh Street, South on Seventh Street to Market Street, and east on Market Street to Broadway Street. The APE may be revised within the Section 106 consultation process.

There are thirteen buildings, structures, and districts located outside of the bounds of the Memorial but within the APE that are listed in the National Register of Historic Places and/or the City of St. Louis Landmarks registry. The locations of these resources are identified in Figure 3.4. These resources include Eads Bridge, located directly north of the Memorial; the Laclede's Landing Historic District further to the north; the J. Kennard and Sons Carpet Company Building, the Missouri Athletic Club Association Building, the Security Building, the Laclede Building, the Mississippi Valley Trust Company Building, the International Fur Exchange, and Pet Plaza, all located west of the Memorial; and St. Mary of Victories Church and the Crunden-Martin Manufacturing Company District, located south of the Memorial. A detailed discussion of those resources most likely to be affected by the proposed alternatives is provided in Appendix C.

Archeological Resources

PHYSICAL HISTORY

MEMORIAL GROUNDS The succession of European Colonial and U.S. development since the late 17th century destroyed any prehistoric



- LEGEND**
- Park Boundary
 - NHL Boundary
 - Area of Potential Effects
 - Archeological Area of Potential Effects
1. Missouri Athletic Club Association Building
 2. J. Kennard and Sons Carpet Company Building
 3. Laclede's Landing Historic District
 4. Security Building
 5. Mississippi Valley Trust Company Building
 6. Laclede Building
 7. Old Courthouse and sundial
 8. Eads Bridge
 9. North and South Overlooks
 10. Railroad tunnel cuts
 11. Gateway Arch
 12. Museum of Westward Expansion
 13. Grand Staircase
 14. International Fur Exchange
 15. American Zinc, Lead and Smelting Company Building
 16. Old Cathedral
 17. Pet Plaza
 18. St. Mary of Victories Church
 19. Crunden-Martin Manufacturing Company Historic District

Figure 3.4. Historic Buildings, Structures, Sites, Objects, and Districts Located within the Area of Potential Effects.

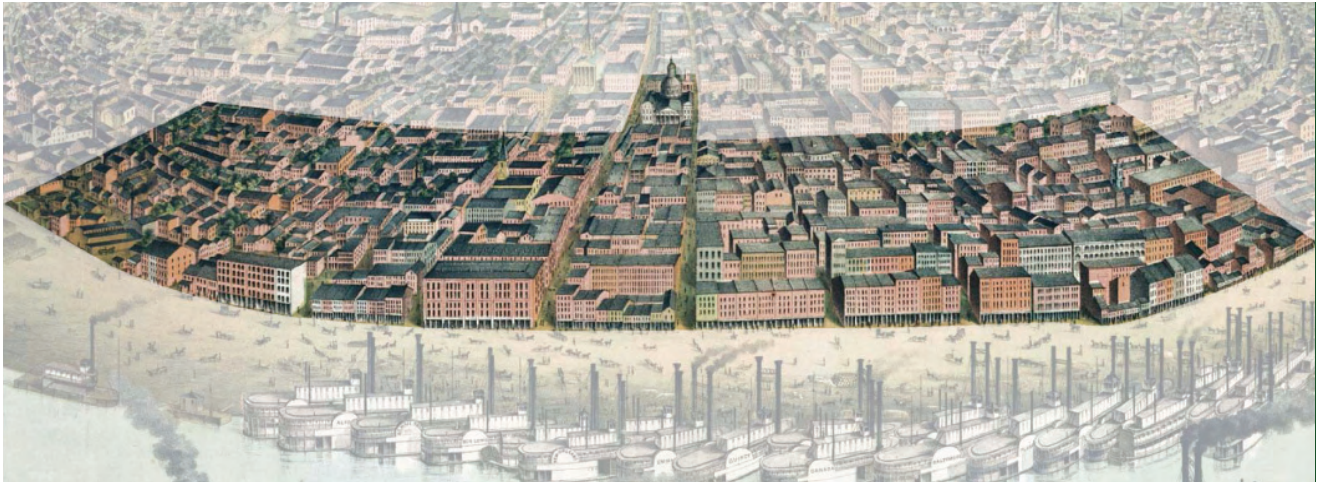


Figure 3.5 “Our city, (St. Louis, Mo.)” lithograph by A. Janicke & Co., published by Hagen & Pfau at the *Anzeiger des Westens*, c. 1859. Jefferson National Expansion Memorial grounds highlighted. Source: Library of Congress, Call No. PGA—Janicke—Our city (St. Louis, MO).

remnants of early cultures that might have been present on the Memorial grounds. The existing archeological resources date to after the Louisiana Purchase with few potential resources surviving from before 1850. Archival and photographic documentation demonstrates a multi-layered building history of the St. Louis riverfront since its inception as a fur trading center. Population expansion accompanied a steamboat trade boom in the 1830s that stimulated riverfront development and creation of a tenement and boarding house area in the old French settlement south of Market Street. The 1849 fire along the wharf fed on this new density, engulfing “numerous business and leaving thousands homeless” (Roselle et al 1999). On July 7, 1849, “the City Council instructed the City Engineer to have the rubbish then being hauled from the burned district deposited in the low places on the wharf near Plum Street,” at the southern edge of today’s Memorial (NPS 1954).

Prior to the Civil War, St. Louis experienced an industrial boom as a result of its river and rail connections. Residential occupation along the riverfront did not recover following the 1849 fire, and “as residents fled the pollution and noise caused by the development, the number of industrial and commercial buildings quickly grew” along the river’s edge (Roselle et al 1999). Residential occupation shifted to the west as diverse industries took advantage of the riverfront access to transportation corridors (Figure 3.5).

The 1907 Sanborn Fire Insurance map shows the multi-story commercial brick structures dominating the landscape (Figure 3.6). By the end of the decade, the 1908 and 1909 Sanborn maps illustrate that the area south of Market Street was almost exclusively industrial warehouses, though a few dwellings, tenements, and lodging houses could be found to the south between Clark and Poplar Streets (Sanborn Fire Insurance Company 1908, 1909). North of Market Street, industrial manufacturing dominated. Despite the development, the turn of the century saw the waning of river-based commerce and the riverfront area felt the impact, with the commercial area slowly abandoned and its structures heading into steady decline.

The Memorial’s overlay of fill in the 20th century is well known. Standing buildings in the area were razed to clear the land in anticipation of construction of the Memorial between 1939 and 1942. Many of these structures “had at least one, and sometimes two full basements, entailing a minimum of 15-30 feet of ground disturbance” resulting from both their construction and demolition (York 1983). If archeological evidence remains, basement foundations and a variety of subsurface features could be present, including wells, refuse disposal features, etc. Construction and landscaping of the Memorial further obscured the original ground surface.

Starting in late December 1954, the Missouri Highway Department dumped 80,000 cubic yards of earth on the site northward from Clark Street toward the Eads Bridge, between Memorial Drive and Wharf Street. Almost 300,000 cubic yards had already been deposited from Clark Street south to the Memorial boundary (Brown 1984a). Again in 1958, hundreds of cubic yards of fill were deposited on the site as stipulated by the grading plans and a remaining warehouse south of the Cathedral was removed (Brown 1984b).

CHOUTEAU'S LANDING Chouteau's Landing, the modern name for the area directly south of the Memorial and north of Chouteau Street, developed as a commercial and industrial site from early on in St. Louis's history due to its accessible location on the river. In the late 19th century, several flour mills were located in this area. The Iron Mountain Railroad was built from 1853-1857 to bring iron ore into the city, and when it consolidated with other lines to form the St. Louis, Iron Mountain & Southern Railroad in 1874, Chouteau's Landing accessed practically all railroads connecting in St. Louis (Landmarks Association of St. Louis 1988).



Figure 3.6. 1907 Sanborn Fire Insurance Map, St. Louis, Missouri. Jefferson National Expansion Memorial grounds highlighted. Source: University of Missouri Digital Library, file name sanborn6397.jpg.

The construction of the Merchant's Railroad Bridge in 1889 solidified the presence of larger manufacturing plants along the riverfront with access to the railroads.

Sanborn Fire Insurance maps indicate that Chouteau's Landing was primarily an industrial and manufacturing area by 1908 (Sanborn Fire Insurance Company 1908). The riverfront was dominated by large plants and railroad yards, including the St. Louis, Iron Mountain & Southern Railroad yards, the Southern White Lead Works and National White Lead Company, and the Laclede Gas-Light Company. Other manufacturing businesses located between the riverfront and Fourth Street included metal works, canning and meat packing factories, flour mills, buggy factories and wheelworks, and a soap and washing powder factory. The majority of buildings between Second Street and Fourth Street were two- to three-story brick storefront or apartment buildings, many listed as tenement housing. Few social centers were located in this area, although a church and school were present.

EAST ST. LOUIS In 1797, James Piggott established a ferry across the Mississippi River from the settlement at St. Louis. Eighteen years later, five of Piggott's seven heirs sold their interest in the ferry and the 100-acre parcel Piggott had claimed to St. Louis entrepreneurs, who combined it with another holding to develop the settlement of Illinois Town across the river. Platted in 1818, the town was incorporated in 1859, by which time the Alton & Terre Haute and Ohio & Mississippi railroads had established terminals on the west side of Bloody Island, the sandbar turned island that rose out of the river c. 1800; and ferry docks on the island were providing service out of Illinoistown (NPS 1937). That same year, the area just south of present-day Eads Bridge is known to have housed construction and railway workers in an area known as "Lower Patch." The southernmost of three such residential concentrations built by the Wiggins Ferry Company between the late 1850s and the Civil War, much of the Lower Patch area was probably destroyed by construction of the bridge and its approaches as well as the tornado in 1871 that also destroyed railroad and lumber facilities in

the area. Following incorporation, a second charter was passed in 1861, absorbing the nearby town of East St. Louis and officially adopting that name for the city. A 1906 photo looking south from the Eads Bridge illustrates the industrial land use in this area at the start of the 20th century (Figure 3.7).

ARCHEOLOGICAL SITES WITHIN THE STUDY AREA

A total of nineteen surveys (Appendix D) have taken place within a one-mile radius of the project area. These have resulted in the identification of seventeen archeological sites, all dating to the historic period (Appendix E). In addition, just outside the one-mile radius (to the north of the project site), but still of note, were a group of prehistoric mounds known as the St. Louis mound group, just north of Laclede's Landing. Early 19th century accounts describe the mounds site as consisting of 26 pyramids with a two hectare plaza, with the largest "Big Mound" at the northern end of the

site (Pauketat 2004). Because of these mounds, St. Louis was nicknamed "Mound City." The St. Louis mound group was demolished as St. Louis development spread north in the 19th century. The majority of mounds were leveled by the 1870s, and little is known about the site as a result (Milner 1998).

ST. LOUIS Only three archeological sites were recorded within St. Louis (outside the Memorial boundaries) and they all included refuse and construction debris dating back to the 1840s and 1850s. They include Sites 23SL976, 23SL2229, and 23SL2234. Like the blocks within the Memorial, the areas where these three sites were found appear to have undergone the pattern of razing buildings and constructing new ones atop the construction debris. Cochran Gardens (Site 23SL2229) provides a good example of this. Located at the southeast corner of O'Fallon Avenue and North Seventh Street, the Cochran Gardens site was a densely populated residential and

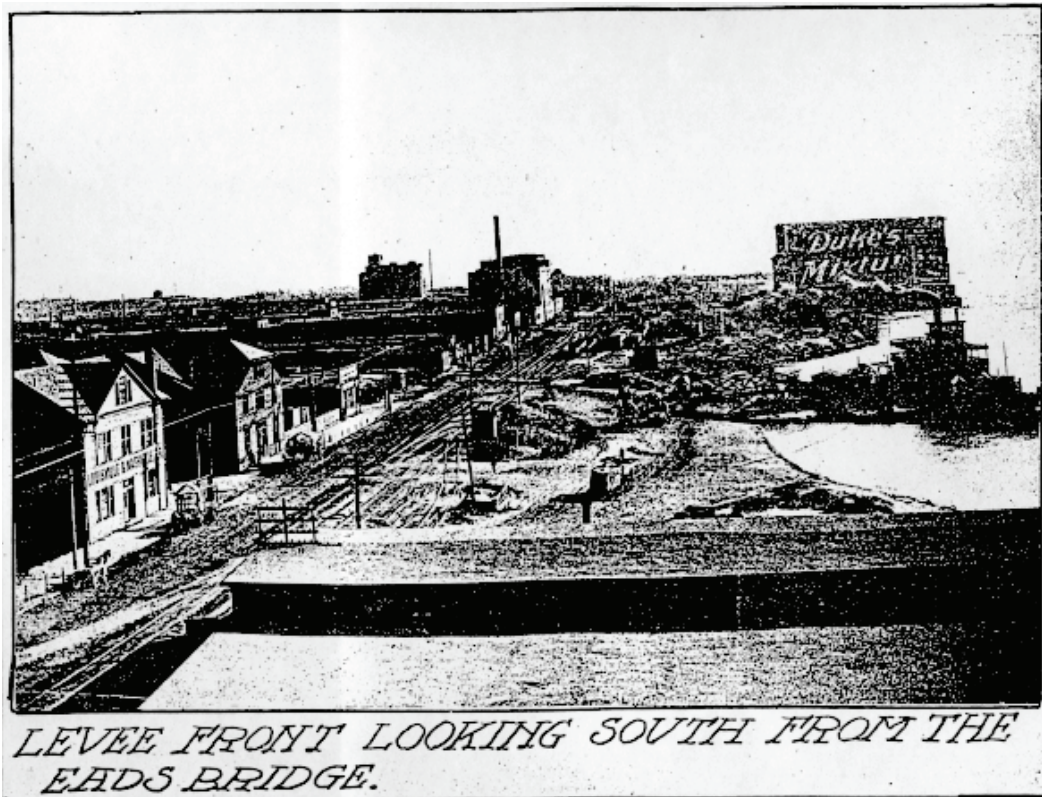


Figure 3.7. Levee Front, Looking South from the Eads Bridge. From Chas A. Franke & Horace J. Eggman, *Pictorial East St. Louis* (1906). Source: RiverWeb, University of Illinois at Urbana-Champaign (<http://riverweb.ncsa.uiuc.edu/cgi-bin/viewrid?RID=812>).

commercial area from the mid-19th to the mid 20th century. Here, 19th century buildings were razed in 1950 and the debris spread on the parcel as the base for an apartment complex. After the apartments were themselves razed in 2002, the rubble was used to fill basements and level the site, and subsequently capped by fill (Altizer, McLaughlin and Harl 2005). This pattern appears to have been the case even in the absence of modern construction. Phase II testing at the Walsh's Row site (Site 23SL2234), remains of row houses built c. 1845 and demolished c. 1935, indicates that modern fill from the demolition overlies brick streets or sidewalks as well as 19th century brick and mortar building debris (Meyer 2004). These sites were found during excavations for new construction, mostly on blocks that were presumed to have no intact archeological features due to development in the 20th century. In each of the sites, intact deposits including refuse deposits, privies and cistern, were encountered below the rubble.

No sites have been documented in Chouteau's Landing to the south of the Memorial, though construction to the south along Lafayette Avenue (site 23SL338) revealed four cisterns intact with artifacts dating from the mid- to late 19th century (Fairchild 1979 in Roselle et al 1999).

EAST ST. LOUIS In East St. Louis, Illinois, most of the sites were related to the railroad and included structural remnants and equipment. They also included two historic houses and the Eads Bridge, all recorded in 1979. Archeological investigations in the Streetscape/Riverscape area of the Memorial identified in alternatives 3, 4, and 5 along the Illinois shoreline have been limited in scope. Studies to the east of Front Street have yielded evidence of the rail lines and rail facilities upon which the hamlet of Illinoistown depended, including Site 11S671 (the Gulf, Mobile and Ohio Freighthouse) constructed in 1881 after the railroad's acquisition of the Cairo and St. Louis Railroad. Results of a 1993 survey indicated that the eastern two-thirds of the building's wooden superstructure were demolished but the western third of the structure, built of brick, was still standing. While nothing was observed on the surface during the survey, it is unknown whether subsurface deposits in

the location of the former structure along present-day West Trendley Avenue east of Front Street may be present. No sites have been identified west of Front Street in the shoreline Streetscape/Riverscape area. However, the western bank of Bloody Island, the sandbar that now constitutes East St. Louis' riverfront, is known to have been the site of bustling railway and ferry activities.

ARCHEOLOGICAL INVESTIGATION OF THE MEMORIAL GROUNDS

In addition to the sites and surveys adjacent to the Memorial, several archeological investigations have taken place within the Memorial grounds. Appendix F provides a summary of the type of work completed and the findings of each investigation.

These excavations and subsurface examinations were focused on identifying intact pre-1849 features and deposits within the Memorial grounds. Excavations within the Memorial boundaries were undertaken in 1960 by Memorial Archeologist Zorro Bradley. Subsequently, Bradley suggested that 35 sites of historic importance were under the ten to thirty feet of fill deposited for landscaping east of the Second Street area on the basis of historic documentation (Bradley 1960). The deepest portion of this fill extends eastward from a north-south line in the vicinity of Second Street to the area of the railroad cut along Commercial Street. Seven additional sites were identified between Second and Memorial, presumably under little to no fill; two were thought to have been previously disturbed or erased by more recent construction. The 1810 office of Dr. Farrar, an important early St. Louis physician, was suggested to have remnants in this area. An additional four sites were thought to exist in proximity to the Old Cathedral (Bradley 1960). Following more limited excavation in 1961, it was determined that "the historic structures . . . sought no longer existed or were too deeply buried to warrant excavation" (Bradley 1976). The two excavations yielded a small number of artifacts; none appear to have been recovered from in situ deposits.

In 1984 and 1985, monitoring of construction activities for the Gateway Arch parking structure spanning the former First and

Second Street areas at the northern edge of the Memorial observed six archeological features, though none definitively represented an intact resource dating to before 1849 (Wells and Williams 1985). Here, remnants of the First Street limestone block retaining wall were observed at an elevation of 443 feet above mean sea level sitting directly on bedrock and capped by the street's 1882 cobblestones. While some apparently sterile soil was observed below the cobblestones, efforts to remove the capping and examine the deposits below the street were deemed inadvisable (Wells and Williams 1985). West of First Street, excavation revealed a mix of approximately nine feet of building and structural material sitting directly on bedrock. East of First Street, two exposed features were observed within trenches five meters deep, consisting of limestone foundation walls and remnants of an aqueduct or sewer. The foundation walls, while corresponding to the location of the "Cadet" Chouteau House built c. 1825, were more probably a portion of the W.H. Bull Medicine Factory later built on the site and demolished by the National Park Service between 1939 and 1942 (Woods 1984).

Two additional features were observed running west from First Street for nine meters and sitting directly on bedrock. The first, a limestone foundation with a top elevation of 435 feet above mean sea level, was associated with a small amount of late 19th and early 20th century material and the second consisted of a brick foundation corner directly to the north. A final feature at the west end of the site was associated with late 19th and early 20th century material. No features were found to have diagnostic information or artifacts, and the matrix of building rubble encountered led to the conclusion that "...in situ features if they exist, will be located below the 436.0-foot elevation that excavation is now or up slope west of First Street" (Wells, Williams and Woods 1985). The findings suggested that "post-1849 urban renewal had destroyed any earlier structures present above grade elevation [436.0 feet above mean sea level] prior to commencement of excavation for construction of the parking facility" (Wells, Williams and Woods 1985).

Further monitoring in 1999 for the construction of the maintenance facility at the south end

of the Memorial also illustrates the potential for archeological resources. Here, auger bore samples hit the limestone bedrock at 9.25 to 13.5 feet below surface, trending to a maximum of 38.5 feet below surface in the northernmost boring observed. Dense brick rubble was seen in many of the borings ranging from below the present asphalt surface to depths of three to ten feet; an undated abandoned sewer line also appeared to have been hit in a separate boring. Memorial Archeologist Vergil Noble concluded that "it is well known that the grounds here were landscaped on urban fill after the buildings were razed" (Noble 1999).

The archeological investigations within the Memorial have typically yielded historic construction debris and partially disturbed architectural and infrastructure features dating to the second half of the 19th century. Because the focus of many if not all of the previous investigations was on identifying pre-1849 resources, the potential for intact later deposits or features was not extensively examined. However, the architectural and infrastructural features observed in earlier studies are indicative of the potential presence of historic period resources that may meet National Register eligibility criteria. Additionally, much of the area has not been subjected to investigations. While the archeological reports all acknowledge that the deep fill in the eastern portion of the Memorial indicates that the likelihood of encountering archeological deposits for most construction projects is limited, the presence of intact deposits and features cannot be discounted.

In a 1960 memorandum between the Memorial archaeologist and the superintendent, the archaeologist pointed out the following:

Over the past four years an artificial fill running from 10 to over 30 feet deep has been dumped over the Memorial area in preparation for final landscaping. The deepest portion of this fill extends eastward from a north-south line in the vicinity of Second Street to the area of the railroad cut along Commercial Street.

Due to the slope of the original ground surface, the section of the Memorial west of Second Street has the highest potential

to yield archeological deposits that are not covered by deep fill and that may be affected by future development. Unexamined areas in the central western area of the Memorial in particular may yield additional information, including areas around the Old Courthouse and Luther Ely Smith Square that are in relatively undisturbed contexts and could contain intact deposits pre-dating the industrial development of the area relatively close to the surface. The area between First and Second Streets, however, may also have a medium to high archeological potential depending on the depths to which future ground disturbing activities may occur. Portions of the southern area are expected to have medium archeological potential as a result of the rubble fill that appears to span from below ground surface to near the limestone bedrock. Sites like Cochran Gardens, Walsh's Row, and Lafayette Avenue in Chouteau's Landing surrounding the Memorial illustrate that, even under significant amounts of building rubble, intact material remains below the surface of St. Louis. Further, the piercing of the possible sewer line in the southern area of the Memorial suggests the potential presence of intact infrastructural remains that may pre-date or be contemporaneous with the fire of 1849, including waterworks developed in 1830, gas light infrastructure in place in 1847, and sewer systems in place by 1850.

The Chouteau's Landing area to the south of the Memorial has undergone little to no archeological examination according to available records. Any expansion of the memorial southward or placement of facilities in the Chouteau's Landing area pose a high potential to encounter intact mid-19th century deposits like those found along Lafayette Avenue, as well as later deposits.

Lastly, the East St. Louis area appears to have medium archeological potential. Here, no sites have been identified in the Streetscape/Riverscape area, though remnants of the ferry and railway activities shown in Figure 3.7 may be present below the surface. Similarly, features or deposits associated with 19th century railway activities may remain below ground in any future joint management areas east of Front Street.

Curatorial Objects and Museum Collections

The Memorial's collection consists of 1,347,086 cataloged items: 10,257 objects and 45 archival collections. There are 8,941 history objects, 860 archeological objects, 342 ethnology objects, 54 geology objects, and 60 biology objects. Currently, there are 411 cataloged objects on display in the Museum of Westward Expansion and 529 items on display in the Old Courthouse.

The cultural collection is sub-divided into four disciplines: archeology, ethnology, history, and archives. Collections are used for permanent and temporary exhibits in the Museum of Westward Expansion and Old Courthouse, and for staff and public research. Archeological holdings from excavations done in association with site work are administered by the NPS Midwest Archeological Center in Lincoln, Nebraska. Ethnological materials in the collection consist of American Indian clothing, weapons, tools, and domestic items such as basketry and pottery. A collection of architectural materials is on long term loan to Southern Illinois University, Edwardsville for cataloging and study.

The history collection forms the bulk of the Memorial's Museum of Westward Expansion collection, and focuses on the history of westward expansion, St. Louis history, and Gateway Arch construction. Objects associated with the history of westward expansion include clothing, tools, equipment, weapons, household goods, personal items, and transportation devices that are representative of those used in exploring and settling the Trans-Mississippian West between 1804 and 1890. To interpret the city's growth and development of the "Gateway to the West," objects in the collection include many of these items manufactured in St. Louis. Included in this category are documented furnishings of the Old Courthouse and selected samples of historic fabric removed from park structures during approved restoration projects. Also included in this category is a large collection of pharmaceutical artifacts and documents from a St. Louis pharmacy in the 1890s. The Memorial also has a small collection of

fine art, including works by Thomas Moran and Ansel Adams.

The Memorial archives include materials which document the creation of park, the clearing of the site, the architectural competition of 1947-1948, the selection of the Saarinen-Kiley design concept, the planning and construction of the Gateway Arch and landscape, the restoration of the Old Courthouse, and other significant events in the Memorial's history. The archives contains most of the original architectural competition entries from noted architects in addition to Eero Saarinen, such as Louis Kahn, Edward D. Stone, Harris Armstrong, Walter Gropius, Gyo Obata, and many others. Another important collection in the archives consists of extremely detailed records, including photographs of the buildings that were razed to create the Memorial site. The archives also contains other collections relevant to park resources and themes, including interviews and papers related to widows of frontier soldiers, a collection of papers and images of western forts, a research collection of Lewis and Clark materials, insolvent debtor records from 1815-1870 and a small but significant collection of contracts awarded for original construction of the Old Courthouse in the 1850s-1860s.

3.3 NATURAL RESOURCES

The inventory and characterization of physical and biological resources provide a baseline for analysis of potential impacts discussed in Chapter 4. The study area for the inventory and analysis of physical and biological resources has generally been defined as the Memorial grounds on the Missouri side of the Mississippi River, and the East St. Louis addition including Malcolm Martin Memorial Park on the Illinois side of the river. On the west side of the river, the study area is bounded by Eads Bridge to the north, Leonor K. Sullivan Boulevard to the east, Poplar Street Bridge to the south, and typically Interstate 70 to the west, although a two-block extension to incorporate the Old Courthouse and Luther Ely Smith Square is also included. On the east side of the river, the study area is bounded by the Cargill facility to the north, and the Terminal Railroad Association tracks to the east, south, and west.

In preparing this analysis, the following resources were reviewed: U.S. Geological Survey mapping, aerial photos, local comprehensive and land use plans, Geographic Information System (GIS) databases, conceptual design drawings, scientific literature, government reports, previous studies, agency comments, and other materials as needed. In addition, field surveys were conducted.

Vegetation

The vegetation community of the Memorial grounds is quite different than that of the East St. Louis addition. The Memorial grounds is a formally planned, designed, and planted landscape, while the East St. Louis addition is a combination of recently cleared land for park construction and early successional forest colonizing formerly industrial land.

THE MEMORIAL GROUNDS

See the Cultural Landscape section above for a discussion of the vegetation on the Memorial grounds.

Of major concern for the vegetation community of the Memorial grounds is the vulnerability of the predominant ash plantings to the emerald ash borer. The emerald ash borer is an exotic wood-boring insect that feeds only on ash trees (*Fraxinus* sp.). The first documented North American occurrence of the beetle was in 2002 in southeastern Michigan and Windsor, Ontario, Canada, and it is thought to have been introduced in the 1990s on solid wood packing material originating from Asia. Unlike many other wood-boring beetles, the emerald ash borer aggressively kills trees within two to three years after infestation. The beetle has no known natural predators in North America and no effective control options have yet been developed. If it is not contained or its effects mitigated, it is likely to continue to infest and kill all species of ash trees throughout its ever-expanding range, including those on the Memorial grounds. The results of the emerald ash borer infestation on the rural and urban forests of North America would be similar to the historic loss of native American chestnut and elm trees associated with chestnut blight and Dutch elm disease, respectively. The emerald ash borer was found in Illinois in 2006 (USDA-APHIS 2008) and on July 23, 2008, the

emerald ash borer was found in Missouri at Wappapello Lake (MDC 2008).

EAST ST. LOUIS ADDITION

The portion of the East St. Louis addition to the south of Malcolm Martin Memorial Park is dominated by early successional trees such as the native eastern cottonwood (*Populus deltoids*), and exotic, invasive species such as mulberry (*Morus alba*), and Siberian elm (*Ulmus pumila*). Portions of the site have a dense shrub layer dominated by the invasive Amur honeysuckle (*Lonicera maackii*). Although the vegetation present on the site seems to be healthy, the dominance of invasive species means that the quality of the overall community is poor.

Federally Listed Threatened and Endangered Species

A federally-listed Threatened species is one that is likely to become Endangered in the foreseeable future. An Endangered species is one that is in danger of extinction throughout all or a significant portion of its range. Plant and animal species that are Threatened and Endangered, either locally, regionally, or nationally, are considered sensitive and are protected (along with their habitat) under a number of federal laws. These include the federal Endangered Species Act of 1973, as amended (ESA), the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act. The ESA requires the federal government to designate “critical habitat” for any species listed under the act. “Critical habitat” is defined as: “the specific areas within the geographical area occupied by the species at the time of listing on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations.” All federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat.

The U.S. Fish and Wildlife Service (USFWS) has responsibility for listing, protecting, and managing federally-listed Threatened and Endangered species under the ESA.

Coordination between the National Park Service and USFWS to identify local populations within the study area are ongoing. There are no known occurrences of Threatened and Endangered species or critical habitat on the Memorial grounds.

The National Park Service has initiated informal consultation with USFWS related to one Threatened species, the decurrent false aster (*Boltonia decurrens*), that may exist on the East St. Louis side of the Mississippi River between the river and the railroad tracks that run along the top of the levee. The decurrent false aster is a perennial plant that grows from one to five feet tall and can occasionally reach heights of over six feet. It blooms from July to October and bears seeds from August to October. Its leaves are linear and narrow with lower leaves broader and larger than upper leaves. Leaves also often have a bluish tint. This plant is called “decurrent” because the leaf tissue extends down the stem from the point of leaf attachment. The flowers of the decurrent false aster are approximately one inch in diameter and occur in branched groups of composite heads with yellow disk flowers and white to purplish ray flowers (Schwegman and Nyboer 1985). It is typically found on moist, sandy, floodplains and prairie wetlands along the Illinois and Mississippi Rivers where it relies on periodic flooding to scour away other plants that compete for the same habitat. Its only known occurrence in Missouri is in St. Charles County, north of the study area (USFWS 1990, MoDNR 2007c). It is more widespread in Illinois with known populations in St. Clair and Jersey Counties and several counties bordering the Illinois River (USFWS 1990).

Soundscape

Noise is generally defined as unwanted or objectionable sound that alters or disturbs quality of life or communication. It also may affect physical health. Most environmental noise, particularly in urban areas, consists of a variety of frequencies of common, distant noises that create relatively constant background noise levels. Periodic loud noises such as horns honking, trucks driving by, or low-level aircraft overflights are easily perceived above background noise levels.

Noise levels are usually measured and expressed in decibels (dB) that are weighted to frequencies perceivable by the human ear, known as A-weighted sound levels or dBA. Noise levels are typically measured over a set period of time (one hour, eight hours, or 24 hours) and are commonly expressed as dBA Leq, which represents the equivalent or average noise level in dBA for a given time period. Typical indoor and outdoor noise levels in dBA are presented in Figure 3.8.

NOISE REGULATIONS AND POLICIES

The State of Missouri does not have a state noise statute, but the State does regulate noise

emissions from watercraft. The State of Illinois has a general prohibition on the emission of sound that would cause noise pollution beyond a property boundary. For the purposes of Section 25 of the Illinois Environmental Protection Act and the codified regulations under Title 35, Subtitle H, Chapter 1, Part 900, noise pollution is defined as “the emission of sound that unreasonably interferes with the enjoyment of life or with any lawful business or activity.”

The City of East St. Louis has a general prohibition on noise pollution similar to the Illinois state statute. The City requires that construction activities (including excavation)

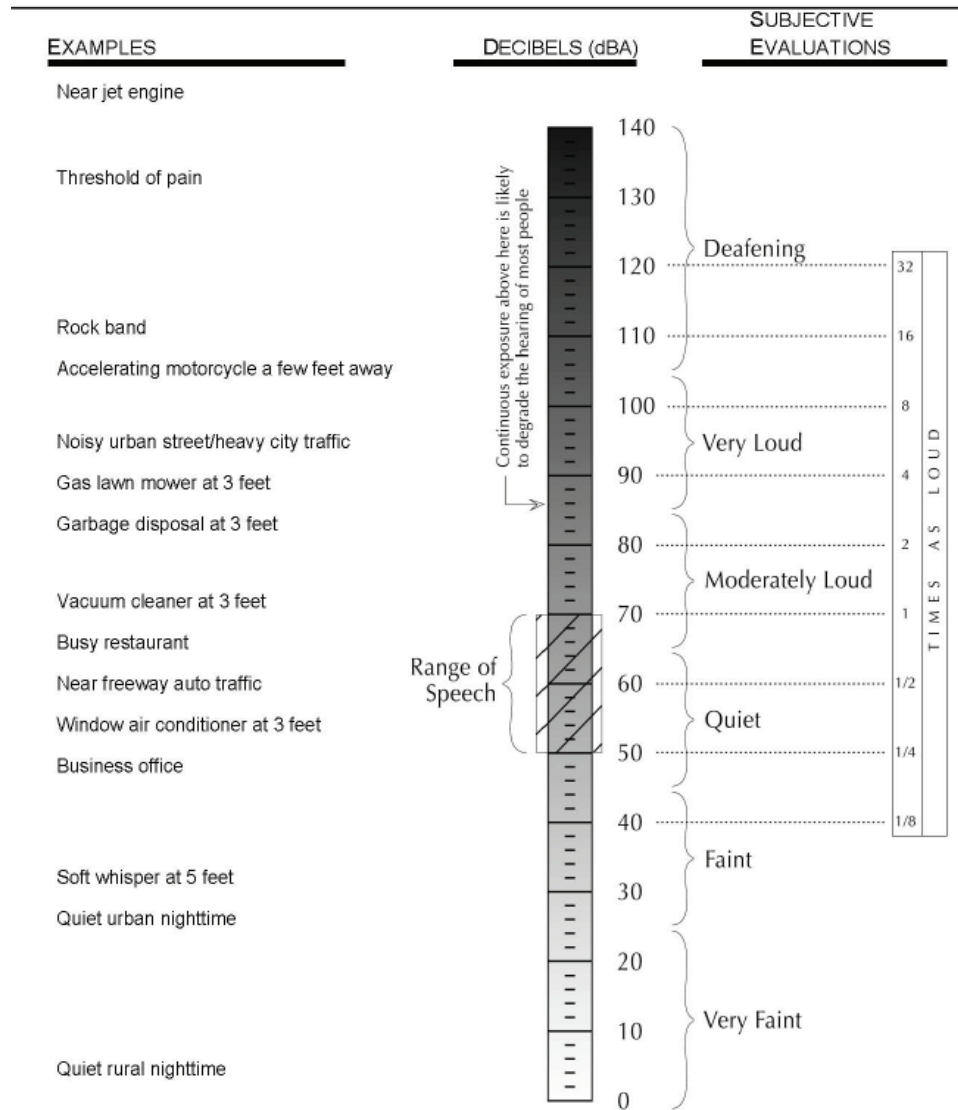


Figure 3.8 Typical Indoor and Outdoor Noise Levels. Source: EGAN 1988 and EDAW 2005.

occur between the hours of 7:00 a.m. and 6:00 p.m. on weekdays, except in the case of urgent necessity in the interest of public health and safety and with a permit from the building inspector (Section 50-32(9)). The City of St. Louis Revised Code Chapter 15.51 regulates stationary sources of industrial noise and sets permissible noise levels for various zoning districts. Stationary noise sources are defined as any equipment, motor vehicle, aircraft, or facility, fixed or movable, capable of emitting audible sound. Noise from stationary sources within the central business district is generally limited to 70 dBA or less if the duration of the noise generating activity exceeds 60 minutes. This limitation would apply to construction and other activities on the Memorial grounds. In addition, Chapter 15.50.081 prohibits construction activity within 1000 feet of a residential property before 6:00 a.m. and after dusk, except in case of an “urgent necessity.”

NATIONAL PARK SERVICE POLICY ON SOUNDSCAPE MANAGEMENT

A portion of the National Park Service mission includes protecting and enhancing soundscapes. A soundscape refers to the total acoustic environment of an area. Depending on the purposes and values of the Memorial, both natural and human-caused sounds may be desirable and appropriate in a soundscape. Soundscapes often vary in their character from day to day and from season to season and can be affected by changes in the numbers of visitors who introduce human-caused sounds into the environment. The NPS policies require that the National Park Service restores degraded soundscapes to the natural condition wherever possible, and protects natural soundscapes from unacceptable impacts (NPS 2006).

CURRENT CONDITIONS ON THE MEMORIAL GROUNDS

The Jefferson National Expansion Memorial is surrounded on three sides by major roadways which include the elevated Eads Bridge to the north, Interstate 70 and Memorial Drive to the west, and the elevated Poplar Street Bridge to the south. To the east, Jefferson National Expansion Memorial is bounded by Leonor K. Sullivan Boulevard along the Mississippi River. An active set of railroad tracks is located below-grade in both

open cuts and tunnels on the eastern portion of the Memorial grounds.

The soundscape on much of the Memorial grounds is dominated by fairly loud background noise from traffic on the surrounding roadways. The traffic noise is loudest on the portions of the Memorial grounds closest to these roadways and diminishes towards the central area near the Gateway Arch and the north and south reflecting ponds; however, the background traffic noise is perceptible on most of the site. Traffic noise near the Gateway Arch and the north and south reflecting ponds is somewhat lower than other areas of the Memorial grounds due to natural attenuation and the intervening topography between the roadways and these portions of the site. Trains moving across Eads Bridge and trains in the below-grade cuts on the eastern portion of the Memorial grounds can be periodically perceived above background noise levels. Commercial aircraft fly over or near the Memorial grounds on approach or departure from Lambert Field, but these noise events are typically of short duration. Horns from ships on the Mississippi River and other noises from the surrounding urban environment contribute to the existing soundscape. In general, the soundscape on the Memorial grounds is comparable to the soundscape of other busy urban areas.

Existing sources of noise on the Memorial grounds include:

- The emergency generators which are tested monthly
- Grounds maintenance equipment such as lawn mowers
- Trains passing through the site on the mainline railroad tracks
- Helicopters taking visitors on aerial tours from a barge moored on the river beneath the Gateway Arch
- Broadcast music from riverboats

Visitors near the emergency generator building when the generators are started or are operating would likely be able to hear the generators above the background noise. Similarly, visitors

near park maintenance activities such as lawn mowing would be temporarily affected by the noise from the maintenance equipment. As discussed above, visitors near the below-grade train trenches when trains are passing are able to hear the trains above background noise levels.

During special events on the Memorial grounds, the soundscape of the Memorial is degraded slightly due to crowd noise, vehicular noise, and amplified sound systems.

CURRENT CONDITIONS IN THE EAST ST. LOUIS ADDITION

The Cargill grain elevator is located immediately adjacent to Malcolm Martin Memorial Park; noise associated with the operations of this facility and the associated truck loading, railcar loading, conveyor belt, and barge loading operations are noticeable throughout the Malcolm Martin Memorial Park.

Another source of noise near the East St. Louis addition is the main railroad line that runs along the east side of the Mississippi River.

3.4 VISITOR OPPORTUNITIES AND USE

Visitor Opportunities

INFORMATION, INTERPRETATION, AND EDUCATION

The Rotunda and first floor exhibits chronicle the history of the Old Courthouse building and its construction between 1839 and 1862. An exhibit about the Dred Scott case and the location of the original courtroom are located in the west wing. A special exhibit gallery located on the first floor of the west wing is used for temporary exhibits and special events.

The Diorama Room, located across the hallway from the Museum Store, exhibits six dioramas representing historic events and periods relating to the westward growth of the United States. Three of the dioramas are historic museum pieces produced by National Park Service craftsmen in the early 1940s. The Competition Room, located next to the Diorama Room, addresses the 1947-48 architectural competition that led to the

selection of the design of the Gateway Arch. Four exhibit galleries with themes covering the growth of St. Louis and the Mississippi River Valley are located on the first floor, and constitute the main exhibit inside the Old Courthouse: *St. Louis: The Early Years, 1764-1850*, south wing; *St. Louis: Becoming a City, 1850-1900*, south wing; *St. Louis: Entering the 20th Century, 1900-1930*, north wing; and *St. Louis Revisited, 1930-present*, north wing.

PERSONAL SERVICES

Jefferson National Expansion Memorial receives most of its visitation within its structures: the underground complex beneath the Gateway Arch, the Museum of Westward Expansion, and the ride to the top of the Gateway Arch. Visitor contact stations currently include the visitor information desk in the lobby of the George B. Hartzog Visitor Center; ticket takers in front of the two theaters; interpreters stationed at the entrance of the Museum of Westward Expansion and roving within the museum; and interpreters stationed at the top of the Gateway Arch.

MUSEUM EDUCATIONAL PROGRAMS

The Memorial offers many educational programs to groups, ranging from pre-school to high school, college, and seniors. Topics include the Lewis and Clark Expedition, the Dred Scott Trial, American Indians, Trappers and Traders, African-Americans of the West, St. Louis History, Immigrants of the Frontier, and other subjects related to westward expansion. Teacher workshops are offered twice a year and provide teachers with an overview of the programs and focus on special topics presented by the Education Department. The Old Courthouse presents school programs concerning St. Louis history and other westward expansion topics. Mock trials, particularly one on the Dred Scott case, are the most popular park programs. The emphasis of other Old Courthouse programs is on the role St. Louis played in the judicial, economic, transportation, and social history of westward expansion.

THEATERS

The Tucker Theater is located on the north side of the lobby and accommodates 325 visitors. A brick mural on the façade of the

theater commemorates the workers, designers, politicians and civic leaders who made the Gateway Arch a reality, as well as demonstrates the height of the Gateway Arch in scale with other well-known landmarks. The captioned film “Monument to the Dream,” a 28-minute documentary on the construction of the Gateway Arch, is shown hourly.

The Odyssey Theatre seats 265 people and is located on the south side of the lobby opposite the Tucker Theater. This theater daily presents special films in the Odyssey Ultra 70mm Wide Screen Projection System and THX Sound System. Films such as “Lewis and Clark: Great Journey West” are shown.

PARK EXHIBIT PROGRAM

One of the goals of the exhibit program at the Memorial is to increase visitor knowledge of the resource and its themes through non-personal interpretive media. The department is responsible for routine and preventive maintenance for exhibits throughout the Memorial. They also seek out and evaluate submitted traveling exhibit proposals, and install chosen exhibits in the special exhibit galleries in the Museum of Westward Expansion and the Old Courthouse.

MEMORIAL GROUNDS

Visitor activities on the grounds include walking, jogging, watching the river, sitting and reading. The area is used by visitors who pass through on their way to the Gateway Arch, as well as local downtown workers who spend their lunch hours there.

The Museum of Westward Expansion is located on the west side of the lobby beneath the Gateway Arch. Through artifacts, quotations, photographs, and animatronic figures, this one-of-a-kind museum commemorates the people and events of the 19th century American westward movement. The exhibits in the Museum of Westward Expansion, in combination with those at the Old Courthouse, are accredited by the American Association of Museums, one of the few NPS museums to have such an accreditation. The Museum of Westward Expansion opened on August 10,

1976, and was dedicated on August 23, 1976. Since that time, an average of over a million visitors a year have experienced its unique layout and displays.

THE JOURNEY TO THE TOP

The Gateway Arch Transportation System takes visitors to the top of the Gateway Arch in two specially designed trams, one in each leg of the Gateway Arch. Each tram consists of eight five-passenger, barrel-shaped capsules and has its own independently-operated electric motor and back-up emergency generator, which pulls the tram by cable. To safely negotiate the curves at the bottom and the top of the Gateway Arch, the trams travel along tracks. The ride up takes approximately four minutes, while the ride down takes approximately three minutes. However, to enjoy the picturesque view of the riverfront and the city from the observation deck at the top, the average visitor takes 30 to 40 minutes to complete the round trip. A cooperative agreement between the National Park Service and Metro Business Enterprises (Metro) permits Metro to operate the tram ride, but the tram system is maintained and controlled by the National Park Service. The top of the Gateway Arch contains an observation deck approximately 15 feet wide and 69 feet long, which can accommodate approximately 160 visitors at a time. An interpretive ranger is stationed at the top to greet and assist visitors and to respond to safety and security concerns.

SPECIAL EVENTS

The Memorial annually hosts a series of special events including African American Heritage Month, Fourth of July celebrations, Constitution Day, Victorian Holidays and St. Louis Traditions, and other special events.

PARK MUSEUM STORES AND SALES AREAS

Jefferson National Parks Association operates the Memorial’s museum stores which include the Gateway Arch Museum Store, Levee Mercantile, and the Old Courthouse Museum Store.

PARTNERS

Jefferson National Expansion Memorial and the Gateway Arch were created as a result

of public-private partnerships, and the cooperation of the City of St. Louis and the federal government. Today, the assistance rendered to the Memorial by the Jefferson National Parks Association, which runs the Memorial's museum stores, and Metro, which runs the trams that take people to the top of the Gateway Arch as well as the interpretive riverboat cruises of the St. Louis riverfront, is so important that the Memorial truly could not function without these vital partners. Many other informal partnerships also exist with local educational and religious groups, professional associations, museums and historic sites.

RECREATIONAL ACTIVITIES

Some recreational activities are allowed on the Memorial grounds, as long as they do not conflict with the stated purpose of the Memorial or its setting. Visitor activities on the landscape currently include walking, jogging, watching the river, sitting, reading and informal recreation such as Frisbee tossing. Organized sporting events are not permitted.

Visitor Use

Memorial partner Metro completed a visitor assessment of the Memorial's interpretive program in 2007. A total of 18,000 surveys were distributed; 10,000 to 11,000 completed surveys were returned. Metro conducted two major surveys for the Memorial, a 16-month survey between August 2003 and December 2004, and another in conjunction with the Memorial's Long-Range Interpretive Plan in 2006-2007. Following are the survey results:

- Two-thirds of visitors reside within 500 miles of the Memorial. More than half of the Memorial's visitors reside within 400 miles. This information was determined by zip code analysis, which is a common practice for business plans.
- Most visitors return within 11 years for another visit.
- The average visit lasts a little more than two hours. As reported by visitors surveyed in 2006, visitors on average planned to spend about one and a half hours at the site, but spent more than two hours at the

Memorial; 13 percent of visitors stated that they wished they had set aside even more time to experience the Memorial.

- For at least 19 percent of visitors the Gateway Arch experience – consisting of the tram ride and view from the top of the Gateway Arch – was the primary reason for visiting.
- The vast majority – 90 percent – of visitors knew about the top of the Gateway Arch/tram ride experience before coming to the Memorial.

3.5 TRANSPORTATION AND ACCESS

The Jefferson National Expansion Memorial, located in the center of the St. Louis metropolitan region, is positioned at the crossroads of numerous modes of transportation. Access to the Memorial is a vital part of the visitor experience. The downtown location of the Memorial presents both challenges and opportunities for getting to and leaving the site.

The following section provides an overview of existing transportation access, parking, and circulation patterns at Jefferson National Expansion Memorial, including roadway characteristics, transit patterns, bicycle and pedestrian circulation, and parking options, as well as existing freight rail and water-based transportation conditions. This summary is based on a variety of information sources including data obtained from the National Park Service, the East West Gateway Council of Governments, the Missouri Department of Transportation, the City of St. Louis, and MetroLink.

Vehicular Traffic

Jefferson National Expansion Memorial, set within downtown St. Louis, is strongly shaped by the urban street pattern that surrounds it. These roadways not only provide access to all sides of the Memorial, they shape the experience of the visitor as well.

Roadways are typically classified according to their function, which relates to whether the roadway is designed for high accessibility

or high mobility. If a roadway is designed for higher accessibility, it means that more streets intersect with it, which lowers travel speeds. On the other hand, a roadway such as a limited access freeway can be designed for a high level of mobility, at a high speed. Such classifications are used to create a functioning network for traffic flow.

The Memorial grounds are surrounded by streets and highways. The type, or functional classification, of each roadway is described below, as well as relevant roadway characteristics and traffic volumes.

The Interstate 70 (I-70) corridor runs through downtown St. Louis, forming the Memorial's western boundary. A part of the larger freeway system in the St. Louis region, it serves as a link between downtown St. Louis and north St. Louis, including Lambert International Airport. The Average Annual Daily Traffic (AADT) in 2006 was 72,777 vehicles (MoDOT 2006). The segment adjacent to the Memorial passes below grade, between Poplar Street and just to the north of Pine Street, at which point it bridges over Memorial Drive.

Memorial Drive forms the western boundary of the Memorial. The street is actually two parallel one-way streets divided by the below-grade I-70. The road functions in part as an on and off ramp to Interstate 70, with three to four lanes of traffic in each direction. It forms a high-speed barrier between the Gateway Arch on the east, and Luther Ely Smith Square and the Old Courthouse to the west.

The former Wharf Street, renamed Leonor K. Sullivan Boulevard for a member of the House of Representatives from Missouri's 3rd Congressional District, forms the eastern boundary of the Memorial. The street serves as St. Louis' riverfront drive. Since it is on the levee and below the floodgates, the street is inaccessible at times due to flooding. The street is considered a local street, with one lane in each direction.

The segment of Washington Avenue between Memorial Drive and Leonor K. Sullivan Drive forms the northern boundary of the Memorial, adjacent to the Eads Bridge. Reconstructed after the building of the Arch Parking Garage,

this one-quarter mile stretch of roadway is located within the boundaries of the Memorial. It consists of two lanes in each direction, with a flood gate at the east end to prevent rising waters from reaching the Arch Parking Garage.

Poplar Street forms the southern boundary of the Memorial, and lies almost directly beneath the I-64/Poplar Street Bridge. It has one lane in each direction, with a planted median along a portion of it. The street has been severed from its historic alignment to the west by the I-55/I-64 interchange, and now directs traffic onto Memorial Drive instead.

Fourth Street and Broadway Street form a one-way pair running north-south through downtown St. Louis. They form the eastern and western boundaries of the Old Courthouse respectively. They are classified as arterial streets, with Fourth Street holding five lanes of traffic northbound, and Broadway Street holding the same number of lanes southbound. The streets do not have on-street parking, with exception of loading zones, and have high posted speeds intended to move traffic quickly through the downtown.

Market Street and Chestnut Street run east-west, forming the northern and southern boundaries of the Memorial adjacent to the Old Courthouse and Luther Ely Smith Square. Chestnut Street, on the north is an eastbound one-way street, with three through lanes and one parking/turn lane. Market Street, to the south, has two lanes running in each direction with a parking lane west of Fourth Street.

While not within the current Memorial boundary, the National Park Service has authorization to purchase land on the East St. Louis side of the Mississippi River, directly across from the Memorial. This expansion was authorized by law, but the exact configuration has yet to be determined, and land has yet to be purchased. Front Street is a minor local road that runs north-south on the east side of the levee and connects the Casino Queen to West Trendley Avenue and the City of East St. Louis. West Trendley Avenue runs east-west and bisects the East St. Louis site.

In addition to the public roads that surround the Memorial, two restricted access roads and a publicly accessible driveway are located within the grounds of the Memorial. The access roads are restricted to the National Park Service and designated contractor use. These interior roadways include the service road to the shipping and receiving area, the generator service road, and the maintenance yard driveway.

The service road to the shipping and receiving area begins at Memorial Drive, just south of the Old Cathedral parking lot, and winds its way approximately 1,000 feet to the shipping and receiving area for the underground Museum of Westward Expansion. It intersects with the heavily used pedestrian path between the Old Cathedral and the Gateway Arch.

The generator service road runs from the central pedestrian pathway that connects Chestnut Street to the Gateway Arch, winding down to the heating, ventilating, and air conditioning systems (HVAC) for the underground Museum of Westward Expansion.

The maintenance yard driveway connects the maintenance facility on the south end of the Memorial to Poplar Street, the southern boundary of the Memorial.

Public Transportation

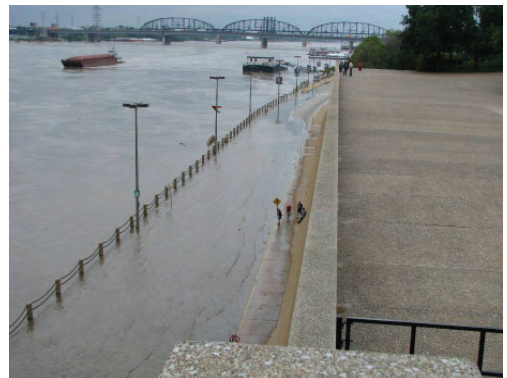
Located in the center of the St. Louis metropolitan region, the Memorial is accessible by several modes of public transportation. Like many American cities,



Memorial Drive, looking south toward the Old Cathedral.



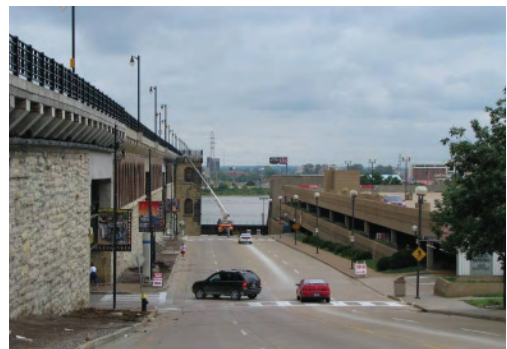
Poplar Street, beneath the Poplar Street Bridge.



Leonor K. Sullivan Boulevard, as viewed from the North Overlook, partially underwater.



Service road to heating, ventilating, and air conditioning systems.



Washington Avenue, looking toward the Mississippi River, with the flood gates closed.



Figure 3.9 Jefferson National Expansion Memorial Transportation Context.

St. Louis once had numerous transit lines, in particular streetcars, originating in the downtown. In the post World War II era, most of the streetcar lines disappeared, with the last line ceasing to operate in 1966 (City of St. Louis 1996). The shift to the private automobile as the dominant means of transportation during the postwar era corresponded with the construction of the interstate system, including Interstate 70 through downtown St. Louis, which opened in 1971. The Interstate facilitated the demise of public transportation and created a strong disconnect between the downtown and the Memorial. At the same time, the interstate system contributed to the number of visitors to the Memorial, after its opening in 1965, as Americans used it to travel to visit parks and other attractions outside their home states.

METROLINK LIGHT RAIL

The St. Louis region became one of the first in the nation to bring fixed rail transit back into operation, with the opening of MetroLink, the light rail line, from Lambert International Airport to East St. Louis in 1993. The line includes six stations within downtown St. Louis, including the Gateway Arch/Laclede's Landing Station located in the historic Eads Bridge across Washington Avenue from the Arch Parking Garage. The Arch/Laclede's Landing station had an average of 1,209 daily boardings in 2007. This station has one of the lowest numbers of daily boardings in the downtown area. The Arch/Laclede's Landing station does not have a large employment or residential base within walking distance, making it largely dependent upon users seeking tourism or entertainment.

METRO BUS

The Memorial is also within one to two blocks of numerous Metro bus lines. Broadway and Fourth Streets accommodate five different bus routes. The bus routes operate seven days a week, from approximately 5:00 a.m. to 1:00 a.m. The closest stop to the Memorial is located at Fourth and Pine Streets, which had an estimated 208 daily boardings in 2007 (Metro St. Louis 2007).

METROLINK EXPRESS BUS

Similar to the regular bus routes, Metro operates express bus routes with stops along Fourth Street

and Broadway Street in downtown, within one to two blocks of the Memorial. These buses operate Monday through Friday only, arriving in downtown St. Louis between 6:00 a.m. and 9:00 a.m., and departing between 3:00 p.m. and 7:00 p.m. These routes connect outlying residential areas of the region to workplaces in the business district in downtown St. Louis.

Pedestrian/Bicycle Circulation

Sidewalks of varying widths and conditions are located along downtown roadways. As is typical in a downtown urban setting, many trips can be made on foot within the vicinity of the Memorial. A general rule of thumb for a comfortable walking distance is one-quarter to one-half mile, which corresponds to a five- to ten-minute walk.

While the Gateway Arch is within one-quarter mile of both the Arch Parking Garage and Old Courthouse, the southern portion of the Memorial is further than one-half mile from either of these facilities. This contributes to its relative isolation. The Memorial is also cut off by Interstate 70 from pedestrians accessing the Memorial on other downtown streets south of Walnut.

The largest impediment to pedestrian access to the Memorial is the crossing of Memorial Drive on Walnut, Market, Pine, or Chestnut Streets. While recent pedestrian accommodations include temporary crosswalk striping across Memorial Drive along Chestnut Street, high curbs, fast traffic, and the freeway crossings contribute to poor pedestrian conditions between the Old Courthouse and the Gateway Arch.

Within the Memorial, there are approximately five miles of exposed aggregate sidewalks, as well as more than two miles of concrete sidewalks around the perimeter (NPS 1996a). The exposed aggregate sidewalks within the Memorial show signs of upheaval and cracking in places.

While the Grand Staircase leading from the Gateway Arch to the riverfront is in good condition, there is currently no means of reaching the riverfront directly from the

Gateway Arch for persons with mobility impairments. In addition, the north and south staircases that reach from the North and South Overlooks down to Leonor K. Sullivan Boulevard are showing their age with cracks and crumbling concrete in places.

With few designated on-street bicycle lanes in downtown St. Louis, most cyclists must share the roadway with automobiles. The Memorial, however, is a destination for bicyclists, primarily via the Riverfront Trail, an off-road facility that is part of the River Ring Greenways system. This trail links the Mississippi riverfront with the Greater St. Louis region. The Memorial is at the center of this trail system and an expansion is planned in the coming years.

The Riverfront Trail, a popular segment of the regional Great Rivers Greenway District, runs past the Memorial along Leonor K. Sullivan Boulevard. This segment of the trail shares the street lanes with vehicular traffic. Poplar Street, Memorial Drive, and Washington Avenue are also designated as part of the regional bikeway network, albeit via shared lanes as well. Other streets in downtown St. Louis, including Chestnut, are designated as bike routes, though without dedicated bike lanes. Only Olive Street, west of 20th Street contains dedicated bicycle lanes in downtown St. Louis.

The grounds of the Memorial allow bicyclists, though specific facilities, such as bike racks, are limited. The NPS partner Metro rents bicycles, including “quadcycles,” from a location at the base of the Grand Staircase along Leonor K. Sullivan Boulevard.

Parking

While parking is ancillary to the experience of the Gateway Arch and Memorial grounds, the location and perceived ease of access to it shapes the visitor experience. For the purposes of this analysis, the parking facilities have been divided into those parking locations within the grounds of the Memorial, and those parking facilities outside of the Memorial.

ON-SITE PARKING FACILITIES

ARCH PARKING GARAGE Work began in 1983 on the construction of the Arch Parking Garage adjacent to Washington Avenue. This parking structure holds 1,208 vehicles on three levels, with two levels below-grade and the top level entrance on grade with surrounding walkways. A perceived deficiency with the current garage is its maximum height of seven feet, which precludes bus, RV, and oversize vehicle parking. The garage remains the primary access point for visitors to the Memorial, with the approximately one-quarter mile walk to the Gateway Arch as one of the most actively used paths within the Memorial grounds.

OLD CATHEDRAL PARKING LOT The surface parking lot at the Old Cathedral, with approximately 87 spaces, dates from 1961 (NPS 1996a). While the Old Cathedral is not within the Memorial boundary, the associated parking lot is. An effort on behalf of the Archdiocese of St. Louis to expand the lot to accommodate additional worshipers was turned down by the National Park Service in 1969, due to its potential impact on the Memorial. The existing lot was resurfaced and redesigned in 1994. There is a bus drop-off area located alongside the Old Cathedral parking lot, with access from Memorial Drive.

The pedestrian path from the Old Cathedral parking lot provides the shortest barrier free accessible route to the Gateway Arch and the Museum of Westward Expansion, making it a desirable drop-off and pick-up location for visitors.

MAINTENANCE FACILITY PARKING LOT

The maintenance facility is located at the south end of the Memorial grounds. The current facility was built in 2002, and includes a small parking lot for use by the NPS employees and visitors to the facility. The lot was expanded from five to ten spaces in 2007.

ON-STREET PARKING SPACES (WITHIN THE MEMORIAL BOUNDARY) Since the official boundary of Jefferson National Expansion Memorial extends to the middle of Market and Chestnut Streets, the area used for

on-street parallel parking spaces on the north side of Market Street, adjacent to Luther Ely Smith Square, falls within the Memorial boundary. These 10 spaces are illegal parking areas, as the street is clearly marked as a no parking zone, yet they continue to be used despite frequent issuances of tickets by the City of St. Louis traffic squad. The other boundary streets around the Memorial grounds (Memorial Drive, Washington Avenue, Poplar Street, and Leonor K. Sullivan Drive) do not have on-street parking spaces, though in times of flooding, on-street parking informally occurs along Leonor K. Sullivan Drive, when the levee parking is underwater.

OFF-SITE PARKING FACILITIES

Visitors to the Memorial have numerous options for parking off site. Given the Memorial's location in downtown St. Louis, additional parking facilities include public on-street spaces as well as nearby private and public parking garages and surface lots.

For the purposes of this plan, only those parking facilities located within one-quarter mile of the Memorial are considered. It is assumed that most visitors arriving via private automobile would park within one-quarter mile (a five-minute walk) of the Memorial if they are not utilizing the on-site parking facilities. Some portions of the Memorial, such as the Old Courthouse and the southern portion of the Memorial grounds are actually closer to off-site parking facilities than to either the Arch Parking Garage or the Old Cathedral parking lot. The study area for the affected parking environment and locations of off-site parking facilities is outlined in Figure 3.10.

PARKING GARAGES AND LOTS There are approximately 46,000 parking spaces located within downtown St. Louis, with 2,700 of them on-street spaces (Downtown St. Louis Partnership 2008). Of these, many off-street spaces are within one-quarter mile of the Memorial boundary. The majority of these facilities are utilized by long-term users, but most have space available for public use as well. A summary of the public parking facilities within one-quarter mile of the Memorial is provided in Appendix I.

BUS AND RV PARKING In addition to the bus drop-off location alongside the Old Cathedral parking lot, Leonor K. Sullivan Boulevard, along the east border of the Memorial, is also used for bus loading and unloading. Bus and oversize vehicle parking is currently accommodated along South Leonor K. Sullivan Boulevard/South Wharf Street south of the Poplar Street Bridge.

Parking in East St. Louis Addition Parking facilities on the East St. Louis side of the river currently consist of a large surface parking lot associated with the Casino Queen, located near the East River MetroLink station. Front Street does not have formal on-street parking restrictions. Parking is also available near Malcolm Martin Memorial Park.

Water Transportation

Current water transportation consists of two riverboats operated by Metro in partnership with the National Park Service. Operating from floating docks along Leonor K. Boulevard, the replica steamboats primarily serve visitors to the Memorial and other tourists. From June through August, the boats operate on a set schedule of five daily trips on weekdays and six on weekends, cruising up and down the river, with no other stops. In the shoulder seasons, March through May and September through November, there are two to four daily scheduled trips. There are no scheduled trips during the winter months from December through February.

There is currently no passenger ferry or water taxi service operating between downtown St. Louis and the East St. Louis side of the river.

3.6 SOCIOECONOMICS

Jefferson National Expansion Memorial is located within the urban area of St. Louis, Missouri. The Memorial attracts millions of visitors each year and is a major tourism attraction for the region. As individuals and families travel to the area they provide an economic stimulus through their local spending. Given the importance of the Memorial as a regional attraction, the influence area for the social and economic

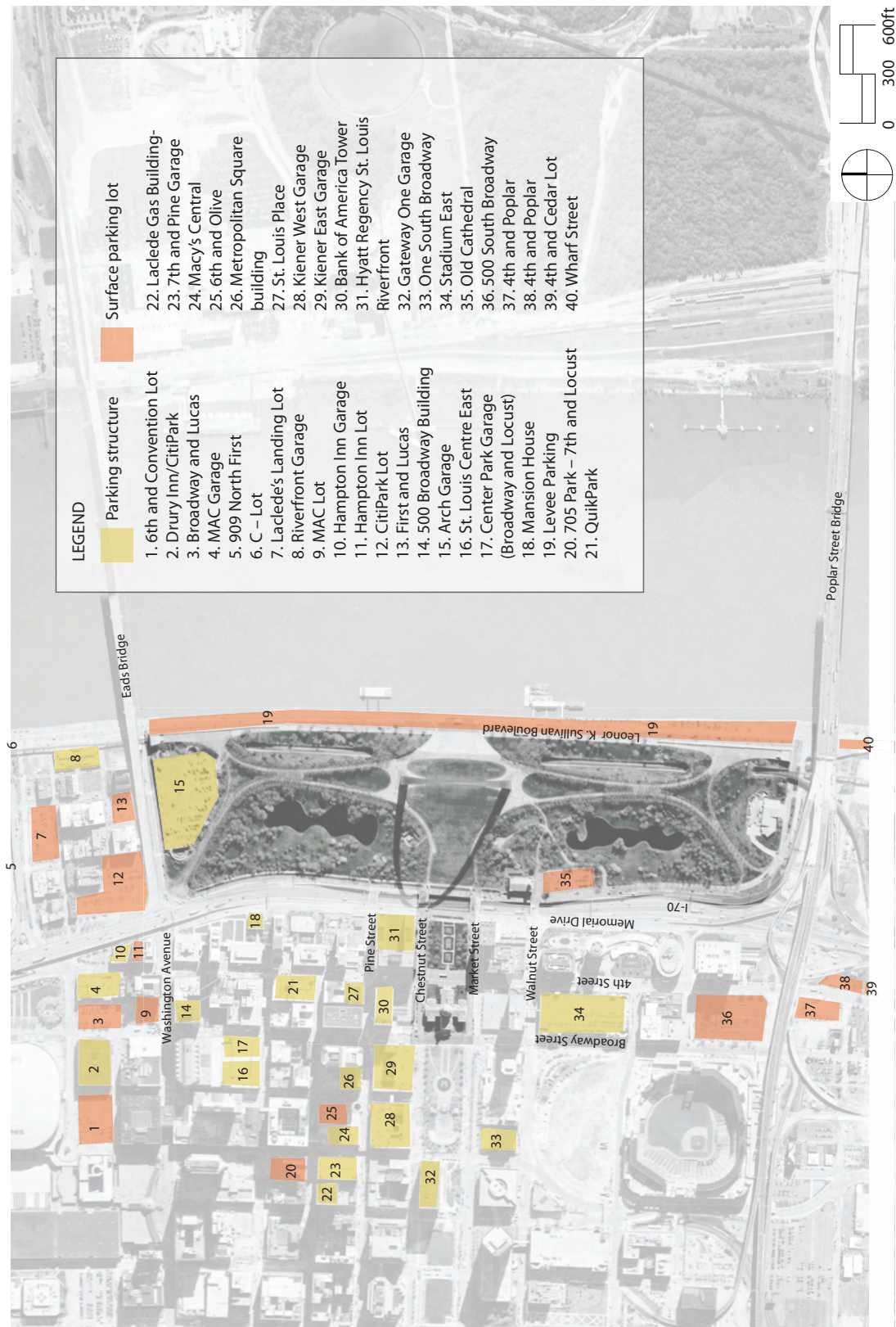


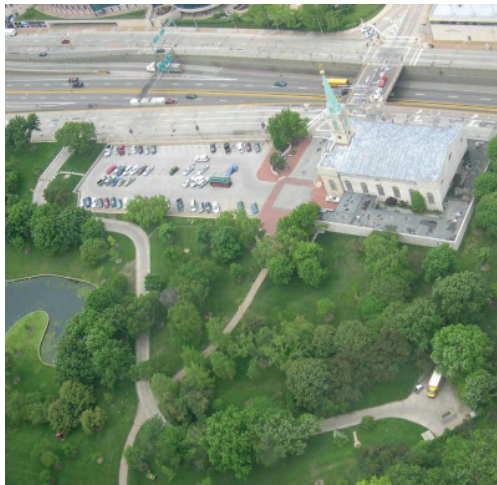
Figure 3.10 Parking Facilities within One-Quarter (1/4) Mile of Jefferson National Expansion Memorial.



Site of future Memorial with surface parking and Luther Ely Smith Square in foreground (circa 1950s).



Arch Parking Garage, looking west along Washington Avenue; Eads Bridge/MetroLink on right.



View of Old Cathedral parking lot adjacent to Memorial Drive.



Leonor K. Sullivan Drive with informal on-street parking.



Bus drop-off location adjacent to Old Cathedral parking lot along Memorial Drive.



NPS Ranger on a riverboat.

considerations has been defined as the City of St. Louis, where most of the economic stimulus caused by visitor spending while visiting the Memorial is likely to occur. In addition, as some of the alternatives presented in this report consider land areas on the east side of the Mississippi River, East St. Louis is also included in the study area. Where possible, the project team collected data and information describing socioeconomic baseline conditions for the Cities of St. Louis and East St. Louis. However some data is only available at a county level. For most parameters, the project team also collected data for St. Louis and St. Clair Counties, where available, to compare trends.

Economic Contributions of the Memorial

As mentioned earlier, the Memorial attracts millions of visitors each year. An estimate of

annual visitation is provided in Table 3.1. From 2003 to 2007, the Memorial averaged three million annual visitors per year. This includes individuals coming to the site solely to use the parking facilities (non-recreation visits) and those that come to the site during special events (e.g. Fair of St. Louis). When these two types of uses are excluded, the Memorial averaged 1.8 million visitors per year over this period.

As individuals and families travel to the area, they provide an economic stimulus through their local spending. The economic contribution of the Memorial during 2003 has been estimated using the NPS Money Generation Model (NPS 2008a). According to this analysis, the Memorial hosted 2.69 million recreational visitors who spent \$90.29 million in the area. This spending generates additional economic activity in the form of sales, income, and jobs to businesses that provide goods and

Year	Recreation Visits	Non-Recreation Visits	Total Annual Visits to Jefferson National Expansion Memorial	Annual Percentage Change in Total Visits	Adjusted Recreational Visits to the Memorial ¹	Annual Percentage Change in Adjusted Recreational Visits
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Annual Average						
(1998 - 2007)	3,059,333	371,929	3,431,262	-3.50%	2,091,304	-3.00%
Annual Average						
(2003 - 2007)	2,673,401	294,513	2,967,914	-5.03%	1,786,687	-7.02%
1 Adjusted Recreational Visits exclude visitors coming to the Jefferson National Expansion Memorial for special events and Non-recreational visits (column 3).						
Source: Monthly Public Use Reports and Personal Communication with Mardi Arce, NPS.						

Table 3.1 Annual Estimated Visitation at the Memorial

services to visitors. The additional economic activity resulted in \$111.3 million in sales, \$41.7 million in personal income and 2,150 in employment (NPS 2008a).

Population

The City of St. Louis and East St. Louis have experienced a decline in population for most of the last two decades. The trend resulted in over 45,000 individuals leaving the City of St. Louis and nearly 12,000 leaving East St. Louis between 1990 and 2007. However, this trend appears to be reversing in St. Louis, where there has recently been a slight population increase. St. Louis County has experienced a slight increase (less than one percent) in population between 1990 and 2007. In all areas, population grew much more slowly than the rest of Missouri which increased population by nearly 15 percent between 1990 and 2007. The U.S. Census estimates that total population in 2007 for City of St. Louis was 350,700, 28,996 for East St. Louis, just fewer than one million for St. Louis County and over 260,000 in St. Clair County.

Employment

Decreases in population in the City of St. Louis and East St. Louis are likely due to a general decline in economic conditions. For instance, total full-time and part-time employment fell by 16 percent in the City of St. Louis between 1990 and 2006, a loss of nearly 54,000 jobs. Employment throughout St. Louis County fared better with the addition of 110,000 jobs during this same time period, a 16 percent increase. Information on total employment was not available for East St. Louis. However, employment increased in St. Clair County by 22 percent between 1990 and 2006, increasing by nearly 24,000.

The difference in economic structure of the City of St. Louis, St. Louis County, and St. Clair County is evident in data reflecting employment by industry. The City of St. Louis shows a stronger concentration in Education and Health than either of the two counties. St. Louis County shows a strong relation to Professional Services, Finance and Real Estate, and Trade and Manufacturing. The economy in St. Clair

County is stronger in Transportation and Utilities and Public Administration.

Unemployment over the last ten years in the St. Louis metro area has tended to follow the trend of the national economy. However, for East St. Louis and St. Clair County, unemployment rates have been much higher than any other area evaluated including the United States. For East St. Louis, unemployment has exceeded 10 percent for the past two years. In addition, since 2005, the St. Louis Metropolitan Statistical Area has experienced a higher unemployment rate than the national rate.

Income and Poverty

While total personal income exceeded \$10 billion in the City of St. Louis in 2006, the City lagged behind in growth of personal income in St. Louis and St. Clair Counties. The City has experienced a decline in total personal income, in real terms, of 1.6 percent between 2000 and 2006. This is in contrast to St. Louis and St. Clair Counties, which have experienced growth in total personal income of seven percent.

Total personal income includes earnings from work and other types of income including dividends, interest, and rent and transfer payments (such as social security and public assistance). The City of St. Louis and St. Louis County experienced a loss in net personal income due to individuals commuting into the area for work, while St. Clair County experienced a net increase in personal income from commuting. For the City of St. Louis, nearly half the earnings are paid to commuters coming to the City.

Other forms of income make up a significant percentage of total personal income in the City of St. Louis. This includes retirement income (dividends, interest, and rent) at 14 percent and transfer payments at 23 percent. Retirement income in the City of St. Louis is similar in percentage to retirement income in St. Clair County (13 percent), but far below the percentage of total personal income in St. Louis County (21 percent). Transfer payments in the City of St. Louis comprise nearly a quarter of personal income (24 percent),

which far exceeds percentages for St. Louis County (nine percent) or St. Clair County (16 percent).

Trends in per capita income also show that the City of St. Louis is economically disadvantaged compared to St. Louis County or the nation as a whole. Real per capita income has declined by 2.6 percent, while it has increased in both the counties and at the national level. In addition, per capita income in City of St. Louis is 77 percent of income levels throughout the U.S. and only 57 percent of per capita income in St. Louis County.

Another perspective on economic welfare is provided by looking at median household income and poverty rates. The City of St. Louis lagged significantly behind the rest of the study area in terms of median household income in 2006. This is especially pronounced when compared with St. Louis County median household income. During 2006, income levels within the City were just 58 percent of income levels in the County. The City of St. Louis also reported poverty levels that are much higher than the other reference communities including the U.S. as a whole.

Land Use

The Jefferson National Expansion Memorial is located entirely within the urban area of downtown St. Louis. The 91-acre Memorial sits on the west bank of the Mississippi River and occupies forty square blocks between Eads Bridge and Poplar Street, as described earlier in this report (NPS 1996a). The site is used as a public park for passive recreational, museum and interpretive uses.

The East St. Louis addition consists of a strip of land between the levee and the riverfront running north-south between the Eads Bridge and the Poplar Street Bridge, as well as one parcel of land located south of Trendley Avenue, crossing over Front Street to the east. Current land uses along the east and west banks of the river include rail and barge transportation uses. The parcel of land south of Trendley Avenue was previously used as a rail car manufacturing facility and is presently vacant.

3.7 NPS OPERATIONS

The Memorial is administered by a Superintendent, headquartered in the Old Courthouse. The Superintendent's office includes a Deputy Superintendent, Management Assistant, and Secretary. The Management Assistant is responsible for all Special Use Permits, Filming Permits, and other commercial uses of the Memorial. Memorial staffing is 166.5 Full Time Equivalent (FTE) employees. Memorial operations are augmented by 110 FTE from partners Metro and Jefferson National Parks Association.

The Ranger Activities Division is responsible for 24-hour, 365-day law enforcement throughout the Memorial and physical security of the Gateway Arch complex. The Memorial has concurrent jurisdiction and commissioned rangers enforce state and federal laws and regulations intended to safeguard visitors and park resources. In addition to law enforcement, this division is responsible for dispatch and emergency medical services throughout the Memorial. Rangers make routine park visitor contacts to ensure that park regulations are understood and being met, to check for safety and resource protection violations, and to respond to or direct visitor inquiries to appropriate park staff. As a designated icon park, the Gateway Arch's physical security is of paramount importance. All visitors to the Gateway Arch are screened via x-ray and magnetometer at one of the two entrances prior to entering the facility.

The Museum Services and Interpretation Division at the Memorial includes an Education Department, Exhibits Department, Theater and Audio-Visual Department, Curatorial Department, and Interpretation Department.

The Division of Administration is responsible for the Memorial's budget and financial accounting, property management, payroll, human resource management, contracting and procurement, mail services, filing, and management of the computer system. This division is also responsible for concession management and the Memorial's telephone system.

The Maintenance Division consists of the Grounds Section, Custodial Services, Building Services, and Gateway Arch Transportation System.

The Memorial relies on volunteers through the Volunteers in Parks (VIP) program to complete a variety of tasks. These include custodial services, information reception, presenting interpretive programs, and clerical assistance. The Memorial has benefited greatly from volunteer service hours. In fiscal year 2008, 33,546 hours were contributed to the Memorial as part of the VIP program. In fiscal year 2007, 885 volunteers donated 33,667 hours to the Memorial. In fiscal year 2006, a total of 35,084 hours were donated by 631 volunteers.

Various partnerships including the Jefferson National Parks Association (JPNA) represent a vital part of the Memorial's interpretive effort with contributions to the museum education

program, exhibits, and library and archival staffing. JNPA operates three stores in the Memorial, and a wide variety of projects are funded through their donations including special exhibits and programs.

Metro Business Enterprises (Metro) is another major partner. Metro funded and built the Gateway Arch Transportation System in the 1960s, and continues to administer its operation. In addition, they collect park fees, built and operate the Arch Parking Garage, and fund exhibits and other improvements.

Currently the Memorial has working relationships with more than 30 groups and organizations, and will continue to build on these partnerships. The memorial is committed to strengthening relationships with universities, schools, institutes, and organizations as well as local, state, and federal agencies to accomplish a variety of operational needs.



4.0 Environmental Consequences

Environmental Consequences

4.1 INTRODUCTION

The National Environmental Policy Act of 1969 (NEPA) (40 CFR 1500-1508) dictates the completion of environmental impact statements for evaluation of the environmental impacts of proposed federal actions. The federal action under consideration in this study is the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The alternatives outlined in this document are intended to provide broad management direction for the Memorial. More detailed environmental documentation likely would be required as individual components of the plan are implemented.

The first portion of this chapter defines terminology and assumptions that are used in the impacts discussion that follows. The next two sections define and review cumulative impacts and impairment as they relate to this plan for the Memorial. There is a subsequent explanation of how impacts to cultural resources and the analysis required by Section 106 of the National Historic Preservation Act (NHPA) are treated within this document. The following section defines the methodology employed in analyzing the impacts for each of the resource areas. Impacts are then examined by alternative: No Action, Program Expansion, Portals, and Park into the City. As required by NEPA, each alternative analysis culminates in a brief discussion of unavoidable adverse impacts, irreversible and irretrievable commitments of resources, and impacts on short-term uses and long-term productivity.

Terms and Assumptions

In the analysis that follows, impacts are characterized by several factors including intensity, type, duration, and context. Definition of these terms, and assumptions related to them, are provided below:

- *Intensity*: The intensity of an impact describes the magnitude of change that the impact generates. Thus, impacts are classified as negligible, minor, moderate, or major. Since definitions of these thresholds necessarily differ depending on the resource area, impact thresholds are defined separately for each topic.
- *Type*: The impact type refers to whether it is adverse (negative) or beneficial (positive). Adverse impacts are those that would deplete or harm resources. Beneficial impacts, by contrast, would improve resource conditions.
- *Duration*: The duration of an impact defines whether it is short-term, and thus occurs over a restricted period of time, or is long-term and persists over an extended period. For the purposes of this analysis, it is assumed that short-term impacts are those that would no longer be detectable after five years. Long-term impacts would still remain after five years' time.
- *Context*: The context of an impact defines whether it is local or regional. In this analysis, local impacts are those that are confined to the area immediately around

the Memorial and the East St. Louis addition. Regional impacts are those that affect the larger St. Louis metropolitan area.

Direct, Indirect, and Cumulative Impacts

In addition to the four factors identified above, impacts may be characterized as direct, indirect, or cumulative. A direct impact is caused by the action and occurs at the same time and place. An indirect impact is caused by the action, occurs later in time or is farther removed in distance, but is still reasonably foreseeable. A cumulative impact is an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

In order to assess potential cumulative impacts, recently completed, ongoing, and planned projects were identified within the area immediately surrounding the Memorial and the East St. Louis addition. These projects include:

- Ballpark Lofts (ongoing);
- Ballpark Village (planned);
- City Garden (completed);
- Federal Reserve Bank of St. Louis (completed);
- Hyatt Regency St. Louis Riverfront (completed);
- Old Post Office Plaza (completed);
- Roberts Tower (ongoing);
- The Bottle District (future); and
- Chouteau’s Landing (ongoing).

Impairment of Park Resources

In addition to assessing the environmental consequences of implementing the alternatives, National Park Service (NPS) management policies require that a determination be made as to whether actions would impair park resources. The fundamental purpose of the National Park Service, as established by the 1916 Organic Act and

reaffirmed by the General Authorities Act of 1970, mandates the conservation of park resources and values. The NPS managers always must seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values, when necessary and appropriate, to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. That discretion is limited, however, by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that would otherwise exist for the enjoyment of those resources and values. An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment if it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the park’s establishing legislation or proclamation;
- Key to the park’s natural or cultural integrity; or
- Identified as a goal in the park’s General Management Plan or other relevant NPS planning document.

The National Park Service has determined the following to be fundamental resources and values at Jefferson National Expansion Memorial:

- Jefferson National Expansion Gateway Arch and designed landscape – a National Historic Landmark (NHL) – integrated by a purposeful approach, scale, and aesthetic qualities, including the relationship to the river and to the Old Courthouse and the corresponding views.

- The Old Courthouse, site of the Dred Scott case and a tangible reminder of intangible concepts such as civil rights, citizenship, and freedom, as well as an innovative and outstanding example of mid-19th century civic architecture.
- The museum objects and archival records in the Memorial collection, vital to the interpretation and education of the visiting public on the topic of the westward expansion of the United States.
- The iconic, inspirational and transcendent nature of the Gateway Arch, as one of the unique and enduring symbols of national identity.

In addition to the Memorial’s fundamental resources and values, character-defining features and contributing features have been identified for the Memorial’s landscape. These features, and the distinction between the two classifications, are discussed in Section 4.2. While the identification of the Gateway Arch and the Memorial grounds as fundamental resources and values necessitates their overall preservation, the identification of the Memorial’s character-defining features provides a detailed inventory of the key elements of the historic landscape.

In the impact analysis provided below, a determination of impairment is made within the conclusion section for each impact topic related to the Memorial’s cultural and natural resources. A determination of impairment is not required for impact topics such as visitor experience, regional socioeconomics, land use, transportation and access, and NPS operations.

Impacts to Cultural Resources and Section 106 of the NHPA

This study considers both impacts to cultural resources, as defined under NEPA and corresponding Council on Environmental Quality regulations, and effects to cultural resources as defined by the NHPA. In accordance with NEPA, impacts to historic buildings, structures, sites, objects, and districts; cultural landscapes; archeological resources; and curatorial resources and

museum collections identified within this document are characterized by their intensity, duration, context, and type, as discussed above. Thus, both adverse and beneficial impacts are identified for each of the alternatives.

In accordance with Section 106 of the NHPA, this study also assesses effects on cultural resources. Section 106 of the NHPA defines an “effect” as follows: “an undertaking has an effect on a historic property when the undertaking may alter the characteristics of the property that may qualify the property for the National Register” (36 CFR 800.5).

According to 36 CFR 800.5(a)(1), “an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property’s eligibility for the National Register.” Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, are farther removed in distance, or are cumulative.

Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the *Secretary of the Interiors Standards for the Treatment of Historic Properties* (36 CFR part 68) and applicable guidelines.
- Removal of the property from its historic location.
- Changes in the character of the property’s use or of physical features within the

property's setting that contribute to its historic significance.

- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an American Indian tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

If an undertaking is determined to have an adverse effect on properties included in, or eligible for, the National Register, the lead federal agency and the State Historic Preservation Officer (SHPO) enter into consultation to identify ways to avoid or reduce adverse effects. The Advisory Council on Historic Preservation and other interested parties can also participate in the consultation. Consultation typically results in a Memorandum of Agreement that stipulates the measures required to mitigate adverse effects and identifies the responsible parties and implementation schedule.

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* are intended to promote preservation practices that protect important cultural resources. Treatments include preservation, rehabilitation, restoration, and reconstruction. Preservation suggests that measures are undertaken to stabilize the resource to ensure that it does not deteriorate further from its existing condition, and then to maintain and repair historic features and materials. Restoration focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of materials from other periods. Reconstruction

establishes limited opportunities to recreate a non-surviving site, landscape, building, structure, or object in all new materials. According to the *Cultural Landscape Report for Jefferson National Expansion Memorial (rev. 2010)*, rehabilitation is the appropriate overall standard for the treatment of the Memorial landscape, buildings and structures, and features associated with the NHL. This treatment involves protecting and maintaining a cultural landscape's character-defining features and materials, but allowing for the replacement of extensively deteriorated, damaged, or missing features and for compatible new uses that do not radically change, obscure, or destroy character-defining spatial organization and land patterns or features and materials (NPS 1996b).

The Secretary's Standards for Rehabilitation are as follows:

- 1) A property will retain its historic use, or will appropriate a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- 2) The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- 3) Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
- 4) Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- 5) Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

- 6) Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- 7) Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- 8) Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- 9) New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old, and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
- 10) New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment will be unimpaired.

These standards have been clarified for landscapes through the *Guidelines for the Treatment of Cultural Landscapes* (NPS 1996b). The guidelines illustrate how to apply the four treatment standards of preservation, restoration, reconstruction, and rehabilitation to cultural landscapes in a way that meets the National Park Service's standards. This document was referenced both in the development of the CLR for the Memorial, as well as in the analysis that follows within the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impacts Statement*.

4.2 METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

Cultural Resources

Chapter 3 established that historic buildings, structures, sites, objects, and districts; cultural landscapes; archaeological resources; and curatorial resources and museum collections would be analyzed in detail in this environmental analysis.

HISTORIC BUILDINGS, STRUCTURES, SITES, OBJECTS, DISTRICTS, AND CULTURAL LANDSCAPES

Historic buildings, structures, sites, objects, districts, and cultural landscapes listed in the National Register were identified. For each of the alternatives, a determination was made regarding adverse effect. In addition, thresholds were defined to identify the intensity of impacts to historic structures and cultural landscapes under NEPA. These thresholds are as follows:

- *Negligible*: The impact does not result in any noticeable changes to the resource or its visual context. For the purposes of Section 106, the determination of effect would be no adverse effect.
- *Minor*: A minor adverse impact occurs when there are visible changes to the resource or its visual context, but there is no effect on the resource's character-defining features or integrity. For the purposes of Section 106, the determination of effect would be no adverse effect. A minor beneficial impact occurs when the historic resource is stabilized. For the purposes of Section 106, the determination of effect would be no adverse effect.
- *Moderate*: A moderate adverse impact results in a change to the resource's identified contributing features, but would not diminish the integrity of the resource to the extent that its National Register eligibility would be lost. For the purposes of Section 106, the determination of effect would be adverse effect. A moderate beneficial impact results in the preservation

of the resource and its contributing features, or rehabilitation of the resource while retaining the integrity of contributing features, and thus preserves the integrity of the design overall. For the purposes of Section 106, the determination of effect would be no adverse effect.

- *Major:* A major adverse impact results in changes to character-defining features such that it could diminish the integrity of the resource to the extent that it would no longer be eligible for listing in the National Register. For purposes of Section 106, the determination of effect would be adverse effect. A major beneficial impact results in the preservation of the resource and its character-defining features, or rehabilitation of the resource while retaining the integrity of character-defining features, and thus enhances substantially the integrity of the design overall. For the purposes of Section 106, the determination of effect would be no adverse effect.

The thresholds defined above distinguish between contributing features and character-defining features. While the landscape features outlined in Chapter 3 all contribute to the historic significance of the Memorial, some features are more critical to the integrity of the NHL. These are its character-defining features.

Definitions:

- A character-defining feature is:
 - “A prominent or distinctive aspect, quality, or characteristic of a cultural landscape that contributes significantly to its physical character. Land use patterns, vegetation, furnishings, decorative details and materials may be such features.” (Cultural Resource Management Guideline, Release No.5 (1997) and The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996))
 - “The term “character-defining feature” was conceived to guide the appropriate treatment and management of historic structures (and later of cultural landscapes), so that features conveying

historic character would be retained by treatment activities.” (CLR Guide)

- A contributing feature is:
 - “A biotic or abiotic feature associated with a landscape characteristic that contributes to the significance of the cultural landscape.” (Cultural Landscapes Inventory Professional Procedures Guide 1998; CLR Guide 1998)
- A contributing resource, according to the National Register, is:
 - “A building, site, structure, or object that adds to the historic significance of a property. A contributing building, site, structure, or object adds to the historic associations, historical architectural qualities, or archaeological values for which a property is significant because of the following: it was present during the period of significance; it relates to the documented significance of the property; it possesses historic integrity or is capable of revealing information about the period; or it independently meets the National Register criteria.” (National Register Bulletin 16A, 1991)

Archeological Resources

Archeological resources are non-renewable. Once an impact occurs, the effect is irreversible and permanent; therefore duration is not identified within this analysis. Any impacts to historical archeological resources are assumed to be local to the historic downtown St. Louis area, unless identified as regional within the analysis. Any effects to prehistoric archeological resources are assumed to have regional impacts, unless otherwise identified in the analysis in this document.

A number of resources were used to analyze impacts to archeological resources. These are discussed in Chapter 3 and include reports on past archeological investigations within the Memorial grounds as well as records kept by the SHPO of investigations in the immediate vicinity. Although these investigations provide some information on the potential for archeological materials to be present, they do not cover the entire project area and can only be used as predictive tools.

Thresholds describing the severity of potential impacts to archeological resources resulting from the proposed alternatives were developed for the impact analysis. Both adverse and beneficial impacts may occur due to the proposed alternatives. Adverse impacts result from the disruption or displacement of archeological resources as a result of earthmoving activities, soil compaction, and related ground disturbing activities associated with construction and planting efforts. Beneficial impacts are those that better protect an archeological resource as a result of changes in patterns of visitor use or management action.

The impact thresholds developed for the discussion of archeological impacts are as follows:

- *Negligible:* The impact is barely measurable, with no perceptible adverse or beneficial consequences.
- *Minor:* A minor adverse impact affects archeological sites with the potential to yield important information in prehistory or history. Impacts are detectable and measurable, but do not diminish the overall integrity of the resource. The impact does not result in changes to defining features or aspects of integrity that contribute to eligibility to the National Register. For purposes of Section 106, the determination of effect is no adverse effect. A minor beneficial impact maintains and preserves an archeological resource. Impacts are measurable and localized. For purposes of Section 106, the determination of effect is no adverse effect.
- *Moderate:* A moderate adverse impact is sufficient to cause a noticeable change, substantially affecting archeological sites with the potential to yield information, even if most of the resource can be avoided, and resulting in loss of overall integrity that consequently jeopardizes a site's National Register eligibility. Impacts include measurable change to character-defining elements. For purposes of Section 106, determination of effect is adverse effect. A moderate beneficial impact

is measurable, with the stabilization of currently threatened sites serving as an example. For purposes of Section 106, determination of effect is no adverse effect.

- *Major:* A major adverse impact consists of highly noticeable disturbance, degradation, or destruction of an archeological resource, and results in the loss of most or all of the site and its potential to yield important information. These impacts result in the loss of overall integrity and substantial changes to character-defining elements to the extent that the resource is no longer eligible for National Register listing. For the purposes of Section 106, the determination of effect is adverse effect. A major beneficial impact consists of active intervention undertaken to preserve a site. Effects are measurable and contribute to the overall stability of the site. For purposes of Section 106, the determination of effect is no adverse effect.

Curatorial Resources and Museum Collections

Museum collections are a critical element of the Memorial. Within this analysis, short-term impacts are defined as those that would result from the movement of the resources from one location to another. Long-term impacts are defined as those impacts that would result from ongoing conditions or treatment of the resources. It is assumed that all impacts are local and confined to collections housed within the Memorial. Collections housed within other repositories in St. Louis are not considered in the subsequent analysis.

The thresholds determining the intensity of impacts on curatorial resources and museum collections are as follows:

- *Negligible:* There is no noticeable change in the condition or treatment of resources, nor is there an increase in the number of resources on display or housed within Memorial collections.
- *Minor:* A minor adverse impact occurs when there is a slight but noticeable degradation of the condition or treatment of resources; and/or there is a slight decrease in the number of resources

on display or housed within Memorial collections. A minor beneficial impact occurs when there is a slight but noticeable improvement in the condition or treatment of resources; and/or there is a slight increase in the number of resources on display or housed within Memorial collections.

- *Moderate:* A moderate adverse impact occurs when the degradation of the condition or treatment of resources is highly noticeable; and/or there is a modest decline in the number of resources on display or housed within Memorial collections. A moderate beneficial impact occurs when improvements to the condition or treatment of resources is highly noticeable; and/or there is a modest increase in the number of resources on display or housed within Memorial collections.
- *Major:* A major adverse impact occurs when the degradation in the condition or treatment of resources is severe, resulting in the loss of a substantial portion of the Memorial's collections; and/or there is a substantial decrease in the number of resources on display or housed within Memorial collections. A major beneficial impact occurs when the improvement in the condition or treatment of resources is exceptional, resulting in the long-term preservation of a substantial portion of the Memorial's collections; and/or there is a substantial increase in the number of resources on display or housed within Memorial collections.

Natural Resources

Potential natural resource impacts from the action and no action alternatives have been evaluated, including impacts on vegetation, threatened and endangered species, and soundscapes. The evaluation of impacts was based on interpretation of the data collected from numerous reports and regulatory documents, discussions with resource agency personnel, site visits, and geographic information system (GIS) data analysis.

VEGETATION

Visitor use and construction activities can impact vegetation through a number of

mechanisms. Direct impacts include trampling and removal of vegetation when walking off pathways or clearing vegetation as part of site preparation and construction. A single trampling event might adversely impact one or more individuals of a species. Repeated trampling of the vegetation along a path can lead to changes in the vegetation and habitat alteration. Soil compaction from the use of heavy machinery or repeated trampling can also indirectly impact vegetation communities on the site.

Introduction or spread of invasive species can also result from visitor use, landscape management and maintenance practices, and construction activities. Establishment of invasive species often results in changes to both the plant and wildlife composition of the infested area. Visitors may unwittingly introduce or spread propagules (e.g., seeds) of invasive species by picking clinging seeds off of shoes or clothing. Many commonly used plants, including those used on the Memorial grounds (such as English ivy), are also invasive. Construction equipment, if not properly cleaned between job sites, is another primary means of spreading invasive species.

Impacts on vegetation communities were evaluated by comparing projected changes resulting from the action alternatives with the no action alternative. The impacts of potential visitation increases have been factored into the analysis.

The thresholds to determine impacts on vegetation are defined as follows:

- *Negligible:* Impacts are barely detectable and/or affect a minimal area of vegetation.
- *Minor:* Impacts are slight, but detectable, and/or affect a small area of vegetation. The severity and timing of changes are not expected to be outside natural variability spatially or temporally. Key ecosystem processes and community structure are retained at the local level.
- *Moderate:* Impacts are readily apparent and/or affect a large area of vegetation. The severity and timing of changes are expected to be outside natural variability spatially

and/or temporally; however, key ecosystem processes and community structure are retained at the regional level.

- *Major*: Impacts are severely adverse or exceptionally beneficial and/or affect a substantial area of vegetation. The severity and timing of changes are expected to be outside natural variability both spatially and temporally. Key ecosystem processes and community structure may be disrupted.

THREATENED AND ENDANGERED SPECIES

Impacts to federally listed or candidate species were evaluated by comparing projected changes resulting from the action alternatives to existing conditions. These evaluations were based on potential occurrences of Threatened and Endangered species within the East St. Louis addition, the distribution of their preferred habitats within these areas, and the distribution of any designated critical habitat. The impacts of potential visitation increases have been factored into the analysis. The federally designated Threatened species addressed in this document is the decurrent false aster (*Boltonia decurrens*).

Impact thresholds for the addressed federally listed or candidate species are defined based on USFWS Section 7 impact terminology as follows:

- *No Effect*: This means there are absolutely no effects to the species or its critical habitat, either positive or negative. A no-effect determination does not include effects that are unlikely to occur. If effects are insignificant (in size) or discountable (extremely unlikely), a determination of not likely to adversely affect is appropriate.
- *Not Likely to Adversely Affect*: This means that all effects to the species or its critical habitat are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without adverse effects to the species. Insignificant effects relate to the size of the impact and should not reach the scale where a taking occurs. Discountable effects are considered extremely unlikely to occur. Determinations of not likely to adversely affect, due to beneficial, insignificant, or discountable

effects typically require written concurrence from the USFWS.

- *Likely to Adversely Affect*: This means that an adverse effect to the species or its critical habitat may occur as a direct or indirect result of an action, and the effect is not discountable, insignificant, or beneficial. In the rare event that adverse effects cannot be avoided, the project would either be discontinued or NPS staff would request formal consultation with the USFWS.

Soundscape

The impacts of each alternative on the soundscape of the Memorial were assessed qualitatively by evaluating the noise generated from construction, noise generated from the operation of various plan components, and the noise reduction potential of certain design elements such as the construction of the three-block lid over Interstate 70 (I-70).

Within this analysis, it is assumed that the construction contractor would manage construction operations to comply with local noise ordinances and restrictions at all times, and that the majority of construction activities would occur between 7:00 a.m. and 7:00 p.m., Monday through Friday.

The thresholds to determine the level of impact on noise are defined as follows:

- *Negligible*: The noise generated during construction or operation is not discernable above background noise levels.
- *Minor*: The noise generated during construction or operation is sometimes discernable above background noise levels.
- *Moderate*: The noise is readily apparent and/or is easily discernable by users of the Memorial grounds above background noise levels, but remains below levels established by regulatory guidelines. The effects are primarily local; however, noise is periodically noticeable offsite.

- *Major:* The noise generated by the construction or operation of the proposed elements exceeds levels established by regulatory guidelines, greatly impacts users' enjoyment of the Memorial grounds, or is frequently noticeable offsite.

Unless otherwise noted, all impacts on the soundscape are assumed to be local impacts that affect only the immediate area of the noise source. No impacts on the regional soundscape are anticipated from any of the proposed alternatives.

Visitor Opportunities and Use

Impacts on visitor opportunities including recreation and interpretive experiences, access, and scenic resources, were evaluated by comparing projected impacts from the action alternatives to the no action alternative. These evaluations included consideration of the Memorial's purpose, significance, fundamental resources and values, and what contributes or detracts from desirable visitor opportunities.

Changes in annual visitor use may be affected by management zoning, visitor opportunities, changing economic conditions, construction projects, and other aspects of the various alternatives. Differences and uncertainties about when specific actions might occur provide a limited basis upon which to project changes in visitor use over time. Consequently, the approach to projecting visitor use relies on the professional judgment of the NPS staff and their assessment of the effects of changes in opportunities, capacities, activities, and promotion or discouragement of use. Estimates of future visitor use are not intended to be predictive or absolute, but rather to provide a means of comparing the likely relative order in visitation changes under each alternative.

Impacts to visitor use and/or experience may be beneficial, adverse, or indeterminate. Beneficial impacts are those that many individuals or groups would accept or recognize as improving visitor use and/or experience in general or for a specific group

of people. Adverse impacts are those that most individuals or groups would accept or generally recognize as diminishing visitor use and/or experience, either in general or for a specific group of people. Indeterminate impacts are those for which the size, timing, location, individuals, or groups that would be impacted cannot be determined, or those that include both beneficial and negative effects, in some instances affecting different communities, populations, public entities, or jurisdictions such that the net effect is indeterminate.

The thresholds for this impact topic are as follows:

- *Negligible:* Visitors would likely be unaware of any effects associated with implementation of the alternative. There would be no noticeable change in visitor use and experience or in any defined indicators of visitor satisfaction or behavior.
- *Minor:* Changes in visitor use and/or experience would be slight though detectable, but would not appreciably enhance or diminish critical characteristics of the visitor experience. Visitor satisfaction would remain stable.
- *Moderate:* Few critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be altered. The visitor would be aware of the effects associated with implementation of the alternative and would likely be able to express an opinion about changes. Visitor satisfaction would begin to either decline or increase as a direct result of the effect.
- *Major:* Multiple critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced or increased. The visitor would be aware of the effects associated with implementation of the alternative and would likely express a strong opinion about the change. Visitor satisfaction would markedly decline or increase.

Transportation and Access

The Memorial is near numerous modes of transportation that provide local and regional access and strongly shape the visitor experience. Future management alternatives for the Memorial may lead to changes to the various transportation resources that serve it. These changes may incur impacts in several ways. Any alterations to the way visitors arrive, exit, or move through the Memorial would have an impact on the transportation resource.

In determining whether an impact to the transportation resource is adverse or beneficial, the critical criterion is how the change influences the visitor's experience. Therefore, traditional quantitative means for assessing transportation-related systems, such as Level of Service, are not applicable within the context of this plan. Rather, starting from the perspective of the visitor experience, this plan measures the impacts to transportation in a qualitative manner, considering how well they meet context-sensitive solutions. The following thresholds measure the impacts of the management alternatives on the transportation resources of the Memorial:

- *Negligible:* The impact is barely detectable and/or results in no measurable or perceptible change to the transportation resource.
- *Minor:* The impact is slight but detectable and/or results in small but measurable changes to the transportation network either within the Memorial or adjacent to it; the effect is localized to the Memorial or adjacent transportation networks.
- *Moderate:* The impact is readily apparent and/or easily detectable to visitors to the Memorial grounds. However, the effects primarily occur within one-quarter mile of the Memorial.
- *Major:* The impact affects both the transportation network adjacent to the Memorial as well as the regional transportation system. A major adverse impact occurs if changes generated by the

construction or operation of additional projects lead to significant failure, without remediation, of particular modes of transportation or significantly alter/degrade the flow of people and goods in the region.

Socioeconomics

In the socioeconomic impact analysis, the economic contributions of the Memorial, as well as population, employment, income, and poverty are combined under the discussion of socioeconomics. The analysis of land use impacts is discussed separately.

SOCIOECONOMICS

The Memorial has been and remains a very important visitor destination and symbol for the City of St. Louis. Proposed changes in the management of the Memorial could impact regional socioeconomics, and are a matter of keen public interest. Potential economic impacts include changes in local employment and income resulting from changes in visitor use and spending. In addition, modification in the NPS operations could have indirect impacts on the local economy and government revenue. However, it was concluded early in the planning process that alternative management schemes would not impact certain social parameters such as population, demographics, or environmental justice.

The analytical approach to evaluating economic impacts focused on four factors:

- Changes to visitor use and spending.
- Changes in the NPS budgets and staffing to administer, maintain, restore, and support new construction projects under each alternative.
- Impacts to local businesses due to changes in traffic patterns and parking resulting from a one-block or three-block closure of Memorial Drive.
- Fiscal impacts of NPS acquiring additional lands within an approved boundary in East St. Louis

Total annual visitation has averaged three million visitors per year. However, when evaluating local economic impacts from Memorial grounds visitation, the analysis focuses on new expenditures in the local economy. To account for this, the analysis excluded visitation due to special events and parking-only patrons because these individuals are likely to be local residents that are not introducing new expenditures to the area. Thus, the economic analysis considered current annual visitation to be 1.8 million visits per year.

Management guidance and zoning established under the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* is expected to attract higher visitor use under all of the action alternatives, as compared to the no action alternative. This assumption is based on the goals of each alternative to improve, enhance, or develop facilities and activities available to visitors, improve connections with other parts of St. Louis, and improve access into and throughout the Memorial.

Estimates of future visitor use are not intended to be predictive, but instead representative of the relative order of magnitude of increases to visitor use over time. Actual changes in visitor use would depend on a number of factors, many outside the control of the National Park Service, including general economic conditions at the regional and national levels.

Estimated implementation costs of the alternatives to operate and maintain the Memorial were based on current budgets. Actual future budgets would reflect future NPS policies, actual conditions, unanticipated events and opportunities, as well as approval of the NPS budgets. The information on visitor expenditures and the NPS operations was used in combination with the regional economic impact model to estimate changes in employment and income.

Thresholds were developed to assess the magnitude of socioeconomic impacts resulting from the alternatives under consideration. In the development of these

thresholds, it was assumed that beneficial impacts are those that many individuals or groups would accept or recognize as improving economic conditions, either in general or for a specific group of people, businesses, organizations, or institutions. Examples of beneficial impacts include lower unemployment, higher personal income, and increases in economic diversity and sustainability. Adverse impacts are those that most individuals or groups would generally recognize as diminishing economic welfare, either in general or for a specific group of people, businesses, organizations, or institutions. Examples of adverse impacts include fewer job opportunities and increases in the cost of living without matching increases in higher income.

The following thresholds were used to determine the magnitude of impacts on socioeconomics:

- *Negligible*: Very few individuals, businesses, or government entities are impacted. Impacts are nonexistent, barely detectable, or detectable only through indirect means and with no discernible impact on regional economic conditions.
- *Minor*: A few individuals, businesses, or government entities are impacted. Impacts are small but detectable, limited to a small geographic area, comparable in scale to typical year-to-year or seasonal variations, and not expected to substantively alter economic conditions over the long-term.
- *Moderate*: Many individuals, businesses, or government entities are impacted. Impacts are readily apparent and detectable across a wider geographic area, and may have a noticeable effect on economic conditions over the long-term.
- *Major*: A large number of individuals, businesses, or government entities are impacted. Impacts are readily detectable and observed, extend across much of the study area, and have substantial influence on economic conditions over the long-term.

LAND USE

Jefferson National Expansion Memorial is an important visitor destination and symbol of the City of St. Louis. The 91 acres occupied by the Memorial are a focal point for the city in many ways. This section evaluates how planned policies and actions under each alternative may affect area land use, particularly in light of the Memorial's location within an active urban corridor and its significance as an urban green space.

In evaluating potential impacts to land use, it is essential to examine the physical context of the Memorial – an urbanized area in the heart of downtown St. Louis. The site is bordered by major transportation routes and the Mississippi River. Relevant land use plans, including those published by the National Park Service, the City of St. Louis, and private developers, were evaluated to determine the interaction between these plans and land use at the Memorial. The plans considered include:

- St. Louis Strategic Land Use Plan;
- St. Louis Gateway Mall Master Plan;
- East St. Louis, IL Comprehensive Plan;
- St. Louis Downtown Development Action Plan;
- Legacy 2035;
- St. Louis Downtown Access, Circulation, and Traffic Study; and
- Ball Park Village.

Thresholds were developed to assess the magnitude of land use impacts resulting from the alternatives under consideration. Beneficial impacts are those that would improve land use or values in general or for a specific group of people, businesses, organizations, or institutions. Adverse impacts are those that would diminish land use or values, either in general or for a specific group of people, businesses, organizations, or institutions.

The following thresholds were used to determine the magnitude of impacts on land use:

- *Negligible*: Very few individuals, businesses or government entities are impacted. Impacts are nonexistent, barely detectable,

or detectable only through indirect means and with no discernible impact on land use.

- *Minor*: A few individuals, businesses or government entities are impacted; however, impacts to land use and values are minimal, though detectable. Mitigation measures, if needed to offset adverse impacts, are simple and successful.
- *Moderate*: Many individuals, businesses or government entities are impacted. Impacts result in a change to land use and values that are readily detectable, measurable, and consequential. Mitigation measures, if needed to offset adverse impacts, may be extensive, though likely successful.
- *Major*: A large number of individuals, businesses or government entities are impacted. Impacts result in a change to land use and values that have substantial consequences. Extensive mitigation measures are needed to offset any adverse impacts, and their success is not guaranteed.

National Park Service Operations

This impact topic refers to the ability of the NPS staff to protect and preserve Jefferson National Expansion Memorial resources, and to provide opportunities for effective and enjoyable visitor experiences. It also addresses the effectiveness and efficiency with which the NPS staff are able to perform such tasks. Information about the NPS operations was compiled from various sources, including the Memorial's managers and other staff. Information gathered includes Memorial staffing, maintenance, and expense records, business plans, annual reports, volunteer records, and other documents. Operational considerations include the needs of the Ranger Activities, Division of Museum Services and Interpretation, Maintenance, and Administrative Divisions, as well as the Volunteers in the Park and current partnerships/associations. Within this analysis, it is assumed that the expansion of existing facilities or the construction of new facilities would not occur if funding could not be obtained for necessary increases in staff.

The following thresholds measure the impacts of the management alternatives on the NPS operations at the Memorial:

- *Negligible*: Impacts on the existing NPS operations would be at or below the level of detection.
- *Minor*: Impacts on the existing level of NPS operations would be small but detectable. The change would be noticeable to staff but probably not to the public.
- *Moderate*: Impacts on the NPS operations would be readily apparent to staff and possibly to the public.
- *Major*: Impacts on the NPS operations would be substantial, widespread, and apparent to staff and the public.

4.3 CURRENT MANAGEMENT ALTERNATIVE: NO ACTION

Cultural Resources: Historic Buildings, Structures, Sites, Objects, and Districts

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

As it has for more than 40 years, the 1962 Master Plan Handbook would continue to guide park managers, upholding the current management approach at the Memorial. The National Park Service would continue to look for opportunities to complete unfinished portions of the original Memorial design, contingent on project approval and funding. The preservation of the NHL and the fundamental resources and values of the Memorial would remain of paramount importance.

Under the no action alternative, all historic structures within the Memorial would be maintained in their current condition. The roof at the Old Courthouse, which leaks, is currently being repaired. In addition, repairs and maintenance of site walkways, benches, and plantings would be accomplished; however, these actions would only have negligible local short- and long-term indirect impacts on historic buildings, structures, sites, objects, and districts. The no action alternative would not directly or indirectly impact resources located

outside of the Memorial boundary. There would be no adverse effects on other buildings, structures, sites, objects, or districts located on the Memorial grounds or within the APE as a result of the no action alternative.

ANALYSIS OF CUMULATIVE IMPACTS

As detailed above, there could be negligible impacts to the Old Courthouse. These impacts, when considered together with projects planned or ongoing within the surrounding area, would not contribute to cumulative impacts to historic buildings, structures, sites, objects, or districts.

CONCLUSION AND IMPAIRMENT FINDING

The implementation of the no action alternative would result in negligible impacts to historic buildings, structures, sites, objects, and districts.

Cultural Landscapes

Analysis of Direct and Indirect Impacts

Under the no action alternative, the 1962 Master Plan Handbook would continue to guide the management of the Memorial. The National Park Service would continue to look for opportunities to complete unfinished portions of the design, contingent on project approval and funding. All actions impacting the Memorial's historic landscape would be undertaken in consultation with the Missouri SHPO. Ultimately, the preservation of the NHL and the fundamental resources and values of the Memorial would be of paramount importance.

The appearance of the Memorial grounds would remain largely unchanged, and the landscape features contributing to the historic character of the Memorial would be preserved. There would be no changes to the topography of the site, surrounding land uses, natural features, viewsheds, and water features. The spatial organization of the Memorial – including the combination of open monumental spaces and enclosed, human-scale spaces – and the critical viewsheds are of paramount importance to the integrity of the cultural landscape. These elements would largely be unchanged.

Over time, repairs and maintenance of site walkways, benches, and plantings would be accomplished, resulting in minor to moderate long-term local beneficial impacts. Overall, there would be no adverse effect to the Memorial's cultural landscape as a result of the no action alternative.

ANALYSIS OF CUMULATIVE IMPACTS

Under the no action alternative, there may be minor to moderate long-term beneficial impacts to the cultural landscape of the Memorial. These impacts, when considered together with projects planned or ongoing within the surrounding area, would not contribute to cumulative impacts to this historic resource.

CONCLUSION AND IMPAIRMENT FINDING

The no action alternative would have minor to moderate long-term local beneficial impacts to cultural landscapes. Under Section 106, there would be no adverse effect on the Memorial landscape. In addition, there would be no impairment of the historic landscape as a result of the no action alternative.

Archeological Resources

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the no action alternative, ground disturbances may occur if streetscape improvements are undertaken along the roadways that border the Memorial.

Most of these improvements are likely to occur within previously disturbed contexts of existing streets, and have a low likelihood of impacting intact archeological resources. However, intact archeological features are more likely to be encountered in the area of improvements in Luther Ely Smith Square and along the riverfront, where the original ground surface generally coincides with the current ground surface. If archeological resources are encountered during ground disturbance, the disturbances proposed under the no action alternative would be addressed by the NPS standard operating procedures, which encourage preservation through avoidance. Under the no action

alternative, there could be negligible, local and regional, long-term adverse impacts and no adverse effects under Section 106.

ANALYSIS OF CUMULATIVE IMPACTS

Cumulative impacts would occur from the incremental impact of this alternative when added to other past, present, and foreseeable future actions. The geographic area that was considered for cumulative impacts on this alternative consists of historic downtown St. Louis. Under this alternative, however, the National Park Service would control all activities according to their standard operating procedures, which encourage preservation of archeological sites. Therefore, there would be continued preservation and no cumulative impact to archeological resources under this alternative.

CONCLUSION AND IMPAIRMENT FINDING

The no action alternative would consist of minor to moderate ground disturbances resulting in negligible, local and regional, long-term adverse impacts to archeological resources. There would be no cumulative impacts. Under Section 106, there would be no adverse effects to archeological resources. In addition, there would be no impairment to archeological resources as a result of the no action alternative.

Curatorial Resources and Museum Collections

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the no action alternative, those portions of the collection on display would continue to be housed as they are in the Museum of Westward Expansion and the Old Courthouse. The balance would still be housed in the dedicated collections room in the Old Courthouse. Current space, access, electrical and HVAC limitations would continue. Water incursions into the space may occur in the future. Thus, there would be minor to moderate long-term local adverse impacts to curatorial resources and museum collections.

CURRENT MANAGEMENT ALTERNATIVE

NO ACTION

**CURRENT
MANAGEMENT
ALTERNATIVE**

NO ACTION

ANALYSIS OF CUMULATIVE IMPACTS

Under the no action alternative, there would be minor to moderate long-term local adverse impacts to curatorial resources and museum collections. These impacts, when considered together with projects planned or ongoing within the surrounding area, would not contribute to cumulative impacts to museum collections.

**CONCLUSION AND
IMPAIRMENT FINDING**

Overall, short-term, long-term, and cumulative impacts to curatorial resources and museum collections would be minor to moderate, adverse and local. There would be no impairment of curatorial resources and museum collections as a result of the no action alternative.

Natural Resources: Vegetation

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

Under the no action alternative, the Memorial grounds would continue to function much the way it does today and management of the site would remain unchanged. Management of vegetation communities at the East St. Louis addition would remain unchanged. There would be no direct impacts due to trampling or removal of vegetation at any of these locations; nor would any secondary impacts from soil compaction associated with construction equipment occur. Negligible long-term impacts from the spread of invasive species would continue since much of the vegetation community on the east side of the river already consists of invasive species.

ANALYSIS OF CUMULATIVE IMPACTS

Past land use practices have completely removed the original forested land cover of the St. Louis/East St. Louis area and created the urban/developed land cover that exists today. Since the no action alternative would have no additional impacts on vegetation, there would be no cumulative impacts to vegetation communities as a result of this alternative.

**CONCLUSION AND
IMPAIRMENT FINDING**

Under the no action alternative, there would be no new construction or change to management or maintenance policies within the study area and no cumulative impacts to vegetation communities. There would be no impairment of Memorial resources.

Threatened and Endangered Species

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

Under the no action alternative, no changes to management practices, site uses, or available habitat would occur. The federally designated threatened decurrent false aster is present on the east bank of the Mississippi River below the levee. Current conditions apparently provide favorable habitat; favorable conditions for this species would remain.

ANALYSIS OF CUMULATIVE IMPACTS

None of the projects considered as part of the cumulative impacts analysis are located on the east side of the river where the current local population of decurrent false aster is present. Thus, there would be no cumulative impacts to the decurrent false aster resulting from the no action alternative.

**CONCLUSION AND
IMPAIRMENT FINDING**

Since there would be no additional development, loss of habitat, or changes in maintenance or management practices that may disturb decurrent false aster populations on the east side of the river, there would be no impact to this threatened species and no impairment of Memorial grounds resources within the study area.

Soundscape

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

There would be minor, short-term noise impacts from the construction of the pedestrian enhancements and streetscape improvements at the Memorial. There would be continuing minor long-term noise impacts from the existing maintenance-related

activities on the Memorial grounds, including lawn mowing and testing of the emergency generators. Due to the infrequent nature and the short duration (typically less than one day) of special events on the Memorial grounds, the impacts to the soundscape of the Memorial from special events would be considered minor. There would be no new noise-generating activities on the East St. Louis addition.

ANALYSIS OF CUMULATIVE IMPACTS

There would be minor short- and long-term adverse impacts to noise under the no action alternative. These impacts, when considered together with recently completed, ongoing, and planned projects within the study area, would not contribute to cumulative impacts to this resource.

CONCLUSION AND IMPAIRMENT FINDING

The no action alternative could result in minor short-term adverse impacts to noise from construction activities associated with pedestrian and streetscape improvements at the Memorial. There would also be continuing minor long-term adverse noise impacts from the existing maintenance activities. There would be no impairment of the soundscape of the Memorial from this alternative.

Visitor Opportunities and Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Visitor opportunities would largely remain the same at the Memorial as they are today under the no action alternative. Visitors would continue to have access to heritage programs and educational activities at the Museum of Westward Expansion and the Old Courthouse. Additionally, visitors would continue to have access to recreational activities on the Memorial grounds. Without changes to facilities and programs, it is expected that most visitors would come to the Memorial to ride the tram and spend approximately two hours at the site while other facilities would remain underutilized (e.g., the museum and Old Courthouse). Impacts to visitor opportunities are expected to be negligible under the no action alternative, as visitors would not

discern any changes in opportunities with implementation of the alternative.

Implementation of the no action alternative is expected to have moderate adverse long-term local impacts on visitor opportunities and use. Some visitors would continue to be adversely impacted by a lack of barrier-free and Americans with Disabilities Act/Architectural Barriers Act Accessibility Standard (ADA/ABAAS)-compliant access to the Memorial. Self-directed educational opportunities would remain limited due to the absence of wayside exhibits throughout the Memorial. The Memorial would continue to attract one-time users (or return visitors after several years) without modernizing exhibits and opportunities throughout the Memorial grounds, including the introduction of new technology.

ANALYSIS OF CUMULATIVE IMPACTS

The no action alternative would result in moderate long-term adverse impacts to visitor opportunities and use. These impacts, when considered together with ongoing or planned projects within the study area, would not contribute to a cumulative impact to visitor opportunities and use.

CONCLUSION

The no action alternative is expected to have a moderate adverse long-term local impact on visitor experience and use. With a lack of barrier-free access points to the Memorial, some visitors are discouraged from visiting the site. In addition, without any modification or rehabilitation to exhibits and education programs such as the introduction of new technology, it is expected that visitors would continue to come to the Memorial mainly for the tram ride and would fail to utilize other facilities (museum and Old Courthouse). This management action would be expected to continue to attract one-time visitors (or repeat visitors after several years). Unfriendly streetscapes to and from the Memorial into downtown would be expected to have a long-term adverse impact on visitor experience, as visitors would be less likely visit other downtown attractions. In addition, some local residents and employees would be less likely to visit the Memorial.

CURRENT MANAGEMENT ALTERNATIVE

NO ACTION

**CURRENT
MANAGEMENT
ALTERNATIVE**

NO ACTION

Transportation and Access

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

In the no action alternative, no changes would occur to the roadway network surrounding the Memorial. Thus, impacts would be negligible.

Under the no action alternative, current public transportation conditions would continue in downtown St. Louis. Impacts to the existing bus routes on adjacent streets in downtown St. Louis would be negligible.

With the continuation of the current management practices at the Memorial, the pedestrian and bicycle circulation environment would remain problematic. The undesirable conditions for pedestrians crossing Memorial Drive would continue, although minor improvements, in coordination with the City and State, could be made. No new accessible routes or new bicycle facilities would be developed.

On-site parking facilities, primarily the Arch Parking Garage and Old Cathedral Parking Lot, would remain under the no action alternative. The continued shortage of oversized vehicle parking would persist. There would be no changes to water transportation under the no action alternative. The existing partnership with the Riverboat ferry operator would remain, with no new additional water-based transportation.

ANALYSIS OF CUMULATIVE IMPACTS

Under the no action alternative, adverse transportation and access conditions at the Memorial would remain. However, ongoing and planned projects within the study area, when considered together with these adverse impacts, would not contribute to a cumulative impact to transportation and access.

CONCLUSION

The no action alternative would result in short- and long-term minor adverse transportation impacts at the Memorial.

Socioeconomics

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

The no action alternative would continue to generate a steady state of spending within the region over the life of the plan. This spending would have beneficial economic impacts. The National Park Service must use its budget to pay for operating expenditures such as payroll, utilities, supplies, and materials to operate the Memorial. The National Park Service has estimated that the implementation of the no action alternative would cost \$10.3 million per year and require approximately 166.5 full-time equivalents (FTE) in employment.

A greater economic impact is generated by the tourists that travel from outside the area to visit the Memorial. The National Park Service has estimated that visitation to the Memorial is approximately 3.0 million visitors per year. Of this total, 1.8 million visitors enjoy Memorial grounds resources. Of the 1.8 million visits, approximately 78 percent arrive from outside the area, and through their spending provide an influx of revenue for the local economy. This influx of revenue is estimated to generate over 1,950 jobs and \$52 million in income in the region.

The economic impacts of operations and visitor use at the Memorial under the no action alternative would have a long-term minor to moderate beneficial impact. The economic contribution to some industries (hotel and restaurants) and geographical areas is noteworthy (downtown St. Louis) and is expected to continue throughout the life of the plan.

ANALYSIS OF CUMULATIVE IMPACTS

An examination of all relevant planning documents for the immediate area surrounding the Memorial reveals that the area would remain highly urbanized. Other plans to further develop the Gateway Mall may also introduce more visitors to the downtown area, potentially augmenting visitation to the Memorial. While this may increase the number of residents visiting the Memorial, it is not likely to have more than a negligible impact on out-of-town visitors, and thus offers a negligible economic impact. The

cumulative economic impact would be beneficial but minor, with impacts limited primarily to local businesses in the downtown area.

CONCLUSION

Management of the Memorial would not significantly change from current conditions under the no action alternative. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area. Under this alternative, visitation to and operation of the Memorial would continue to have a long-term minor to moderate local beneficial economic impact to the region.

Land Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The no action alternative would be expected to have minor adverse long-term impacts on local land use. Under this alternative, the National Park Service would continue to focus its attention on the west side of the Mississippi River. By not proactively participating in the planning of development for the east side of the river, the National Park Service may not be able to limit incompatible development of land which could adversely impact the Memorial. In addition, while the National Park Service continues to partner with the City of St. Louis to improve at-grade crossings at Memorial Drive, improvements have not been made to date and there are no firm plans to improve the at-grade crossings at this time.

ANALYSIS OF CUMULATIVE IMPACTS

The land use environment in which the Memorial is located is dynamic, and is not isolated from land use changes in the surrounding community. The Memorial is located in a highly urbanized area; new development, or redevelopment of existing properties, is being discussed and undertaken. Some plans call for the redevelopment of areas near the Memorial such as Ballpark Village, which could provide additional residential and commercial spaces within a short distance of the site. Because land use under this alternative is not expected to change, cumulative impacts on land use are likely to be negligible.

CONCLUSION

The no action alternative is expected to have a minor long-term adverse impact on local land use. With a lack of focus on planning activities in East St. Louis, the National Park Service may lose the ability to influence future land use in the East St. Louis addition. Also, under this alternative, the National Park Service would not make any substantial changes in land use on the Memorial.

NPS Operations

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Assuming current funding trends persist and staffing levels remain similar to those present, the Memorial would continue to be unable to fully achieve desired conditions in program areas such as museum and interpretive services and administration. In addition, the deferred maintenance backlog would continue to grow over time. The no action alternative would have ongoing long-term minor to moderate local adverse impacts on the NPS operations, but there would be no new impacts.

ANALYSIS OF CUMULATIVE IMPACTS

The no action alternative would have ongoing long-term minor to moderate adverse impacts on NPS operations. These impacts, when considered together with other ongoing and planned projects in the area, would not result in a cumulative impact to NPS operations.

CONCLUSION

Ongoing impacts (long-term minor to moderate local and adverse) would continue.

Unavoidable Adverse Impacts

Some negligible to minor adverse impacts to soils and vegetation would result from the continued use of the Memorial by visitors. In addition, the maintenance of the Memorial over time would have minor long-term adverse impacts on the soundscape of the Memorial. These impacts are considered unavoidable.

CURRENT MANAGEMENT ALTERNATIVE

NO ACTION

Irreversible and Irrecoverable Commitments of Resources

Irreversible commitments of resources are actions that result in the loss of resources that cannot be reversed. Irrecoverable commitments of resources are actions that result in the loss of resources for a period of time. With the exception of the consumption of fuels and raw materials for maintenance activities, no actions in this alternative would result in the use of nonrenewable natural resources or the use of renewable resources that would preclude other uses for a period of time.

Relationship of Short-Term Uses and Long-Term Productivity

Jefferson National Expansion Memorial would continue to be used by the public as a cultural and recreational resource, and the National Park Service would manage the Memorial to preserve its cultural and natural resources. Actions would be taken with care to ensure that uses do not adversely affect the long-term utilization of cultural and natural resources at the site.

4.4 IMPACTS OF ALTERNATIVE 3: PROGRAM EXPANSION

Cultural Resources: Historic Buildings, Structures, Sites, Objects, and Districts

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Program Expansion alternative, the Memorial would be revitalized by expanded programming, facilities, and partnerships through a design competition similar to the 1947 competition. The selected design would also expand interpretation, education opportunities, and visitor amenities. New development could occur at the north or south ends of the site, or potentially in the East St. Louis addition. Development could also occur within Luther Ely Smith Square or directly east of the square across Memorial Drive, allowing for a new western entrance to the facility and a visitor orientation facility within Luther Ely Smith Square. In

addition, the underground Arch complex may be expanded to the west. Such development would be required to preserve the important east-west axis through the Memorial, a character-defining feature of the NHL. Impacts to the Memorial would range somewhat depending on the location of the new elements and their above ground expression. Through guidelines established within the competition program, the National Park Service would preserve the character-defining features of the NHL and the designed landscape and would not allow any changes that would detract from the integrity of the Memorial in such a way as would threaten its designation as an NHL. All actions affecting the historic structures on the Memorial grounds or within the APE would be undertaken in consultation with the Missouri and Illinois SHPOs and the Advisory Council on Historic Preservation.

The following discussion outlines impacts on historic buildings, structures, sites, objects, and districts, both on-site and within the surrounding area.

GATEWAY ARCH Barrier-free accessible entrances to the Museum of Westward Expansion would be undertaken in this alternative. These entrances would be constructed either at the base of the Gateway Arch or on Memorial Drive. If constructed at the base of Gateway Arch, there would be minor short- and long-term local adverse impacts on this historic structure. The construction of a new entrance to the underground complex near Memorial Drive would not result in impacts to the structure of the Gateway Arch. The renovation of facilities at the north end of the Memorial grounds for heritage education or visitor orientation, or the construction of new facilities at the south end of the Memorial, would be designed such that they would not interrupt views of the Gateway Arch. The addition to the Museum of Westward Expansion would be accomplished in accordance with the *Secretary of the Interior's Standards for Rehabilitation* such that new construction would not destroy historic materials, features, and spatial relationships that characterize the property. Long-term impacts would be negligible. There would be no adverse effect under Section 106 on the Gateway Arch.

ALTERNATIVE 3

PROGRAM EXPANSION

OLD COURTHOUSE Under this alternative, the Old Courthouse would be preserved. This would result in a minor long-term local beneficial impact on the building. West of the Gateway Arch, there may be any combination of a single elevated deck, multiple bridges, improved at-grade pedestrian crossings at Memorial Drive, and a one- or three-block closure of Memorial Drive. The pedestrian crossings over Memorial Drive would not obstruct the important east-west axis that connects the Old Courthouse to the Memorial grounds. Thus, short- and long-term impacts would be negligible to minor adverse. The potential closure of Memorial Drive could strengthen the axial connection between the Arch and the Old Courthouse, resulting in minor local long-term beneficial impacts. Streetscape improvements proposed around the Old Courthouse would be accomplished in a manner such that the setting of the historic structure and its key features, including the sundial and fountain, are not compromised. Under this alternative, development could occur within Luther Ely Smith Square. The potential construction of a visitor orientation facility at Luther Ely Smith Square could impact the Old Courthouse. However, the modifications would be achieved in accordance with the *Secretary of the Interior's Standards for Rehabilitation*. Long-term impacts would be negligible to minor adverse.

GRAND STAIRCASE Barrier-free access would be provided to the riverfront. Depending upon how the access is provided, it may be visible from the Grand Staircase, resulting in minor short- and long-term local adverse impacts on this historic structure. However, the new access routes would be designed in accordance with the *Secretary of the Interior's Standards for Rehabilitation* and the *Guidelines for the Treatment of Cultural Landscapes* and thus there would be no adverse effect under Section 106.

NORTH AND SOUTH OVERLOOKS The North and South Overlooks would be renovated to accommodate heritage education and visitor amenities. This could result in negligible to minor short- and long-term adverse impacts. In accordance with the *Secretary of the Interior's Standards for Rehabilitation*, new additions, exterior alterations, or related new construction would not destroy historic

materials, features, and spatial relationships that characterize the property. The new work would be differentiated from the old and would be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. The renovation of the structure at the north end of the Memorial and the potential construction of new facilities at the south end of the Memorial could have minor beneficial to minor adverse short- and long-term local impacts. There would be no adverse effect under Section 106 to the North and South Overlooks.

RAILROAD TUNNELS There could be negligible short- or long-term adverse impacts on the railroad tunnels. In addition, there would be no adverse effect under Section 106, since any potential design for improved access between the Memorial grounds and the riverfront would be required to not directly impact the tunnels.

RESOURCES WITHIN THE APE Under the Program Expansion alternative, parking would be maintained at the Old Cathedral and the design competition would seek to improve aesthetics and visual compatibility while preserving landscape integrity. Short- and long-term impacts would likely be negligible to minor beneficial. The renovation of the parking facility at the north end of the Memorial grounds could result in an above-grade expression, however, it would not block views between Eads Bridge and the Memorial and thus long-term local adverse impacts would be minor. Instead, if the renovated facility includes a planted surface expression, there could be minor long-term local beneficial impacts to Eads Bridge. Improvements at the North Overlook could result in indirect negligible to minor adverse short- and long-term local impacts to Eads Bridge. In addition, streetscape improvements along Washington Avenue may have negligible to minor adverse impacts on the bridge, depending on the location and extent of improvements. The proposed design resulting from the competition may further impact historic structures and districts north and west of the Memorial, including

ALTERNATIVE 3

PROGRAM EXPANSION

the Laclede's Landing Historic District, the J. Kennard Carpet Company Building, the Missouri Athletic Club Association Building, the Mississippi Valley Trust Company Building, the International Fur Exchange, the Security Building, and Pet Plaza (see Figure 3.4 for the location of these resources). These historic resources have visual connections to the Memorial grounds. Depending on the potential height and location of new features proposed in the design competition, there may be negligible to minor long-term local adverse impacts on these historic buildings and districts.

ANALYSIS OF CUMULATIVE IMPACTS

There may be minor adverse to minor beneficial short- and long-term local impacts on historic structures as a result of the implementation of the Program Expansion alternative. These impacts, when considered together with the residential, mixed-use, and commercial developments that are planned and underway in downtown St. Louis, would not contribute to a cumulative impact on historic buildings, structures, sites, objects, and districts.

CONCLUSION AND IMPAIRMENT FINDING

Within the Memorial boundary, there may be negligible to minor short- and long-term local adverse impacts on the Gateway Arch, and potential minor beneficial to minor adverse long-term local impacts on the Old Courthouse. In addition, there may be minor short- and long-term adverse local impacts on the Grand Staircase and short- and long-term minor beneficial to minor adverse local impacts on the North and South Overlooks. Outside of the Memorial, there may be negligible to minor beneficial short- and long-term local impacts on the Old Cathedral, and short- and long-term minor beneficial to minor adverse local impacts on Eads Bridge. Finally, there may be negligible to minor long-term local adverse impacts on various historic structures and districts that have a visual relationship with the Gateway Arch grounds, including the Laclede's Landing Historic District, the J. Kennard Carpet Company Building, the Missouri Athletic Club Building, the Mississippi Valley Trust Company Building, the International Fur Exchange, the Security

Building, and Pet Plaza. There would be no adverse effect under Section 106.

Cultural Landscapes

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Program Expansion alternative, the Memorial would be revitalized by expanded programming, facilities, and partnerships. This revitalization would be achieved through a design competition that proposes new elements for the Memorial grounds. The Design Competition Overlay was drawn to protect critical viewsheds and contributing landscape features. Through guidelines established within the competition program, the National Park Service would preserve the character-defining features of the NHL and major contributing features of the original design. Although the National Park Service assumes there would be changes to the look of the Memorial, all new elements and enhancements would be required to be located in such a manner as to preserve the integrity of the NHL or National Register Historic District, and the National Park Service would not allow the implementation of a design element that would cause the NHL to be delisted.

The spatial organization of the site is of paramount importance to the maintenance of the integrity of the NHL. Enhanced connections between the Old Courthouse and the Memorial have the potential to improve the spatial organization of the Memorial along the strong east-west axis. These changes would result in minor short-term adverse and moderate to major long-term beneficial local impacts, as the east and west portions of the Memorial grounds would be unified. Such a connection was envisioned in the Saarinen-Kiley concept for the Memorial but was never completed. If the design of the landscape within Luther Ely Smith Square is enhanced through the inclusion of additional plantings consistent with the Saarinen-Kiley concept, there would be moderate to major long-term local beneficial impacts on spatial organization. The essential view that stretches from the Old Courthouse east towards the Gateway Arch and the river could also be enhanced by the one- or three-block closure

ALTERNATIVE 3

PROGRAM EXPANSION

of Memorial Drive, as it would mitigate the freeway's disruption and connect the east and west portions of the Memorial grounds. These changes would result in moderate to major long-term local beneficial impacts. The addition of new amenities at the North and South Overlooks could result in negligible to minor long-term local adverse impacts, depending on the height and scale of the proposed elements.

The east-west axis that stretches from the Old Courthouse east towards the Gateway Arch and the river is both an organizing element in the landscape and an essential view. These features may be altered under the Program Expansion alternative. The pedestrian crossings over Memorial Drive would not obstruct the important east-west axis that connects the Old Courthouse to the Memorial grounds and would be designed in accordance with the *Secretary of the Interior's Standards for Rehabilitation*. Long-term local impacts would be negligible to minor adverse.

Under this alternative, development could occur within Luther Ely Smith Square. If there is no above-grade expression and the square is re-planted in accordance with the Saarinen-Kiley concept (allées of uniform trees), long-term moderate beneficial local impacts could result. If an above-grade structure is proposed within the Square, it would be designed such that it would not obstruct the east-west view corridor, a character-defining feature. Due to the potential visibility of an entrance to the new facility, there could be minor short-term and minor to moderate long-term local adverse impacts. This impact could be partially mitigated depending on the ultimate design. The addition of a new entrance to the expanded below-grade museum would be required to be located in such a manner as to not disrupt the open visual axis of the cultural landscape between the Gateway Arch and the Old Courthouse. Impacts would be negligible to moderate adverse depending on the final design. Thus, there could be an adverse effect under Section 106.

Views along the north-south axis may also be impacted under the Program Expansion alternative due to the renovation of the parking

structure at the north end of the Memorial. The renovated facility would not obstruct views along the essential north-south axis. Long-term impacts may be minor, local and beneficial, if the above-grade expression of the current parking garage is replaced by a surface planted expression. The potential construction of new facilities for heritage education at the south end of the Memorial could result in minor short-term adverse impacts and minor beneficial to minor adverse long-term impacts to the view. However, the view would not be obstructed by any new design elements.

Views to the Gateway Arch from the North and South Overlooks and from East St. Louis may be impacted by the Program Expansion alternative. Views from the North and South Overlooks along the river could be impacted by construction at the north and south ends of the Memorial. Depending on the height and mass of the above ground expression, there may be minor adverse short-term impacts and minor beneficial to minor adverse local impacts on these views. Views from East St. Louis may be affected creating both beneficial and adverse impacts under the Program Expansion alternative. Views may improve if visitors are able to observe the Gateway Arch without the obstruction of the levee, resulting in moderate long-term beneficial impacts on this view corridor. However, new development on the west side of the river, such as infrastructure for the water taxi, may generate minor short- and long-term local adverse impacts on views from the east side of the river. To partially mitigate this impact, infrastructure for the water taxi should be located north or south of the central axis through the Gateway Arch.

The Program Expansion alternative could also have impacts on the site's topography. The construction of the proposed visitor orientation facility at Luther Ely Smith Square may alter the topography of this portion of the site. However, since the existing sunken garden was not part of the original Saarinen-Kiley concept, long-term impacts on the cultural landscape would be negligible. The redesign of the entrances to the Gateway Arch and the provision of barrier-free access to the riverfront may cause minor to moderate long-term adverse impacts on the site's topography, resulting in a potential adverse effect under

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Section 106. The provision of access to and around the north and south reflecting ponds may also have negligible to minor impacts on the landscape's topography.

Increased connectivity between the Old Courthouse and the Gateway Arch is a goal included within the guidelines for the design competition. Proposals for increased connectivity may include any combination of a single elevated deck, multiple bridges, improved at-grade pedestrian crossings across Memorial Drive, and a one- or three-block closure of Memorial Drive. If completed in accordance with the Saarinen-Kiley concept, these elements may result in long-term minor to moderate beneficial impacts on spatial organization and circulation at the Memorial.

Under the Program Expansion alternative, the alignment and spacing of the trees along the sidewalks leading to the Gateway Arch, a character-defining feature of the Memorial, would not be altered. Impacts would thus be negligible. The emerald ash borer and other threats to the predominant species of trees lining the walkways would be responded to with direction provided in the *Cultural Landscape Report for Jefferson National Expansion Memorial* (rev. 2010).

The potential increase in visitation at the Memorial as a result of enhanced services may result in minor to moderate local long-term beneficial impacts to the natural and constructed setting. However, an increase in visitors may result in crowding and greater degradation of the landscape, resulting in a minor short-term local adverse impact on the cultural landscape, possibly leading to local minor long-term adverse impacts.

There are no proposed changes to the existing small-scale features at the Memorial grounds, though there may be minor adverse impacts on lights and benches in the short-term as a result of construction projects. These impacts may be mitigated by replacement of the features after construction.

The Program Expansion alternative has the potential to have an adverse effect under Section 106 on the cultural landscape of the Memorial. According to (c)(2) Section

110(f) of the NHPA, approval of any Federal undertaking which may directly and adversely affect any NHL requires that the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council a reasonable opportunity to comment on the undertaking.

ANALYSIS OF CUMULATIVE IMPACTS

The implementation of the Program Expansion alternative could result in minor short-term adverse and moderate adverse to major beneficial long-term impacts to the cultural landscape at the Memorial. These impacts, in particular the increased wear and tear on the Memorial landscape as a result of higher visitation levels, could contribute to a minor short-term local adverse cumulative impact, when considered together with the residential, mixed-use, and commercial developments that are planned and underway in downtown St. Louis.

CONCLUSION AND IMPAIRMENT FINDING

The implementation of the Program Expansion alternative could result in minor short-term adverse and moderate adverse to major beneficial long-term impacts to the cultural landscape at the Memorial. There could be an adverse effect under Section 106; however this would not lead to impairment of the cultural landscape.

Archeological Resources

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Several components of this alternative include ground disturbance that may impact archeological resources. These elements constitute different levels of ground disturbance and are located in areas that have varying levels of archeological sensitivity. The impact assessments take these two factors into account, recognizing that most elements have not yet been designed and that the precise locations of archeological resources are not known. The following table (Table 4.1) summarizes the components that are likely to disturb the ground and the archeological sensitivity of the area of disturbance. This

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Component with Potential for Ground Disturbances	Type of Disturbance Likely	Archeological Sensitivity	Impact Assessment
The north and south ends of the Memorial grounds are renovated	Moderate disturbances from renovation	Low	Negligible to Minor
Increased connectivity between Old Courthouse and Gateway Arch	Minor disturbance from street improvements for pedestrian access	High	Minor to Moderate
New entrance to Museum of Westward Expansion	Major disturbances for underground entrance	Moderate to High	Moderate to Major
Entrances into the visitor center and the Museum of Westward Expansion renovated to meet codes	Minor disturbance from excavation for ADA/ABAAS- compliant railings or ramps	Low	Negligible to Minor
Museum of Westward Expansion is enlarged	Major disturbances for expansion	Moderate to High	Moderate to Major
Closure of Memorial Drive	Moderate to major disturbances assumed to be mostly within street right-of-way	Low to Moderate	Negligible to Minor
Luther Ely Smith Square is redeveloped	Major disturbances for structure	High	Major
Rehabilitation of the designed landscape	Minor disturbances from rehabilitation	Low to Moderate	Negligible to Moderate
Develop partnership for creation of water taxi	Minor to moderate disturbances	Low to Moderate	Negligible to Moderate

Table 4.1 Impacts to Archeological Resources in Alternative 3 - Program Expansion

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is followed by a discussion of the level of disturbance and its potential impact on archeological resources.

Many of the ground-disturbing activities, such as the installation of ADA/ABAAS ramps would have at most a minor local or regional, long-term adverse impact (no adverse effect) on archeological resources. A few of the activities in this alternative have the potential to cause major local or regional, long-term adverse impacts (adverse effect) on archeological resources. These include potential elevated crossings over Memorial Drive, which may cause a large disturbance within an area that has a high archeological sensitivity, the expansion of the Museum of Westward Expansion under the Gateway Arch, and the construction of a new facility within Luther Ely Smith Square. These actions may precipitate major local or regional, long-term adverse impacts (adverse effect) on archeological resources, especially if new facilities are placed in areas of high archeological sensitivity.

If archeological resources are encountered during any of the moderate to major ground-disturbing activities but the activity is then modified to avoid the resource, this would comprise a beneficial local or regional, long-term impact (no adverse effect) because the location of the site would then be known and protected from future inadvertent impact. Likewise, elements of this alternative that do not include ground-disturbing activities would have minor local or regional, long-term beneficial impacts (no adverse effect) on potential archeological sites that may remain preserved as a result. One element of this alternative is the boundary modification of the Memorial, which adds approximately 100 acres in East St. Louis. This represents a moderate local or regional, long-term beneficial impact (no adverse effect), as it places any archeological resources that might be located on the parcel under the NPS jurisdiction, therefore protecting them by federal law.

ANALYSIS OF CUMULATIVE IMPACTS

If important archeological resources are encountered as a result of this alternative, cumulative impacts would occur from the incremental impact of this alternative when added to other past, present, and foreseeable

future actions. The geographic area that was considered for cumulative impacts on this alternative consists of historic downtown St. Louis and the East St. Louis riverfront area.

Multiple projects are planned or have recently been completed in downtown St. Louis, while less development has occurred or is planned in the East St. Louis riverfront area. Past projects in St. Louis, such as Cochran Gardens and Walsh's Row, have yielded archeological evidence of the historic use of the downtown, indicating that intact, potentially significant subsurface deposits remain within historic downtown St. Louis. It is likely that the planned projects would also impact archeological sites.

Archeological sites are protected by both local and non-local laws and ordinances (as outlined in Chapter 1). Archeological sites are non-renewable resources. In general, impacts on significant archeological sites are mitigated by data collection, and that data collection, along with subsequent development of the site, causes the destruction of that archeological site. Because of the likelihood that past, present, and foreseeable future actions in the cumulative study area would impact archeological resources, any adverse impacts/effects on archeological sites discovered as a result of this alternative would have a major local or regional, long-term cumulative impact.

CONCLUSION AND IMPAIRMENT FINDING

Overall, the Program Expansion alternative would have local or regional, long-term impacts ranging from minor beneficial to major adverse, depending on the level of ground disturbance. Thus, there could be an adverse effect under Section 106.

The ground-disturbing activities in this alternative may encounter significant archeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). The range of potential impacts under this alternative are due, in part, to the lack of specific information regarding the exact

nature and location of physical actions which would be identified through the design competition. These impacts would need to be further refined as the elements and locations are finalized.

Elements of this alternative that would not disturb the ground or would be adjusted to avoid archeological sites would have no adverse impact (no adverse effect) on archeological resources, and may have a minor local or regional, long-term beneficial impact if the resources remain preserved below the surface.

Curatorial Resources and Museum Collections

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

An expanded and renovated Museum of Westward Expansion under the Gateway Arch is included in the proposed action. In the renovation of the Museum of Westward Expansion under the Gateway Arch, a new, state-of-the-art storage facility for collections and archives would be provided to better address the needs of Memorial collections and archives in meeting NPS standards related to preserving these resources, while providing researchers, the public, and staff improved access to the collections and archives. In addition, the exhibits at the Old Courthouse and the Museum of Westward Expansion would be redesigned to provide more interactive and engaging experiences for visitors. The provision of more up-to-date exhibits and archivally sound storage area for collections would result in moderate long-term beneficial impacts on curatorial resources and museum collections.

ANALYSIS OF CUMULATIVE IMPACTS

Under the Program Expansion alternative, there would be moderate long-term beneficial impacts on curatorial resources and museum collections. These impacts, when considered together with projects planned or ongoing within the surrounding area, would not contribute to cumulative impacts on museum collections.

CONCLUSION AND IMPAIRMENT FINDING

The implementation of the Program Expansion alternative would result in moderate long-term beneficial impacts on curatorial resources and museum collections. There would be no impairment of curatorial resources and museum collections as a result of the Program Expansion alternative.

Natural Resources: Vegetation

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Minor to moderate adverse impacts on vegetation in the East St. Louis addition may occur as a result of clearing related to construction of new design elements. However, this would also create opportunities to restore and enhance the planting in these areas, resulting in minor, long-term beneficial impacts. Negligible to moderate beneficial impacts might occur as a result of the design competition. Since this area is currently dominated by early successional or invasive species, overall impacts would be beneficial.

ANALYSIS OF CUMULATIVE IMPACTS

Past land use practices have completely removed the original forested land cover of the St. Louis/East St. Louis area and created the urban/developed land cover that exists today. Since impacts on vegetation communities within the study area would generally be considered beneficial due to the removal of invasive species, there would be no cumulative impacts on vegetation communities.

CONCLUSION AND IMPAIRMENT FINDING

Potential impacts on vegetation communities range from moderate beneficial to moderate adverse. Final design entries would undergo additional environmental review by the National Park Service to determine the impacts of various design alternatives with greater specificity. Long-term beneficial impacts would result from the removal of invasive species; however, there would be a short-term temporary disruption of the successional habitat community. No impairment of Memorial grounds resources is anticipated from this alternative.

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Threatened and Endangered Species

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The current location of the federally designated Threatened decurrent false aster on the east bank of the Mississippi River below the levee is within the area included in the design competition. However, the presence of the decurrent false aster in the area would necessitate a field survey to establish its precise location and extent of locally available habitat to be protected. Thus, the Program Expansion alternative would not likely adversely affect this species.

ANALYSIS OF CUMULATIVE IMPACTS

None of the projects considered as part of the cumulative impacts analysis are located on the east side of the river where the current local population is present. Thus, cumulative impacts on the decurrent false aster as a result of the Program Expansion alternative would be unlikely.

CONCLUSION AND IMPAIRMENT FINDING

Until the design competition is completed, there would be no additional development, loss of habitat, or changes in maintenance or management practices in the near-term in decurrent false aster population areas on the east side of the river. Any future development that might result from the design competition would be preceded by a site survey to determine whether or not the species is present. If the species and any critical habitat are present, the USFWS would be consulted. Thus, impacts on this threatened species are unlikely and no impairment of Memorial grounds resources within the study area would occur.

Soundscape

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

There would be minor short-term adverse impacts on the soundscape of the Memorial from the construction of the pedestrian enhancements, streetscape improvements, potential pedestrian crossings over Memorial Drive, accessible ramps to the riverfront, and other facilities proposed through the design

competition. Noise from these activities would be greatest in the immediate vicinity of the construction activity, and would diminish as visitors migrate away from the activity. Given the existing background noise levels throughout much of the Memorial, noise from construction would only be periodically discernable above background noise levels and would generally not interfere with a user's enjoyment of the Memorial grounds.

There would be continuing minor long-term adverse impacts on the soundscape of the Memorial from the existing maintenance-related activities on the Memorial grounds including lawn mowing and testing of the emergency generators. Increased visitation and vehicular traffic on the Memorial grounds and the East St. Louis addition would result in a minor long-term adverse impact on the soundscape of these areas.

Implementation of a visitor transportation system would introduce a new noise source to the Memorial grounds and the surrounding streets. The institution of the water taxi service between the Memorial and the East St. Louis addition would introduce a new noise source to the Mississippi River and the riverfront area. The long-term adverse impacts on the soundscape associated with the visitor transportation system and the water taxi service are expected to be minor.

If a broad elevated deck is constructed over Memorial Drive, or a one- or three-block closure of Memorial Drive occurs as a result of the design competition, this would have a minimal impact on the soundscape of the Memorial grounds. If a lid is constructed over I-70, this could have a minor to moderate beneficial impact on the soundscape of Luther Ely Smith Square and the central portion of the Memorial grounds. There would be a slight increase in traffic noise at the lid entrances; however, the overall impact of the lid on the soundscape of the Memorial would be beneficial.

ANALYSIS OF CUMULATIVE IMPACTS

There would be minor short-term adverse impacts and minor long-term

adverse to moderate beneficial impacts on the soundscape of the Memorial. When considered together with the ongoing and planned projects within the study area, there could/ be a minor short-term adverse cumulative impact on the soundscape within the study area.

CONCLUSION AND IMPAIRMENT FINDING

There would be minor short-term adverse impacts and minor adverse to moderate beneficial long-term impacts on the soundscape of the Memorial. These impacts would not impair the soundscape of the Memorial.

Visitor Opportunities and Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Visitor opportunities are expected to improve with the redesign of exhibits to include more interactive experiences at the expanded Museum of Westward Expansion and at the Old Courthouse. In addition, the results of the design competition could introduce more elements to the Memorial that would provide state-of-the-art exhibits and exhibitions, particularly at the west, north, and south portals, as well as the overlooks. While the magnitude of impacts from these new facilities on visitor experience is indeterminate until details of the design competition are known, it is likely they would be beneficial over the long-term. Visitors would benefit from additional activities and special events throughout the grounds of the Memorial, including a new visitor transportation system.

Visitor experiences would improve with the development of barrier-free access to the Museum of Westward Expansion, via a new entrance near Memorial Drive. Also, visitors would be able to access the Memorial from East St. Louis via a water taxi, with the long-term potential for visitor programming in East St. Louis along Trendley Avenue.

Visitors would be expected to benefit from the expansion of food services throughout the Memorial. Visitor opportunities would improve with the development of barrier-free access and improved streetscapes and connections with downtown and local

neighborhoods. Long-term impacts would be moderate beneficial. Short-term adverse impacts might occur to visitor opportunities due to disruption caused by the construction of new facilities. Short-term adverse impacts would also occur during peak periods due to crowding at popular sites.

Implementation of the Program Expansion alternative would have a short-term moderate to major beneficial impact on visitor use. If the results of the design competition introduce more facilities to the Memorial, this would result in a short-term increase in visitors and residents coming to experience new attractions. Under this scenario, visitation would be expected to decline over the long-term, which is common for other similar facilities. As discussed above, visitor opportunities would be expected to improve under the Program Expansion alternative with the rehabilitation of exhibits, the introduction of more interactive experiences, and expansion of food services. This could encourage more repeat visitors to the site, increase the number of first-time visitors, and/or encourage visitors to extend their stay at the Memorial. The development of barrier-free and ADA/ABAAS-compliant access to the Memorial could encourage more people to visit the site. Visitation would also be expected to increase with the addition of more special events.

ANALYSIS OF CUMULATIVE IMPACTS

Under this alternative, it is expected that the design competition would introduce new ideas for improved connection between the Memorial and downtown St. Louis. Improving connectivity with the urban setting around the Memorial would expand the types of activities and amenities visitors would have access to while visiting the Memorial. Visitors would be more likely to support local businesses and other attractions in the downtown area, which would benefit other entities. In addition, individuals visiting or working in downtown would be more likely to visit the Memorial under these conditions. Overall, this alternative would create a minor beneficial cumulative impact on visitor use and experience of downtown St. Louis, particularly when combined with other recent

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downtown civic improvements, such as the City Gardens.

CONCLUSION

Implementation of the Program Expansion alternative would likely have moderate to major beneficial short-term impacts on visitor use and moderate beneficial long-term impacts. The development of new elements as a result of the design competition could encourage significant increases in visitation of new attractions at the Memorial. Minor short-term adverse impacts could result from disruptions caused by construction or crowding during peak periods. In addition, modification and rehabilitation of exhibits and heritage programs, including more interactive experiences would improve visitor opportunities, attract new visitors, and encourage more use of underutilized facilities. Improvements in streetscapes, the introduction of a new transportation system, and a water taxi service are expected to increase connectivity to local neighborhoods in downtown St. Louis and East St. Louis and have a long-term beneficial impact on local visitor opportunities and use.

Transportation and Access

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Program Expansion alternative, changes could occur to the roadway network surrounding the Memorial. The largest of these changes would impact the Memorial Drive corridor, a portion of which is part of the Design Competition Overlay. As such, the potential range of impacts is broad, with multiple configurations possible, including any combination of a single elevated deck, multiple bridges, improved at-grade crossings, or a one- or three-block closure of Memorial Drive.

The Memorial Drive Traffic Study (NPS 2009) was initiated to examine potential impacts to vehicular transportation on the streets in downtown St. Louis adjacent to the Memorial, resulting from a potential closure of portions of Memorial Drive to vehicular traffic. One of the options tested examined closure of one block of Memorial Drive, between Chestnut Street and Market Street, to vehicular traffic. This would have a negligible to minor

beneficial impact on 14 of the 16 intersections in the vicinity of the Memorial that were modeled in the study (see Appendix J for list of intersections). Two intersections, 4th Street and Market Street, and Broadway and Walnut Street would have negligible to minor adverse impacts, as indicated by the traffic simulation model.

Likewise, according to the results of the Memorial Drive Traffic Study (NPS 2009), the option to close three blocks of Memorial Drive, between Pine Street and Walnut Street, to vehicular traffic, would have a negligible to minor beneficial impact on 7 of the 10 remaining intersections in the vicinity of the Memorial that were modeled in the study (see Appendix J for table of intersections, including the six intersections that would be eliminated if this option were implemented). One intersection, Broadway at Walnut Street, would experience negligible to minor adverse impacts. Two intersections, 4th Street at Walnut Street and 4th Street at Pine Street, would, for the purposes of this study, have a moderate adverse impact on vehicular traffic circulation.

However, with the elimination of vehicular traffic at the key connection point between the Old Courthouse and an expanded Museum of Westward Expansion, the movement of pedestrians, bicyclists, and potentially public transit and visitor transportation users could substantially improve. As such, long-term adverse impacts to vehicular circulation would need to be weighed against the long-term beneficial impacts to visitor circulation.

Public transportation to and from the Memorial could experience moderate to major beneficial impacts under the Program Expansion alternative. Part of the benefit derives from the potential renovation of the Arch Parking Garage as part of the design competition such that it better mediates the access between the Metro Link Station at the Eads Bridge and the Gateway Arch. In addition, potential programmatic changes to areas within the Design Competition Overlay might lead to increased visitor demand at the Memorial. Some of the new visitors and increased staff would arrive via public transportation, particularly if substantial new

parking facilities are not included as part of the winning design entry. In addition, a visitor transportation system, linking visitor attractions within and outside of the Memorial, is proposed in the Program Expansion alternative. Such a system could enhance the circulation of visitors within the Memorial as well as within the larger downtown context.

The design competition would result in a moderate beneficial impact on pedestrian circulation from the improved connections at the west, north, and south portals. In addition, there would be a minor beneficial impact on pedestrian circulation resulting from enhanced streetscapes along the boundaries of the Memorial, as implemented in conjunction with outside partners. Within the Memorial, barrier-free access to the riverfront, as well as ADA/ABAAS-accessible entrances to the Museum of Westward Expansion and access to the north and south reflecting ponds would enhance the pedestrian experience. New and existing partnerships for transportation could include additional bicycle infrastructure and facilities. In addition, new facilities within the Design Competition Overlay might be more accommodating to the regional bicycle networks that traverse the Memorial grounds than the current surface streets. Design competition entrants would be encouraged to provide improved circulation between the current Memorial grounds and the potential East St. Louis addition. The impacts on pedestrian and bicycle circulation are expected to be moderate and beneficial.

The increase in visitor parking demand near the Old Courthouse and Luther Ely Smith Square resulting from enhanced programming would cause a minor long-term adverse impact on the parking in the area. Improving the bus drop-off at the Old Cathedral would have a minor long-term beneficial impact. Potential changes to the Arch Parking Garage, as part of the design competition overlay, would result in negligible impacts, since the ultimate amount of parking would not change. Improvements to allow for oversize and/or recreational vehicle parking would be a long-term beneficial impact. Short-term minor adverse impacts could occur during reconstruction of the parking garage. The long-term effect is negligible to minor beneficial.

The Program Expansion alternative contains plans for a water taxi between the Memorial and the East St. Louis side of the river. Given that such a water taxi service would likely operate seasonally and at specified times, the benefit gained from a transportation and access standpoint would be negligible to minor beneficial. (The greater beneficial impact from a water taxi would accrue to the visitor experience.)

ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts of the Program Expansion alternative could be substantial. Again, much depends on the outcome of the design competition. Major new programming and expanded facilities, in conjunction with the Gateway Arch, could stimulate visitor use to include both increased local and regional trips to the Memorial. Together with future changes to the regional transportation network, including planned and proposed Metro rail expansion, a new I-70 bridge crossing the Mississippi River north of the Memorial, and the introduction of high speed rail, linking St. Louis to Chicago and Kansas City, as outlined by the Midwest Regional Rail Initiative, the changes to the Memorial could result in moderate to major long-term beneficial cumulative impacts from investments in transportation infrastructure.

CONCLUSION

The Preferred alternative could result in moderate to major long-term beneficial impacts on the transportation resources of the Memorial. This determination derives from the expected improvements to the flow and circulation of visitors to the Memorial. Depending upon the outcome of the design competition, changes to the roadway network in downtown St. Louis resulting from a potential closure of a portion of Memorial Drive, could reduce the beneficial impacts to vehicular circulation. However, gains accrued to other modes of transportation from a potential closure of Memorial Drive could offset the adverse impact to vehicular traffic, resulting in an overall moderate long-term beneficial impact to transportation and access.

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Socioeconomics

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Implementing the Program Expansion alternative would increase expenditures on operations and staffing over the no action alternative. Annual expenditures would increase by \$4.7 million to over \$14.7 million total, while staffing is estimated to rise by an additional 62 FTE over the no action alternative. Increases in expenditures and staffing would have minor beneficial long-term economic impacts on the region as more federal expenditures are made in the local area. In addition to ongoing operations, a potential beneficial short-term economic impact might occur with the construction of new design elements resulting from the design competition. The actual magnitude of this impact is indeterminate without details on the size and number of these elements.

It is expected that expanded programming and facilities would increase visitation to the Memorial. New programming and facilities could generate a short-term moderate beneficial economic impact from visitation to the Memorial, as residents and visitors come to participate in new attractions and activities. Over time, new activities and/or attractions have the potential to generate a net increase in visitation and average length of visitor stays. Increased connectivity at Memorial Drive would have a minor beneficial economic impact on businesses in the downtown area by encouraging visitor traffic between the Memorial and downtown. Prolonged increases in visitation due to revitalization of exhibits and addition of special events would have long-term, minor beneficial economic impacts. A new visitor transportation system would have a minor to moderate beneficial economic impact on downtown St. Louis, depending on the route. If the route reaches to other major attractions and locations in the city, visitors might extend their stay and patronage to more local businesses throughout downtown. The magnitude of economic impacts under the Program Expansion alternative cannot be determined precisely without additional details on the size and type of design elements and programs. However, it is expected that the

impact would be beneficial in both the short- and long-term due to an increase in visitor use.

A one- or three-block closure of Memorial Drive, if implemented under this alternative, could have a minor, adverse long-term impact to businesses in the downtown area. Impacts to traffic patterns and on-street parking could occur within a six-block area from Memorial Drive to Broadway and Pine Street to Walnut Street. Within this area there are approximately 11 bars and restaurants, four hotels, and six office buildings, including banks. These businesses would be impacted differently due to the closure of Memorial Drive. Restaurants and bars within the impact area could be adversely impacted by a loss in on-street parking located near these establishments along Pine, Broadway, and 4th Streets. This includes customer parking as well as loading zones. However, these businesses may also benefit from street-level improvements that could encourage more foot traffic. Other businesses located within the six block area would likely be impacted by an increase in traffic congestion and wait times, especially during morning and evening rush hours. This could have an impact on customers visiting these locations but would likely have a bigger impact on employees that are required to access these sites during normal business hours. Some of these businesses may also be impacted by a loss in loading zones near their facilities. Visitors utilizing the hotels in the impact area could also experience difficulties in accessing the hotels and parking structures during certain times of day which would have a negligible impact on visitation.

Expansion of park boundaries in East St. Louis could have a minor, adverse fiscal impact on local taxing districts. If the National Park Service were to purchase acreage from private landowners for the expansion, these lands would be removed from the tax base and result in a loss in tax revenue to local tax districts. The current boundary expansion area includes lands assessed for tax purposes and lands exempt from property taxes (railroad). The actual loss in tax revenues would depend on the number of acres within private ownership. Examination of current tax status indicates that if all acreage were purchased within

the boundary, a loss in tax revenues could approach up to \$30,000 per year. However, this impact would be partially or fully mitigated with the application of Payment in Lieu of Taxes which are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries.

ANALYSIS OF CUMULATIVE IMPACTS

The implementation of the Program Expansion alternative would have minor to moderate beneficial economic impacts. When this impact is considered together with other ongoing and planned projects in the study area, this could result in a minor long-term beneficial cumulative impact to socioeconomic resources, with impacts limited to businesses in the downtown area. Businesses near the Memorial could experience minor, adverse cumulative impacts due to changes in traffic patterns and on-street parking with the potential closing of Memorial Drive and other development projects in the downtown area.

CONCLUSION

Management of the Memorial under the Program Expansion alternative would focus on increasing programming, facilities, and partnerships. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors would increase with the additional programming and elements of this alternative. Visitation to the Memorial would have a long-term beneficial economic impact on the St. Louis metropolitan area due to visitor spending and expenditures associated with operations at the Memorial, although the precise impact cannot be determined. Cumulative impacts from other projects and planning activities have the potential to increase visitation to the Memorial and the downtown, which would have a minor beneficial impact on downtown retailers and businesses. Businesses near the Memorial could experience minor, adverse impacts due to changes in traffic patterns and on-street parking with the potential closing of Memorial Drive. Purchase of lands for park expansion in East St. Louis could have a minor, adverse fiscal impact to local government taxing entities.

Land Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Implementation of the Program Expansion alternative might lead to changes in land use upon the Memorial grounds. This could include the expansion of facilities as a result of the design competition, development of barrier-free entrances, improvements in streetscapes surrounding the Memorial, and changes in visitor parking. The impacts of new or rehabilitated facilities as a result of the design competition are indeterminate, as the impacts might be both beneficial and adverse.

The National Park Service has current authorization to expand the boundaries of the Memorial to include 100 acres in East St. Louis. This could have a long-term beneficial impact to land use as changes in management would alter land use in East St. Louis to be compatible with adjacent land uses (Metro Parks) as well as the Memorial on the west side of the Mississippi River.

ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts on land use under this alternative are indeterminate. Development of new facilities at the Memorial might have beneficial or adverse impacts on the surrounding land uses depending on their compatibility with the existing urban environment. For instance, increased development at the Memorial might influence the further redevelopment of adjacent areas such as Chouteau's Landing and bring more visitors to Laclede's Landing and other parts of downtown. Improvements in connectivity and streetscapes could be expected to have a beneficial impact on surrounding land uses.

CONCLUSION

The Program Expansion alternative could have both beneficial and adverse impacts on land use. The alternative would implement various changes in land use including development of new facilities, improvements in connectivity with downtown St. Louis, and changes in management of the East St. Louis addition. Improvements to streetscapes and connectivity with local neighborhoods would have long-term beneficial impacts on land use within and

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immediately outside the Memorial. Changes in management in the East St. Louis addition would have long-term beneficial impacts on local land use.

NPS Operations

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The changes proposed in this management alternative could create considerable beneficial or adverse impacts to NPS operations and would add more assets to the Memorial. According to analysis provided by current staff at the Memorial, the changes to the operation of the Memorial related to Program Expansion would require an increase of 62 additional FTE to effectively manage new assets and programs. The final outcome of the design competition would largely influence the extent of changes to Memorial operations under this alternative and could add a substantial number and variety of new assets, further complicating operations and increasing the overall maintenance liability for those same resources. An overall increase in infrastructure with a potential expansion in food service, expanded educational opportunities, and visitor amenities such as restaurants and restrooms, greater visitation due to improved connections, an expanded museum with new curatorial facility and new entrance, a new visitor transportation system, and an expanded land base in East St. Louis that would more than double the size of the Memorial with a connecting water taxi, would all contribute to the need for additional operational resources. Should staffing levels increase at a commensurate level to match the needs of new infrastructure and new programs, adverse impacts to NPS operations would be negligible. In some cases, such as a new entrance into the Museum of Westward Expansion, NPS operations would improve due to appropriately designed visitor screening stations and queues creating long-term direct and indirect, moderate to major beneficial impacts. Should staffing levels and funding for NPS operations remain the same, without a commensurate increase to address an expanded Memorial, newly added programs, and infrastructure, the direct impact would be moderate to major and adverse over the long-term.

ANALYSIS OF CUMULATIVE IMPACTS

Should staffing and funding levels increase at a commensurate level to match the needs of new infrastructure and new programs, adverse impacts to NPS operations would be negligible and therefore would not contribute to an adverse cumulative impact to operations. Should funding and staffing levels remain the same, the proposed expansion of programming at the Memorial would have moderate to major long-term adverse impacts on NPS operations. These adverse impacts, when considered with other ongoing and planned projects, could contribute to a cumulative impact to operations, since the projects outside of the Memorial grounds could increase the number of people visiting the Memorial. However, the potential for additional partnerships in implementing and managing the successful outcome of the design competition could mitigate these impacts if the existing operational resources are supplemented and enhanced by additional resources.

CONCLUSION

If funded, the long-term impacts of the Program Expansion alternative in general would be negligible and the specific addition of a new entrance into the Museum of Westward Expansion would be moderate to major and beneficial. The long-term impacts of the Program Expansion alternative would be moderate to major long-term adverse if funding for NPS operations remains the same without a commensurate increase. Much depends on the outcome of the design competition, and whether the new programs and elements that emerge from the competition come with additional financial resources for operations.

Unavoidable Adverse Impacts

The Program Expansion alternative has the potential to have an adverse effect under Section 106 on the cultural landscape of the Memorial. Depending on the level of ground disturbance, the Program Expansion alternative could have unavoidable impacts on subsurface archeological resources. Adverse impacts on vegetation in East St. Louis could result from the development of design

elements. In addition, the maintenance of the Memorial over time would have minor long-term adverse impacts on the soundscape of the Memorial. These impacts are considered unavoidable.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are actions that result in the permanent loss of resources. Irretrievable commitments of resources are actions that result in the loss of resources for a period of time. Construction of the various elements of the Program Expansion alternative would result in an irreversible and irretrievable commitment of resources used in the construction of the facilities. However, since these facilities would be put to beneficial use, these commitments of resources are not considered to be a significant impact of this alternative.

Relationship of Short-Term Uses and Long-Term Productivity

Jefferson National Expansion Memorial would continue to be used by the public as a cultural and recreational resource, and the National Park Service would manage the Memorial to preserve its cultural and natural resources. Actions taken under this alternative would be consistent with the NPS mission and would provide for the long-term protection of the cultural and natural resource values for which the Memorial was established.

4.5 IMPACTS OF ALTERNATIVE 4: PORTALS

Cultural Resources: Historic Buildings, Structures, Sites, Objects, and Districts

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Portals alternative, sensitive rehabilitation and renovation of the Memorial's buildings and structures would be undertaken to improve accessibility and security, and to modestly increase heritage education. These improvements would be

achieved in accordance with the *Secretary of the Interior's Standards for Rehabilitation*, and thus the NHL and the fundamental resources and values of the Memorial would be protected. In addition, all actions affecting the historic structures on the Memorial grounds or within the APE would be undertaken in consultation with the Missouri and Illinois SHPOs and the Advisory Council on Historic Preservation.

The following discussion outlines impacts on historic structures, both on-site and within the surrounding area:

GATEWAY ARCH Accessible entrances to the Museum of Westward Expansion are proposed under this alternative. These entrances would be constructed either at the base of the Gateway Arch or on Memorial Drive. If constructed at the base of Gateway Arch, there would be minor short- and long-term local adverse impacts on this historic structure. The construction of a new entrance to the underground complex near Memorial Drive would not result in impacts to the structure of the Gateway Arch. The renovation of facilities at the north end of the Memorial grounds would be designed in accordance with the *Secretary of the Interior's Standards for Rehabilitation* to ensure that there are no long-term adverse impacts on views to or from the Gateway Arch. The addition to the Museum of Westward Expansion would be accomplished in accordance with the *Secretary of the Interior's Standards for Rehabilitation* to ensure that long-term adverse impacts to the underground structure are negligible. Under Section 106, there would be no adverse effect on the Gateway Arch.

OLD COURTHOUSE Under this alternative, the Old Courthouse would be preserved. This would result in a minor long-term local beneficial impact on the building. West of the Gateway Arch, a nearly three-block at-grade lid would be constructed over Memorial Drive. Ventilation may be required for the lid. If the ventilation can be achieved through a below-grade apparatus, long-term local adverse impacts to the Old Courthouse would be negligible. However, if a low-scale, but still above-grade apparatus is required, it could be

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apparent in views from the Old Courthouse towards the Gateway Arch grounds, resulting in minor indirect long-term adverse local impacts on the Old Courthouse. Streetscape improvements proposed around the Old Courthouse would be accomplished so that the setting of the historic structure and its key features are not compromised. The construction of a below-grade visitor orientation facility at Luther Ely Smith Square may also impact the Old Courthouse. However, the modifications would be achieved in accordance with the *Secretary of the Interior's Standards for Rehabilitation* and thus adverse impacts would be negligible to minor. Under Section 106, there would be no adverse effect on the Old Courthouse.

GRAND STAIRCASE Barrier-free routes would be provided from the Gateway Arch to the riverfront. These paths would likely be visible from the Grand Staircase, resulting in minor long-term local adverse impacts on this historic structure. However, the new access routes would be designed in accordance with the *Secretary of the Interior's Standards for Rehabilitation*, and thus there would be no adverse effect under Section 106.

NORTH AND SOUTH OVERLOOKS The North and South Overlooks would be renovated to accommodate heritage education and visitor amenities. This could result in negligible to minor short- and long-term adverse impacts. In accordance with the *Secretary of the Interior's Standards for Rehabilitation*, new additions, exterior alterations, or related new construction would not destroy historic materials, features, and spatial relationships that characterize the property. The new work would be differentiated from the old and would be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. Thus, there would be no adverse effect under Section 106 to the North and South Overlooks.

RAILROAD TUNNELS There would be negligible short- or long-term local adverse impacts on the railroad tunnels. In addition, there would be no adverse effect under Section 106.

RESOURCES WITHIN THE APE Under the Portals alternative, parking at the Old Cathedral would be moved below grade and a surface landscape treatment would be installed. This would have a minor to moderate long-term local beneficial impact on the Old Cathedral. The renovation of the current parking facility at the north end of the Memorial grounds would alter views from Eads Bridge, resulting in minor adverse to minor beneficial long-term local impacts on Eads Bridge. In addition, streetscape improvements along Washington Avenue may have negligible to minor long-term adverse impacts on the bridge, depending on the location and scope of the improvements. The renovation of the North Overlook, also visible from Eads Bridge, may result in short- and long-term minor adverse local impacts on this historic structure. There could also be long-term negligible to minor adverse local impacts on the Missouri Athletic Club Association Building and the J. Kennard and Sons Carpet Company Building, as both have visual connections to the north end of the Memorial. The Portals alternative would not directly or indirectly impact other historic structures located within the APE that are listed in the National Register or the City Landmark's registry. Under Section 106, there would be no adverse effects on historic buildings, structures, sites, objects, and districts located within the APE.

ANALYSIS OF CUMULATIVE IMPACTS

There would be negligible to minor short- and long-term local adverse impacts and minor to moderate long-term local beneficial impacts on historic buildings and structures as a result of the implementation of the Portals alternative. These impacts, when considered together with the residential, mixed-use, and commercial developments that are planned and underway in downtown St. Louis, would not result in cumulative impacts to historic buildings, structures, sites, objects, and districts.

CONCLUSION AND IMPAIRMENT FINDING

Within the Memorial boundary, there would be negligible to minor adverse short- and long-term local impacts on the Gateway Arch. There would also be potential negligible to minor short- and long-term local adverse impacts and

long-term minor beneficial impacts on the Old Courthouse. In addition, there would be minor short- and long-term local adverse impacts on the Grand Staircase, and negligible to minor short- and long-term local adverse impacts on the North and South Overlooks. Outside of the Memorial, there would be long-term minor to moderate beneficial impacts on the Old Cathedral, and long-term minor adverse to minor beneficial impacts on Eads Bridge. There could also be long-term negligible to minor adverse local impacts on the Missouri Athletic Club Association Building and the J. Kennard and Sons Carpet Company Building. There would be no adverse effects under Section 106 and no impairment of historic buildings, structures, sites, objects, and districts.

Cultural Landscapes

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Portals alternative, sensitive rehabilitation and renovation of the Memorial landscape would be undertaken to improve accessibility and security, and to modestly increase heritage education. These improvements would be achieved in accordance with the *Secretary of the Interior's Standards for Rehabilitation* and the *Guidelines for the Treatment of Cultural Landscapes*, and thus the NHL and the fundamental resources and values of the Memorial would be protected.

The spatial organization of the site is of paramount importance to the maintenance of the integrity of the NHL. The proposed changes to the connections between the Old Courthouse and the Memorial, through the three-block lid and elevated pedestrian walkways, may enhance the established spatial organization of the cultural landscape along the strong east-west axis. Such a connection was envisioned within the Saarinen-Kiley concept for the Memorial, but was never completed. These changes would result in minor short-term local adverse impacts and moderate to major long-term local beneficial impacts on spatial organization at the Memorial. If the design of the landscape within Luther Ely Smith Square is enhanced through the inclusion of additional plantings consistent with the Saarinen-Kiley concept, there would be moderate to major long-term local beneficial

impacts on spatial organization. The renovation of the facility at the north end of the Memorial grounds for visitor orientation would result in minor long-term local beneficial impacts if the renovated facility has a planted surface expression. The addition of new amenities at the North and South Overlooks would result in negligible to minor long-term local adverse impacts, depending on the height and scale of the proposed elements.

The essential view that stretches from the Old Courthouse east towards the Gateway Arch and the river would be enhanced by the three-block lid, as it would partially mitigate the freeway's disruption and connect the east and west portions of the Memorial grounds. The view would further be accentuated by the pedestrian bridges over Memorial Drive. These changes would result in moderate long-term local beneficial impacts. If ventilation is required for the Interstate tunnel, it could potentially impact views along the east-west axis. If possible, the ventilation would be achieved through a below-grade apparatus. If an above-grade expression is required, it would be located outside of the central east-west view corridor. Thus, long-term local impacts would be negligible to minor adverse. The construction of the below-grade visitor orientation facility at Luther Ely Smith Square may generate minor short-term local adverse impacts resulting from construction, and minor to moderate long-term local adverse impacts due to the potential visibility of the entrance to the new facility. This impact could be partially mitigated if a vegetative screen is employed to shield this entrance. The addition of a new entrance to the expanded below-grade museum would be located in such a manner as to not disrupt the open visual axis of the cultural landscape between the Gateway Arch and the Old Courthouse. Depending on the design, impacts would be negligible to moderate adverse. Thus there could be an adverse effect under Section 106.

Views along the north-south axis may also be impacted under the Portals alternative due to the renovation of the facility at the north end of the Memorial grounds. Long-term impacts may be minor, local and beneficial, if the above-grade expression of the current parking garage is replaced by a surface planted

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expression. The renovated facility would not obstruct views along the essential north-south axis.

Views from East St. Louis may experience both beneficial and adverse impacts under the Portals alternative. Views may improve if visitors are able to observe the Gateway Arch without the obstruction of the levee, resulting in moderate long-term beneficial impacts on this view corridor. However, new development on the west side of the river, such as infrastructure for the water taxi, may generate minor short- and long-term local adverse impacts on views from the east side of the river. To partially mitigate this impact, infrastructure for the water taxi should be located north or south of the central axis through the Gateway Arch.

New walkways and bridges around the north and south reflecting ponds may have minor short- and long-term local adverse impacts on views from the ponds. While potentially included within views of the Gateway Arch, such elements would not obstruct views of the Gateway Arch. Views north and south along the river from the overlooks could also be impacted under the Portals alternative, due to the renovation of the parking facility at the north end of the Memorial. Depending on the height and mass of the above ground expression, there may be short- and long-term minor beneficial to minor adverse impacts on these views.

The Portals alternative could also have slight impacts on the site's topography. Although below grade, the construction of the proposed visitor orientation facility at Luther Ely Smith Square may alter the topography of this portion of the site. However, the sunken garden was not part of the original Saarinen-Kiley concept, and thus long-term impacts on the cultural landscape would be negligible. The redesign of the entrances to the Gateway Arch and accessible ramps to the riverfront may cause negligible to minor long-term adverse impacts on the site's topography.

The Portals alternative proposes widespread changes to circulation elements at the Memorial. The addition of pedestrian

bridges between Luther Ely Smith Square and the Gateway Arch (due to the fulfillment of Saarinen-Kiley Master Plan proposal) would result in moderate long-term local beneficial impacts on circulation. Enhanced connections at Pine and Walnut Streets, and general streetscape improvements have the potential to generate minor short-term adverse impacts and potential minor long-term adverse to moderate beneficial local impacts, depending on the scope of the improvements within and outside the Memorial grounds.

The removal of at-grade parking at the Old Cathedral would alter the Memorial's landscape and may require additional access routes to the proposed underground parking, resulting in minor to moderate long-term local adverse impacts. However, the installation of a landscape expression in lieu of surface parking may mitigate this adverse impact. Finally, the circulation system to the north and south reflecting ponds would likely have local short-term minor adverse impacts during construction and local long-term minor adverse impacts, due to the potential location and treatment of walkways and crossings.

The potential increase in visitation at the Memorial as a result of enhanced services may support commercial activity within the surrounding neighborhood, enhancing the urban environment and resulting in minor to moderate local long-term beneficial impacts to the natural and constructed setting. However, an increase in visitors may result in crowding and greater degradation of the landscape, resulting in a minor short-term local adverse impact on the cultural landscape, possibly leading to local minor long-term adverse impacts.

Under the Portals alternative, there would be no direct changes to the north or south reflecting ponds as part of this alternative. However, if the proposed pathways and bridges are implemented, there would be minor long-term indirect adverse impacts on the ponds.

There are no proposed changes to the existing small-scale features at the Memorial grounds, though there may be minor adverse impacts on lights and benches as a result of construction projects. These impacts may be mitigated by replacement of the features after construction.

ANALYSIS OF CUMULATIVE IMPACTS

The implementation of the Portals alternative would result in moderate to major beneficial and negligible to moderate adverse short- and long-term local impacts on the cultural landscape at the Memorial. These impacts, in particular the increased wear and tear on the Memorial landscape as a result of higher visitation levels, could contribute to a minor short-term local adverse cumulative impact, when considered together with the residential, mixed-use, and commercial developments that are planned and underway in downtown St. Louis.

CONCLUSION AND IMPAIRMENT FINDING

The Portals alternative may result in local negligible to moderate long-term adverse and moderate to major long-term beneficial impacts on the cultural landscape at Jefferson National Expansion Memorial. There could be an adverse effect under Section 106, but this would not lead to impairment of the cultural landscape.

Archeological Resources

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Several components of this alternative include a ground-disturbing element which may impact buried archeological resources. These elements constitute different levels of ground disturbance and are located in areas that have varying levels of archeological sensitivity. The impact assessments consider these two factors, recognizing that elements have not yet been designed and that the precise locations of archeological resources are not known. The following table (Table 4.2) summarizes the components that are likely to disturb the ground, the archeological sensitivity of the area of disturbance, and the impact that disturbance might have on significant archeological resources. This is followed by a discussion of the activities that are likely to have the most impact on archeological resources.

Many of the ground-disturbing activities, such as the installation of ADA/ABAAS railings, would have at most a minor local or regional, long-term adverse impact (no

adverse effect) on archeological resources under this alternative. A few of the activities, however, have the potential to cause major local or regional, long-term adverse impacts (adverse effect) on archeological resources. These include the underground parking at Luther Ely Smith Square and the Old Cathedral, and the expansion of the museum under the Gateway Arch. All of these are in areas with at least moderate sensitivity for archeological resources.

Under this alternative, the boundary of the Memorial would be amended to add approximately 50 acres in East St. Louis. This would have a moderate local or regional, long-term beneficial impact (no adverse effect) due to the fact that it would place any archeological resources that might be located on the parcel under NPS jurisdiction.

ANALYSIS OF CUMULATIVE IMPACTS

If important archeological resources are encountered as a result of this alternative, cumulative impacts would occur from the incremental impact of this alternative when added to other past, present, and foreseeable future actions. The geographic area that was considered for cumulative impacts on this alternative consists of historic downtown St. Louis and the East St. Louis riverfront area.

In general, impacts on archeological sites can be mitigated by data collection although that data collection, along with subsequent development of the site, causes the destruction of that archeological site. Because of the likelihood that past, present, and foreseeable future actions in the cumulative study area would impact archeological resources, any adverse impacts on archeological sites discovered as a result of this alternative would have a moderate local long-term cumulative impact.

CONCLUSION AND IMPAIRMENT FINDING

Overall, the Portals alternative would have local, long-term impacts on archeological resources that could range from minor beneficial to major adverse. Under Section 106, these would range from no adverse effects to adverse effects. Adverse effects on archeological resources could be avoided

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Component with Potential for Ground Disturbances	Type of Disturbance Likely	Archeological Sensitivity	Impact Assessment
The north and south ends of the Memorial grounds are renovated	Moderate disturbances from renovation	Low	Negligible to Minor
Luther Ely Smith Square is redeveloped	Major disturbances for underground parking	High	Major
Increased connectivity between adjacent neighborhoods	Minor disturbance from street improvements for pedestrian access	Low to Moderate	Negligible to Minor
Increased connectivity between adjacent neighborhoods	Moderate disturbance for pedestrian overcrossings and at-grade lid	Low to High	Negligible to Moderate
Perimeter security and public safety issues continue to be addressed	Minor disturbances if additional fencing or bollards are needed	Low to High	Negligible to Minor
New entrance to Museum of Westward Expansion	Major disturbances for underground entrance	Moderate to High	Moderate to Major
Parking lot at the Old Cathedral is placed underground	Major disturbances for underground parking	Moderate to High	Moderate to Major
Entrances into the visitor center and the Museum of Westward Expansion renovated to meet codes	Minor disturbance from excavation for ADA/ABAAS-compliant railings or ramps	Low	Negligible to Minor
Entrances into the visitor center and the Museum of Westward Expansion renovated to meet codes	Moderate to major disturbances for nearby entrance creation	Moderate	Minor to Moderate
Museum of Westward Expansion is enlarged	Major disturbances for expansion	Moderate to High	Moderate to Major
Unify streetscape	Minor disturbances from installation of landscape elements, signage, etc.	Low to Moderate	Negligible to Moderate
Encourage compatible riverfront improvements	Minor to moderate disturbances from improvements compatible with the Memorial grounds	Low to Moderate	Negligible to Moderate
Develop partnership for creation of water taxi	Minor to moderate disturbances	Low to Moderate	Negligible to Moderate
Rehabilitation of the designed landscape	Minor disturbances from rehabilitation	Low to Moderate	Negligible to Moderate
Accessibility and heightened security design on all new facilities	Minor to major disturbances for ADA/ABAAS-compliant ramps or railing installation	Low to High	Negligible to Major

Table 4.2 Impacts to Archeological Resources in Alternative 4 - Portals

through mitigation and by having cultural resource observers present during ground-disturbing activities in areas likely to contain archeological resources. Mitigation of impacts would ensure that there would be no impairment of archeological resources.

Activities occurring on the western portion of the Memorial grounds are expected to have a greater likelihood of encountering archeological resources since the original historic grade is near the surface in this area. If archeological sites were discovered during construction activities, and the sites were recorded, such findings could yield beneficial information regarding the history or prehistory of the area. The recording and/or preservation of previously undiscovered sites would be considered a beneficial impact.

Curatorial Resources and Museum Collections

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Portals alternative, the exhibits at the Old Courthouse and in the Museum of Westward Expansion would be redesigned to provide more interactive and engaging experiences for visitors. In addition, the existing museum would be renovated and expanded, and a new state-of-the-art storage facility for collections and archives would be provided. The provision of more up-to-date exhibits and archivally sound storage area for collections would result in moderate long-term beneficial impacts on curatorial resources and museum collections. Relocation of collections to the new facility would result in a short-term risk of impacts that could range from negligible to moderate adverse impacts on curatorial resources and museum collections due to the movement of these objects.

ANALYSIS OF CUMULATIVE IMPACTS

Under the Portals alternative, there would be moderate long-term beneficial impacts on curatorial resources and museum collections. These impacts, when considered together with projects planned or ongoing within the surrounding area, would not contribute to cumulative impacts on museum collections.

CONCLUSION AND IMPAIRMENT FINDING

The implementation of the Portals alternative would result in moderate long-term beneficial impacts on curatorial resources and museum collections. Relocation of collections to the new facility would result in a short-term risk of impacts that could range from negligible to moderate adverse impacts on curatorial resources and museum collections. There would be no impairment of curatorial resources and museum collections as a result of the Portals alternative.

Natural Resources: Vegetation

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Minor to moderate short-term adverse impacts on vegetation in the East St. Louis addition would occur as a result of clearing related to construction of new facilities. However, this would also create opportunities to restore and enhance the planting in these areas. Negligible to moderate long-term beneficial impacts might occur as a result of the development of the site. Since this area is currently dominated by early successional or invasive species, overall impacts would be beneficial.

ANALYSIS OF CUMULATIVE IMPACTS

Past land use practices have completely removed the original forested land cover of the St. Louis/East St. Louis area and created the urban/developed land cover that exists today. Since impacts on vegetation communities within the study area would generally be considered beneficial due to the removal of invasive species, there would be no cumulative impacts on vegetation communities.

CONCLUSION AND IMPAIRMENT FINDING

The Portals alternative would have negligible to moderate long-term beneficial and short-term minor to moderate adverse impacts on the vegetation communities of the East St. Louis addition. Long-term beneficial impacts would result from the removal of invasive species; however, there would be a short-term temporary disruption of the successional habitat community. Overall, the Portals

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alternative would have a beneficial impact on vegetation communities within the study area.

Threatened and Endangered Species

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The current location of the federally designated Threatened decurrent false aster on the east bank of the Mississippi River below the levee is outside of the area to be impacted under the Portals alternative, at least in the short-term. Current plans for the Portals alternative designate the east bank of the river for streetscape/riverscape improvements at some point in the future; however, the presence of the decurrent false aster in the area would necessitate a field survey to establish its precise location and extent of locally available habitat to be protected. If a new dock for the water taxi were to be constructed on the east bank of the Mississippi River, there could be construction impacts within areas of potential habitat for the decurrent false aster. However, surveys would be conducted prior to construction to determine whether or not the species is present. Thus, the Portals alternative is not likely to adversely affect this species.

ANALYSIS OF CUMULATIVE IMPACTS

Surveys for local populations of decurrent false aster would be conducted prior to construction. In addition, none of the projects considered as part of the cumulative impacts analysis are located on the east side of the river where the current local population is present. Thus, there would be no cumulative impacts on the decurrent false aster as a result of the Portals alternative.

CONCLUSION AND IMPAIRMENT FINDING

There would be no additional development, loss of habitat, or changes in maintenance or management practices in the near term in areas that may disturb decurrent false aster populations present on the east side of the River. Any future development that may occur along the east bank of the Mississippi River would be preceded by a site survey to identify the exact location of the species and any available habitat to be protected. Thus, there would be no impact on this threatened species

and no impairment of Memorial resources within the study area.

Soundscape

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

There would be minor short-term adverse impacts on the soundscape of the Memorial from the construction of the pedestrian enhancements, streetscape improvements, riverfront improvements, pedestrian bridges over Memorial Drive, nearly three-block lid over I-70, accessible ramps to the riverfront, recreational vehicle parking area, below-grade parking areas at Luther Ely Smith Square and the Old Cathedral, below-grade visitor orientation facilities, and the expanded underground Museum of Westward Expansion. Noise from these activities would be greatest in the immediate vicinity of the construction activity and would diminish as visitors migrate from the activity. Given the existing background noise levels throughout much of the Memorial grounds, noise from construction would only be periodically discernable above background noise levels, and would generally not interfere with a user's enjoyment of the Memorial. Construction activities in the west-central portion of the Memorial grounds may cause individuals to avoid this area during the construction period.

There would be continuing minor long-term adverse impacts on the soundscape of the Memorial from the existing maintenance-related activities on the Memorial grounds, including lawn mowing and testing of the emergency generators. Implementation of a visitor transportation system would introduce a new noise source to the Memorial grounds and the surrounding streets. Implementation of the water taxi service between the Memorial and the East St. Louis addition would introduce a new noise source to the Mississippi River and the riverfront area. The long-term adverse impacts on the soundscape associated with the visitor transportation system and the water taxi service are expected to be minor.

Increased visitation and vehicular traffic on the Memorial grounds and the East St. Louis

addition would result in a minor long-term adverse impact on the soundscape of these areas. There would be minor long-term adverse impacts on the soundscape resulting from increased vehicular traffic entering and exiting the new parking garages at Luther Ely Smith Square and the Old Cathedral, and the renovated parking structure at the north end of the Memorial.

The addition of the nearly three-block lid over I-70 may have a minor to moderate beneficial impact on the soundscape of Luther Ely Smith Square and the central portion of the Memorial grounds. The lid would cover much of the depressed section of I-70 and would dampen much of the reflected traffic noise from this portion of the freeway. There may be a slight increase in traffic noise at the tunnel entrances as a result of the lid; however, the overall impact of the lid on the soundscape of the Memorial is expected to be beneficial.

ANALYSIS OF CUMULATIVE IMPACTS

There may be minor adverse and minor to moderate beneficial impacts on the soundscape as a result of the implementation of the Portals alternative. These impacts, when considered together with that of ongoing or planned projects in the vicinity of the Memorial, may contribute to a minor adverse cumulative impact on the soundscape of the Memorial.

CONCLUSION AND IMPAIRMENT FINDING

The Portals alternative would have minor short-term adverse impacts on the soundscape from the construction of the pedestrian enhancements, streetscape improvements, riverfront improvements, pedestrian bridges over Memorial Drive, a nearly three-block lid over I-70, accessible ramps to the riverfront, recreational vehicle parking area, below-grade parking areas at Luther Ely Smith Square and the Old Cathedral, below-grade visitor orientation facilities, and the expanded underground Museum of Westward Expansion. There would also be continuing minor long-term adverse impacts on the soundscape from existing maintenance activities. Implementing

a water taxi and visitor transportation system would result in minor long-term adverse impacts on the soundscape.

The addition of the nearly three-block lid over I-70 may have a minor to moderate long-term beneficial impact on the soundscape of the Memorial grounds, potentially improving visitor experience of the Memorial. There would be no impairment of the soundscape of the Memorial resulting from this alternative.

Visitor Opportunities and Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The focus of the Portals alternative is to revitalize the Memorial through enhanced visual and physical connections with surrounding downtown neighborhoods and East St. Louis. Changes implemented under this alternative would be expected to have moderate beneficial long-term impacts on visitor opportunities. Visitor opportunities are expected to improve with the redesign of exhibits, including more interactive experiences at the Museum of Westward Expansion and at the Old Courthouse. Visitor experiences are expected to improve with the development of barrier-free access to the riverfront and the Museum of Westward Expansion, including a new entrance on Memorial Drive. Also, visitors would be able to access the Memorial from East St. Louis via a water taxi. Visitors would have more opportunities for heritage education and orientation with new facilities developed at Luther Ely Smith Square, the north end of the site, and the North and South Overlooks. Visitors would continue to have access to recreational activities on the surface of the Memorial grounds. Short-term adverse impacts may also occur during peak periods due to crowding at popular sites.

Implementation of the Portals alternative may have a short- and long-term moderate beneficial impact on visitor use. The rehabilitation of exhibits and the introduction of more interactive experiences may encourage more repeat visitors to the site, increase the number of first-time visitors, and/or encourage visitors to extend their stay while at the

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Memorial. In addition, the development of barrier-free and ADA/ABAAS-compliant access to the Memorial and the addition of more special events may encourage more visitors to the site.

ANALYSIS OF CUMULATIVE IMPACTS

The increased connectivity and provision of new access points would improve visitor experience both within and outside the Memorial grounds. These connections may introduce visitors to amenities in other parts of downtown and East St. Louis, causing a beneficial cumulative impact on local businesses. In addition, individuals visiting or working in downtown are more likely to visit the Memorial under these conditions. Overall, this alternative would create a beneficial cumulative impact on visitor use and experience of downtown St. Louis and East St. Louis.

CONCLUSION

Implementation of the Portals alternative may have moderate long-term beneficial impacts on visitor opportunity and use. Visitor opportunities and use are expected to improve with the redesign of exhibits at the Museum of Westward Expansion and the Old Courthouse. Visitor experiences are expected to improve with the development of barrier-free access to the riverfront and museum including a new entrance on Memorial Drive. Improvements in streetscapes, the introduction of a new transportation system, and a water taxi service are expected to increase connectivity to local neighborhoods in downtown St. Louis and East St. Louis, and have a long-term beneficial impact on visitor opportunities and use. There could be short-term adverse impacts due to crowding during peak periods.

Transportation and Access

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Portals alternative, several changes may occur that would impact the roadway network surrounding the Memorial. The most significant impact would be the construction of a three-block, at-grade lid centered on the Old Courthouse over I-70. The construction of the lid would have

a short-term moderate adverse impact on vehicular traffic on the Interstate, as well as a moderate short-term adverse impact on vehicular traffic on Memorial Drive. In the long-term, the level of service on Memorial Drive would experience a minor to moderate adverse impact, due to the improved pedestrian connections across Memorial Drive. While improving the pedestrian and visitor experience, these changes would lead to increased vehicular delay and lower speeds on Memorial Drive, and this would be considered an adverse impact on traffic flow. However, since the visitor experience would be greatly enhanced, these changes would have an overall beneficial impact.

Public transportation would experience a moderate beneficial long-term impact under this alternative. Two projects in particular would increase the volume of potential users of public transportation. The first is the reconstruction of the Arch Parking Garage at the north end of the Memorial to put parking facilities below grade, allowing for a better connection to the existing Metro station at Eads Bridge. The second, more substantial project would be the implementation of a visitor transportation system, which would link attractions within and outside the Memorial. Envisioned as a rubber-tired trolley or bus, the proposed visitor transportation system would operate on a circuit around the Memorial and key stops within downtown St. Louis. This transportation system is envisioned to operate at 15- to 20-minute intervals and in partnership with downtown business organizations and/or Metro.

The nearly three-block lid over Memorial Drive, the two elevated pedestrian bridges, and the enhanced connections at Pine and Walnut Streets, combined with a new visitor entrance on Memorial Drive would result in a major beneficial impact on pedestrian circulation. The enhanced connections to Laclede's Landing and to downtown at the Northwest Plaza would contribute to improved pedestrian circulation conditions as well.

This alternative would improve parking near the Memorial due to the construction of parking under Luther Ely Smith Square and a new underground parking facility that

would replace the existing parking lot at the Old Cathedral. The reconstruction of the Arch Parking Garage to include oversize recreational vehicle parking would result in a moderate long-term beneficial impact. There would be a minor seasonal impact on visitor parking demand due to the implementation of a water taxi across the river. Improving bus drop-off at the Old Cathedral would also have a minor long-term beneficial impact.

ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts of the Portals alternative on the transportation resources of the Memorial would be minor to moderate long-term and beneficial. Current investments in downtown St. Louis would require changes to the transportation and circulation patterns there, such as the potential removal of one-way streets and increased demands on parking facilities. Changes to transportation resulting from this alternative would build upon the ongoing trends in downtown St. Louis, particularly the improved pedestrian environment.

CONCLUSION

The Portals alternative would result in minor to major long-term local beneficial impacts on transportation on and around the Memorial. This determination is due to significant improvements to pedestrian circulation and parking resources, as well as the implementation of a visitor transportation system. However, there could be moderate short-term and minor to moderate long-term impacts to vehicular circulation on Memorial Drive.

Socioeconomics

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Implementing the Portals alternative would increase expenditures on operations and staffing over those estimated under the no action alternative. Annual expenditures are expected to increase by \$6.3 million to over \$26.1 million total when all programs are implemented, while staffing is estimated to increase by an additional 77 FTE over the no action alternative. Increases in expenditures and staffing would have minor beneficial long-term economic impacts on the region, as

more federal expenditures are made in the local area and future employees spend their incomes near their place of employment and residence.

Under the Portals alternative, it is expected that visitation to the Memorial would increase above the baseline conditions of the no action alternative. Minor to moderate increases in visitation to the Memorial are anticipated due to the expansion of special events and addition of a water taxi to East St. Louis. In addition, increased connectivity at Memorial Drive, Washington Avenue, and Laclede's Landing would likely improve access and support of local businesses by visitors. These actions would have a minor positive long-term economic impact, with impacts limited to a small geographic area immediately adjacent to the Memorial. A new visitor transportation system would have a minor to moderate beneficial economic impact on downtown St. Louis, depending on the route. If the route extends to other major attractions and locations in the city, visitors would likely prolong their stays and patronage to more local businesses throughout downtown.

Expansion of park boundaries in East St. Louis could have a minor, negative fiscal impact on local taxing districts. If the National Park Service were to purchase acreage from private landowners for the expansion, these lands would be removed from the tax base and result in a loss in tax revenue to local tax districts. The current boundary expansion area includes lands assessed for tax purposes and lands exempt from property taxes (railroad). The actual loss in tax revenues would depend on the number of acres within private ownership. Examination of current tax status indicates that if all acreage were purchased within the boundary, a loss in tax revenues could approach up to \$30,000 per year. However, this impact would be partially or fully mitigated with the application of Payment in Lieu of Taxes which are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries.

ANALYSIS OF CUMULATIVE IMPACTS

The implementation of the Portals alternative would have a minor to moderate long-term

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beneficial economic impact. When this impact is considered together with other ongoing and planned projects in the study area, this could result in a minor long-term beneficial cumulative impact to socioeconomic resources, with impacts limited to businesses in the downtown area.

CONCLUSION

Management of the Memorial and the East St. Louis addition would focus on improving physical and visual connections from the surrounding neighborhoods. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors is expected to have a minor beneficial increase in visitation under this alternative. There could be a moderate beneficial impact from the provision of a visitor transportation system. Visitation to the Memorial would have a long-term minor beneficial economic impact due to visitor spending and expenditures associated with operations at the Memorial, though the impact would be focused within the local geographic area. Cumulative impacts from other projects may increase visitation to the Memorial and downtown, which would have a minor beneficial impact on downtown retailers and businesses. Purchase of lands for park expansion in East St. Louis could have a minor, negative fiscal impact to local government taxing entities.

Land Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Implementation of alternative 4, with its emphasis on portals into the Memorial, may have beneficial impacts on land use. Improving access to the Memorial through the development of barrier-free entrances and improved visitor screening and security would improve land use within the Memorial. Development of a nearly three-block lid and pedestrian walkways would have beneficial long-term impacts on land use by improving the connectivity of the Memorial with other parts of downtown.

Reconstructing the parking lot at the Old Cathedral as an underground facility would have a long-term local beneficial impact

on land use by renovating the surface to accommodate bus/shuttle drop-off and re-designing the surface to be more compatible with surrounding land use. A long-term moderate local adverse impact on land use may occur with the development of a new barrier-free entrance to the underground museum on Memorial Drive, with the removal of existing green space. Expansion of the Memorial's boundary to include 50 additional acres in East St. Louis would have moderate long-term local beneficial impacts on land use. The National Park Service would be able to influence development of areas along the east bank of the Mississippi River that are compatible with the existing Memorial grounds on the west side of the river, as well as land uses planned by Metro Parks for park facilities on the east side of the river.

ANALYSIS OF CUMULATIVE IMPACTS

Implementation of the Portals alternative may have moderate beneficial to moderate adverse long-term impacts on land use within and outside the Memorial. When these impacts are considered together with recently completed, ongoing, and planned projects in the area, there may be a minor beneficial impact on land use by further connecting uses at the Memorial with other compatible uses outside the Memorial grounds. NPS actions in East St. Louis would not only enhance the land uses planned by Metro Parks, but may also encourage other partnerships, further developing the area with compatible uses and consequently linking the east and west side of the river.

CONCLUSION

Implementation of the Portals alternative is expected to have a long-term moderate beneficial impact on local land use. While the development of a new barrier-free entrance to the underground museum would have adverse impacts in the loss of green space, those impacts are expected to be localized to that specific area of the Memorial grounds. Beneficial impacts are expected to occur with the development of a nearly three-block deck of Memorial Drive and pedestrian walkways, improving compatibility of the Memorial with adjacent major roadways. Moderate beneficial impacts would also occur with

the expansion of the Memorial's boundary into East St. Louis, encouraging compatible development with Metro Parks and other potential partners.

NPS Operations

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The changes proposed in the Portals alternative could create beneficial or adverse impacts on the operational resources of the Memorial and would add more assets to the Memorial. According to analysis provided by current staff at the Memorial, the changes to the operation of the Memorial related to this alternative would require an increase of 77 additional FTE to effectively manage proposed new infrastructure and programs. An expanded visitor center and museum with new entrance on Memorial Drive, the below-grade expansion at Luther Ely Smith Square, the water taxi, the reconstructed Arch Parking Garage, and the expansion on the East St. Louis side of the Mississippi River would all require additional operational resources. Should staffing levels increase at a commensurate level to match the needs of new infrastructure and new programs, adverse impacts to NPS operations would be negligible. In some cases, such as a new entrance into the Museum of Westward Expansion, NPS operations would improve due to appropriately designed visitor screening stations and queues creating long-term direct and indirect, moderate to major beneficial impacts. Should staffing levels and funding for NPS operations remain the same, without a commensurate increase to address an expanded Memorial, newly added programs and infrastructure, the direct impact would be moderate to major long-term and adverse.

ANALYSIS OF CUMULATIVE IMPACTS

Should staffing and funding levels increase at a commensurate level to match the needs of new infrastructure and new programs, adverse impacts to NPS operations would be negligible. A new entrance into the Museum of Westward Expansion would create long-term direct and indirect, moderate to major beneficial impacts to NPS operations. Given the current underfunding of operations at the Memorial, and should funding and staffing

levels remain the same, the proposed expansion of programs and facilities at the Memorial would have moderate to major adverse impacts on NPS operations. These impacts, when considered with other ongoing and planned projects, could contribute to a cumulative impact to operations, since the projects outside of the Memorial grounds could increase the number of people living in or visiting the downtown, and thus the number of people visiting the Memorial.

CONCLUSION

If funded, the long-term impacts of the Program Expansion alternative in general would be negligible and the specific addition of a new entrance into the Museum of Westward Expansion would be moderate to major and beneficial. The long-term impacts of the Portal alternative would be moderate to major and adverse if funding for NPS operations remains the same without a commensurate increase. The expanded facilities would require a commensurate increase in NPS operational resources.

Unavoidable Adverse Impacts

Depending on the level of ground disturbance, the Portals alternative could have unavoidable impacts on subsurface archeological resources. Adverse impacts on vegetation would result from the continued use of the Memorial by visitors. In addition, the maintenance of the Memorial over time would have minor long-term adverse impacts on the soundscape of the Memorial. These impacts are considered unavoidable.

Irreversible and Irrecoverable Commitments of Resources

Irreversible commitments of resources are actions that result in the permanent loss of resources. Irrecoverable commitments of resources are actions that result in the loss of resources for a period of time. Construction of the various elements of the Portals alternative would result in an irreversible and irretrievable commitment of resources used in the construction of the facilities. However, since these facilities would be put to beneficial use, these commitments of resources are not considered to be a significant impact of this alternative.

Relationship of Short-Term Uses and Long-Term Productivity

Jefferson National Expansion Memorial would continue to be used by the public as a cultural and recreational resource, and the National Park Service would manage the Memorial to preserve its cultural and natural resources. Actions taken under this alternative would be consistent with the NPS mission and would provide for the long-term protection of the cultural and natural resource values for which the Memorial was established.

4.6 IMPACTS OF ALTERNATIVE 5: PARK INTO THE CITY

Cultural Resources: Historic Buildings, Structures, Sites, Objects, and Districts

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Park into the City alternative, sensitive rehabilitation and renovation of the Memorial's buildings and structures would be undertaken to improve accessibility and security, and to modestly increase heritage education. These improvements would be achieved in accordance with the *Secretary of the Interior's Standards for Rehabilitation*, and thus the NHL and the fundamental resources and values of the Memorial would be protected. In addition, all actions affecting the historic structures on the Memorial grounds or within the APE would be undertaken in consultation with the Missouri and Illinois SHPOs and the Advisory Council on Historic Preservation.

The following discussion outlines impacts on historic buildings, structures, sites, objects, and districts, both on-site and within the surrounding area:

GATEWAY ARCH The existing ramps and stairs at the entrances to the Museum of Westward Expansion would be redesigned to meet ADA/ABAAS universal design standards. This would generate minor short- and long-term adverse impacts on the Gateway Arch. The renovation of facilities at the north end of the Memorial grounds, and the construction

of a new education and research facility at the south end of the Memorial grounds would be accomplished in accordance with the *Secretary of the Interior's Standards for Rehabilitation*. Thus, new additions, exterior alterations, or related new construction would not destroy historic materials, features, and spatial relationships that characterize the property. The new work would be differentiated from the old and would be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. There would be negligible long-term local impacts on views to or from the Gateway Arch as a result of the new and renovated buildings. Under Section 106, there would be no adverse effect on the Gateway Arch.

OLD COURTHOUSE Under this alternative, the Old Courthouse would be preserved. This would result in a minor long-term local beneficial impact on the building. West of the Gateway Arch, Memorial Drive would be rerouted away from the Memorial grounds between Poplar and Locust streets. With the removal of this major thoroughfare from within the Memorial's boundary, the axial connection between the Old Courthouse and the Gateway Arch would be strengthened, resulting in minor long-term beneficial local impacts to this historic resource. I-70 would remain below grade, but would be housed within a tunnel that would require ventilation. If the ventilation can be achieved through a below-grade apparatus, long-term local adverse impacts to the Old Courthouse would be negligible. However, if a low scale, but still above-grade apparatus is required, it could be apparent in views from the Old Courthouse towards the Gateway Arch, resulting in minor indirect long-term adverse local impacts on the Old Courthouse. Streetscape improvements proposed around the Old Courthouse may result in negligible to minor long-term adverse impacts, but would be accomplished so that the setting of the historic structure and its key features are not compromised. Under Section 106, there would be no adverse effect on the Old Courthouse.

GRAND STAIRCASE Barrier-free routes would be provided from the Gateway Arch to the riverfront. These paths would likely be visible from the Grand Staircase, resulting in minor short- and long-term local adverse impacts on this historic structure. However, the new access routes would be designed in accordance with the *Secretary of the Interior's Standards for Rehabilitation*, and thus there would be no adverse effect under Section 106.

NORTH AND SOUTH OVERLOOKS The renovation of the existing facility at the north end of the Memorial may result in indirect impacts on the North Overlook. These short- and long-term local impacts may range from minor beneficial to minor adverse in intensity, depending on the surface expression of the renovated structure. At the South Overlook, the construction of a new education and research center may result in short- and long-term minor beneficial to minor adverse local impacts. Although these renovated or new facilities would be visible from the North and South Overlooks, they would not block key historic designed views to the Gateway Arch or to the river. There would be no adverse effect on the North and South Overlooks under Section 106.

RAILROAD TUNNELS There would be negligible short- or long-term adverse impacts on the railroad tunnels. In addition, there would be no adverse effect under Section 106.

RESOURCES WITHIN THE APE The renovation of the current parking facility at the north end of the Memorial grounds would alter views from Eads Bridge, resulting in minor adverse to minor beneficial long-term local impacts on Eads Bridge. In addition, streetscape improvements along Washington Avenue may have negligible to minor long-term adverse impacts on the bridge, depending on the location and scope of the improvements. The renovation of the North Overlook, also visible from Eads Bridge, may result in short- and long-term minor adverse local impacts on the bridge. There could also be long-term negligible to minor adverse local impacts on the Missouri Athletic Club Association Building and the J. Kennard and Sons Carpet Company Building, as both have

visual connections to the north end of the Memorial. The relocation of the maintenance facility, potentially to a site within Chouteau's Landing, may result in negligible to minor adverse short- and long-term visual impacts on the Crunden-Martin Manufacturing Company Historic District and St. Mary of Victories Church. The degree of impact on these resources would depend on the location of the maintenance facility, and whether the National Park Service employs an existing structure or builds a new facility. The Park into the City alternative would not directly or indirectly impact other historic buildings, structures, sites, objects, or districts located within the APE that are listed in the National Register. Under Section 106, there would be no adverse effects on historic buildings, structures, sites, objects, and districts located within the APE.

ANALYSIS OF CUMULATIVE IMPACTS

There would be minor long-term beneficial impacts and negligible to minor short- and long-term adverse impacts on historic buildings, structures, sites, objects, and districts as a result of the implementation of the Park into the City alternative. These impacts, when considered together with the residential, mixed-use, and commercial developments that are planned and underway in downtown St. Louis, would not result in cumulative impacts on historic buildings and structures.

CONCLUSION AND IMPAIRMENT FINDING

Within the Memorial boundary, there would be minor short- and long-term adverse impacts on the Gateway Arch. There would also be potential minor short- and long-term adverse impacts and minor beneficial long-term impacts on the Old Courthouse. In addition, there would be minor short- and long-term adverse impacts on the Grand Staircase. Outside of the Memorial, there would be short- and long-term minor adverse to minor beneficial impacts on Eads Bridge. There could also be long-term negligible to minor adverse local impacts on the Missouri Athletic Club Association Building and the J. Kennard and Sons Carpet Company Building, as both have visual connections to the north end of the

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Memorial. Further, there may be negligible to minor long-term local adverse impacts on the Crunden-Martin Manufacturing District and St. Mary of Victories Church. Under Section 106, there would be no adverse effects to these historic resources. In addition, there would be no impairment to historic buildings, structures, sites, objects, and districts as a result of the Park into the City alternative.

Cultural Landscapes

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Park into the City alternative, sensitive rehabilitation and renovation of the Memorial landscape would be undertaken to improve accessibility and security, and to modestly increase heritage education. The visitor experience would be extended into the downtown and Memorial Drive would be rerouted, allowing for a series of plazas. These improvements would be achieved in accordance with the *Secretary of the Interior's Standards for Rehabilitation*, and thus the NHL and the fundamental resources and values of the Memorial would be protected.

The spatial organization of the site is of paramount importance to the maintenance of the integrity of the NHL. The proposed changes to the connections between the Old Courthouse and the Memorial, through the rerouting of Memorial Drive and the establishment of at-grade plazas, have the potential to enhance the spatial organization of the Memorial. These changes would result in moderate to major long-term beneficial local impacts, as the east and west portions of the Memorial grounds would be unified. If the design of the landscape within Luther Ely Smith Square is enhanced through the inclusion of additional plantings consistent with the Saarinen-Kiley concept, there would be moderate to major long-term local beneficial impacts on spatial organization. The renovation of the facility at the north end of the Memorial for heritage education/visitor amenities, and the construction of a new research center at the south end of the Memorial, may result in moderate long-term local beneficial impacts if the facilities have a planted expression at grade.

The essential view that stretches from the Old Courthouse east towards the Gateway Arch and the river would be enhanced by the relocation of Memorial Drive, as it would mitigate the freeway's disruption and connect the east and west portions of the Memorial grounds. These changes would result in moderate to major long-term local beneficial impacts. If ventilation is required for the I-70 tunnel, it could potentially impact views along the east-west axis. If possible, the ventilation would be achieved through a below-grade apparatus. If an above-grade expression is required, it would be located outside of the central east-west view corridor. Thus, long-term local impacts would be negligible to minor adverse.

Views along the north-south axis may also be impacted under the Park into the City alternative due to the renovation of the facility at the north end of the Memorial. Long-term impacts may be minor, local and beneficial, if the above-grade expression of the current parking garage is replaced by a surface planted expression. The renovated facility would not obstruct views along the essential north-south axis.

Views from East St. Louis back towards the Gateway Arch may be improved if an education facility is constructed on the east side of the river, as visitors may view the Gateway Arch without the obstruction of the levee. Local impacts would be long-term and moderate beneficial. Views from the North and South Overlooks along the river could be impacted by construction at the north and south ends of the Memorial. Depending on the height and mass of the above ground expression, there may be short- and long-term minor beneficial to minor adverse local impacts on these views.

The Park into the City alternative could also result in modest changes to the site's topography. The construction of a new research center at the south end of the Memorial may result in slight changes to the topography, depending on the design of the new facility; long-term local adverse impacts would be negligible to minor. The redesign of the entrances to the Gateway Arch and accessible ramps to the riverfront may cause

minor to moderate long-term adverse impacts on the site's topography. Thus, there could be an adverse effect under Section 106.

The relocation of Memorial Drive and the creation of at-grade plazas would result in minor local short-term adverse impacts and moderate long-term local beneficial impacts on circulation. Enhanced connections at Pine and Walnut Streets and general streetscape improvements have the potential to generate minor short-term adverse impacts and potential minor adverse to moderate beneficial impacts, depending on the scope of the improvements within and outside the Memorial grounds. The removal of at-grade parking at the Old Cathedral and the installation of a landscape expression in its place would result in a minor long-term beneficial local impact.

The potential increase in visitation at the Memorial resulting from the implementation of the Park into the City alternative may increase commercial activity within the surrounding neighborhood, enhancing the urban environment and resulting in minor to moderate long-term beneficial impacts to the Memorial's constructed setting. However, the increase in visitors may result in crowding and greater degradation of the landscape, resulting in a minor short-term adverse impact on the cultural landscape, possibly leading to minor long-term adverse impacts.

Under the Park into the City alternative, there are no proposed changes to the existing small-scale features at the Memorial grounds, though there may be minor adverse impacts on lights and benches as a result of construction projects. These impacts may be mitigated by replacement of the features after construction.

ANALYSIS OF CUMULATIVE IMPACTS

The implementation of the Park into the City alternative would result in long-term moderate to major beneficial and minor to moderate adverse impacts on the cultural landscape at the Memorial. Additional visitation at the Memorial, when viewed together with the residential, mixed-use, and commercial developments that are planned and underway in downtown St. Louis, may generate minor short-term adverse cumulative impacts on the landscape through additional degradation.

CONCLUSION AND IMPAIRMENT FINDING

The Park into the City alternative may result in long-term moderate to major beneficial and minor to moderate adverse local impacts on the cultural landscape at Jefferson National Expansion Memorial. Thus, there could be an adverse effect under Section 106, but this would not lead to impairment of the cultural landscape.

Archeological Resources

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Several components of this alternative include ground-disturbing activities which may impact buried archeological resources. These elements constitute different levels of ground disturbance and are located in areas that have varying levels of archeological sensitivity. The impact assessments take these two factors into account, recognizing that most elements have not yet been designed and that the precise locations of archeological resources are not known. The following table (Table 4.3) summarizes the components that are likely to disturb the ground, the archeological sensitivity of the area of disturbance, and the impact that disturbance might have on significant archeological resources. This is followed by a discussion of the activities that are likely to have the most impact on archeological resources.

Several of the ground-disturbing activities proposed under the Park into the City alternative have the potential to cause major long-term adverse impacts (adverse effect) on archeological resources if these activities are conducted in areas of high sensitivity. These include the relocation of the maintenance facility (especially if it is moved to an area of high archeological sensitivity) and the renovation of the parking garage to a multimodal transportation facility.

One of the elements of this alternative is that the boundary of the Memorial would be amended to add approximately 100 acres in East St. Louis. This would represent a moderate local or regional, long-term beneficial impact (no adverse effect) since it would place any archeological resources

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Component with Potential for Ground Disturbances	Type of Disturbance Likely	Archeological Sensitivity	Impact Assessment
Remove Memorial Drive	Moderate to major disturbances assumed to be mostly within street right-of-way	Low to Moderate	Negligible to Minor
North and south ends zoned for amenities	Minor to moderate disturbances	Low to Moderate	Negligible to Minor
Parking lot at the Old Cathedral is eliminated	Minor disturbances from landscaping and resurfacing	Moderate to High	Minor to Moderate
Unify streetscape	Minor disturbances from installation of landscape elements, signage, etc.	Low to moderate	Negligible to Moderate
Encourage compatible riverfront improvements	Minor to moderate disturbances from improvements compatible with the Memorial grounds	Moderate	Negligible to Moderate
Move maintenance facility	Major disturbances from footings/ foundation for new facility	Low to High (depending on placement of facility)	Negligible to Major
Rehabilitation of the designed landscape and structures	Minor disturbances from rehabilitation	Low to Moderate	Negligible to Moderate
Accessibility and heightened security design on all new facilities	Minor to major disturbances for ADA/ABAAS-compliant railing installation	Low to High	Negligible to Major

Table 4.3 Impacts to Archeological Resources in Alternative 5 - Park into the City

that might be located on the parcel under NPS jurisdiction and therefore would be protected by federal law.

ANALYSIS OF CUMULATIVE IMPACTS

If important archeological resources are encountered as a result of this alternative, cumulative impacts would occur from the incremental impact of this alternative when added to other past, present, and foreseeable future actions. The geographic area that was considered for cumulative impacts on this alternative consists of historic downtown St. Louis and the East St. Louis riverfront area.

In general, impacts on archeological sites are mitigated by data collection and recording

of that data prior to site development. Because of the likelihood that past, present, and foreseeable future actions in the study area would impact archeological resources, any adverse impacts on archeological sites discovered as a result of this alternative would have a moderate local long-term cumulative impact.

CONCLUSION AND IMPAIRMENT FINDING

Overall, the Park into the City alternative would have local long-term impacts ranging from minor beneficial to major adverse. Under Section 106, these would range from no adverse effects to adverse effects. Adverse effects on archeological resources could

be avoided through mitigation and by having cultural resource observers present during ground-disturbing activities in areas likely to contain archeological resources. Mitigation of impacts would ensure that there would be no impairment of archeological resources.

Activities occurring on the western portion of the Memorial Grounds are expected to have a greater likelihood of encountering archeological resources since the original historic grade is near the surface in this area. If archeological sites were discovered during construction activities, and the sites were recorded, such findings could yield beneficial information regarding the history or prehistory of the area. The recording and/or preservation of previously undiscovered sites would be considered a beneficial impact.

Out of all of the alternatives, the Park into the City alternative has the lowest potential for an adverse impact on archeological resources because it has fewer components that may cause large disturbances in areas with high archeological sensitivity.

The impacts identified for this alternative are a result of ground-disturbing activities which may encounter significant archeological resources. Depending on the size of the disturbance, these activities would have a local or regional, long-term adverse impact ranging from minor (no adverse effect) to major (adverse effect). The range of potential impacts under this alternative is due, in part, to the lack of specific information regarding the location of the maintenance facility. These impacts would need to be further refined once the location for the maintenance facility has been identified.

Curatorial Resources and Museum Collections

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Park into the City alternative, the exhibits at the Old Courthouse and in the Museum of Westward Expansion would be redesigned to provide more interactive and engaging experiences for visitors. In addition, a new state-of-the-art storage facility for collections and archives would be provided

and a new education and research facility would be constructed at the south end of the Memorial grounds. The provision of more up-to-date exhibits and an archival sound storage area for collections would result in local long-term moderate beneficial impacts on curatorial resources and museum collections. Relocation of collections to the new facility would result in a short-term risk of impacts that could range from negligible to moderate adverse impacts on curatorial resources and museum collections due to the movement of these objects.

ANALYSIS OF CUMULATIVE IMPACTS

Under the Park into the City alternative, there would be local moderate long-term beneficial impacts on curatorial resources and museum collections. These impacts, when considered together with projects planned or ongoing within the surrounding area, would not contribute to cumulative impacts on museum collections.

CONCLUSION AND IMPAIRMENT FINDING

The implementation of the Park into the City alternative would result in local moderate long-term beneficial impacts on curatorial resources and museum collections. Relocation of collections to the new facility would result in a short-term risk of impacts that could range from negligible to moderate adverse impacts on curatorial resources and museum collections. There would be no impairment of curatorial resources and museum collections as a result of the Park into the City alternative.

Natural Resources

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Minor to moderate impacts on vegetation in the East St. Louis addition would occur as a result of clearing related to construction of new facilities. However, this would also create opportunities to restore and enhance the planting in these areas. Negligible to moderate impacts might occur as a result of the development of the site. Since this area is currently dominated by early successional or invasive species, overall impacts would be beneficial.

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ANALYSIS OF CUMULATIVE IMPACTS

Past land use practices have completely removed the original forested land cover of the St. Louis/East St. Louis area and created the urban/developed land cover that exists today. Since impacts on vegetation communities within the study area would generally be considered beneficial due to the removal of invasive species, there would be no cumulative impacts on vegetation communities.

**CONCLUSION AND
IMPAIRMENT FINDING**

The Park into the City alternative would have long-term beneficial to short-term moderate adverse impacts on the vegetation communities of the East St. Louis addition. Long-term beneficial impacts would result from the removal of invasive species; however, there would be a short-term temporary disruption of the successional habitat community. Overall, the Park into the City alternative would have a minor to moderate beneficial impact on vegetation communities within the study area.

Threatened and Endangered Species

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

The current location of the federally designated Threatened decurrent false aster on the east bank of the Mississippi River below the levee is outside of the area to be impacted under the Park into the City alternative, at least in the short-term. Current plans for the Park into the City alternative designate the east bank of the river for streetscape/riverscape improvements at some point in the future; however, the presence of the decurrent false aster in the area would necessitate a field survey to establish its precise location and extent of locally available habitat to be protected. Thus, the Park into the City alternative is not likely to adversely affect this species.

ANALYSIS OF CUMULATIVE IMPACTS

Surveys for local populations of decurrent false aster would be conducted prior to construction and avoiding potential habitat areas would mitigate the potential for impacts to this species. In addition, none of the projects considered as part of the cumulative impacts analysis are located on the east side of the river

where the current local population is present. Thus, there would be no cumulative impacts on the decurrent false aster as a result of the Park into the City alternative.

**CONCLUSION AND
IMPAIRMENT FINDING**

There would be no additional development, loss of habitat, or changes in maintenance or management practices in the near term in areas that may disturb decurrent false aster populations present on the east side of the River. Any future development that may occur along the east bank of the Mississippi River would be preceded by a site survey to identify the exact location of the species and any available habitat to be protected. Thus, there would be no impact on this threatened species and no impairment of Memorial resources within the study area.

Soundscape

**ANALYSIS OF DIRECT
AND INDIRECT IMPACTS**

There would be minor short-term adverse impacts on the soundscape of the Memorial from the construction of the pedestrian enhancements, streetscape/riverscape improvements, and pedestrian plaza on Memorial Drive, the pedestrian plazas over I-70, accessible ramps to the riverfront, renovations to the parking garage, the multimodal transit center, and the education and research facility. Noise from these activities would be greatest in the immediate vicinity of the construction activity, and would diminish as visitors migrate from the activity. Given the existing background noise levels throughout much of the Memorial, noise from construction would only be periodically discernable above background noise levels, and would generally not interfere with a user's enjoyment of the Memorial grounds.

There would be continuing minor long-term adverse impacts on the soundscape of the Memorial from the existing maintenance-related activities, including lawn mowing and testing of the emergency generators. In addition, moving the grounds maintenance facility off the Memorial grounds would result in minor long-term impacts on the soundscape

as maintenance vehicles would be operated in off-site areas. Implementation of a visitor transportation system would introduce a new noise source to the Memorial grounds and the surrounding streets. The long-term impacts on the soundscape of the Memorial associated with the visitor transportation system are expected to be minor.

Increased visitation to the Memorial grounds and the East St. Louis addition would result in a minor long-term adverse impact on the soundscape of these areas. Increased special events programming would result in large numbers of people driving to and congregating on the Memorial grounds. The crowd noise and amplified music or public address systems would constitute a minor to moderate short-term adverse impact on the soundscape of the Memorial.

Removal of parking from the Old Cathedral and north parking garage would have a minor beneficial impact on the soundscape of the Memorial, but would result in increased noise in other areas of St. Louis, as visitors would need to travel further to look for parking. The removal of vehicular traffic from Memorial Drive and the creation of a pedestrian plaza would also result in a beneficial impact on the soundscape of the Memorial grounds, but would transfer this traffic noise to downtown streets.

ANALYSIS OF CUMULATIVE IMPACTS

There would be minor short-term and long-term adverse impacts and minor to moderate long-term beneficial impacts on the soundscape of the Memorial as a result of the implementation of the Park into the City alternative. These impacts, when considered together with the impact of ongoing or planned projects in the vicinity of the Memorial, may contribute to a minor long-term beneficial cumulative impact on the soundscape of the Memorial. This beneficial cumulative impact would result primarily from the removal of traffic from Memorial Drive and the creation of the pedestrian plaza.

CONCLUSION AND IMPAIRMENT FINDING

The Park into the City alternative would have minor short-term adverse impacts on

the soundscape of the Memorial from the construction of the pedestrian enhancements, streetscape improvements, riverfront improvements, and pedestrian plaza on Memorial Drive, and accessible ramps to the riverfront, education, and research facility, and multimodal transit center. There would also be continuing minor long-term adverse impacts on the soundscape from the existing maintenance activities. Moving the grounds maintenance facility off the Memorial grounds and implementing a visitor transportation system would result in minor long-term adverse impacts on the soundscape. Increased special events programming would result in minor to moderate short-term adverse impacts on the soundscape of the Memorial.

The removal of traffic from Memorial Drive and the creation of the pedestrian plaza would have a minor to moderate beneficial impact on the soundscape of the Memorial grounds, likely improving visitor experience. However, the rerouting of traffic through downtown St. Louis would result in minor to moderate local increases in traffic noise on downtown streets. Overall, there would be no impairment of the soundscape of the Memorial, and there may be an improvement of the current soundscape of the Memorial if all elements of this alternative are implemented.

Visitor Opportunities and Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The focus of the Park into the City alternative is to extend the visitor's experience of the Memorial into downtown St. Louis and the surrounding neighborhoods, including East St. Louis. Changes implemented under this alternative are expected to have moderate beneficial long-term impacts on visitor opportunities. Visitor opportunities are expected to improve with the redesign of exhibits, including more interactive experiences at the Museum of Westward Expansion and the Old Courthouse. Visitor experiences are expected to improve with the development of barrier-free access to the riverfront and the museum. Visitors would have more opportunities for heritage education and orientation with new facilities developed at the north end of the Memorial

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and the North and South Overlooks. In addition, the north and south ends of the Memorial have been zoned to include more amenities and heritage education, improving visitor experience. Visitors would continue to have access to recreational activities on the surface of the Memorial grounds. Short-term adverse impacts may also occur during peak periods due to crowding at popular sites.

Implementation of the Park into the City alternative may have short- and long-term moderate beneficial impacts on visitor use. The rehabilitation of exhibits and the introduction of more interactive experiences may encourage more repeat visitors to the site, increase the number of first-time visitors, and/or encourage visitors to extend their stay while at the Memorial. In addition, more amenities and opportunities for heritage education may have a long-term beneficial impact on visitor use, and may encourage visitors to extend their stay while at the Memorial. The development of barrier-free and ADA/ABAAS-compliant access to the Memorial may attract additional visitors to the site. Visitation is also expected to increase with the addition of more special events.

ANALYSIS OF CUMULATIVE IMPACTS

The rerouting of Memorial Drive may have beneficial impacts on residents, visitors, and employees working in downtown St. Louis. These improvements would include a series of plazas that would improve the connectivity of the Memorial with Luther Ely Square and the Old Courthouse. In addition, the improvements would further fulfill the goals of the Gateway Mall, connecting the existing Mall with the Memorial and unifying the entire corridor. This would likely improve the desirability of downtown St. Louis as a place to live, work, and visit. A new transportation system that would link visitors with attractions both inside and outside the Memorial may generate beneficial cumulative impacts by improving the visitor's experience, further supporting other businesses in downtown St. Louis, and more effectively linking the Memorial with the overall urban setting. Overall, this creates a beneficial cumulative impact on visitor use and experience of downtown St. Louis.

CONCLUSION

Implementation of the Park into the City alternative would have moderate long-term beneficial impact on visitor opportunity and use. Visitor opportunities are expected to improve with the redesign of exhibits at the Museum of Westward Expansion and the Old Courthouse. Visitor experiences are expected to improve with the development of barrier-free access to the riverfront and the museum. Improvements in streetscapes and the introduction of a new transportation system are expected to increase connectivity to local neighborhoods in downtown St. Louis, and to have a long-term beneficial impact on visitor opportunities and use.

Transportation and Access

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Under the Park into the City alternative, the elimination/realignment of Memorial Drive would result in a potential long-term minor adverse impact on traffic and congestion on city streets near the Memorial. This action would add traffic to adjacent downtown streets, in particular Fourth Street and Broadway Street. The removal of parking from the parking garage would result in a moderate beneficial impact on traffic patterns and vehicle movement along Washington Avenue, but could increase traffic and congestion on streets in downtown St. Louis and Laclede's Landing. The removal of the NPS maintenance facility outside of the Memorial boundary would result in a minor adverse impact on traffic on adjacent city streets, due to maintenance equipment operating on those streets.

Public transportation would experience a moderate to major beneficial long-term impact under this alternative. The elimination of parking at the Arch Parking Garage would allow for a better connection to the existing Metro station in the Eads Bridge. The new facility would include a multimodal transit center, which would serve as a base of operations for a new visitor transportation system. This rubber-tired trolley or bus system would link attractions within and outside the Memorial, including key stops within

downtown St. Louis. This transportation system is anticipated to operate in 15- to 20-minute headways in partnership with downtown business organizations and/or Metro.

The closing of Memorial Drive to vehicular traffic would result in major beneficial impacts on pedestrian circulation within the vicinity of the Memorial. The space currently used for vehicles on Memorial Drive would become a large community plaza, softening the edge of the Memorial grounds and creating a connection between Luther Ely Smith Square and the Gateway Arch. In addition, there would be a minor to moderate positive impact on pedestrian circulation due to enhanced connections to Laclede's Landing and Chouteau's Landing and to downtown at the Northwest Plaza.

The elimination of parking on the Memorial grounds would have a major adverse impact on the parking resources of the Memorial, as well potential ramifications on the agreement between the National Park Service and Metro. There would be long-term moderate adverse impacts due to the elimination of the Old Cathedral parking lot, including the loss of 23 employee parking spots. Improving bus drop-off at the Old Cathedral would have a minor beneficial impact. The proposed visitor transportation system would alleviate some of the issues caused by moving parking offsite.

ANALYSIS OF CUMULATIVE IMPACTS

The cumulative impacts of the Park into the City alternative on the transportation resources of the Memorial would be moderate to major beneficial. The transformation of Memorial Drive into a pedestrian plaza fits well with other investments in downtown St. Louis to improve the pedestrian atmosphere, including increased residential development and the implementation of the Gateway Mall Master Plan. In addition, the visitor transportation system would improve visitor connections within the Memorial and surrounding areas.

CONCLUSION

The Park into the City alternative would result in moderate to major long-term beneficial impacts on transportation on and around the Memorial. This determination is due to the significant

improvements to pedestrian circulation and transit enhancements, particularly the implementation of a visitor transportation system. This finding assumes that the loss of on-site parking is considered a benefit to the overall visitor experience of the Memorial, rather than a hindrance.

Socioeconomics

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Implementing the Park into the City alternative would increase expenditures on operations and staffing over those estimated under the no action alternative. Annual expenditures are expected to increase by \$6.5 million to over \$26.2 million total when all programs are implemented, while staffing is estimated to increase by an additional 68 FTE as compared to those under the no action alternative. Increases in expenditures and staffing would have minor beneficial long-term economic impacts on the region, as more federal expenditures are made in the local area, and future employees spend their incomes near their places of employment and residence, generating additional economic activity.

Under the Park into the City alternative, it is expected that visitation to the Memorial would increase over those of the no action alternative. Minor to moderate increases in visitation to the Memorial are expected due to an expansion of special events, which would have a minor beneficial economic impact over the long-term. Negligible beneficial economic impacts would occur from an increase in visitation to the education/research center at the Memorial. Minor, positive economic impacts are expected from food service vendors on the plazas along Memorial Drive. Enhanced connectivity to local neighborhoods and Memorial Drive may increase average visit time and patronage of local businesses, resulting in a minor long-term beneficial economic impact. A new visitor transportation system would have a minor to moderate beneficial economic impact on downtown St. Louis, depending on the route. If the route reaches to other major attractions and locations in the city, visitors would likely extend their stays and increase patronage of local businesses throughout downtown.

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Expansion of park boundaries in East St. Louis could have a minor, negative fiscal impact on local taxing districts. If the National Park Service were to purchase acreage from private landowners for the expansion, these lands would be removed from the tax base and result in a loss in tax revenue to local tax districts. The current boundary expansion area includes lands assessed for tax purposes and lands exempt from property taxes (railroad). The actual loss in tax revenues would depend on the number of acres within private ownership. Examination of current tax status indicates that if all acreage were purchased within the boundary, a loss in tax revenues could approach up to \$30,000 per year. However, this impact would be partially or fully mitigated with the application of Payment in Lieu of Taxes which are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries.

ANALYSIS OF CUMULATIVE IMPACTS

The implementation of the Park into the City alternative would have a minor to moderate beneficial economic impacts. When this impact is considered together with other ongoing and planned projects in the study area, this could result in a minor long-term beneficial cumulative impact to socioeconomic resources, with impacts limited to businesses in the downtown area.

CONCLUSION

Management of the Memorial would focus on extending the visitor's experience at the Memorial and into downtown St. Louis. The Memorial would continue to be a major attraction for visitors coming to the St. Louis area, and its appeal to local residents and visitors is expected to generate a minor positive increase in visitation. Visitation to the Memorial would have a long-term minor to moderate beneficial economic impact due to visitor spending and expenditures associated with operations at the Memorial. Impacts would be largely focused within a small geographic area near the Memorial, but may be expanded if a visitor transportation system travels near other important downtown sites and businesses. Cumulative impacts from other projects and planning activities have the potential to increase visitation to the

Memorial and downtown, which would have a minor beneficial impact on downtown retailers and businesses. Purchase of lands for park expansion in East St. Louis could have a minor, negative fiscal impact to local government taxing entities.

Land Use

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

Implementation of the Park into the City alternative, with its emphasis on extending the Memorial into downtown St. Louis and surrounding neighborhoods may have beneficial impacts on land use. Changes in routing of Memorial Drive would have a long-term beneficial impact on land use in and around the Memorial by improving the connectivity of the Memorial with other parts of downtown, and extending the urban park experience of the Memorial into the city. Eliminating on-site parking would improve the utilization of parking facilities in downtown, while allowing existing parking areas to be redeveloped and used for more heritage education and visitor amenities consistent with the Memorial's purpose and goals.

Expansion of the Memorial's boundary to include 100 additional acres in East St. Louis would have moderate beneficial impacts on land use. As a result of this expansion, the National Park Service would be able to influence development of areas along the east bank of the Mississippi River that are compatible with the existing Memorial grounds.

ANALYSIS OF CUMULATIVE IMPACTS

Implementation of the Park into the City alternative may have beneficial, long-term impacts on land use within and outside the Memorial, when considered together with recently completed, ongoing, and planned projects within the study area. The rerouting of Memorial Drive may generate long-term moderate beneficial impacts on land use in and around the Memorial. By eliminating traffic along Memorial Drive adjacent to one of the major entrances to the Memorial, the site would become much more connected to other parts of downtown including Luther Ely Smith Square, the Old Courthouse, and the Gateway Mall. This action would enable the City's goal

of connecting the Gateway Mall with the Memorial, and enhancing the entire corridor as an important amenity for residents and visitors alike. Moving significant facilities off the Memorial Grounds, such as the maintenance facilities and parking garage, may have positive beneficial impacts on land use depending on where the facility is located. For instance, locating the maintenance facility within Chouteau's Landing may encourage redevelopment of the area, a major goal of the City's development community. NPS actions in East St. Louis would not only enhance the land uses planned by Metro Parks, but may also encourage other partnerships that can further develop the area with compatible uses, linking the east and west sides of the river.

CONCLUSION

Implementation of The Park into City alternative is expected to have a long-term moderate beneficial impact on local land use. The rerouting of Memorial Drive has the potential to generate long-term moderate beneficial impacts on land uses in and around the Memorial. Eliminating on-site parking would allow the Memorial to expand opportunities for heritage education and visitor amenities. This action may also cause parking facilities downtown to be utilized more efficiently. Moderate beneficial impacts would also occur with the expansion of the Memorial's boundary into East St. Louis, which would encourage compatible development with Metro Parks and other potential partners.

NPS Operations

ANALYSIS OF DIRECT AND INDIRECT IMPACTS

The changes proposed in this management alternative could create beneficial or adverse impacts on the operational resources of the Memorial. According to analysis provided by current staff at the Memorial, the changes to the operation of the Memorial related to this alternative would require an increase of 68 additional FTE to effectively manage proposed new infrastructure and programs. The construction of new heritage and educational facilities at the north and south ends of the Memorial, expansion of the Memorial in East St. Louis and the new plaza

in place of Memorial Drive, would require additional maintenance, law enforcement, and curatorial staff. Should staffing levels increase at a commensurate level to match the needs of new infrastructure and new programs, adverse impacts to NPS operations would be negligible. In some cases, such as the new curatorial facility, NPS operations would improve due to an appropriately designed and accessible collections facility creating long-term direct and indirect, moderate to major beneficial impacts. Should staffing levels and funding for NPS operations remain the same, without a commensurate increase to address an expanded Memorial, newly added programs and infrastructure, the direct impact would be moderate to major adverse over the long-term.

ANALYSIS OF CUMULATIVE IMPACTS

Should staffing and funding levels increase at a commensurate level to match the needs of new infrastructure and new programs, adverse impacts to NPS operations would be negligible. A new curatorial facility would create long-term direct and indirect, moderate to major beneficial impacts to NPS operations. Given the current underfunding of operations at the Memorial, and should funding and staff levels remain the same, the proposed expansion of facilities and programs at the Memorial would have moderate to major adverse impacts on NPS operations. These impacts, when considered with other ongoing and planned projects, could contribute to a cumulative impact to operations, since the projects outside of the Memorial grounds could increase the number of people living in or visiting the downtown, and thus the number of people visiting the Memorial.

CONCLUSION

If funded, the long-term impacts of the Program Expansion alternative in general would be negligible and the specific addition of a new curatorial facility would be moderate to major and beneficial. The long-term impacts of the Park into the City alternative would be moderate to major and adverse if funding for NPS operations remains the same without a commensurate increase. The expanded facilities would require a commensurate increase in NPS operational resources.

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Unavoidable Adverse Impacts

Depending on the level of ground disturbance, the Park into the City alternative could have unavoidable impacts on subsurface archeological resources. Adverse impacts on vegetation would result from continued use of the Memorial by visitors. In addition, the maintenance of the Memorial over time would have minor long-term adverse impacts on the soundscape of the Memorial. These impacts are considered unavoidable.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are actions that result in the permanent loss of resources. Irretrievable commitments of resources are actions that result in the loss of resources for a period of time. Construction of the various elements of the Park into the

City alternative would result in an irreversible and irretrievable commitment of resources used in the construction of the facilities. However, since these facilities would be put to beneficial use, these commitments of resources are not considered to be a significant impact of this alternative.

Relationship of Short-Term Uses and Long-Term Productivity

Jefferson National Expansion Memorial would continue to be used by the public as a cultural and recreational resource, and the National Park Service would manage the Memorial to preserve its cultural and natural resources. Actions taken under this alternative would be consistent with the NPS mission and would provide for the long-term protection of the cultural and natural resource values for which the Memorial was established.



5.0 Consultation and Coordination

Consultation and Coordination

5.1 PUBLIC INVOLVEMENT, INCLUDING SCOPING

The public was notified of the National Park Service planning effort via: (1) a Federal Register notice of intent, dated June 12, 2008, (Volume 73, Number 114, page 33454) to prepare the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*; (2) distribution of the first newsletter for public scoping in June 2008; and (3) a press release announcing a public comment opportunity, including public meetings held during Summer 2008 to comment on the draft management zones and preliminary alternatives.

Newsletter #1 introduced the concepts of general management plans (GMPs) and environmental impact statements (EISs). It outlined the draft planning issues as defined by the planning team and explained the Memorial's purpose, fundamental resources and values, significance, and interpretive themes. It also contained descriptions of five preliminary alternatives that illustrated how the Memorial might look in the future, and how the draft management zones would apply to each preliminary alternative in different regards. Newsletter #1 solicited public input and participation in the refinement of preliminary alternatives through an attached comment form, by invitation to two public open houses, and via web link to the Memorial's General Management Plan website. Providing a basic timeline for the GMP/EIS planning process, this newsletter was posted on the Memorial's General Management Plan website, published in the St. Louis Post-Dispatch on June 19, 2008, and distributed at the public open houses.

A public review and comment on the preliminary alternatives was open from June 18 through July 14, 2008. Public scoping meetings, in an open-house format, were held on June 25 and July 1, 2008, in St. Louis, Missouri. Meetings with the Memorial staff and other National Park Service employees were also held. The primary purpose of the comment period and meetings was to introduce the draft management zones and preliminary alternatives, while gathering suggestions and ideas for their refinement. Approximately 600 people attended the public open houses, and over 700 letters and comment forms (hard copy and electronic) were received as a result of the open houses and Newsletter #1.

Newsletter #2 summarized the public scoping comments. It described the history of the Old Courthouse, laid out the subsequent steps of the planning process, and provided an updated timeline for the planning process. A summary of public comments was posted on the Memorial's website in September 2008. As a result of public comment and further deliberations of the planning team, including environmental analysis, the preliminary alternatives were revised. Prior to the identification of a preferred alternative, a value analysis decision-making process, Choosing By Advantages (CBA), was undertaken. At this stage, public input, probable environmental consequences, and costs of the alternatives were thoroughly considered by the planning team.

A press release on October 21, 2008, announced the preliminary preferred alternative for the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The press release provided a basic explanation of the next steps, a timeline

for the remaining portion of the planning process, and an announcement that another opportunity for public comment would occur in winter 2009 on the plan. Fact sheets for each of the revised preliminary alternatives and the no action alternative were publicly posted on the Memorial's website with the press release. The fact sheets described the elements of each revised preliminary alternative and provided maps detailing the management zones. After the preliminary preferred alternative was identified, the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* was produced and made available for public review.

The public was notified that the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* was available for public review via (1) a Federal Register notice of intent, dated January 16, 2009 (Volume 74, Number 111, page 3101); and (2) a January 16, 2009, press release announcing the public comment period. The local media also provided coverage of the release of the draft plan. The public review and comment period began January 16, 2009 was open for 60 days, and ended March 16, 2009. The approximately 225 individuals and organizations on the mailing list were notified that the plan was available, primarily via e-mail. Press releases were mailed to those on the mailing list for whom an e-mail address was not available. The draft plan was sent out to 183 individuals, agencies, and organizations. It was also posted on the National Park Service's Planning, Environment and Public Comment (PEPC) website, on the Memorial's website, and distributed at public meetings.

A press release on February 18, 2009, announced two public meetings on the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. The local media also provided coverage that announced the meetings. The primary purpose of the comment period and the public meetings was to collect input on the adequacy of the draft plan. The public meetings were held in St. Louis on February 23 and 24, 2009. Both public meetings included a formal

presentation of the draft plan by the National Park Service as well an opportunity for formal public comments and an informal open house informational session. Approximately 62 people attended the public meetings. The National Park Service hosted two brownbag sessions regarding the draft plan that attracted approximately 30 individuals. These sessions were held on January 29, 2009, and January, 31, 2009, at the Old Courthouse and Ulysses S. Grant NHS, respectively. Brownbag sessions were also hosted by the Missouri Open Space Council on February 4, 2009, the East-West Gateway Council of Governments on February 6, 2009, and The Confluence Partnership at Cahokia Mounds on February 19, 2009. Approximately 92 individuals attended these brownbag sessions. The National Park Service held two informal brownbag sessions for Jefferson National Expansion Memorial employees on February 23 and 24, 2009, with approximately 18 people in attendance.

The National Park Service issued a press release on March 9, 2009, announcing that the public comment period was about to close and encouraging the public to comment. Approximately 130 correspondences (hard copy and electronic) were received during the public comment period.

The planning team carefully considered all public comments on the draft plan and made changes where appropriate before issuing this *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*. Any changes made to the preferred alternative and management zones in this final plan are discussed in the preferred alternative text (Section 2.5) and in responses to the comments on the last draft. (Section 5.4).

Documents related to this planning process are available online at the Memorial's website and the National Park Service Planning, Environment and Public Comment (PEPC) website. These documents include newsletters, public comment summaries, frequently asked questions, letters, planning updates from the Superintendent, and the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*.

The *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* is also available online at (<http://parkplanning.nps.gov>).

5.2 AGENCY CONSULTATION

Consultation with American Indians

The National Park Service recognizes that indigenous peoples have traditional and contemporary interests and ongoing rights in lands now under NPS management, as well as concerns and contributions to make for the future as part of scoping processes in NPS GMPs and other projects. The need for government to government consultation between the United States and American Indians stems from the historic power of Congress to make treaties with American Indian tribes as sovereign nations. Consultations with American Indians and other Native Americans such as Alaska Natives and Native Hawaiians are required by various federal laws, executive orders, regulations and policies. For example, such consultations are required to comply with Section 106 of the National Historic Preservation Act and the National Environmental Policy Act.

Historically, the project study area was within the territory of the Illini Confederacy, although the Memorial and potential East St. Louis site were not the sites of villages. Disease and warfare with other tribes devastated the Illini over the course of time, leaving few survivors of the tribe. The annihilation of the tribe that lived near the Memorial and East St. Louis sites, the Cahokia, was so complete that the tribe had ceased to exist by the early 1800s. Any remnant members of the Cahokia intermarried with the Kaskaskia, a tribe which likewise suffered a catastrophic decline and merged, in 1854, with the Peoria Tribe. Today, the Peoria, who number about 2,000, live in Miami, Oklahoma.

The Osage Nation is linked to the St. Louis area through their historical involvement in the fur trade, their interests in the ancient Mississippian mound builders, and familial

ties with St. Louis residents. At the time of Lewis and Clark, the Osage were the most powerful tribe in the lower Midwest. They moved from their original home along the Ohio River to western Missouri before the beginning of the French Mississippi and Missouri River fur trade in the 18th century. By 1804 the Osage held total sway over the region of western Missouri, northern Arkansas and eastern Kansas due to their ties with French fur traders and Spanish government officials in St. Louis. The powerful Chouteau family had a trade monopoly with the Osage for many years, and intermarriages with Osage women were common. The Osage called themselves Ni-U-Ko'n-Ska, or "children of the middle waters." The two main bands of the Indians lived on the Osage River (the Great Osage) and the Missouri River (the Petit or Little Osage). Treaties, some of which were negotiated in St. Louis, gradually took Osage lands in the Territory and later State of Missouri, moving them to a reservation in Oklahoma, where their tribal government is located today.

Letters were sent to the Peoria Tribe (January 2009) and Osage Nation (September 2009) requesting their involvement in the planning process and comment on the document. Consultation with the Peoria, the Osage and others related to the *Draft and Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* is ongoing. The Peoria Tribe of Indians of Oklahoma advised the National Park Service to contact them if, during subsequent implementation of the final plan, any archeological evidence of tribal or other American Indian habitation is found.

U.S. Fish and Wildlife Service

The Endangered Species Act requires in Section 7 (a) (2) that each federal agency, in consultation with the Secretary of the Interior, ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. This section of the act sets out the consultation process, which is further implemented by regulation (50 CFR 402).

In October 2008, the National Park Service initiated informal consultation with the U.S. Fish and Wildlife Service to determine the presence of federally listed Threatened and Endangered species within the project study area and the associated effect, if any, of proposed actions to listed species. Prior telephone conversations between NPS staff and U.S. Fish and Wildlife biologists in 2003 indicated that no species were present within the existing Memorial grounds and due to the urban environment and associated disturbances suitable habitat was highly unlikely to be available in the future. With the proposal of inclusion and management of new lands in East St. Louis and a potential ferry boat operation between East St. Louis, Illinois, and St. Louis, Missouri, the National Park Service requested concurrence on preliminary determinations of effects based on proposed actions. As a result of ongoing consultation and on the ground survey work by the planning team, it was discovered that a listed Threatened species, decurrent false aster, may occur within the East St. Louis floodplain. The U.S. Fish and Wildlife Service advised the National Park Service of the need for compliance in any future project-specific planning for East St. Louis during implementation of the final plan due to the likely presence of the Threatened species, the decurrent false aster. As such, consultation is ongoing and will continue throughout the implementation process. Copies of the two project newsletters and a copy of the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* were provided to the agency and a copy of this final document will be provided for review.

U.S. Army Corps of Engineers and U. S. Coast Guard

Navigation in United States waters is regulated and administered by the United States Army Corps of Engineers (Corps) and United States Coast Guard (Coast Guard). Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) establishes permit requirements to prevent unauthorized obstruction or alteration of any navigable water of the United States. Navigable waters are defined as “those waters that are subject to the ebb and flow of the

tide and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce” (33 CFR Part 329). Section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344), commonly referred to as the Clean Water Act, further establishes Corps jurisdiction over navigable waters and prohibits discharge of dredged or fill material into navigable waters without permit.

A proposed water taxi operation has been identified as part of the NPS preferred alternative and therefore requires coordination with the Corps and Coast Guard. If a water taxi operation were to be implemented within this section of the Mississippi River, it would require specific designs beyond the conceptual ideas presented in this document and could likely require a Section 10 Corps permit. The National Park Service contacted the Illinois Regulatory Branch of the Corps by telephone in November 2008 regarding a potential water taxi operation, sent copies of the draft document to both the Corps and Coast Guard for review and comment, and will send copies of the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* for review.

Consultation with the Missouri and Illinois State Historic Preservation Officers

Agencies that have direct or indirect jurisdiction over historic properties are required by Section 106 of the National Historic Preservation Act to take into account the effect of any undertaking on properties listed or eligible for listing in the National Register of Historic Places. The National Park Service officially requested consultation with the Missouri State Historic Preservation Officer (SHPO) in May 2008. By letter, the Superintendent informed both Missouri and Illinois SHPOs of the initiation of this *Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* and invited these offices to participate in the planning process and comment on the draft as it progressed. The Missouri SHPO responded by placing a representative of the office, Kris Zapalac, Ph.D. on the planning team. Dr. Zapalac has

been involved in discussions, workshops, and document review for the length of the project. In anticipation of implementing the preferred alternative, the National Park Service is holding preliminary conversations with the Missouri and Illinois SHPOs and the Advisory Council on Historic Preservation in preparation for carrying out Section 106 for a design competition.

Copies of the two project newsletters were provided to these agencies and a copy of the draft document was provided for review. A copy of the final document will be provided for review. SHPO comments and advice were welcomed throughout the planning process for possible decisions regarding the protection and preservation of Jefferson National Expansion Memorial's significant historic properties and the State Historic Preservation Officers will continue to be engaged throughout implementation of this final plan.

Consultation with the U.S. Environmental Protection Agency

The National Park Service officially requested consultation with the U.S. EPA in January 2009 by letter. A letter received on March 11, 2009, from the Region 7, Kansas City, Kansas office of the Environmental Protection Agency provided comments on the draft plan. This office rated the draft plan preferred alternative as "Environmental Concerns -2 (insufficient information)". This letter is reprinted in Section 5.4 and includes responses to requested items for correction and suggested consultation.

Consultation with the City of St. Louis

The City of St. Louis Office of the Mayor was sent a copy of the draft plan. The National Park Service received a letter in response to the draft plan on March 13, 2009 (the full text of the letter is reprinted in Section 5.4). The National Park Service requested consultation from the Office of the Mayor regarding the rerouting or removal of Memorial Drive by letter on March 27, 2009. On April 15, 2009, June 4, 2009, August 13, 2009 and September 21, 2009, the City of St. Louis participated in meetings with the National Park Service to help facilitate the traffic study for the

Memorial Drive corridor. The National Park Service also consulted with Mayor's office regarding partnerships to expand the design competition to include city properties/streets surrounding the Memorial.

Consultation with Metro East Parks & Recreation Department

Metro East Parks and Recreation Department was sent a copy of the draft plan. The Department owns and manages the Malcolm Martin Memorial Park on the East St. Louis, Illinois riverfront, a portion of which was identified in the draft preferred alternative for inclusion within a proposed boundary expansion. The National Park Service requested consultation with the Department regarding future facility development at the site and the implications of a design competition on the site. The Department was supportive of the design competition and potential program related partnerships that could ensue.

Consultation with the East West Gateway Council of Governments

The National Park Service requested consultation from the East West Gateway Council of Governments regarding the rerouting or removal of Memorial Drive by letter on March 27, 2009. On April 15, 2009, June 3, 2009, August 13, 2009, and September 21, 2009, the East West Gateway Council of Governments met with the National Park Service to help facilitate the traffic study for the Memorial Drive corridor.

Consultation with the Missouri Department of Transportation

The National Park Service requested consultation from the Missouri Department of Transportation regarding the rerouting or removal of Memorial Drive by letter on March 27, 2009. On April 15, 2009, July 2, 2009, August 13, 2009, and September 21, 2009, the Missouri Department of Transportation met with the National Park Service to help facilitate the traffic study for the Memorial Drive corridor. The Mississippi River Bridge office also participated in the meeting on July 2, 2009.

Consultation with the Illinois Department of Transportation

The National Park Service requested consultation from the Illinois Department of Transportation regarding the rerouting or removal of Memorial Drive by letter on March 27, 2009. On April 15, 2009, the Illinois Department of Transportation met with the National Park Service to help facilitate the traffic study for the Memorial Drive corridor.

Consultation with the Federal Highway Administration

The National Park Service requested consultation from the Federal Highway Administration regarding the rerouting or removal of Memorial Drive by letter on March 27, 2009. On April 15, 2009, and August 13, 2009, the Federal Highway Administration met with the National Park Service to help facilitate a traffic study for the Memorial Drive corridor.

5.3 LIST OF AGENCIES OR ENTITIES RECEIVING A COPY OF THIS PLAN OR NOTICE OF AVAILABILITY OF THIS PLAN

Federal Agencies

Advisory Council on Historic Preservation
Federal Executive Board of St. Louis
Federal Highway Administration
Library of Congress
U. S. Army Corps of Engineers
U.S. Coast Guard
U.S. Department of the Interior
 Fish and Wildlife Service
 National Park Service
 Denver Service Center
 Harpers Ferry Center
 Midwest Archeological Center
 Midwest Regional Office
 Ulysses S. Grant National Historic Site
U.S. Department of Justice
 U.S. Attorney's Office
U.S. Environmental Protection Agency

U.S. Senators and Representatives

MISSOURI

Honorable Christopher Bond, Senator
Honorable Claire McCaskill, Senator

Honorable William Lacy Clay,
House of Representatives

ILLINOIS

Honorable Richard Durbin, Senator
Honorable Roland W. Burris, Senator
Honorable Jerry Costello, House of Representatives

State Agencies

MISSOURI

Missouri Department of Natural Resources
Missouri Department of Transportation
Missouri Division of Tourism
Missouri State Archives
Missouri State Historic Preservation Officer

ILLINOIS

Illinois Department of Transportation
Illinois Division of State Parks
Illinois State Historic Preservation Officer

State Officials

MISSOURI

Honorable Jeremiah W. Nixon, Governor of Missouri
State Representative Robin Wright Jones
State Senator Maida Coleman

ILLINOIS

Honorable Pat Quinn, Governor of Illinois
State Representative Eddie Lee Jackson, Sr.
State Senator James F. Clayborne, Jr.
American Indian Tribes
Osage Nation
Peoria Tribe

Local and Regional Government Agencies

City of East St. Louis-Mayor
Metro East Parks and Recreation District
Great Rivers Greenway District
Madison County Transit
East West Gateway Council of Governments
City of St. Louis Board of Aldermen
Alderwoman Phyllis Young
City of St. Louis Fire Department
City of St. Louis Office of the Mayor
City of St. Louis Office of Planning
City of St. Louis Office of Special Events
City of St. Louis Parks and Recreation

City of St. Louis Police Department
City of St. Louis Port Authority
City of St. Louis Street Department
St. Louis County Office of the Executive
St. Louis County Parks and Recreation

Organizations and Businesses

American Institute of Architects-St. Louis
American Society of Landscape Architects-
St. Louis
Archdiocese of St. Louis
Basilica of St. Louis, King (Old Cathedral)
Audubon Missouri
Audubon St. Louis
Canteen Services
Celebrate St. Louis
Chouteau's Landing Association
Coalition of Concerned National Park
ServiceRetirees
Confluence Greenway
Danforth Foundation
Downtown St. Louis Partnership
Dred Scott Foundation
East-West Gateway Coordinating Council
Fontbonne College
Forest Park Forever
Gateway Center of Metro St. Louis
Gateway Foundation
Grace Hill Settlement House
Green Center
Harris-Stowe University
Jefferson National Parks Association
Laclede's Landing Redevelopment
Corporation
Landmarks Association of St. Louis
Lindenwood University
Maryville University
Mercantile Library
Metro
Mississippi River Trail, Inc.
Missouri Baptist College
Missouri Coalition for the Environment
Missouri Historical Society
National Audubon Society (St. Louis chapter)
National Park Conservation Association
National Tour Association
National Trust for Historic
Preservation Library
Nature Conservancy
Open Space Council
Smithsonian Institution of Libraries
Southern Illinois University-Carbondale

Southern Illinois University-Edwardsville
Southwest Illinois College
St. Louis Community College
St. Louis Community Foundation
St. Louis Convention and Visitors Commission
St. Louis County Library-Main Branch
St. Louis Public Library-Main Branch
St. Louis Public School District
St. Louis Regional Commerce and
Growth Association
St. Louis University
Terminal Railroad
Trailnet
Trust for Public Land
University of Missouri-St. Louis
Washington University
Webster University

Media

Associated Press (Local)
Belleville News Democrat
KMOV-TV (CBS)
KMOX-AM Radio
KPLR-TV (CW11)
KSDK-TV (NBC)
KTRS 550 Radio
KTVI-TV (FOX)
KWMU 90.7 (Radio-University
Missouri- St. Louis)
South County Times
Southwest County Journal
St. Louis American
St. Louis Beacon
St. Louis Business Journal
St. Louis Post-Dispatch
Suburban Journals of Greater
St. Louis Headquarters
United Press International (Local)

Individuals and Adjoining Property Owners

There are more than 200 individuals to whom copies of this plan were sent or notification as to the availability of this plan was sent. A complete list of these names is on file at the Memorial Headquarters.

5.4 COMMENTS, AND RESPONSES TO COMMENTS, ON THE DRAFT PLAN

Comments on the Draft Plan

The *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* was made available for public review in mid January, 2009. Approximately 225 individuals and organizations were notified of the availability of the plan. The draft plan was then sent to 183 individuals, agencies, and organizations. The draft plan was also distributed at public meetings and posted on the Web. Approximately 130 correspondences were received on the draft plan during the public comment period.

Responses to Comments on the Draft Plan

In preparing a final general management plan and environmental impact statement, the National Park Service is required to respond to all substantive written and oral comments from the public or from agencies. The National Park Service is also required to make every reasonable attempt to consider issues or alternatives suggested by the public or by other agencies.

Letters and Web comments from federal and state agencies and from tribes are reprinted in full, along with NPS responses to substantive comments. Other substantive comments (from organizations and individuals) are paraphrased, and NPS responses are provided. The full text of letters, Web comments, e-mails, and meeting transcripts are a part of the project administrative record located at the Memorial. Comments are substantive if they do one or more of the following:

- (a) question, with reasonable basis, the accuracy of information in the document;
- (b) question, with reasonable basis, the adequacy of environmental analysis ;
- (c) present reasonable alternatives other than those presented in the draft document;

(d) cause changes or revisions in the proposal (preferred alternative).

Comments that simply state a position in favor of or against the proposed alternative, that only agree or disagree with NPS policy, or that otherwise express an unsupported personal preference or opinion are not considered substantive. Although the planning team is only obligated to respond to substantive comments, it has also responded to selected nonsubstantive comments for various reasons (e.g., politics, number of people responding, and the need to clarify the agency position).

On the following pages, comments from organizations and individuals are paraphrased and an NPS response is provided. These comments are organized by topic or theme, such as connectivity, design competition, or access. Following these comments, letters from agencies and organizations are reproduced in full with substantive comments bracketed and NPS responses provided.

Responses to Public Comments

DESIGN COMPETITION

COMMENT The Design Competition zone should be expanded to include a portion of the grounds near the eastern boundary of the Memorial in order to provide a stronger connection to the riverfront. This expanded zone could either include the portion of the Memorial grounds from the eastern boundary of the Memorial up to and including the railroad tunnels or the area from the riverfront to the base of the Arch.

RESPONSE In response to public comment, the planning team has placed the area between L.K. Sullivan Boulevard and the top of the slope above the railroad tunnels under a Design Competition Overlay (see Figure 2.3) in order to have design competition entrants explore creative and cohesive solutions to accessibility between the Memorial and the riverfront. All solutions offered by entrants will need to be situated in such a manner as to have as minimal impact as possible on the NHL. The Design Competition Overlay carries a requirement that all character-defining features and historic landscapes and

structures be preserved in order to minimize impact to the NHL.

COMMENT The design competition should be expanded to include additional areas within the Memorial grounds and/or areas outside of the boundaries of the Memorial.

RESPONSE In response to public comment, and to specifically address the City of St. Louis' interest in partnering with the NPS, the preferred alternative was changed to include Leonor K. Sullivan Boulevard, the connections into Laclede's Landing and Chouteau's Landing, and the entire boundary along Memorial Drive in the design competition to provide for a unified approach to revitalization of the entire streetscape surrounding the Memorial. The NPS would support a further expansion of the design competition boundary to areas directly adjacent to the Memorial, so long as the competition keeps to the original purpose and intent of revitalizing the Memorial and strengthening the connection of the Memorial to the surrounding cities. A geographically larger design competition is only possible in close cooperation with the cities of St. Louis and East St. Louis and the private property owners. The NPS has no administrative control of properties outside of the Memorial boundary.

COMMENT The Design Competition zone should be included in portions of the other alternatives.

RESPONSE The purpose of public review and comment on the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* was to assist the planning team in selecting the preferred alternative to carry forward into the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*, not to revise all of the alternatives in order to reconsider the full array again. At the close of the public comment period on March 16, 2009, and after review and analysis of all public comments, the planning team used the public responses to improve upon the original preferred alternative. The planning team moved

elements from alternatives 4 and 5 into the revised preferred alternative 3.

COMMENT The design competition should be reorganized into a series of smaller design competitions to address specific areas and issues that have been outlined in the GMP that require solutions, both on the borders of the Memorial and in East St. Louis. A large competition poses risks from designs that are incompatible with the National Historic Landmark designation and could disrupt established open space.

RESPONSE The NPS is concerned that dividing the competition into a series of smaller competitions will lead to a disjointed and potentially conflicting design aesthetic across the Memorial. The purpose of creating a single design competition for the Memorial and surrounding areas is to provide a unified approach to revitalization of the Memorial and to improve physical and thematic connections between the Memorial and the cities of St. Louis and East St. Louis.

There are parameters and criteria in place to ensure the final selected and implemented design is compatible with the purposes of the Memorial and preserves critical elements of the NHL and the fundamental resources of the Memorial, while at the same time providing ample opportunity for new and innovative connections between the Memorial, St. Louis and East St. Louis.

COMMENT A public design competition would prolong the time needed to address pressing issues when effective solutions have been proposed for the Memorial in other alternatives or exist in the original design plans that have yet to be implemented. The design competition should therefore be eliminated.

RESPONSE A GMP of this scope contains many implementation projects, many of which could be started soon after the signing of the Record of Decision, dependent upon funding and staffing. Preparation for the design competition described in the record of decision could start as soon as funding was available. The NPS is committed to working as quickly as possible to find effective solutions to the challenges at the Memorial.

COMMENT Goals, funding, and boundary delineations for a design competition remain unclear and have yet to be determined, leading to an unknown result and potentially eliminating public input. The design competition may also generate proposals and raise public expectations for those proposals that would violate National Park Service policy due to adverse impacts on cultural resources that are fundamental to the National Historic Landmark designation. The design competition should therefore be eliminated.

RESPONSE There are parameters and criteria in place to ensure the final selected and implemented design is compatible with the purposes of the Memorial, and preserves critical elements of the NHL and the fundamental resources of the Memorial. We believe the goals of the design competition are clearly articulated in the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*.

Funding for a design competition has not been procured and would only be sought after the close of the GMP/EIS process. At that time, the NPS most likely would enlist existing partners and develop new partnerships with many organizations to jointly sponsor a design competition.

In response to public comment, the design competition boundaries have been redrawn. Two maps illustrate the revised preferred alternative. The first map (Figure 2.2) shows how the NPS intends to manage the Memorial for the next 15-20 years. The zones, as placed on the ground, describe the desired future conditions the NPS will work to attain in specific areas of the Memorial. The zones are, in essence, management goals. The design competition is now set up as an overlay (Figure 2.3) in order to show how the parameters of a design competition work across the Memorial.

We have created the overlay, based on public comments, to demonstrate our commitment to protecting the NHL and fundamental resources and values of the Memorial while providing a forum in which to gather the widest breadth of ideas to resolve current challenges. Design Competition Area A and

Area B differ in the amount of allowable change, but share the same goal of preserving the NHL. In contemplating changes to the Memorial, entrants should be mindful of the *Secretary of the Interior's Standards for Preservation and the Treatment of Historic Properties and Cultural Landscapes*, and the competition finalists, selected by a multidisciplinary panel of judges, will be subject to NEPA and NHPA compliance, consultation with other agencies and further public review and comment. Ultimately the NPS will select the winning entry.

COMMENT A design charrette conducted with Memorial neighbors should be considered as part of the planning process to expand NPS programs and outline how issues at the Memorial boundaries will be addressed.

RESPONSE The logistical details of the design competition have not been worked out. After the record of decision is signed that includes a design competition in the selected alternative, a professional design competition advisor would be retained as soon as practicable to assist in developing the specific program for the competition, including significant public involvement.

MANAGEMENT ZONING

COMMENT The Old Courthouse should be included in the Design Competition zone in order to define its use.

RESPONSE The Old Courthouse is zoned for Heritage Education and Visitor Amenities. This zone allows the National Park Service to enhance the building's established use for visitor education and orientation. Exhibits and other program elements would be redesigned to engage visitors in more interactive participation.

COMMENT In the preferred alternative, the portions of Washington Street, Poplar Street, and Leonor K. Sullivan Boulevard that were zoned as Streetscape/Riverscape in the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* should be changed and zoned as Design Competition in order to allow the design competition to explore better connections to the

surrounding neighborhoods and enhance the riverfront experience.

RESPONSE In response to public comment and to specifically address the City of St. Louis' interest in partnering with the NPS on the design competition, the planning team has placed Washington and Poplar Streets, Memorial Drive, Leonor K. Sullivan Boulevard and the adjacent riverfront area under a Design Competition Overlay (see Figure 2.3). This change will facilitate a unified approach to revitalization of the entire streetscape surrounding the Memorial, and provides design entrants with opportunities to improve physical and thematic connections between the Memorial and cities.

COMMENT The Streetscape/Riverscape and Orientation zones are similar and should be combined into one zone.

RESPONSE The Streetscape/Riverscape zone specifically targets pedestrian-oriented areas that transition from the adjacent urban areas into the Memorial to improve connectivity between the two. The Orientation zone is characterized by visitor orientation and wayfinding. Its purpose is specifically to provide services that address visitor needs and make visits to the Memorial safer and more enjoyable. Because these two zones have different, distinct goals, the zones will not be combined in the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement*.

MEMORIAL USE

COMMENT The train tracks should be covered and brought to grade to create more usable space within the Memorial.

RESPONSE The train tracks, present along the riverfront prior to the designation and creation of the Memorial, were moved and covered in part to allow for the construction of the Gateway Arch. The railroad cuts and tunnels were designed by Saarinen and are a contributing feature of the NHL, as well as a structural necessity. The Railroad tunnels and corresponding railroad "cuts" also were specifically designed to provide ventilation. As character-defining features, they need to be preserved in order to minimize impact to

the designed landscape. The purpose of the Original Landscape zone is to preserve the NHL status of the Memorial, and it allows for sensitive rehabilitation of the landscape as necessary to provide safe visitor access and security, so long as the integrity of the NHL is protected.

COMMENT The North Overlook should include a new significant structure/landmark.

RESPONSE In the preferred alternative, the North and South Overlooks were re-zoned as Heritage Education and Visitor Amenities and included in Design Competition Area B in response to public comment. This zoning would allow rehabilitation of the overlooks to provide better visitor orientation, education, and appropriate and necessary visitor amenities. Facilities could include educational exhibits, visitor contact stations, spaces designed for educational programs, restrooms, and food service. The overlooks are character defining features that reflect the Saarinen-Kiley concept and thus contribute to the significance of the National Historic Landmark. They were designed to provide expansive views of the Mississippi River and the Gateway Arch (page 3-16) and to appear symmetrical (page 2-26), as such their symmetry is an important value to continue. In addition, the overlooks serve as a structural part of the railroad tunnels and concrete floodwalls (page 3-9), as designed by Saarinen, which contribute to the significance of the National Historic Landmark. Any improvements made to the overlooks would preserve the character defining features.

COMMENT The south end of the Memorial could be developed with a parking garage, museum, and/or shuttle terminal to balance the development of the north end of the Memorial.

RESPONSE In response to public comment, the south end of the Memorial has been included in Design Competition Area A in order to show the NPS goal to provide improved visitor access and orientation at the south end of the Memorial grounds. It is the NPS' intention that the existing maintenance facility will be maintained in the current location in order to capture the benefits of the relatively new building while at the same time allowing for

additional uses of this underutilized area. However, the ultimate configuration and combined use of space in the north and south ends of the Memorial will be determined through a design competition.

COMMENT Additional bridges across the Mississippi River should be considered.

RESPONSE To the north of the Memorial, Eads Bridge provides visitors automobile, rail, bicycle and pedestrian access across the Mississippi River. To the south, the Poplar Street bridge provides automobile access across the river to the Memorial. The NPS does not propose additional automobile bridges across the River; however, the NPS will continue to support the efforts of the Great Rivers Greenway and its partners to develop pedestrian/bicycle connections near the south end of the Memorial, so that visitors might be able to cross the Mississippi River and connect to both east and west portions of the Memorial. NPS believes this could offer great benefits for visitor access, use and enjoyment.

COMMENT A number of ideas for program expansion were proposed such as: introducing water features (including boats and related amenities), integrating the history of the Memorial site (including reconstructing a trading post or general store), and adding amenities such as a playground, picnic tables and benches.

RESPONSE Proposals for specific features will be included in a design competition, guided by the goals, parameters, and criteria as discussed in the *Final Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* and noted elsewhere in our responses to public comments. In addition, the revised management zones for the preferred alternative (alternative 3) and the goals implicit in those zones also provide guidance for design competition entrants. In response to public comments, all management zones except the Service zone have been adjusted to allow for the inclusion of benches or site furnishings, which includes benches. Picnicking and informal games and activities are allowable and established activities on the Memorial grounds. NPS policy does not allow for

reconstruction of cultural elements except in rare circumstances (Section 5.3.5.4.4, Management Policies 2006). Designated playgrounds are not compatible with the purpose of the memorial.

COMMENT Several new ideas were proposed specifically related to accessibility, including making the Arch barrier-free accessible and providing a tram service to shuttle visitors with mobility impairments around the grounds of the Memorial.

RESPONSE Based on public comment on the draft plan, a visitor transportation system linking visitor attractions within and outside of the Memorial (alternative 5) was incorporated into the revised preferred alternative 3. In all development planning, the NPS is required by law to consider ways to provide and improve opportunities for visitors with limited mobility and other disabilities. The preferred alternative would establish barrier-free routes from the Memorial grounds to the riverfront and any new facilities would incorporate accessibility in its widest interpretation. Emerging technologies will continue to be explored for ways to make the tram and observation deck at the top of the Gateway Arch accessible.

COMMENT The East St. Louis addition should be configured to reflect the original design plan, regardless of current property boundaries and should consider integrating a master development of adjacent lands.

RESPONSE The authorizing legislation that allows the National Park Service, through the Secretary of the Interior, to designate an East St. Louis “addition” to the Memorial states “that the boundaries are to approximately 100 acres continuous with the Mississippi River between the Eads Bridge and the Poplar Street Bridge (P.L. 98-398 and P.L. 102-355).” Given these parameters, and in recognition of the existing commercial developments and existing infrastructure, the planning team considered a range of optional boundary proposals. The NPS is recommending an addition that encompasses approximately 100 acres - the earlier preferred alternative proposed an addition of approximately 70 acres. The entire East St. Louis addition is encompassed by Design Competition Overlay

Area A in order for the NPS to capture the most creative, innovative ideas for its development. To that end, the NPS embraces a design competition that would effectively integrate with and revitalize East St. Louis, strengthen the connection between the two riverfronts and support the underlying purpose of Jefferson National Expansion Memorial.

COMMENT Adjacent property should be acquired as a buffer to protect the Memorial from encroaching commercial development.

RESPONSE The National Park Service generally has no opposition to adjacent commercial activity provided the adjacent development does not impair Memorial resources and does not impede visitor use and enjoyment of the Memorial. Additionally, it is against NPS policy to acquire buffer lands outside park boundaries.

GMP AND EIS ANALYSIS

COMMENT The GMP/EIS needs to include an impact analysis for visitor attendance and economic impacts for each of the elements that may be part of the design competition. This analysis should incorporate the information prepared for the 2007 Danforth Foundation study.

RESPONSE The *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Statement* included a discussion of visitor attendance and the economic impacts of the Memorial (pages 3-40 through 3-45). This analysis included the number of recreational visitors in 2003 (2.69 million) and their various economic contributions, including direct spending and other additional economic activity generated.

NPS has considered the previous work completed by the Danforth Foundation in evaluating all the action alternatives. However, most of the analysis is not relevant. This is partially due to the fact that the specific elements proposed (ice skating rink, restaurants, rock climbing wall, amphitheater, beer garden, specialty shops and retail, etc.) are not necessarily appropriate within the Memorial. Also, NPS has purposely not specified elements that could be part of the

design competition in order to not prematurely influence the creative process in determining what is possible for the Memorial.

While it was the objective of the Danforth Foundation to propose ideas and projects that provide extensive development of the riverfront, in order to maximize visitors and generate economic development for St. Louis, this is not the objective of the NPS. The purpose of the Memorial, first and foremost, is to commemorate President Jefferson's vision for a unified nation across the continent, then, to provide for visitor use in such a manner as leaves the resources unimpaired for future generations. Visitation must be considered in light of other objectives and policies such as the protection of historic, cultural, and natural resources. The geographic focus of the Danforth Foundation studies was the riverfront area along Leonor K. Sullivan Boulevard adjacent to the Memorial. Their proposed development included a mix of recreational uses such as outdoor recreational facilities and restaurants. There are currently no elements similar to this proposed development in any of the GMP action alternatives. Thus, inclusion of these results into the analysis of the GMP/EIS alternatives is not appropriate.

Current visitation to the Memorial is close to three million visitors per year; these visitors provide an influx of revenue for the local economy. This influx of revenue is estimated to generate over 1,950 jobs and \$52 million in income in the region. The purpose of the GMP/EIS is to describe different alternatives for revitalizing the Memorial, and to analyze the likely consequences of those actions. The final preferred alternative includes a design competition that has not specified the elements that may impact visitation. Once the competition finalists have been selected, an environmental analysis will evaluate the impacts each of the final designs and any new facilities would have on the local and regional economy.

COMMENT The natural resource impacts typically assessed in general management plans [i.e. air quality, wildlife, etc.] were dismissed without further consideration in the alternatives.

RESPONSE The impact topics that were considered and dismissed are discussed on pages 1-12 through 1-18. These topics were dismissed from further analysis because implementing the alternatives would have little (negligible or minor) to no impact to those resources at the Memorial, or because the resource does not occur within the Memorial.

COMMENT The GMP does not include a traffic study that supports the assertion that the streets surrounding Memorial Drive have adequate capacity to absorb traffic without diminishing the level of service if Memorial Drive is closed.

RESPONSE The NPS, City of St. Louis, the Missouri Department of Transportation, the Illinois Department of Transportation, East West Gateway Council of Governments, and the Federal Highway Administration worked together to study multiple scenarios for the closure of Memorial Drive and the rerouting of traffic onto other downtown streets. The impetus for a potential closure of Memorial Drive was to eliminate the conflict between pedestrians and vehicles, increasing the physical and thematic connectivity between the city and the Memorial and improving, overall, the visitor experience. Within the traffic study, analysis was based on forecasted conditions for 2011. In particular, this study identified the traffic impacts on adjacent streets and intersections to the Memorial in downtown St. Louis. Four scenarios were tested as part of the traffic study:

1. A No-Build Scenario of that assumes traffic patterns continue as they currently exist.
2. A one block closure of Memorial Drive between Market St. and Chestnut St.
3. A two block closure of Memorial Drive between Chestnut St. and Walnut St.
4. A three block closure of Memorial Drive between Pine St. and Walnut St.

The Memorial Drive Traffic Study (NPS 2009) lists the potential impacts to vehicular circulation on the streets surrounding Memorial Drive, as measured by Level of Service (LOS), for each potential scenario. This measurement calculates the seconds of delay at a particular intersection, giving a qualitative score to the length of time it takes a vehicle to

pass through the intersection. See Appendix J for the table of intersections analyzed as part of the Memorial Drive Traffic Study.

MEMORIAL DRIVE AND I-70

COMMENT Changing the traffic patterns around the Memorial by manipulating the actual street configuration could include closing Memorial Drive between Walnut Street and Pine Street, rerouting the traffic to 4th Street and Broadway Street, and closing or reconfiguring Chestnut and Market Streets between 4th Street and Memorial Drive (while leaving vehicular access to the establishments along those blocks).

RESPONSE The NPS, City of St. Louis, the Missouri Department of Transportation, the Illinois Department of Transportation East West Gateway Council of Governments, and the Federal Highway Administration worked together to study multiple scenarios for the closure of Memorial Drive and the rerouting of traffic onto other downtown streets. The Memorial Drive Traffic Study (NPS 2009) examined the impacts to adjacent downtown streets and intersections, including Pine, Chestnut, Market, Walnut, 4th, and Broadway Streets, that would result from a potential one, two, or three block closure of Memorial Drive adjacent to the Memorial. Each of the scenarios modeled as part of the traffic study considered potential changes to the lane configurations and on-street parking spaces that would be needed in the event of a partial closure of Memorial Drive.

The revised preferred alternative includes the option of a one- or three-block closure of Memorial Drive to vehicular traffic.

In addition, we agree with the commenters that vehicular access to the existing parking garages on those blocks would need to remain. The blocks adjacent to Luther Ely Smith Square are zoned Streetscape/Riverscape and are included in Design Competition Area A, and as such may evolve depending upon the results of the competition.

COMMENT Memorial Drive should be redesigned into a pedestrian friendly, at-grade boulevard to best reconnect the

Old Courthouse and the rest of downtown to the Memorial.

RESPONSE The revised preferred alternative includes the option of a one- or three-block closure of Memorial Drive to vehicular traffic, in both directions, as part of the design competition mandate to improve connections between downtown St. Louis and the Memorial. This potential closure is based on the previously mentioned traffic study and could significantly contribute to improved pedestrian conditions at the Memorial by eliminating Memorial Drive as a continuous high-speed traffic corridor. In place of Memorial Drive, some combination of a single elevated deck, multiple bridges, or improved at grade crossings could occur, depending upon the outcome of the Design Competition, connecting the Gateway Arch to the Old Courthouse.

COMMENT On-street, metered parking would meet future parking needs, particularly along Memorial Drive, and contribute to traffic calming.

RESPONSE The preferred alternative anticipates meeting all future parking needs at the site of the existing parking garage at the north end of the Memorial, next to the Old Cathedral, and through the numerous on- and off-street parking facilities within downtown St. Louis, surrounding the Memorial. As previously mentioned, the Memorial Drive Traffic Study (NPS 2009) examined the effects of potentially closing a portion of Memorial Drive to vehicular traffic. Should a one- or three-block closure of Memorial Drive occur as an outcome of the design competition, it could significantly contribute to traffic calming and improved pedestrian conditions adjacent to the Memorial by eliminating a portion of the street as a single, continuous high-speed vehicular traffic corridor.

Due to the potential re-configuration of adjacent downtown streets to accommodate re-routed traffic off of any closed section of Memorial Drive, the remaining portions of Memorial Drive would be unable to accommodate on-street parking. This is due to the needed capacity of those remaining

segments of Memorial Drive, particularly as they function in relation to I-70.

COMMENT The portion of I-70 adjacent to the Jefferson National Expansion Memorial should be removed in order to eliminate the physical and psychological barrier it creates.

RESPONSE The National Park Service would prefer and strongly supports the removal of the Interstate highway between Poplar Street Bridge and Eads Bridge at some point in the future. We recognize an undertaking of this magnitude may not be possible during the time frame this GMP addresses (15-20 years), but we would amend the GMP should such an opportunity become feasible prior to the expiration of this plan. The NPS will continue to coordinate with the City of St. Louis, Missouri Department of Transportation, East West Gateway Council of Governments, the Federal Highway Administration, and all other related agencies regarding impacts to the Memorial and Memorial visitors due to the location and configuration of this highway. The NPS is committed to finding ways to mitigate the physical and aesthetic challenges of the interstate. Please refer to our responses concerning the potential of a partial closure of Memorial Drive, the creation of a civic plaza, and west portal to the Memorial.

COMMENT A new, below-grade parking structure could replace the sunken lanes of I-70 adjacent to the Memorial and should be mentioned in the design competition.

RESPONSE As mentioned above, the National Park Service would prefer and strongly supports the removal of the Interstate highway between Poplar Street Bridge and Eads Bridge at some point in the future. If the removal of I-70 became feasible, options for the vacated I-70 corridor would then be explored. Future parking needs at the Memorial will be met at the site of the existing parking garage, next to the Old Cathedral and potentially underneath Luther Ely Smith Square, as determined by the outcome of the design competition.

INTERPRETIVE THEMES

COMMENT The prehistory of the area is not addressed in the General Management Plan

and it should be, especially because of the close association with Cahokia Mounds on the other side of the Mississippi River.

RESPONSE The management and planning for units of the national park system is based, in large part, on the reason for the park's existence or park purpose (see page 1-5), those things that make the park distinctive (significance) and the fundamental resources and values that exemplify the park's purpose and significance. The Memorial's purpose, firmly established in legislation, is to commemorate President Jefferson's vision of building a nation that stretched across the continent, to interpret the role of St. Louis in exploiting and peopling the "West", and to preserve the Old Courthouse as the site of the Dred Scott case.

Though the story of the prehistory of the region is compelling, it is not the Memorial's purpose to preserve, commemorate or interpret the prehistory of the area. Based on the archeological investigations that have taken place both within and around the Memorial grounds, it is unlikely that prehistoric materials exist under the early historic remains (see page 3-21), and early maps which chronicle the location of a mound group well to the north of the current Memorial indicate that there were no mounds or evidence of habitation sites in the area of the Memorial. Exhibits may be rehabbed to reflect the fact that the region was populated by Native groups of various types for thousands of years prior to colonial, territorial and Federal habitation, but this level of planning is outside the scope of the GMP.

COMMENT The original vision of the Memorial is limited by its Eurocentric context and does not embrace the diverse and holistic nature of westward expansion.

RESPONSE Jefferson National Expansion Memorial's purpose statements are derived from the 1935 executive order designating the Memorial as well as subsequent legislative history specific to the Memorial and laws and policies that govern all national parks. These purpose statements, together with the park's significance statements, fundamental resources and values, and interpretive themes, include recognition of the important role cultural diversity played in westward expansion and specifically highlight the significance of removing American Indian tribes from their lands and the important role the Dred Scott court case played in the expansion of slavery into western lands (pages 1-6 through 1-9).

Although the original vision of the Memorial may have been somewhat limited, subsequent interpretations broadened that conception and have enabled the interpretive program to evolve, just as perceptions of the West by both historians and the general public have evolved. The Memorial commemorates change on a vast scale and the main challenge in interpreting the site is to convey a far more complex story than may have originally been recognized.

Responses to Agency Comments

(Please see responses to agency comments following the original letter.)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

11 MAR 2009

Superintendent Tom Bradley
Jefferson National Expedition Memorial
11 North 4th Street
St. Louis, MO 63102

Dear Superintendent Bradley:

RE: Review of Draft Environmental Impact Statement for the Jefferson National Expansion Memorial, General Management Plan, Implementation, St. Louis, MO

Regions 5 and 7 of the U.S. Environmental Protection Agency have reviewed the Draft Environmental Impact Statement for the Jefferson National Expansion Memorial GMP. Our review is provided pursuant to the National Environmental Policy Act 42 U.S.C. 4231, Council on Environmental Quality regulations 40 C.F.R. Parts 1500-1508, and Section 309 of the Clean Air Act. The DEIS was assigned the CEQ number 20090004.

The GMP/DEIS includes four alternatives and six management zones for use within the Memorial. There is a no action alternative and three action alternatives (3, 4, and 5). Alternative 2 was withdrawn from consideration. Alternative 3 is the preferred alternative. The preferred alternative, "Program Expansion," would capitalize on multiple opportunities to expand the visitor experience throughout the Memorial. To gain the widest breadth of ideas for expansion, a design competition would be initiated by the National Park Service in close coordination with partners.

Based on the fact that the design competition for the preferred alternative has not yet begun, and that the result of an implemented design may cause "moderate to major long-term adverse to beneficial impacts on transportation" (conclusion, page 4-30), the EPA has rated the DEIS for this project Environmental Concerns-2 (insufficient information). A copy of EPA's rating descriptions is provided as an enclosure to this letter.

Overall, the document conveys a sense of thorough evaluation and wide encompassing coordination. Particularly noteworthy for use in comparative analysis of effects is Section 4.2, (Methods and Assumptions for Analyzing Impacts). We also commend the National Park Service for entering into an agreement with the St. Louis chapter of the National Audubon Society to turn off the lights that illuminate the Gateway arch during the Spring and Fall bird migration.



EPA offers a few observations and recommendations as follows:

1. Park land holdings contain considerable urban fill. Caution should be exercised when building new infrastructure with respect to asbestos, and wastes from previous activities undertaken on Memorial lands (e.g. W.H. Bull Medicine Factory).
2. Metropolitan and State transportation planners (East-West Gateway, Missouri Department of Transportation, Federal Transit Authority...) might assist in influencing the design competition specifications to preclude designs that are likely to result in an adverse effect.
3. The results of American Indian consultation with the Peoria Tribe, and others, should be completed and those results included in the Final EIS.
4. The FEIS should include any commitments on behalf of the NPS to adhere to E.O.13423, "Strengthening Federal Environmental, Energy, and Transportation Management," and/or Leadership in Energy and Environmental Design goals. We suggest informing design competition entrants about the sustainability commitments of the NPS at the beginning of the design competition.
5. In addition to the general air-quality mitigation measures listed on page 1-15, please also consider adding:
 - construction equipment and tour buses will be shut down when not in use,
 - how anti-idling measures will be enforced, and
 - retrofitting all diesel powered construction equipment with diesel oxidation catalysts or diesel particulate filters.
6. The following typographical errors:
 - Page 1-13, Environmental Justice Section, 2nd paragraph, 2nd sentence needs clarification.
 - Page 4-13, Sections 4.3 and 4.4, the letters "e" and "n" are substituted for each other in the titles of those sections.

Thank you for the opportunity to provide comments regarding this project and your DEIS. If you have any questions or concerns, please contact Joseph Cothorn at (913) 551-7148.

Sincerely,



Ronald F. Hammerschmidt, Ph.D.
Director
Environmental Services Division

cc: Julie Guenther, U.S. EPA, Region 5, Chicago, IL
Nick Chevance, NPS, Omaha, NE

RESPONSES

1. In locations where new infrastructure would create substantial ground disturbance at depths that may encounter previous urban fill, drill core samples would be taken to determine substrate materials. If hazardous materials are determined to be present, appropriate mitigation would be taken at that time to ensure the health, safety and welfare of the general public and employees.

2. Substantive comments were received regarding transportation. In the process of responding to those comments, the National Park Service initiated a transportation study to more fully understand how a change to Memorial Drive might impact downtown transportation. The NPS, City of St. Louis, the Missouri Department of Transportation, the Illinois Department of Transportation, East West Gateway Council of Governments, and the Federal Highway Administration worked together to study multiple scenarios for the closure of Memorial Drive and the rerouting of traffic onto other downtown streets.

3. Tribal consultation with the Peoria Tribe and the Osage Tribe has occurred and would proceed throughout subsequent planning stages as the selected alternative is implemented.

4. One of the goals of a design competition - noted in the *Draft General Management Plan/ Environmental Impact Statement* - carried through to the *Final General Management Plan/ Environmental Impact Statement*, is the NPS commitment to “Operational efficiency and effectiveness for the Memorial’s operation in

a sustainable manner (page 2-12).” Further, the National Park Service’s commitment to overall operational sustainability and LEED™ certification is described in Chapter 2 of this document (page 2-41).

5. As authorized by the Code of Federal Regulations, Title 36, Chapter 1, Parts 1-7, the 2009 Superintendent’s Compendium of Designations, Closures, Permit Requirements and Other Restrictions Imposed Under Discretionary Authority specifically prohibits the idling of engines in the bus pullout zone near the Old Cathedral. This regulation is enforced by commissioned Park Rangers and through the issuance of citations to drivers violating the anti-idling restriction. Construction equipment anti-idling measures would be incorporated into Memorial operations for work done by employees and addressed on a contract by contract basis for work done by contractors.

The Memorial operates one diesel powered backhoe using low sulfur fuel that met EPA standards at the time it was purchased. When this piece of equipment is replaced or NPS acquires additional diesel powered construction equipment, new equipment will be fitted with either diesel oxidation catalysts or diesel particulate filters. All contractors performing work on NPS property will be encouraged to use equipment fitted with either diesel oxidation catalysts or diesel particulate filters.

6. The typographical errors have been corrected (pages 1-13 and 4-13).



OFFICE OF THE MAYOR
CITY OF ST. LOUIS
MISSOURI

FRANCIS G. SLAY
MAYOR

CITY HALL - ROOM 200
1200 MARKET STREET
SAINT LOUIS, MISSOURI 63103-2877
(314) 622-3201
FAX: (314) 622-4061

March 13, 2009

Mr. Tom Bradley
Superintendent, Jefferson National Expansion Memorial
National Park Service
United States Department of the Interior
11 North 4th Street
St. Louis, Missouri 63102

Dear Superintendent Bradley,

The purpose of this letter is to thank you and the National Park Service (NPS) for your hard work and willingness to consider changes to the grounds of the Gateway Arch.

As you will recall, I have asked three of St. Louis' leading citizens – Walter Metcalfe, Dr. Robert Archibald and Dr. Peter Raven – to advise my administration. I know my advisors have been active in your General Management Plan process as you consider the future of the Jefferson National Expansion Memorial. I am pleased to learn that NPS has placed an emphasis on improving connections between the Arch grounds and downtown and that there is a willingness to consider a new destination attraction.

I have attached the statement prepared by Mr. Metcalfe and Drs. Archibald and Raven. I fully endorse this statement and urge you to give it great consideration. There are many important points, but I would like to briefly focus on two: the proposed design competition and a completion date for improvements.

The Arch and its surrounding grounds have stood in isolation far too long. NPS and the City of St. Louis have an opportunity, as a result of your planning process, to work together to enhance the Arch and the

1 City. I urge you to expand the design area to include the St. Louis riverfront, the connections into Laclède's Landing and Chouteau's Landing and the entire boundary along Memorial Drive where the Arch grounds meet the City. Within that design area, we can work together through an international design competition to develop a destination attraction and improved parking and pedestrian connections that enhance the Riverfront, the Arch and downtown – some of the greatest assets of our region.

2 Like before, I completely endorse the use of the regional, nonprofit trust to sponsor the design competition and to help raise funds for the new destination attraction. As Mayor of the City of St. Louis, I pledge to work with NPS and the trust to conduct the design competition with this expanded area to bring about many positive improvements for the Arch and our City.

3 Finally, I urge you to set the 50th anniversary of the completion of the Arch, October, 2015, as the completion date for the project. It is critical that we have a shared goal and timetable to rally the interested parties to realize the possibilities of the Riverfront and Park.

We have an opportunity to once again celebrate the Arch – to once again be reminded of excitement and magnificence of the Mississippi River and daring optimism and energy of westward expansion. I look forward to working with you.

Sincerely,

Francis G. Slay
Mayor, City of St. Louis



RESPONSES

1. In response to public comment, and to specifically address the City of St. Louis' interest in partnering with the NPS, the preferred alternative was changed to include Leonor K. Sullivan Boulevard, the connections into Laclede's Landing and Chouteau's Landing and the entire boundary along Memorial Drive in the design competition to provide for a unified approach to revitalization of the entire streetscape surrounding the Memorial. The NPS would support a further expansion of the design competition boundary to areas directly adjacent to the Memorial, so long as the competition keeps to the original purpose and intent of revitalizing the Memorial and strengthening the connection of the Memorial to the surrounding cities. A geographically larger design competition is only possible in close cooperation with the cities of St. Louis and East St. Louis and the

private property owners. The NPS has no administrative control of properties outside of the Memorial boundary.

2. If a design competition is included in the selected alternative, the NPS most likely would enlist existing partners and develop new partnerships with many organizations to jointly sponsor a design competition.

3. Until the National Park Service has signed a Record of Decision selecting the alternative that is to be implemented, it would be pre-decisional for the agency to set a completion date. The implementation of the approved GMP depends on future funding and a host of external factors outside the direct control of the National Park Service. The approval of the plan does not guarantee funding, though the NPS would be diligent in its efforts to procure necessary funding.



PEORIA TRIBE OF INDIANS OF OKLAHOMA

118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538

P.O. Box 1527

MIAMI, OKLAHOMA 74355

CHIEF

John P. Froman

SECOND CHIEF

Jason Dollarhide

January 14, 2009

United States Department of the Interior
Attn: Thomas Bradley
Superintendent
National Park Service
Jefferson National Expansion Memorial
11 North Fourth Street
St. Louis, MO 63102-1882

RE: Jefferson National Expansion Memorial

Thank you for notice of the referenced project. The Peoria Tribe of Indians of Oklahoma is currently unaware of any documentation directly linking Indian Religious Sites to the proposed construction. In the event any items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) are discovered during construction, the Peoria Tribe request notification and further consultation.

The Peoria Tribe has no objection to the proposed construction. However, *if any human skeletal remains and/or any objects falling under NAGPRA are uncovered during construction, the construction should stop immediately, and the appropriate persons, including state and tribal NAGPRA representatives contacted.*

John P. Froman
Chief

xc: Bud Ellis, Repatriation/NAGPRA Committee Chairman

TREASURER
John Sharp

SECRETARY
Hank Downum

FIRST COUNCILMAN
Carolyn Garren

SECOND COUNCILMAN
Jenny Rampey

THIRD COUNCILMAN
Alan Goforth



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Columbia Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, Missouri 65203-0007



Phone: (573) 234-2132 Fax: (573) 234-2181

MEMORANDUM

To: Superintendent Tom Bradley, Jefferson National Expansion Memorial,
National Park Service (NPS)

From: Charlie Scott, Field Supervisor, Columbia Ecological Services Field
Office, U. S. Fish & Wildlife Service (Service)

Subject: Informal Consultation – Future Management Alternatives for Jefferson
National Expansion Memorial

We have reviewed the information in your November 7, 2008, memorandum pertaining to four management alternatives being considered for future improvements and expansion of the Memorial in St. Louis, Missouri and East St. Louis, Illinois. You provided an assessment of the action's impact on species listed under the Endangered Species Act. You determined that the Indiana bat and gray bat were unlikely to occur in the project area and that the action is not likely to adversely affect the pallid sturgeon and decurrent false aster.

We concur with your determinations on the pallid sturgeon, Indiana bat, and gray bat. We are deferring further informal consultation and concurrence for the decurrent false aster in Illinois to the Marion, Illinois Ecological Services Field Office. As stated in your memorandum, the project site in East St. Louis contains suitable habitat for this plant and nearby survey information by the Illinois Department of Transportation indicates that the species may occur at this location. Based on this information, a survey of the site for the decurrent false aster may be necessary. As project plans progress for the East St. Louis site, you propose that the NPS and Service coordinate and evaluate the effects of more specific alternatives on the decurrent false aster and its habitat. Please coordinate with Ms. Joyce Collins of the Marion, Illinois Ecological Services Field Office pertaining to We appreciate the opportunity to review this action. Please contact me if you have any questions or require any additional information.

Charles M. Scott
Field Supervisor

cc: Joyce Collins, USFWS, Marion, IL ESFO w/cy of incoming memorandum and attachments



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Marion Illinois Suboffice (ES)

8588 Route 148

Marion, IL 62959

(618) 997-3344

January 12, 2009

Memorandum

To: Superintendent Tom Bradley, Jefferson National Expansion Memorial, National Park Service (NPS)

From: Joyce Collins, Assistant Field Supervisor, Marion Ecological Services Sub-Office, U.S. Fish & Wildlife Service (Service)

Subject: Informal Consultation – Future management alternatives for Jefferson National Expansion Memorial

We have received and reviewed the information in your November 7, 2008, memorandum regarding the proposed expansion of Jefferson National Memorial in Saint Louis, Missouri and East Saint Louis, Illinois. This action consists of four management alternatives, including a no action alternative. You listed actions that may merit consideration by the Fish and Wildlife Service including the potential redesign and restructuring of some areas of the Memorial grounds on the Missouri side of the Mississippi River, expanded use and development of properties east of the river, including a possible ferry connection across the Mississippi River, riverfront and museum development and a potential reconfiguration of local highways.

The Columbia Ecological Services Field Office sent a memorandum to your office concurring with your determinations on the pallid sturgeon, Indiana bat, and gray bat and deferred further informal consultation and concurrence for the decurrent false aster in Illinois to our office. As stated in your memorandum, the project area on the river side of the levee flood wall in East St. Louis appears to contain suitable habitat for the decurrent false aster and a positive finding by the Illinois Department of Transportation one mile north indicates that the species may occur within the project area.

Information in the memorandum indicates that given the general nature of the planning effort and the ability to take into account and plan for the preservation of any populations of decurrent false aster during future implementation of any proposed actions in East St. Louis, the Jefferson National Expansion Memorial has made a “may affect but not likely to adversely affect” determination. Additionally, the NPS proposes that the NPS and Service communicate and

evaluate individual site-specific project designs and construction proposals for the East St. Louis Addition to determine specific effects to the decurrent false aster and its habitat.

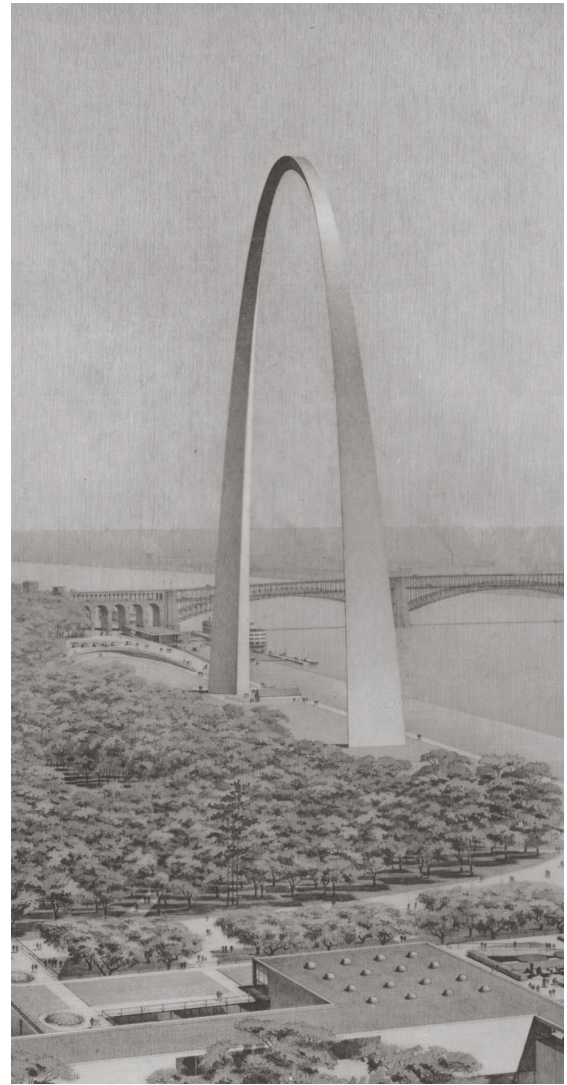
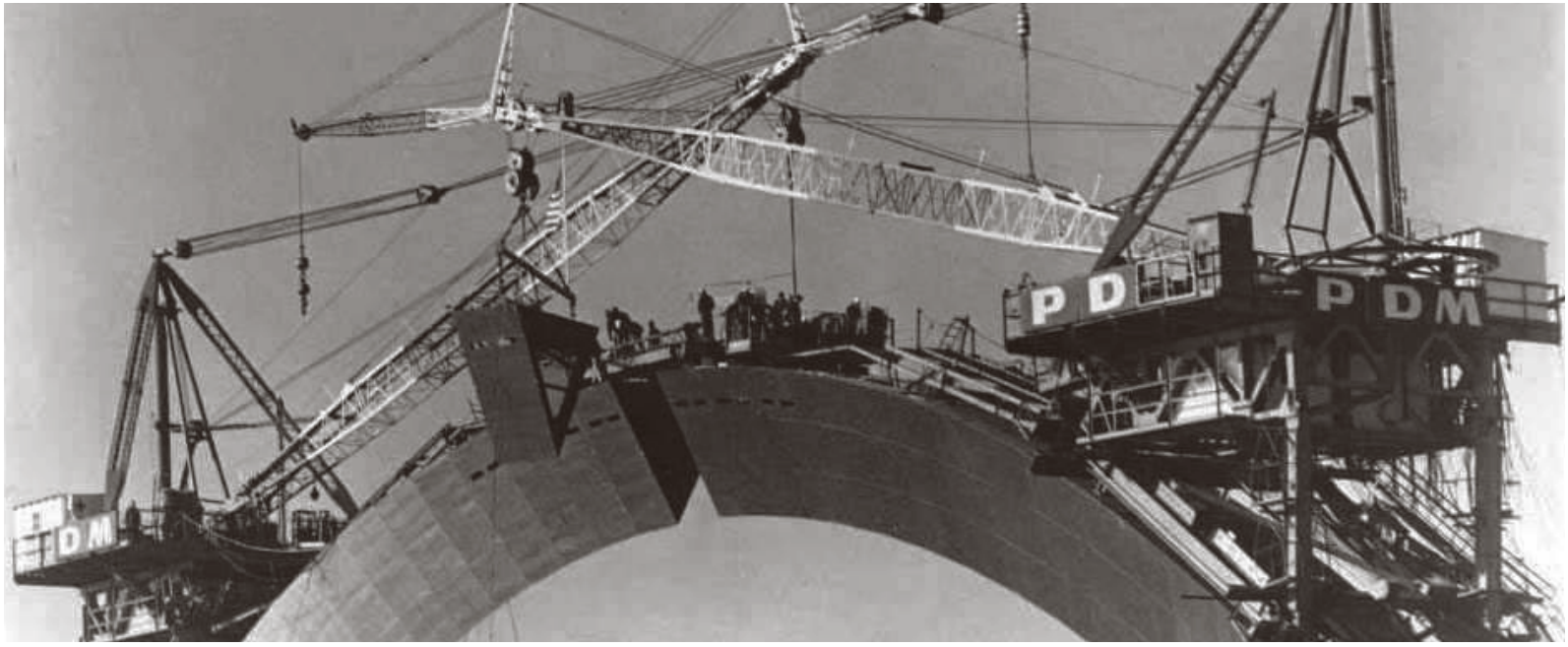
Provided that any future site-specific project designs and construction proposals are coordinated with our office during the early planning stages, we would concur that the proposed activity may effect but not likely to adversely affect the decurrent false aster. Depending on future project designs, a survey of the site for decurrent false aster may be necessary. In addition, we would recommend that any future project proposals that include a possible ferry connection across the Mississippi River or in channel construction be coordinated with this office to determine potential effects to the pallid sturgeon and its habitat.

Thank you for the opportunity to review the proposed project alternatives. We look forward to coordinating with you on this project in the future. If you have any questions, please contact Matt Mangan of my staff at (618) 997-3344, ext. 345.

Sincerely,

/s/ Joyce A. Collins

Joyce A. Collins
Assistant Field Supervisor



Appendices

Appendix A: Establishment Legislation

Executive Order

ALLOCATION OF FUNDS TO THE SECRETARY OF THE INTERIOR FOR THE ACQUISITION AND DEVELOPMENT OF A HISTORIC SITE TO BE KNOWN AS THE JEFFERSON NATIONAL EXPANSION MEMORIAL

WHEREAS the act of August 21, 1935, Public No. 292, 74th Congress, declares it to be a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States; and

WHEREAS the Secretary of the Interior through the National Park Service has determined that certain lands situate on the west bank of the Mississippi River at and near the site of Old St. Louis, Missouri, possess exceptional value as commemorating or illustrating the history of the United States and are a historic site within the meaning of the said act, since thereon were situate: the Spanish Colonial office where, during the administration of Thomas Jefferson, third President of the United States, all the first territory comprised in the Upper Louisiana Purchase was transferred to the United States; the Government House at which, on March 9, 1804, Charles Dehault Delassus, the Spanish commandant in St. Louis, transferred possession of Upper Louisiana to Captain Amos Stoddard of the United States Army, who had been delegated by France as its representative, and at which, on the morning of March 10, 1804, Captain Stoddard, as the agent of the United States, took formal possession of the Louisiana Purchase and raised the American flag, by reason of which transactions the Spanish, French, and American flags waved successively over the site within a period of twenty-four hours; the old French Cathedral of St. Louis, earliest home of religion on the western bank of the Mississippi; the place where Laclede and Chouteau established the first civil government west of the Mississippi; the place where Lafayette was received by a grateful people; the places where the Santa Fe, the Oregon, and other trails originated; the place where Lewis and Clark prepared for their trip of discovery and exploration; and the Court House in which the Dred Scott case was tried; and

WHEREAS the City of St. Louis has agreed to contribute for the project of acquiring and developing the said site the sum of \$2,250,000, which is one-fourth of the entire amount to be expended for such purposes; and

WHEREAS I find that the said project will be a useful project, and will provide relief, work relief, and increased employment:

NOW, THEREFORE, by virtue of and pursuant to the authority vested in me by the Emergency Relief Appropriation Act of 1935, approved April 8, 1935 (Pub. Res. No. 11, 74th Cong.), I hereby allocate to the Secretary of the Interior from the funds made available by the said Act the sum of \$6,750,000, which with the sum of \$2,250,000 to be contributed by the City of St. Louis and accepted by the Secretary of the Interior under authority of the said act of August 21, 1935, will make available for the said project the total sum of \$9,000,000; and the Secretary of the Interior, through the National Park Service, is hereby authorized and directed to expend the said sum of \$9,000,000 in acquiring the said property and in developing and preserving it for the purposes of the said act of August 21, 1935, if and when the City of St. Louis shall make the said sum of \$2,250,000 available to the Secretary of the Interior for such purposes.

FRANKLIN D ROOSEVELT

THE WHITE HOUSE,

December 21st, 1935.

[No. 7253]

7. Jefferson National Expansion

PUBLIC LAW 98-398—AUG. 24, 1984

98 STAT. 1456

Public Law 98-398
98th Congress

An Act

To establish the Illinois and Michigan Canal National Heritage Corridor in the State of Illinois and for other purposes.

Aug. 24, 1984
[S. 746]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

* * * * *

98 STAT. 1467

TITLE II

SEC. 201. (a) The Act of May 17, 1964 entitled "An Act to provide for the construction of the Jefferson National Expansion Memorial at the site of old Saint Louis, Missouri, in general accordance with the plan approved by the United States Territorial Expansion Memorial Commission, and for other purposes" (68 Stat. 98; 16 U.S.C. 450jj), is amended by inserting after section 3 the following new sections:

Jefferson
National
Expansion
Memorial
Amendments
Act of 1984,
Saint Louis, Mo.,
and East Saint
Louis, Ill.

"SEC. 4. (a) The Secretary of the Interior is further authorized to designate for addition to the Jefferson Nation Expansion Memorial (hereinafter in this Act referred to as the 'Memorial') not more than one hundred acres in the city of East Saint Louis, Illinois, continuous with the Mississippi River and between the Eads Bridge and the Poplar Street Bridge, as generally depicted on the map entitled 'Boundary Map, Jefferson National Expansion Memorial',

Public
availability.
16 USC 450jj-3.

18 STAT. 1468

PUBLIC LAW 98-398—AUG. 24, 1984

Gateway Arch.

numbered MWR-366/80,004, and dated February 9, 1984, which shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior. The additional acreage authorized by this section is in recognition of the historical significance of the Memorial site to the westward expansion of the United States and the historical linkage of this site on the Mississippi in both Missouri and Illinois to such expansion, the international recognition of the Gateway Arch, designed by Eero Saarinen, as one of the world's great sculptural and architectural achievements, and the increasing use of the Memorial site by millions of people from all over the United States and the world.

"(b) Within the area designated in accordance with this section the Secretary of the Interior may acquire lands and interests in lands by donation, purchase with donated or appropriated funds, or exchange, except that lands owned by the State of Illinois or any political subdivision thereof may be acquired only by donation.

6 USC 450jj-4.

"SEC. 5. Where appropriate in the discretion of the Secretary of the Interior, he may transfer by lease or otherwise, to any appropriate person or governmental entity, land owned by the United States (or any interest therein) which has been acquired by the Secretary under section 4. Any such transfer shall be consistent with the management plan for the area and with the requirements of section 5 of the Act of July 15, 1968 (82 Stat. 356; 16 U.S.C. 4601-22) and shall be subject to such conditions and restrictions as the Secretary deems necessary to carry out the purposes of this Act, including terms and conditions which provide for—

6 USC 460l-22.

"(1) the continuation of existing uses of the land which are compatible with the Memorial,

"(2) the protection of the important historical resources of the leased area, and

"(3) the retention by the Secretary of such access and development rights as the Secretary deems necessary to provide for appropriate visitor use and resource management.

In transferring any lands or interest in lands under this section, the Secretary shall take into account the views of the Commission established under section 8.

Post, p. 1470.
6 USC 450jj-5.
*In*te, p. 1467.

"SEC. 6. Lands and interests in lands acquired pursuant to section 4 shall, upon acquisition, be a part of the Memorial. The Secretary of the Interior shall administer the Memorial in accordance with this Act and the provisions of law generally applicable to units of the national park system, including the Act entitled 'An Act to establish a National Park Service, and for other purposes', approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1-4) and the Act of Aug. 21, 1935 (49 Stat. 666; 16 U.S.C. 461-467). In the development, management, and operation of that portion of the Memorial which is added to the Memorial under section 4, the Secretary shall, to the maximum extent feasible, utilize the assistance of State and local government agencies and the private sector. For such purposes, the Secretary may, consistent with the management plan for the area, enter into cooperative agreements with the State, wish any political subdivision of the State, or with any person. Any such cooperative agreement shall, at a minimum, establish procedures for providing notice to the Secretary of any action proposed by the State, such political subdivision, or such person, which may affect the area.

PUBLIC LAW 98-398—AUG. 24, 1984

98 STAT. 1469

"SEC. 7. (a) There is hereby established the Jefferson National Expansion Memorial Commission (hereinafter in this Act referred to as the Commission).

"(b) The Commission shall be composed of twenty members as follows:

"(1) The county executive of Saint Louis County, Missouri, ex officio, or a delegate.

"(2) The chairman of the Saint Clair County Board of Supervisors, Illinois, ex officio, or a delegate.

"(3)(A) The executive director of the Bi-State Development Agency, Saint Louis, Missouri, ex officio, or a delegate.

"(B) A member of the Bi-State Development Agency, Saint Louis, Missouri, who is not a resident of the same State as the executive director of such agency, appointed by a majority of the members of such agency, or a delegate.

"(4) The mayor of the city of East Saint Louis, Illinois, ex officio, or a delegate.

"(5) The mayor of Saint Louis, Missouri, ex officio, or a delegate.

"(6) The Governor of the State of Illinois, ex officio, or a delegate.

"(7) The Governor of the State of Missouri, ex officio, or a delegate.

"(8) The Secretary of the Interior, ex officio, or a delegate.

"(9) The Secretary of Housing and Urban Development, ex officio, or a delegate.

"(10) The Secretary of Transportation, ex officio, or a delegate.

"(11) The Secretary of the Treasury, ex officio, or a delegate.

"(12) The Secretary of Commerce, ex officio, or a delegate.

"(13) The Secretary of the Smithsonian Institution, ex officio, or a delegate.

"(14) Three individuals appointed by the Secretary of the Interior from a list of individuals nominated by the mayor of East Saint Louis, Illinois, and the Governor of the State of Illinois.

"(15) Three individuals appointed by the Secretary of the Interior from a list of individuals nominated by the mayor of Saint Louis, Missouri, and the Governor of the State of Missouri.

Individuals nominated for appointment under paragraphs (14) and (15) shall be individuals who have knowledge and experience in one or more of the fields of parks and recreation, environmental protection, historic preservation, cultural affairs, tourism, economic development, city planning and management, finance, or public administration. A vacancy in the Commission shall be filled in the manner in which the original appointment was made.

"(c)(1) Except as provided in paragraphs (2) and (3), members of the Commission shall be appointed for terms of three years.

"(2) Of the members of the Commission first appointed under paragraphs (14) and (15) of subsection (c)—

"(A) two shall be appointed for terms of one year;

"(B) two shall be appointed for terms of two years; and

"(C) two shall be appointed for terms of three years;

as designated by the Secretary of the Interior at the time of appointment.

Jefferson
National
Expansion
Memorial
Commission,
establishment.
16 USC 450jj-6.

"(3) Any member of the Commission appointed to fill a vacancy occurring before the expiration of the term for which his predecessor was appointed shall be appointed only for the remainder of such term. A member of the Commission may serve after the expiration of his term until his successor has taken office.

"(d) Members of the Commission shall receive no pay on account of their service on the Commission, but while away from their homes or regular places of business in the performance of service for the Commission, members of the Commission shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5, United States Code.

"(e) The chairperson of the Commission shall be elected by the members of the Commission.

"(f) Upon request of the Commission, the head of any Federal agency represented by members on the Commission may detail any of the personnel or such agency, or provide administrative services to the Commission to assist the Commission in carrying out the Commission's duties under section 8.

Infra.

"(g) The Commission may, for the purposes of carrying out the Commission's duties under section 8, seek, accept, and dispose of gifts bequests, or donations of money, personal property, or service received from any source.

Termination.

"(h)(1) Except as provided in paragraph (2), the Commission shall terminate on the day occurring ten years after the date of enactment of this section.

Extension.

"(2) The Secretary of the Interior may extend the life of the Commission for a period of not more than five years beginning on the day referred to in paragraph (1) if the Commission determine that such extension is necessary in order for the Commission to carry out this Act.

Development
plan.
16 USC 450jj-7.

"SEC. 8. (a) Within two years from the enactment of this section, the Commission shall develop and transmit to the Secretary a development and management plan for the East Saint Louis, Illinois, portion of the Memorial. The plan shall include—

"(1) measures for the preservation of the area's resources;

"(2) indications of types and general intensities of development (including visitor circulation and transportation pattern systems, and modes) associated with public enjoyment and use of the area, including general locations, timing of implementation, and cost estimates;

"(3) identification of any implementation commitments for visitor carrying capacities for all areas of the area;

"(4) indications of potential modifications to the external boundaries of the area, the reasons therefore, and cost estimates;

"(5) measures and commitments for insuring that the development, management, and operation of the area in the State of Illinois are compatible with the portion of the Memorial in the State of Missouri;

"(6) opportunities and commitments for cooperative activities in the development, management, and operation of the East Saint Louis portion of the Memorial with other Federal, State and local agencies, and the private sector; and

"(7) effective and appropriate ways to increase local participation in the management of the East Saint Louis portion of the

PUBLIC LAW 98-398—AUG. 24, 1984

98 STAT. 1471

Memorial to help reduce the day-to-day operational and management responsibilities of the National Park Service and to increase opportunities for local employment.

“(b) The plan shall also identify and include—

“(1) needs, opportunities, and commitments for the aesthetic and economic rehabilitation of the entire East Saint Louis, Illinois, waterfront and adjacent areas, in a manner compatible with and complementary to, the Memorial, including the appropriate commitments and roles of the Federal, State, and local governments and the private sector; and

“(2) cost estimates and recommendations for Federal, State, and local administrative and legislative actions.

In carrying out its duties under this section, the Commission shall take into account Federal, State, and local plans and studies respecting the area, including the study by the National Park Service on the feasibility of a museum of American ethnic culture to be a part of any development plans for the Memorial.

“SEC. 9. (a) Upon completion of the plan, the Commission shall transmit the plan to the secretary for his review and approval of its adequacy and appropriateness. In order to approve the plan, the Secretary must be able to find affirmatively that:

16 USC 450jj-8.

“(1) The plan addresses all elements outlined in section 8 above;

“(2) The plan is consistent with the Saint Louis, Missouri, portion of the Memorial;

“(3) There are binding commitments to fund land acquisition and development, including visitor circulation and transportation systems and modes, in amounts sufficient to completely implement the plan as recommended by the Commission from sources other than funds authorized to be appropriated in this Act; and

“(4) There are binding commitments to fund or provide the equivalent of all costs in excess of \$350,000 per annum for the continued management, operation, and protection of the East Saint Louis, Illinois, portion of the Memorial.

“(b) The Secretary shall transmit in writing a notice of his approval and his certification as to the existence and nature of funding commitments **contained in the approved plan to the Committee on interior and insular Affairs of the House of Representatives and to the Committee on Energy and Natural Resources of the United States Senate.**

“SEC. 10. Pending submission of the Commission’s plan, any Federal entity conducting or supporting significant activities directly affecting East Saint Louis, Illinois, generally and the site specifically referred to in section 4 shall—

16 USC 450jj-9.

“(1) consult with the Secretary of the interior and the Commission with respect to such activities;

“(2) cooperate with the Secretary of the Interior and the Commission in carrying out their duties under this Act, and to the maximum extent practicable, coordinate such activities **with the carrying out of such duties; and**

“(3) to the maximum extent practicable, conduct or support such activities in a manner which the Secretary determines will not have an adverse effect on the Memorial.”

(b) The Act of May 17, 1954 entitled “An Act to Provide for the construction of the Jefferson National Expansion Memorial at the site of old Saint Louis, Missouri, in general accordance with the plan

16 USC 450jj note.

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PUBLIC LAW 98-398—AUG. 24, 1984

approved by the United States Territorial Expansion Memorial Commission, and for other purposes" (68 Stat. 98; 16 U.S.C. 450jj) is amended by—

(1) redesignating "SEC. 4." (as so designated prior to the amendments made in subsection (a) of this section) as "SEC. 11. (a)"; and

(2) adding at the end thereof the following new subsections:

Appropriation
authorization.

"(b) For the purposes of the East Saint Louis portion of the Memorial, there is hereby authorized to be appropriated not exceed \$1,000,000 for land acquisition and not to exceed \$1,250,000 for development, of which not to exceed \$500,000 shall be available only for landscaping and only for expenditure in the ratio of one dollar of Federal funds to one dollar of non-Federal funds: *Provided*, That no funds authorized to be appropriated hereunder may be appropriated prior to the approval by the Secretary of the plan developed by the Commission.

"(c) Funds appropriated under subsection (b) of this section shall remain available until expended.

"(d) **Authority to enter into contracts or make payments under this Act shall be effective for any fiscal year only to the extent that appropriations are available for that purpose.**"

Effective dates.
16 USC 450jj-3
note.

SEC. 202. Any provision of this title (or any amendment made by this title) which, directly or indirectly, authorizes the enactment of new budget authority described in section 402(a) of the Congressional Budget Act of 1974 shall be effective only for fiscal years beginning after September 30, 1983.

16 USC 450jj
note.

SEC. 203. This title may be cited as the "Jefferson National Expansion Memorial Amendments Act of 1984".

Approved August 24, 1984.

LEGISLATIVE HISTORY—S. 746 (H.R. 2014):

HOUSE REPORT No. 98-601 accompanying H.R. 2014 (Comm. on Interior and Insular Affairs).

SENATE REPORT No 98-355 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 180 (1984):

Feb. 27, considered and passed Senate.

Feb. 28, HR. 2014 considered and passed House; S. 746. amended, passed in lieu.

June 28, Senate concurred in House amendment with an amendment.

June 29, House concurred in Senate amendment.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 20, No. 35 (1984):

August 24, Presidential statement.

7. Jefferson National Expansion

PUBLIC LAW 102-355—AUG. 26, 1992

106 STAT. 947

Public Law 102-355
102d Congress

An Act

To amend the Act of May 17, 1954, relating to the Jefferson National Expansion Memorial to authorize increased funding for the East Saint Louis portion of the Memorial, and for other purposes.

Aug. 26, 1992
[H.R. 2926]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION I. EAST SAINT LOUIS PORTION OF JEFFERSON NATIONAL EXPANSION MEMORIAL.

The Act of May 17, 1954, entitled "An Act to provide for the construction of the Jefferson National Expansion Memorial at the site of old Saint Louis, Missouri, in general accordance with the plan approved by the United States Territorial Expansion Memorial Commission, and for other purposes" (68 Stat. 98; 16 U.S.C. 450jj and following) is amended as follows:

- (1) The first sentence of section 4(a) is amended—
 - (A) by striking out "The Secretary of the Interior is further authorized to designate" and inserting in lieu thereof "There is hereby designated";
 - (B) by striking out "not more than" and inserting in lieu thereof "approximately"; and
 - (C) by striking out "MWR-366/80,004, and dated February 9, 1984," and inserting in lieu thereof "366-80013, dated January 1992,".

16 USC 450jj.

- (2) Section 9 is repealed.
- (3) Section 11 is amended by striking out subsection (d) and by amending subsection (b), as added by section 201(b) of Public Law 98-398, to read as follows:

16 USC 450jj-8.
16 USC 450jj
note.

"(b)(1) For the purposes of the East St. Louis portion of the memorial, there are authorized to be appropriated \$2,000,000 for land acquisition and, subject to the provisions of paragraphs (2) and (3), such sums as may be necessary for development: *Provided*, That such authorization shall not include any sums for the acquisition, removal, or relocation of the grain elevator and business located within the East St. Louis unit of the Memorial. Such development shall be consistent with the level of development described in phase one of the draft Development and Management Plan and Environmental Assessment, East St. Louis Addition to Jefferson National Expansion Memorial—Illinois/Missouri, dated August 1987.

Appropriation
authorization.

"(2) Federal funds expended under paragraph (1) for development may not exceed 75 percent of the actual cost of such development. The remaining share of such actual costs shall be provided from non-Federal funds, services, or materials, or a combination thereof, fairly valued as determined by the Secretary. Any non-Federal expenditures for the acquisition, removal, or relocation of the grain elevator and business shall be included as part of the non-Federal cost share: *Provided*, That credit shall not be given for any such expenditures which exceed the cost of acquisition, removal, or

relocation of the grain elevator and business located within the East St. Louis unit of the Memorial if such action had been accomplished by the Federal Government as determined by the Secretary under existing law; *Provided further*, That only those non-Federal funds expended at least sixty days after the transmission of the report referred to in paragraph (3) for the removal of such grain elevator shall be credited towards the non-Federal cost share. For the purposes of this paragraph, the Secretary may accept and utilize for such purposes any non-Federal funds, services, and materials so contributed.

“(3) Within one year after the date of enactment of this paragraph, the Secretary, in direct consultation with the city of East St. Louis, Gateway Arch Park Expansion, and the Southwestern Illinois Development Authority, shall develop and transmit to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives a study of alternatives to, and costs associated with, the removal of the grain elevator located within the East St. Louis unit of the Memorial. The study shall contain, but need not be limited to, at least one alternative which would incorporate and retain the existing grain elevator into the draft development and management plan and environmental assessment referred to in paragraph (1).”

Approved August 26, 1992.

LEGISLATIVE HISTORY—H.R. 2926:

HOUSE REPORTS: No. 102-465 (Comm. on Interior and Insular Affairs).

SENATE REPORTS: No. 102-288 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 138 (1992):

Mar. 24, considered and passed House.

July 20, considered and passed Senate, amended.

Aug. 6, House concurred in Senate amendment.

Appendix B: National Historic Preservation Act Criteria

(Excerpted from *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*)

The National Register of Historic Places is the nation's inventory of historic places and the national repository of documentation on the variety of historic property types, significance, abundance, condition, ownership, needs, and other information. There are more than 80,000 properties listed in the National Register.

The National Register Criteria for Evaluation identify the range of resources and kinds of significance that will qualify properties for listing in the National Register. The criteria are written broadly to recognize the wide variety of historic properties associated with our prehistory and history.

Decisions concerning the significance, historic integrity, documentation, and treatment of properties can be made reliably only when the resource is evaluated within its historic context. The historic context serves as the framework within which the National Register Criteria are applied to specific properties or property types. The descriptions provided here are intended to help you understand the National Park Service's use of the Criteria for Evaluation, historic contexts, integrity, and Criteria Considerations, and how they apply to properties under consideration for listing in the National Register.

Although National Register documentation includes a recommendation about whether a property is significant at the local, State, or national level, the only official designation of national significance is as a result of National Historic Landmark designation by the Secretary of the Interior, National Monument designation by the President of the

United States, or establishment as a unit of the National Park System by Congress.

National Historic Landmarks are those districts, sites, buildings, structures, and objects designated by the Secretary of the Interior as possessing national significance in American history, architecture, archeology, engineering, and culture. There are fewer than 2,500 National Historic Landmarks.

Historic Property Definitions

- **Building:** created principally to shelter any form of human activity, for example, a barn, house, church, or hotel.
- **Site:** the location of a significant event; a prehistoric or historic occupation or activity; or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value, regardless of the value of the existing structure.
- **Structure:** a functional construction usually made for purposes other than creating human shelter, such as tunnels, bridges, oil wells, or dams.
- **Object:** primarily artistic in nature or is relatively small in scale and simply constructed. Although an object may be moveable by nature or design, it is associated with a specific setting or environment, including sculptures, boundary markers, or statues.
- **District:** possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development, such as a college campus,

central business district, fort, or sprawling ranch.

- Landscape: a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values (NPS 1990; NPS 1992).

National Register of Historic Places Criteria

The National Register of Historic Places Eligibility Criteria, as outlined in 36 CFR 60.4, state that

“The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:

are associated with events that have made a significant contribution to the broad patterns of our history; or

are associated with the lives of persons significant in our past; or

embody the distinctive characteristics of a type, period, or method of construction; or that represent the work of a master, or that possess high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction; or

have yielded, or may be likely to yield, information important in prehistory or history.

The regulations (36 CFR 60.4) also outline several additional criteria that affect National Register of Historic Places eligibility for certain types of properties. Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the

National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or have certain distinguishing characteristics. Of the seven recognized categories, notable exceptions include: religious properties deriving primary significance from architectural or artistic distinction or historical importance; a cemetery that derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or a property that achieves significance within the past 50 years, if it is of exceptional significance.

Significance

The National Register of Historic Places includes significant properties, classified as buildings, sites, districts, structures, or objects. It is not used to list intangible values, except in so far as they are associated with or reflected by historic properties. The National Register does not list cultural events, or skilled or talented individuals, as is done in some countries. Rather, the National Register is oriented to recognizing tangible properties that are relatively fixed in location.

To qualify for the National Register, a property must be significant; that is, it must represent a significant part of the history, architecture, archeology, engineering, or culture of an area, and it must have the characteristics that make it a good representative of properties associated with that aspect of the past.

Context

The significance of a historic property can be judged and explained only when it is evaluated within its historic context. Historic contexts are those patterns or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear. Historians, architectural historians, folklorists, archeologists, and anthropologists use different words to describe this phenomenon such as trend, pattern, theme, or cultural affiliation, but ultimately the concept is the same.

The core premise of historic context is that resources, properties, or happenings in history do not occur in a vacuum but rather are part of larger trends or patterns. If the property being evaluated represents an important aspect of the area's history or prehistory and possesses the requisite quality of integrity, then it qualifies for the National Register.

Historic contexts are historical patterns that can be identified through consideration of the history of the property and the history of the surrounding area. In accordance with the National Register Criteria, the historic context may relate to one of the four Eligibility Criteria (A, B, C and/or D) listed previously.

Integrity

Integrity is the ability of a property to convey its significance. To be listed in the National Register of Historic Places, a property must not only be shown to be significant under the National Register Criteria, but it also must have integrity. The evaluation of integrity is grounded in an understanding of a property's physical features and how they relate to its significance. Historic properties either retain integrity (this is, convey their significance) or they do not.

Within the concept of integrity, the National Register Criteria identify seven aspects or qualities that, in various combinations, define integrity. The seven aspects of integrity are Location, Design, Setting, Materials, Workmanship, Feeling and Association. To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance. Determining which of these aspects are most important to a particular property requires knowing why, where, and when the property is significant.

National Historic Landmarks Criteria

A property being nominated to the National Register may also merit consideration for potential designation as a National Historic Landmark. Such consideration is dependent upon the stringent application of the following distinct set of criteria (found in the Code of Federal Regulations, Title 36, Part 65).

The quality of national significance is ascribed to districts, sites, buildings, structures, and objects that possess exceptional value or quality in illustrating or interpreting the heritage of the United States in history, architecture, archeology, engineering, and culture and that possess a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association, and:

That are associated with events that have made a significant contribution to, and are identified with, or that outstandingly represent, the broad national patterns of United States history and from which an understanding and appreciation of those patterns may be gained; or

That are associated importantly with the lives of persons nationally significant in the history of the United States; or

That represent some great idea or ideal of the American people; or

That embody the distinguishing characteristics of an architectural type specimen exceptionally valuable for a study of a period, style or method of construction, or that represent a significant, distinctive and exceptional entity whose components may lack individual distinction; or

That are composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historical or artistic significance, or outstandingly commemorate or illustrate a way of life or culture; or

That have yielded or may be likely to yield information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation over large areas of the United States. Such sites are those which have yielded, or which may reasonably be expected to yield, data affecting theories, concepts and ideas to a major degree.

There are some differences between National Register and National Historic Landmark Criteria, but generally, these two designations follow similar criteria. The categories of historic properties are defined the same way and historic contexts are identified similarly. National Historic Landmarks, however, should also be exceptionally important compared to similar properties associated with a historic theme. In short, they are the best in their class. Detailed descriptions of the requirements for each of these designations can be found on the National Park Service website, located at: www.nps.gov/nr and www.nps.gov/nhl.

Appendix C: Detailed Descriptions of Historic Resources within the APE

The Old Cathedral

The parcel occupied by the Old Cathedral was designated for religious purposes when the city was founded in the mid-18th century by Pierre Laclede and Auguste Chouteau. A log house and small church were built on the site in the late 18th century. In 1826, St. Louis became a Catholic diocese, and several years later construction began on the current church. Completed in 1834, the Greek Revival Style structure was the first cathedral established west of the Mississippi. In 1961, Pope John XXIII named the building the “Basilica of St. Louis, King of France,” the highest honor bestowed upon an American Catholic church.



The Old Cathedral as viewed from the south.

Eads Bridge

Eads Bridge, a National Historic Landmark, borders the Memorial to the north, connecting St. Louis, Missouri, and East St. Louis, Illinois, across the Mississippi River. Constructed between 1867 and 1874 to accommodate rail, pedestrian, and vehicular traffic, the bridge employs a three-span deck arch design, with ribbed steel arches and decks supported on granite-faced limestone piers. There are small masonry arches on the approaches to the bridge, and larger arches next to the river. At the time it was constructed, the spans were larger than any previously constructed bridge. It is significant for its pioneering design, method of construction, and materials. The bridge was listed in the National Register in 1985, with a period of significance spanning from 1867 through 1874 (NPS 1985).



Eads Bridge looking east across the Mississippi River.

Laclede's Landing Historic District

The Laclede's Landing Historic District is a nine-block area north of the Memorial. It is bordered by the Mississippi River to the east, Eads Bridge to the south, Third Street to the west, and the Dr. Martin Luther King Memorial Bridge to the north. The district is significant as the only surviving portion of the City's 19th-century commercial waterfront. It preserves a large number of structural cast iron commercial front buildings, as well as the City's original 18th-century street grid and sloping topography. Laclede's Landing was listed in the National Register in 1976. The Christian Peper Building at 719 North First Street is a City Landmark.



Laclede's Landing north of the Monument.

J. Kennard and Sons Carpet Company Building

The J. Kennard and Sons Carpet Company Building is located at 400 Washington Avenue, near the northwest corner of the Memorial. Designed by Isaac Taylor and constructed in 1901, this commercial building is significant as an example of Italian Renaissance Revival architecture in the city. The seven-story building is characterized by highly decorative terracotta panels, scrolled keystones and brackets, quoin windows, and a scalloped cornice. It was listed in the National Register in 2000.

Missouri Athletic Club Association Building

The Missouri Athletic Club Association Building is located northwest of the Memorial at 409 Washington Avenue. It was designed in the Renaissance Revival Style in 1915 by St. Louis architect William B. Ittner, and served as the first businessmen's amateur athletic club in the city. It continues to house the club today. The building was listed in the National Register in 2007.

Security Building

The Security Building is sited west of the Memorial, at 319 North 4th Street. Architects Peabody, Stearns and Foster designed the building in the Classical Revival style between 1890 and 1892. Its significance lies in its design; it was one of a series of early tall office buildings in St. Louis, and at the time was the most costly such building in the city (NPS 2000). Eleven stories tall, the Security Building is characterized by a three-story pink granite base, a four-story arcade through the center of the building, and a second two-story arcade capped by a classically inspired cornice. The structure was listed in the National Register in 2000.

Laclede Building

Located at 408 Olive Street, west of the Memorial, the Laclede Building is the city's earliest surviving example of the skyscraper, dating from 1886-1888. Eight stories high, the pioneering design employed cast iron framing and fireproofing, and was finished in a restrained commercial style. In 1906, the

building was renovated and Classical details were added to both the interior and the exterior of the structure. The Laclede Building was listed in the National Register in 1998.

Mississippi Valley Trust Company Building

The Mississippi Valley Trust Company Building is located at 401 Pine Street. The Classical Revival style building was constructed in 1896 to house the Mississippi Valley Trust Company, one of the city's preeminent financial institutions. The building is locally significant not only because of this association, but also for its design. It was listed in the National Register in 2001.

American Zinc, Lead and Smelting Company Building

Located at 120 South 4th Street, just south of the Old Courthouse, the American Zinc, Lead and Smelting Company Building was designed by the architectural firm of Hellmuth, Obata, and Kassabaum (HOK) in 1967. Although less than 50 years old, the building is viewed as a fine local example of Modern architectural design and techniques. The structure employed the Vierendeel truss, allowing for highly flexible interior spaces. The interior structural system is reflected on the exterior in the ladder-like windows on the sides of the building (NPS 1998c). The American, Lead and Smelting Company Building was listed in the National Register in 1998.

International Fur Exchange Building

The International Fur Exchange Building, located at 2-14 South 4th Street, is directly southeast of the Old Courthouse. The period of significance runs from 1920, when the building was constructed, through 1948. The building has national importance due to its association with the primacy of the city in the international fur trade. The commercial structure is seven stories high and is clad in multi-colored brick with white terracotta accents. It was listed in the National Register in 1998.

Pet Plaza

Pet Plaza is located at 400 South 4th Street, overlooking the Gateway Arch grounds. Constructed in 1969 as the world headquarters for Pet, Inc., this thirteen-story concrete tower was designed in the New Brutalist style to present a fresh image for an established company. The building is distinguished by its textured concrete, stark lines, and elevated plaza (NPS 2004a). It was listed in the National Register in 2004.

St. Mary of Victories Church

St. Mary of Victories Church is a City of St. Louis Landmark. Located south of the Monument, within Chouteau's Landing, the building was constructed in 1843-1844 with an addition in 1859-1860. It was the first German national parish in the city and the second completed Catholic Church, after the Old Cathedral. Together with the adjacent parish school, erected in 1882, St. Mary of Victories Church was listed in the National Register in 1980.

Crunden-Martin Manufacturing Company Historic District

The Crunden-Martin Manufacturing Company District encompasses seven buildings south of the Memorial, within Chouteau's Landing. The industrial riverfront buildings, dating between 1904 and 1920, are five to six stories high and reflect turn-of-the-century Revival styles. The district is significant both for its architectural styles and for its association with the Crunden-Martin Manufacturing Company, one of the more important wood-ware, willowware and metal goods firms in the city. The district was listed in the National Register in 2004 with a period of significance of 1904 through 1954.

D

Appendix D: Archeological and Historical Surveys within a One-mile Radius of the Project Area

Primary Author	Title	Date	Conducted by	Survey/Report #
Altizer, Valerie et al.	Proposed Redevelopment of Cochran Gardens in St. Louis City	2005	Archeological Research Center of St Louis, Inc.	SL-597
Booker and Associates, Inc. Staff	LaSalle Park Urban Renewal Project: Phase III Determination of Eligibility for Certain Buildings	1979	Booker Engineers	SL-042
Fairchild, Jerry	Results of Archeological Salvage Work Within the Right-of-Way Corridor of Job. No. 6-I-44-37; Route 44, City of St. Louis, Missouri	1979	MHTD	SL-032
Gumms, B. and M. Morelock	Survey No. 11-S-671 Revisit. Illinois Archeological Survey.	1993	3.1	On file at the Illinois Historic Preservation Agency
Hajic, Edwin R.	Roundhouse Investigations at Gateway Foundation Park, Illinois, 11S666 Revised	2005	SCI Engineering Inc.	15456
Markman, Charles W.	Coal Gasification Plant Development, East St. Louis, St. Clair County, Illinois: A Phase I Archeological Survey and Cultural Resource Assessment	2004	Markman and Associates, Inc.	224

Meyer, Michael J.	Phase I Survey and Phase II Archeological Investigations of the Walsh's Row Site	2004	Missouri Department of Transportation	MoDOT Job No. J6I667
Naglich, Dennis	Salvage Investigations of Cultural Resources at the New United States Federal Courthouse Site (23SL976), City of St. Louis, Missouri	1995	Archeological Research Center of St. Louis, Inc.	SL-233
Rogers, Leah D.	St. Louis District Cultural Resources Management Report No. 31: St. Louis Harbor Historic Properties Reconnaissance, City of St. Louis, Missouri	1987	American Resources Group, Ltd.	SL-117
Shinn, Orval E. "Dan"	Management Summary: Phase I Cultural Resources Investigation for Williams Communication, Inc., Fiber Optic Communications System	2000	Burns & McDonnell, Inc.	AU-029
Vollman, Colleen	Proposed Telecommunications Antennae, Building Mount, 1430 Olive, St. Louis, Missouri	2004	Rox Engineering, Inc	SL-527
Williams, Michele	Phase I Inventory of Cultural Resources Associated with the Proposed Williams Communications, Inc. Fiber Optic Communications System	2001	Gray and Pape, Inc.	AU-033
Witty, C.	Archeological Survey Short Report	1996	Illinois Transportation Archeological Research Program	7927

Witty, C.	Archeological Survey Short Report	1997	Illinois Transportation Archeological Research Program	8469
Witty, C.	Archeological Survey Short Report	2005	Illinois Transportation Archeological Research Program	15285

Appendix E: Archeological and Historical Sites within a One-mile Radius of the Project Area

Site name	Site #	Period	Type	Dates	Year Recorded	Eligibility
New Federal courthouse site	23SL976	Historic	43 domestic features	1840s to present	1997	Unknown
Cochran Garden Site	23SL2229	Historic	2 privies, 1 cistern, house cellar foundations	1850s to present	2005	Unknown
Walsh's Row Site	23SL2234	Historic	Remains of Walsh's row houses built ca. 1845 and demolished ca. 1935	1840s to present	2004	Eligible; D
Illinoistown Roundhouse Site	11S661	Historic	Terminal Railroad Roundhouse foundation	c. 1874	1979	Unknown
Chimney Site	11S662	Historic	Railroad Roundhouse Chimney	c. 1874	1979; 1993	Not Eligible
Wiggins Ferry Roundhouse and Repair Shops	11S665	Historic	Railroad Roundhouse	c. 1900	1971; 1994	Not Eligible
Mobil and Ohio Roundhouse Site	11S666	Historic	Railroad Roundhouse	1874-1929	n.d.; 2005	
Railroad Dump Site	11S669	Historic	Surface Scatter	1920s	1979; 1993	Not Eligible
B&O Freighthouse	11S670	Historic	Structural Remains	1980-1980	1979; 1993	Not Eligible
Gulf, Mobile, and Ohio Freighthouse	11S671	Historic	Structural Remains	1910	1979; 1993	Not Eligible
Big Four Freighthouse Site	11S672	Historic	Structural Remains	1920s-1980s	1979; 1993	Not Eligible
Piggot-Wiggins Ferry Complex Site	11S674	Historic	NA	1797-1850	1979; 1993	NA

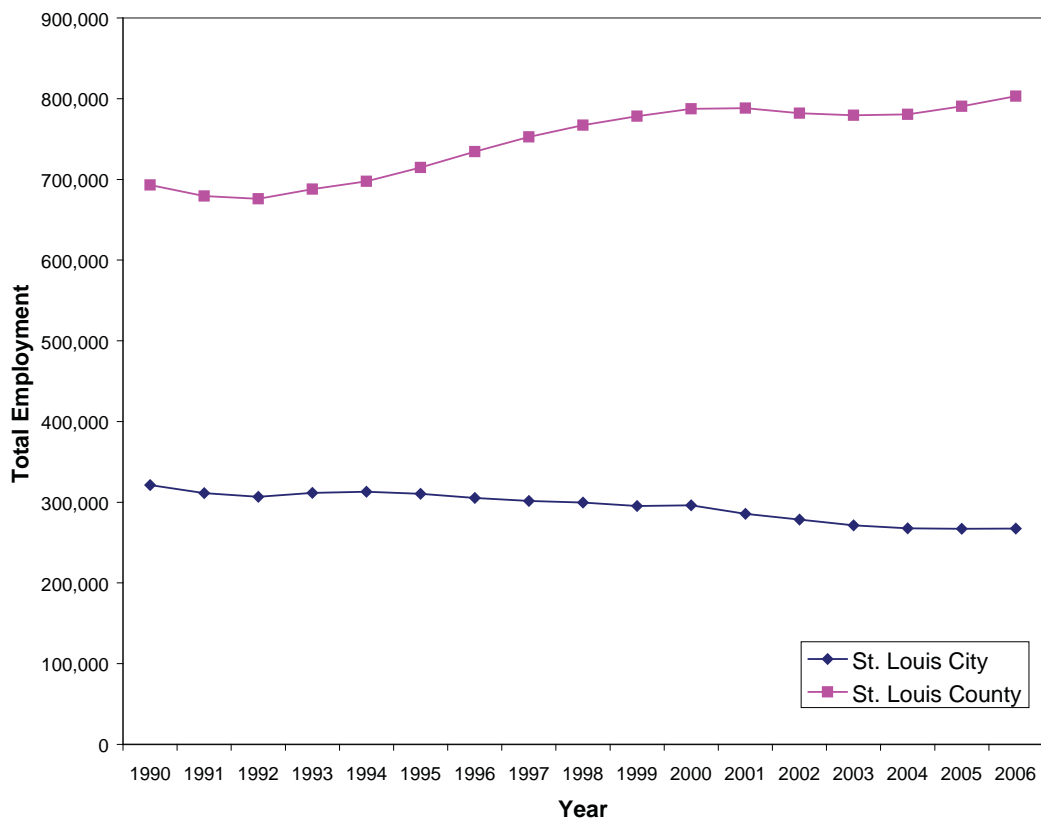
Site name	Site #	Period	Type	Dates	Year Recorded	Eligibility
Bonnie's Tap Site	11S675	Historic	Building	1873-1993	1979: 1993	Not Eligible
Douglas School Site	11S679	Historic	Construction debris	1850s		Not Eligible
"C" Street House Site	11S680	Historic	Historic House	mid-late 19th Century	1979	Unknown
Illinoistown Site	11S683	Historic	Historic House	19th Century	1979	Unknown
Eads Bridge	11S684	Historic	Bridge	1874	1979	Unknown

F

Appendix F: Archeological Investigations within Jefferson National Expansion Memorial Boundaries

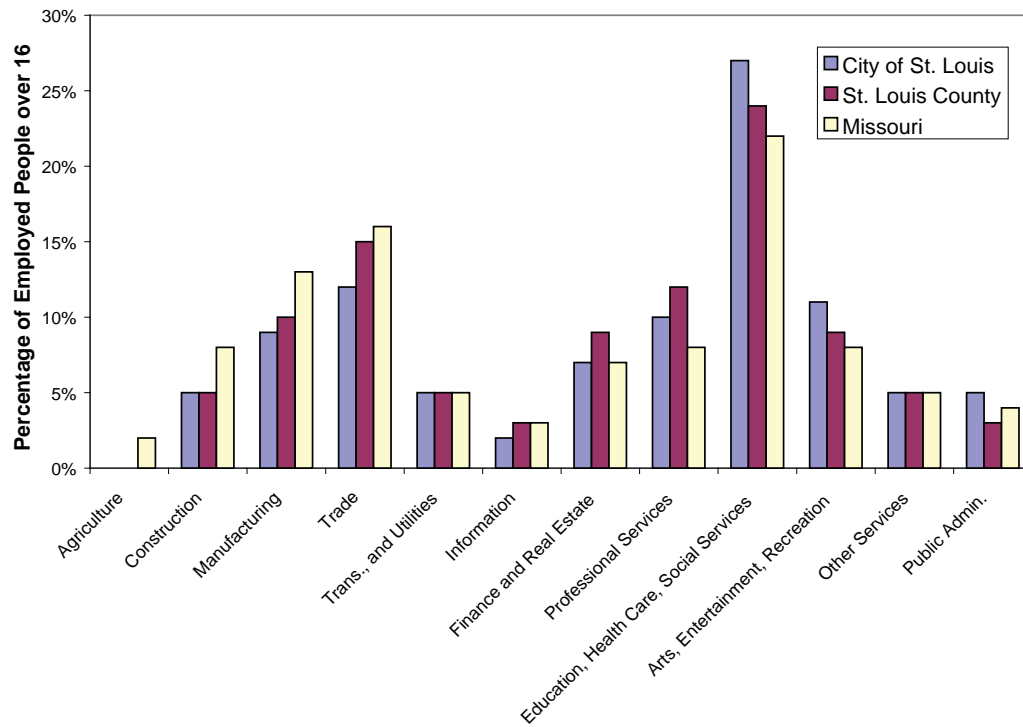
Type of Archeological Investigation	Archeological Data	Study Area	Extent of Excavation	Date	Conducted by
Monitoring of Test Borings of a 6-in auger	Brick, glass and construction debris	Maintenance Facility at Southern end of park	12 m	1998	Midwest Archeological Center
Monitoring of Construction of New Garage	First Street retaining wall, construction debris, foundation walls, 1880s aqueduct; 19th and 20th Century artifacts;	North Parking Garage	2.7 m	1984	Southern Illinois University-Edwardsville
Monitoring of Utility Lines	Late 19th Century sewer line	Northwest and West Courthouse Lawn	1.1 m	2007	Midwest Archeological Center
Monitoring of Railroad and Overlook Museum Construction Area	Gunflint, animal bones, glass, smoking pipe fragments, leather	Overlook area	unknown	1961	JNEM Archaeologist

Appendix G: Total Full- and Part-time Employment in the City of St. Louis and the County of St. Louis, 1990-2006



Source: U.S. Bureau of Economic Analysis, 2008

Appendix H: Total Employment by Industry for the City of St. Louis, the County of St. Louis, and the State of Missouri



Appendix I: Public Parking Facilities within 1/4 Mile of the Memorial in Downtown St. Louis

	Parking Facility	Owner	Type
1	Levee Parking	St. Louis Parking	Surface
2	Arch Garage	Metro	Garage
3	First and Lucas	St. Louis Parking	Surface
4	CitiPark Lot	CitiPark	Surface
5	Riverfront Garage	St. Louis Parking	Garage
6	Laclede's Landing Lot	St. Louis Parking	Surface
7	C – Lot	St. Louis Parking	Surface
8	909 North First		Surface
9	Broadway and Lucas	St. Louis Parking	Surface
10	MAC Garage	St. Louis Parking	Garage
11	Hampton Inn Lot	St. Louis Parking	Surface
12	Hampton Inn Garage	St. Louis Parking	Garage
13	MAC Lot	St. Louis Parking	Surface
14	500 Broadway Building	Central Parking	Garage
15	Mansion House	St. Louis Parking	Garage
16	QuikPark	CitiPark	Garage
17	St. Louis Place	InterPark	Garage
18	Bank of America Tower	St. Louis Parking	Garage
19	Hyatt Regency St. Louis Riverfront	Hyatt	Garage
20	Stadium East	InterPark	Garage
21	500 South Broadway	S&H Parking	Surface
22	3rd and Poplar	S&H Parking	Surface
23	4th and Poplar	S&H Parking	Surface
24	4th and Poplar	S&H Parking	Surface
25	One South Broadway	Marriott	Garage
26	Gateway One Garage	St. Louis Parking	Garage
27	Kiener West Garage	InterPark	Garage
28	Kiener East Garage	InterPark	Garage
29	Metropolitan Square Building	Central Parking	Garage
30	6th and Olive	Central Parking	Surface
31	Macy's Central	Central Parking	Garage
32	Laclede Gas Building	Central Parking	Garage

33	7th and Pine Garage	City of St. Louis	Garage
34	705 Park – 7th and Locust		Surface
35	Center Park Garage (Broadway and Locust)	St. Louis Parking	Garage
36	St. Louis Centre East	St. Louis Parking	Garage
37	Drury Inn/CitiPark	CitiPark	Garage
38	4th and Cedar Lot	St. Louis Parking	Surface

Appendix J: Memorial Drive Traffic Study: Intersections Analyzed (2011)

The National Park Service, in partnership with the City of St. Louis, the Missouri Department of Transportation, the East West Gateway Council of Governments, and in consultation with the Illinois Department of Transportation and Federal Highway Administration, conducted the Memorial Drive Traffic Study (NPS 2009) as part of the GMP planning process for the Jefferson National Expansion Memorial in St. Louis, Missouri. The study was initiated in response to public comments received on the *Draft Jefferson National Expansion Memorial General Management Plan and Environmental Impact Study* regarding impacts to downtown streets that might result from actions in the proposed management alternatives. The study examined the potential traffic impacts that would result from closing a portion of Memorial Drive, adjacent to the Memorial, to vehicular traffic. The impetus for a potential closure of a portion of Memorial Drive was to eliminate the conflict between pedestrians and vehicles, increasing the physical and thematic connectivity between the city and the Memorial, while improving the overall visitor experience.

Memorial Drive consists of two one-way streets, parallel to the Memorial, separated by the below-grade I-70 that forms a pedestrian barrier between the Gateway Arch to the east, and Luther Ely Smith Square and the Old Courthouse to the west. The Memorial Drive Traffic Study identifies the potential impacts to vehicular traffic on adjacent streets, intersections and ramps in the vicinity of the Memorial in downtown St. Louis, forecasted to result from a potential closure of a portion of Memorial Drive.

Within the study, sixteen key intersections were identified and analyzed. The analysis included planned development within the vicinity and was based on forecasted conditions for the year 2011. Four future scenarios were evaluated, in addition to the existing conditions. These scenarios include:

- **No-Build Scenario** – The No-Build option assumes that traffic patterns will continue as they currently exist, but traffic will increase by the expected annual growth rate of 1%. New traffic generated from nearby planned development is included within the traffic volumes in this scenario.
- **Scenario A** – A one-block closure of Memorial Drive northbound and southbound between Market Street and Chestnut Street.
- **Scenario B** – A two-block closure of Memorial Avenue northbound and southbound between Walnut Street and Chestnut Street.
- **Scenario C** – A three-block closure of Memorial Drive northbound and southbound between Pine Street and Walnut Street.

The table on the following page lists the 16 signalized intersections that were analyzed during morning and evening peak hours. The table also indicates those intersections which were assumed to be eliminated under either Scenarios A, B, or C, or would convert to “free flow” meaning they would no longer require a signal.

	Intersection	No-Build	1-Block Closure	2-Block Closure	3-Block Closure
1	Memorial Drive NB/ Walnut Street	●	●	Free Flow	Free Flow
2	Memorial Drive SB/ Walnut Street	●	●		
3	Memorial Drive NB/ Market Street	●	Free Flow		
4	Memorial Drive SB/ Market Street	●	Free Flow		
5	Memorial Drive NB/ Chestnut Street	●	Free Flow	Free Flow	
6	Memorial Drive SB/ Chestnut Street	●	●	●	
7	Memorial Drive NB/ Pine Street	●	●	●	
8	Memorial Drive SB/ Pine Street	●	●	●	●
9	4th Street/Walnut Street	●	●	●	●
10	4th Street/Market Street	●	●	●	●
11	4th Street/Chestnut Street	●	●	●	●
12	4th Street/ Pine Street	●	●	●	●
13	Broadway Street/ Walnut Street	●	●	●	●
14	Broadway Street/ Market Street	●	●	●	●
15	Broadway Street/ Chestnut Street	●	●	●	●
16	Broadway Street/ Pine Street	●	●	●	●

● - Signalized Intersection Modeled

This traffic study shows that Scenario A (One-Block Closure) contains the least traffic impacts, while Scenario B (Two-Block Closure) would have a greater impact, and Scenario C (Three-Block Closure) and the No-Build Scenario would have the most traffic impacts.

All three Memorial Drive closure scenarios would favor pedestrian circulation and would provide greater pedestrian access by eliminating the pedestrian barrier between the Gateway Arch, and Luther Ely Smith Square and the Old Courthouse.

The benefits of increased connectivity for visitors and residents between the Memorial and downtown St. Louis should be weighed against any potential impacts to vehicular traffic flow.

In addition, while each scenario considered for this study requires some potential changes to lane configurations and on-street parking in the affected blocks, these changes must be weighed against potential opportunities for impacted business along the respective streets that result from an improved pedestrian environment.



Bibliography, List of Preparers, Acronyms, Index

Bibliography

Altizer, Valerie, Meredith McLaughlin and Joe Harl

- 2005 “Proposed Redevelopment of Cochran Gardens in St. Louis City. Report Number SL-597.” Prepared by Archeological Research Center of St Louis, Inc. Report on file at the Missouri Department of Natural Resources, State Historic Preservation Office.

Architectural Record

- 1957 “Revised Scheme, Revised Hope, for Saarinen’s St. Louis Arch.” In *Architectural Record*, v. 122, November 1957.

Army Corps of Engineers

- 2006 “Upper Mississippi River Comprehensive Plan: Draft for Public Review.” Prepared by Rock Island, St. Paul, and St. Louis Districts. Available on the Internet at <<http://www2.mvr.usace.army.mil/UMRCP/index.cfm>>.

Bockheim, J.G.

- 1974 “Nature and Properties of Highly Disturbed Urban Soils, Philadelphia, Pennsylvania.” Paper presented before Div. S-5, Soil Science Society of America Annual Meeting, Chicago, IL.

Bradley, Zorro

- 1960 *Memorandum from Jefferson National Expansion Memorial Archaeologist to Superintendent*, Jefferson National Expansion Memorial. November 4, 1960. On file at Jefferson National Expansion Memorial archives.

- 1976 *Memorandum from Zorro Bradley to Supervisory Archaeologist*, Midwest Archaeological Center. April 19, 1976. On file at at Jefferson National Expansion Memorial archives.

Callender, Charles

- 1978 “Illinois,” in *Handbook of North American Indians, Vol. 15, Northeast*, edited by B. G. Trigger, 673-680. Washington, DC: Smithsonian Institution.

California Department of Transportation

- 1998 “Traffic Noise Analysis Protocol: Technical Noise Supplement.” Sacramento, CA.

Catholic Community Forum

- “History of the Old Cathedral.” Available on the Internet at <<http://www.catholic-forum.com/churches/140stlouis/history.html>>.

City of East St. Louis

- 2004 *City of East St. Louis Comprehensive Plan*. East St. Louis, IL: City of East St. Louis.

City of St. Louis

- 1996 *A Preservation Plan for the City of St. Louis*. Prepared by The Heritage and Urban Design Division, Preservation Section, City of St. Louis, MO.
- 2005 *St. Louis Strategic Land Use Plan*. Available on the Internet at <<http://stlcin.missouri.org/landuse/index.cfm>>.
- 2007a *St. Louis Gateway Mall Master Plan*. City of St. Louis Planning and Urban Design Agency. Available on the Internet at <<http://stlouis.missouri.org/citygov/planning/gatewaymall>>.
- 2007b Memo regarding nomination to the National Register of Missouri Athletic Club Building, January 22, 2007. On file at the City of St. Louis Cultural Resources Office.

The Confluence Greenway

- 2001 "The Confluence Greenway Master Plan." St. Louis, MO: The Confluence Greenway. Available on the Internet at <<http://www.confluencegreenway.org>>.

Costa, David J

2000. "Miami-Illinois Tribe Names." In *Papers of the Thirty-first Algonquian Conference*, John Nichols, ed., 30-53. Winnipeg, Manitoba, Canada: University of Manitoba.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe

- 1979 *Classification of Wetlands and Deepwater Habitats of the United States*. Prepared for the USDI-U.S. Fish and Wildlife Service, Biological Services Program; FWS/OBS-79/31. Available on the Internet at <<http://www.nwrc.usgs.gov/wdb/pub/others/79-31.pdf>>.

Crawford, Bunte, Brammeier: Transportation Engineers

- 2005 "St. Louis Downtown Access, Circulation, and Traffic Study," presented at Public Presentation Open House, December 6, 2005. Available on the Internet at <<http://www.downtownstl.org/docs/TrafficStudy.pdf>>.

The Danforth Foundation

- 2007 "Riverfront Development and the Arch Connector: A Report to the Mayor." Available on the Internet at <<http://groundsforchangelstl.org/>>.

Downtown Now!

- 1999 *St. Louis Downtown Development Action Plan*. Available on the Internet at <<http://stlouis.missouri.org/development/downtown-now>>.
- 2000 "St. Louis Downtown Streetscape Guidelines." Available on the Internet at <<http://stlouis.missouri.org/development/downtown-now>>.

Downtown St. Louis Partnership

- 2008 *Public Parking Map and Index of Parking Facilities*. Available on the Internet at <<http://www.downtownstl.org/docs/ParkingGuide%2708.pdf>>.

East-West Gateway Council of Governments

- 2007a *Legacy 2035*. Available on the Internet at <<http://www.ewgateway.org>>.

- 2007b *Transportation Improvement Program, Fiscal Years 2008 through 2011, St. Louis Metropolitan Region*. Available on the Internet at <<http://www.egateway.org>>.
- 2007c “Southwestern Illinois Flood Prevention Initiative: Status Report and Timeline.” Available on the Internet at <<http://www.ewgateway.org/pdffiles/library/Levees/ILFloodPrevention.pdf>>.
- 2008a *Ozone Data Sharing* website. Available on the Internet at <<http://www.ewgateway.org/environment/aq/OzoneDataSharing/ozonedatasharing.htm>>.
- 2008b *Presentations* website. Available on the Internet at <<http://www.ewgateway.org/environment/aq/presentations/24hrpm25desreq.pdf>>.

Egan, M. David

- 1988 *Architectural Acoustics*. Chelsea, MI: McGraw-Hill.

Explorer Pipeline Company

- 2008 *Explorer Pipeline Company* website. Available on the Internet at <<http://www.expl.com/Pipeline/ShippingDiagrams.aspx>>.

Farrell, Kevin and Matt Schindler

- 2007 *2007 Downtown St. Louis Housing Report*, Prepared for the Downtown St. Louis Partnership. by Kevin Farrell and Matt Schindler. Available on the Internet at <<http://www.downtownstl.org>>.

Federal Emergency Management Agency (FEMA)

- 1979 “Flood Insurance Rate Map: City of St. Louis, Missouri, Independent City.” Community Panel Number 290385 0010 A. Available on the Internet at <http://map1.msc.fema.gov/idms/IntraList.cgi?displ=wsp/item_1627579.txt>.
- 2003a “Flood Insurance Rate Map: St. Clair County, Illinois, and Incorporated Areas.” Map Numbers 17163C0160D. Available on the Internet at <<http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=48777148&IFIT=1>>.
- 2003b “Flood Insurance Rate Map: St. Clair County, Illinois, and Incorporated Areas.” Map Numbers 17163C0020D. Available on the Internet at <<http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=48854164&IFIT=1>>.
- 2003c “Preliminary Flood Insurance Rate Map: St. Clair County, Illinois, and Incorporated Areas.” Map Numbers 17163C0160E and 17163C0020E. Available on the Internet at <<http://www.illinoisfloodmaps.org/outside.aspx?co=stclair>>.

Great Rivers Greenway District

- 2003 “Building The River Ring: A Citizen-Driven Regional Plan.” Available on the Internet at <<http://www.greatrivers.info/Projects/PDFs/BuildingTheRiverRing.pdf>>.

Gregory C. Rigamer & Associates, Inc.

- 1985 *Mississippi River Bridge Authority Ferry System Evaluation and Assessment*. Prepared for the Louisiana Department of Transportation and Development.

- Hauswer, J.
2008 “Metro East marks key milestone in its levee restoration process as FEMA releases preliminary flood plain maps for the American Bottoms.” Press release by Southwestern Illinois Flood Prevention Initiative. Available on the Internet at <<http://www.swillinoislevees.org/pdf/PRs/PR-MetroEastMarksKeyMilestones-061308.pdf>>.
- Hughes, Mary
1999 “Dan Kiley’s Site Design for the Gateway Arch. “ In *Preserving Modern Landscape Architecture: Papers from the Wave Hill – National Park Service Conference*, edited by Charles Birnbaum, 29-32. Cambridge, MA: Spacemaker Press.
- Illinois State Historic Preservation Office
2008 *National Register of Historic Places in Illinois*. On file at Illinois State Historic Preservation Office.
- Landmarks Association of St. Louis
1988 *Final Report – Chouteau’s Landing Survey*. September 29, 1988. On file at the Missouri Department of Natural Resources, State Historic Preservation Office.
- Metro St. Louis
2007 *Metro Ridership by City of St. Louis Ward*. Prepared by Metro Research and Development. Available on the Internet at <http://www.metrostlouis.org/ResearchRidership/Metro_Ward01.pdf>.
- Meyer, Michael J.
2004 *Phase I Survey and Phase II Archeological Investigations of the Walsh’s Row site (MoDOTSL6)*. Prepared for the Missouri Department of Transportation. Report on file at the Missouri Department of Natural Resources, State Historic Preservation Office.
- Milner, George R
1998 *The Cahokia Chiefdom: The Archaeology of a Mississippian Society*. Washington, DC: Smithsonian Institution Press.
- Missouri Department of Conservation (MDC)
2008 “Discovery of Forest Pest Triggers State, Federal Response.” Available on the Internet at <http://mdc.mo.gov/cgi-bin/news/news_search.cgi?item=1217360081,51717>.
- Missouri Department of Natural Resources (MoDNR)
2006a “Total Maximum Daily Loads (TMDLs) for Chlordane and Polychlorinated Biphenyls in the Mississippi River.” Prepared by the Water Protection Program. Available on the Internet at <<http://www.dnr.mo.gov/env/wpp/tmdl/0001-1707-3152-mississippi-r-tmdl.pdf>>.
2006b “St. Louis 8-Hour Ozone Nonattainment Area Reasonably Available Control Technology (RACT) Demonstration.” September 28, 2006. Available on the Internet at <<http://www.dnr.mo.gov/ENV/apcp/docs/ractdemonstration.pdf>>.

- 2007a *State of Missouri Plan for Implementation, Maintenance and Enforcement of National Ambient Air Quality Standards*, Adopted February 1, 2007. Available on the Internet at <<http://www.dnr.mo.gov/env/apcp/sips.htm>>.
- 2007b “2007 Revision of the State Implementation Plan for the St. Louis 8-Hour Ozone Nonattainment Area,” Adoption Hearing, May 31, 2007.
- 2007c “Endangered Species Guidesheet: Decurrent False Aster (*Boltonia decurrens*).” Available on the Internet at <<http://mdc.mo.gov/nathis/endangered/endanger/aster/>>.
- 2008 *State of Missouri Regional Haze Plan*, Adopted February 7, 2008.

Missouri Department of Transportation (MoDOT)

- 2006 “District 6 Traffic Volume Map.” Available on the Internet at <http://www.modot.mo.gov/stlouis/news_and_information/documents/Traffic_2006_District6.pdf>.

Missouri State Historic Preservation Office

- 2002 “Section 106 Documentation for Monumental Entrance, Jefferson National Expansion Memorial.” Report on file at the Jefferson National Expansion Memorial.

Mitsch, W.J. and J.G. Gosselink

- 2000 *Wetlands*. New York: Van Nostrand Reinhold Co.

National Park Service, U.S. Department of the Interior

- 1951 “Agreement Between U.S. DOI and City of St. Louis Regarding Temporary Beautification of JNEM (Luther Ely Smith Square).” March 1951. Report on file at the Jefferson National Expansion Memorial.
- 1954 *The Changing Scene on the St. Louis Riverfront: 1764-1954*, prepared by John A. Bryan. Report on file at the Jefferson National Expansion Memorial.
- 1962 *Jefferson National Expansion Memorial Master Plan Handbook*. St. Louis, MO. On file at the Jefferson National Expansion Memorial.
- 1966 *National Register Nomination for the Jefferson National Expansion Memorial*. Omaha, NE.
- 1976 *National Register Nomination for Laclede’s Landing*. Jefferson City, MO.
- 1980a *National Register Nomination for St. Mary of Victories Church*. St. Louis, MO.
- 1980b “Land Use Plan for the Jefferson National Expansion Memorial [utility map sheets 1 through 24].” June 25, 1980. On file at the Jefferson National Expansion Memorial.

- 1984 *Jefferson National Expansion Memorial Administrative History, 1935-1981.* Prepared by Sahron Brown. Available at <http://www.nps.gov/archive/jeff/adhi%20Folder/adhi1-6.htm>.
- 1985 *National Register of Historic Places Inventory Nomination Form for Eads Bridge.* Washington, D.C.
- 1986a *Jefferson National Expansion Memorial National Historic Site: East St. Louis Extension Data Report,* prepared by TDP/St. Louis, Inc. Report on file at the Jefferson National Expansion Memorial.
- 1986b *National Historic Landmark Nomination for the Jefferson National Expansion Memorial.*
- 1990 “How to Apply the National Register Criteria for Evaluation.” *National Register Bulletin.*
- 1994 *Urban Innovation and Practical Partnerships: An Administrative History of Jefferson National Expansion Memorial, 1980-1991,* prepared by Bob Moore. Report on file at the Jefferson National Expansion Memorial.
- 1996a *Cultural Landscape Report for Jefferson National Expansion Memorial.* Omaha, NE: National Park Service Midwest Field Area.
- 1996b *Guidelines for the Treatment of Cultural Landscapes.* Available on the Internet at http://www.nps.gov/history/HPS/hli/landscape_guidelines/index.htm.
- 1997 “Level II/III Environmental Site Assessment at the Jefferson National Expansion Memorial East St. Louis, Illinois.” Prepared by WW Engineering & Science. Report on file at the Jefferson National Expansion Memorial.
- 1998a *A Guide to Cultural Landscape Reports: Landscape Lines,* prepared by Robert R. Page, Cathy A. Gilbert, Susan A. Dolan. Washington, D.C.: Cultural Resource Stewardships and Partnerships, Park Historic Structures and Cultural Landscape Program.
- 1998b *National Register Nomination for the Security Building.* St. Louis, MO.
- 1998c *National Register Nomination for the American Zinc, Lead and Smelting Company Building.* St. Louis, MO.
- 1998d *National Register Nomination for the International Fur Exchange Building.* St. Louis, MO.
- 2000 “Report of Subsurface Investigation and Geotechnical Engineering Evaluation: Jefferson National Memorial Expansion Maintenance Facility, St. Louis, Missouri,” prepared by The Benham Group. Report on file at the Jefferson National Expansion Memorial.
- 2000 *National Register Nomination for the J. Kennard and Sons Carpet Company Building.* St. Louis, MO.

- 2001 *National Register Nomination for the Mississippi Valley Trust Company Building*. St. Louis, MO.
- 2002a *Environmental Assessment for Complete Construction of Gateway Arch Monumental Entrance, Jefferson National Expansion Memorial, St. Louis, Missouri*. Report on file at the Jefferson National Expansion Memorial.
- 2002b “Finding of No Significant Impact for Complete Construction of Gateway Arch Monumental Entrance, Jefferson National Expansion Memorial.” St. Louis, MO.
- 2004a *National Register Nomination for Pet Plaza*. St. Louis, MO.
- 2004b *National Register Nomination for the Crunden-Martin Manufacturing Company District*. St. Louis, MO.
- 2006 *Management Policies: The Guide to Managing the National Park System*. Washington, DC. Available on the Internet at <<http://www.nps.gov/policy/mp/policies.html>>.
- 2007a “Jefferson National Expansion Memorial Core Operations Report.” Report on file at the Jefferson National Expansion Memorial.
- 2007b “Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan - Draft Environmental Impact Statement.” Marin County, California.
- 2008a Economic Impacts of Visitor Spending by Parks: Jefferson National Expansion memorial for 2003. Available on the Internet November 2008 at <http://web4.msue.msu.edu/mgm2/default.htm>.
- 2008b “List of Classified Structures: Jefferson National Expansion Memorial,” prepared by Park Historic Structures and Cultural Landscapes Program. Report on file at the Jefferson National Expansion Memorial.
- 2008c “National Register Information System, Jefferson National Expansion Memorial National Historic Site.” Available on the Internet at <<http://www.nr.nps.gov/>>.
- 2008d *Procedural Manual 77-1: Wetland Protection*. Available on the Internet at <<http://www.nps.gov/policy/DOrders/DO77-1-Reissue.htm>>.
- “The Old Courthouse in St. Louis: Yesterday and Today,” prepared by Diane James Weber for the National Register of Historic Places: Teaching with Historic Places. Available on the Internet at <http://www.nr.nps.gov/iwisapi/explorer.dll?IWS_SCHEMA=NRIS1&IWS_LOGIN=1&IWS_REPORT=100000044>.
- Lewis and Clark Expedition, Jefferson National Expansion Memorial National Historic Site. Available on the Internet at <http://www.nr.nps.gov/iwisapi/explorer.dll?IWS_SCHEMA=NRIS1&IWS_LOGIN=1&IWS_REPORT=100000044>.
- 2009 *Memorial Drive Traffic Study for Jefferson National Expansion Memorial*. Omaha, NE: National Park Service Midwest Field Area.

- 2010 *Cultural Landscape Report for Jefferson National Expansion Memorial*. Omaha, NE: National Park Service Midwest Field Area.
- Noble, Vergil
1999 *Trip Report: Jefferson National Expansion Memorial (JNEM); December 16-23, 1998*. Letter dated January 7, 1999. On file at JNEM archives.
- Pauketat, Timothy R.
2004 *Ancient Cahokia and the Mississippians*. Cambridge University Press.
- Peterson, Charles E.
1991 "The Old St. Louis Riverfront 1938." Reproduced in facsimile for the Society of Architectural Historians Domestic Field Tour, Illinois and Missouri, May 19-26, 1991.
- Primm, James Neal
1981 *Lion of the Valley*, St. Louis, Missouri. Denver: Pruett Publishing Company.
- Roselle, Eric, Janet Kneller, Jennifer Spence, and John Fulmer
1999 *Archival Search and Architectural Survey within the Area of Potential Effect for a New Mississippi River Bridge, St. Louis City, Missouri*. Prepared for Illinois Transportation Archaeological Research Program.
- Saarinen, Aline B.
1962 *Eero Saarinen on his Work*. New Haven, CT and London: Yale University Press, p.23.
- Sanborn Fire Insurance Company
1907 Block Line Map of St. Louis, Missouri, Heavy Valued District.
1908 Map of Congested District, St. Louis, Vol. I, Sheets 18-22, 71-78, and 98.
1909 Map of Congested District, St. Louis, Vol. II, Sheets 20-24 and 44-48.
- Scheyer, J.M., and K.W. Hipple
2005 *Urban Soil Primer*. Prepared for the United States Department of Agriculture and the Natural Resources Conservation Service. National Soil Survey Center. Lincoln, NE. Available on the Internet at <<http://soils.usda.gov/use/urban/primer.html>>.
- Schwegman, J.E. and R.W. Nyboer
1985 "The Taxonomic and Population Status of *Boltonia decurrens* (Torr. and Gray) Wood." In *Castanea* 50:112-115.
- St. Louis Convention & Visitors Commission
2006 *St. Louis' Newest Restaurants Fill Historic Buildings Near America's Center*. February 2006.
- St. Louis Globe-Democrat
1951a "City to Improve River Front Site with Sunken Garden." In *St. Louis Globe-Democrat*. St. Louis, MO, February 21, 1951.
1951b "U.S. Signs Contract to Let City Beautify Riverfront Park Site." In *St. Louis Globe-Democrat*. St. Louis, MO, February 15, 1951.

St. Louis Post-Dispatch

- 1951a "City Plans to Beautify Riverfront with Grass, Trees, Playgrounds." In *St. Louis Post-Dispatch*. St. Louis, MO, January 16, 1951.
- 1951b "Riverfront Garden Started." In *St. Louis Post-Dispatch*. St. Louis, MO, March 30, 1951.
- 1951c "Riverfront Garden Will be Built to Improve Memorial." In *St. Louis Post-Dispatch*. St. Louis, MO, February 20, 1951.

St. Louis Regional History Project.

- 2006 *Hooverville*. St. Louis Virtual City Project, 1930 Site Index. University of Missouri St. Louis. Available at <http://www.umsl.edu/virtualstl/phase2/1930/buildings/hooverville.htm>.

Star Times

- 1951a "\$20,000 River Front Landscape Fund Okayed." In *Star Times*. St. Louis, MO, February 9, 1951.
- 1951b "Sunken Garden to be Laid Out Soon on River Front Memorial." In *Star Times*. St. Louis, MO, February 20, 1951.

Southern Illinois University at Edwardsville

- 1984a "Arch Parking Facility Archaeological Monitoring Progress Report #1: 3 February through 21 February 1984." Report prepared for the National Park Service.
- 1984b "Arch Parking Facility Archaeological Monitoring Progress Report #2: 22 February through 9 March 1984." Report prepared for the National Park Service.
- 1984c "Arch Parking Facility Archaeological Monitoring Progress Report #3: 10 March through 23 March 1984." Report prepared for the National Park Service.
- 1984d "Arch Parking Facility Archaeological Monitoring Progress Report #4: 26 March through 6 April 1984." Report prepared for the National Park Service.

Terminal Railroad Association of St. Louis

- 2008 "Terminal Railroad Association History." Available online at www.terminalrailroad.com/history.php. (accessed 2008).

Tranel, Mark

- 2007 *St. Louis Plans: The Ideal and the Real St. Louis*. University of Missouri Press.

United States Bureau of Economic Analysis

- 2008 "Table CA05N Personal income by major source and earnings by NAICS industry." *Regional Economic Information System*. Available on the Internet at <http://www.bea.gov/regional/reis/default.cfm#step3> and <http://www.bea.gov/regional/index.htm#state>.

- United States Bureau of Labor Statistics
 2008 “Local Area Unemployment Statistics.” October 2008. Available on the Internet at <<http://www.bls.gov/lau/>>.
- United States Census Bureau
 2006 *American Community Survey*. Accessed on the Internet October 2008 at <<http://factfinder.census.gov/>>.
 2008 *American Fact Finder Website*. Accessed on the Internet October 2008 at <<http://factfinder.census.gov>>.
- United States Department of Agriculture (USDA)
 1982 “Soil Survey of St. Louis County and St. Louis City, Missouri.” Prepared by the Soil Conservation Service.
 2008 “Natural Resources Conservation Service Websoil Survey.” Available on the Internet at <<http://websoilsurvey.nrcs.usda.gov/app/>>.
- United States Department of Agriculture-APHIS (USDA-APHIS)
 2003 *Farm and Ranch Lands Protection Program*. Title 7 U.S. Code Sec. 1491.3. Available on the Internet at <<http://law.justia.com/us/cfr/title07/7-10.1.2.3.41.1.291.3.html>>.
 2008 *New Pest Response Guidelines for the Emerald Ash Borer, Agrilus planipennis*. (Fairmaire) USDA-APHIS-PPQ-Emergency and Domestic Programs-Emergency Planning. Available on the Internet at <http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/Draft-NPRG.pdf>.
- United States Department of Transportation
 2007 “National Pipeline Mapping System Website.” Available on the Internet at <<http://www.npms.phmsa.dot.gov/>>.
- United States Environmental Protection Agency (EPA)
 1965 *Solid Waste Disposal Act*. Title 42 U.S. Code Sec. 6901–6992k, PL 89-272, 94-580[1][20], 98-616[2][21]
 1972 *The Clean Water Act*. Title 33 U.S. Code Sec. 1251-1387. As amended 1973-1983, 1987, 1988, 1990-1992, 1994, 1995 and 1996. Washington, DC: Government Printing Office.
 1975 *Hazardous Materials Transportation Act*. Title 49 U.S. Code Sec. 5101-5127, PL 93-633, 101-615, 103-311. Washington, DC: Government Printing Office.
 1976 *Toxic Substances Control Act*. Title 15 U.S. Code Sec. 2601-2692, PL 94-469. Washington, DC: Government Printing Office.
 1980 *Comprehensive Environmental Response, Compensation and Liability Act of 1980* (CERCLA). Title 42 U.S. Code Sec. 9601-9675, PL 96-510.
 1990a *The Clean Air Act of 1990*. Title 42 U.S. Code Sec. 7401-7671q, PL 88-206. Washington, DC: Government Printing Office.

- 1990b *The Oil Pollution Act*. Title 33 U.S. Code Sec 2701-2761, PL 101-380. Washington, DC: Government Printing Office.
- 1995 *Definition of Wetlands*. Title 40 Code of Federal Regulations Part 230.3[t].
- 1997 *Climate Change and Missouri*. EPA 230-F-97-008y. Washington, DC: Office of Policy, Planning and Evaluation, September 1997. Available on the Internet at <[http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BUTGH/\\$File/mo_impct.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BUTGH/$File/mo_impct.pdf)>.
- 2004 “305(b) Lists/Assessment Unit Information Year 2004.” Available on the Internet at <http://iaspub.epa.gov/tmdl_waters10/enviro.wcontrol?p_id305b=ILJ03_J%20%20%2036>.
- 2006 “Listed Water Information. State: Illinois.” List ID: IL-J36. Available on the Internet at <http://iaspub.epa.gov/tmdl_waters10/enviro.control?p_list_id=IL_J36>.
- United States Fish and Wildlife Service (USFWS)
- 1918 *Migratory Bird Treaty Act*. Title 7 U.S. Code Sec. 2. Washington, DC: Government Printing Office.
- 1940 *Bald and Golden Eagle Protection Act*. Title 16 U.S. Code. Sec. 669-668d, 54 Stat. 250. Washington, DC: Government Printing Office.
- 1973 *Endangered Species Act*. Title 7 U.S. Code Sec. 136, Title 16 U.S. Code Sec. 1531 et. seq. Washington, DC: Government Printing Office.
- 1990 *Decurrent False Aster (Boltonia decurrens) Recovery Plan*, prepared for Region III of the U.S. Fish and Wildlife Service, Twin Cities, Minnesota. Available on the Internet at <http://ecos.fws.gov/docs/recovery_plan/900928c.pdf>.
- Walker, Peter
- 2007 “Daniel Urban Kiley, 1912-2004.” in *Pioneers of American Landscape Design*, edited by The Cultural Landscape Foundation. Available on the Internet at <<http://www.tclf.org/pioneers/kiley.htm>>.
- Wells, Christy L. and Joyce A. Williams
- 1985 “A Report of Archaeological Monitoring of Parking Facility Construction at the Jefferson National Expansion Memorial National Historic Site,” prepared for the National Park Service and the Bi-State Development Agency, 61-62.
- Willman, H., et al.
- 1975 *Handbook of Illinois Stratigraphy*: Illinois State Geological Survey Bulletin 95, 261 .
- Woods, William
- 1984 *Arch Parking Facility: Archeological Monitoring Progress Report #4, 26 March through 6 April 1984*. Report Prepared by Southern Illinois University at Edwardsville. On file at Jefferson National Expansion Memorial archives.
- York, Jill
- 1983 Memorandum of telephone call from Jill York, Regional Historian, Midwest Region to Michelle Aubry. June 27, 1983. On file at Jefferson National Expansion Memorial archives.

List of Preparers

National Park Service Midwest Regional Office

Nicholas Chevance, Regional Environmental Coordinator. 32 years NEPA and NHPA experience, 8 years with NPS. BA, Anthropology, Western Illinois University; MA, Anthropology, University of Nebraska – Lincoln.

William Stilwell Harlow, Chief, Park Historic Architecture & Landscapes Program. 23 years NPS experience. BA, Earlham College, Fine Arts; MArch, Architecture, University Wisconsin – Milwaukee.

Marla J. McEnaney, Historical Landscape Architect. 18 years experience, 14 years with NPS. BLA, Landscape Architecture, Ball State University; MA, Landscape Architecture, University Wisconsin – Madison.

Ian P. Shanklin, Landscape Architect. 11 years experience, 8 years with NPS. BLA, Landscape Architecture, North Carolina State University.

Donald L. Stevens, Jr., PhD, Chief, History & National Register Program. 22 years NPS experience. BA, MA, History, University of Nebraska, Omaha; PhD, Applied History, Carnegie Mellon University.

Sandra J. Washington, Chief, Planning & Compliance. 24 years experience, 19 years with NPS. BS, Natural Resources Interpretation and Planning, The Ohio State University; MS, Natural Resources Planning and Policy Analysis, The Ohio State University.

Jefferson National Expansion Memorial

Mardi J. Arce, Chief of Museum Services & Interpretation. 24 years NPS experience. BA, History and Library Science, Buena Vista College.

Tom Bradley, Superintendent. 38 years NPS experience. BA, Economics, University of Wyoming.

David Bubac, Chief of Facility Management. 39 years NPS experience.

Jennifer R. Clark, Archivist. 12 years experience, 10 years with NPS. BA, History, Davidson University; MA, Near Eastern Languages and Cultures, Indiana University; MS Library Sciences, University of North Carolina; Certified Archivist.

Victoria Dugan, Superintendent's Secretary. 30 years experience, 12 years with NPS.

Ann Honious, Chief of Museum Services and Interpretation. 18 years NPS experience.

Rose Hoots, Management Assistant. 35 years experience, 23 years with NPS.

Arlene J. Jackson, Chief of Interpretation, Ulysses S. Grant National Historic Site. 22 years NPS experience. BS, Forest Management, Colorado State University.

Frank Mares, Deputy Superintendent. 30 years NPS experience. BA, History, University of New Mexico.

Robert J. Moore, Jr., Historian. 30 years NPS experience. BFA, Art/Film, Syracuse University; MA, PhD, History, Washington University.

Pete Swisher, Chief of Law Enforcement and Security. 18 years NPS experience. BA, Recreation, Park and Tourism Administration, Western Illinois University.

Kathryn Thomas, Museum Curator. 28 years NPS experience. BA, History, Augustana College; MA, Museum Studies, Cooperstown Graduate Programs.

Sherry L. Tunteri, Administrative Officer. 25 years NPS experience. BS, Child Development and Family Life, Oregon State University.

Consultants

EDAW / AECOM

Laura Bandara, ASLA, Landscape Designer. 3 years experience, BA Cultural Studies, Hampshire College; MLA, Landscape Architecture, University of Virginia.

Susan Bemis, Planner. BA, Policy Studies and Spanish, Dickinson College; Master of Urban and Environmental Planning, University of Virginia.

David H. Bennett, AIA, ASLA, LEED AP, Senior Associate. 25+ years experience. BArch, Cornell University; MLA, Landscape Architecture, Harvard University Graduate School of Design.

Susan L. Berigan, Technical Editor/Writer. 16 years experience. BA, English, Dickinson College.

Jamie Cleland, PhD, Principal. 30+ years experience. BA, Anthropology, University of Michigan; MA, PhD, Anthropology, University of Virginia.

Roger Courtenay, FASLA, LEED AP, Principal/Vice President. 31 years experience. BLA, Landscape Architecture, and BA, Sociology, University of Guelph; MLA, Landscape Architecture, Harvard University.

Christy Dolan, Senior Associate. 19 years experience. BA, History and Anthropology, University of New Hampshire; MA, Anthropology, College of William and Mary.

Stephanie Dyer-Carroll, AICP, Associate. 15 years experience. BA, Art History, Georgetown University; MA, Architectural History, University of Virginia.

Adriane Fowler, RLA, ASLA, LEED AP, Associate. 9 years experience. BA, Geography and Anthropology, Vassar College; MLA, Landscape Architecture, University of Virginia.

Alan Harwood, AICP, Principal/Vice President. 26 years experience. BS, Geography, University of South Carolina; MS, Urban and Regional Planning, George Washington University.

Rachel Evans Lloyd, LEED AP, Associate. 13 years experience. BA, American History, University of Pennsylvania; MLA, Landscape Architecture, University of Virginia.

Jessica Emmitt Mauzy, ASLA, LEED AP, Landscape Designer. 4 years experience. BS Botany, Colorado State University; MLA, Landscape Architecture, Virginia Polytechnic Institute and State University.

Robert M. McGinnis, RLA, ASLA, Senior Director. 25 years experience. BFA, Visual Art, James Madison University; MFA, Visual Art, California Institute of the Arts; MLA, Landscape Architecture, University of Virginia.

Trina Meiser, Architectural Historian. 6 years experience. BA, History, Kenyon College; MA, Historic Preservation Planning, Cornell University.

David Merkey, PhD, PWS, Senior Scientist. 13 years experience. BS, Biology, Grand Valley State University; MLA, Landscape Architecture, University of Michigan; PhD, Ecology, University of Michigan.

Kristiana G. Mueller, RLA, Associate. 13 years experience. BLA, Landscape Architecture, Ball State University.

Jennifer O'Brien, Graphic Designer. 4 years experience. BFA, Graphic Design, University of Michigan; Master of Urban and Environmental Planning, University of Virginia (May 2011).

John Van Kirk, Associate. 22 years experience. BA, Geography and Environmental Studies, University of California, Santa Barbara; MA, Geography, University of California, Santa Barbara.

Eric Wright, ASLA, AICP, Associate. 9 years experience. BA, Political Science, Emory University; Master of Urban and Environmental Planning, University of Virginia; MLA, Landscape Architecture, University of Virginia.

Zhetao Wu, RLA, Landscape Architect. 5 years experience. BArch, Architecture, Hefei University of Technology; MArch, Architecture Tsinghua University; MLA, Landscape Architecture, Harvard University.

The Louis Berger Group, Inc.

Lisa McDonald, PhD, Senior Economist. 16 years experience. BS, Earth Science, University of South Dakota; PhD, Mineral Economics, Colorado School of Mines.

Acronyms

AAADT: Average Annual Daily Traffic

ADA/ABAAS: Americans With Disabilities Act/Architectural Barriers Act Accessibility Standard

APE: Area of Potential Effects

CAA: Clean Air Act

CBA: Choosing By Advantages

CEQ: Council on Environmental Quality

CFR: Code of Federal Regulations

CLR: Cultural Landscape Report

DO: Director's Order

EIS: Environmental Impact Statement

EO: Executive Order

EPA: Environmental Protection Agency

ESA: Endangered Species Act

EWGCOG: East-West Gateway Council of Governments

FTE: Full-time equivalent staff position

GIS: Geographic Information Systems

GMP: General Management Plan

JNEMA: Jefferson National Expansion Memorial Association

LEED™: Leadership in Energy and Environmental Design

LID: Low Impact Development

MoDNR: Missouri Department of Natural Resources

MMMP: Malcolm Martin Memorial Park

MoDOT: Missouri Department of Transportation

MSA: Metropolitan Statistical Area

NAAQS: National Ambient Air Quality Standards

NEPA: National Environmental Policy Act

NFPA: National Fire Protection Association

NHL: National Historic Landmark

NHPA: National Historic Preservation Act

NMFS: National Marine Fisheries Service

NOAA: National Oceanic and Atmospheric Administration

NPS: National Park Service

NWI: National Wetlands Inventory

PCB: Polychlorinated biphenyls

PEPC: Planning, Environment and Public Comment

SHPO: State Historic Preservation Officer

SIP: State Implementation Plan

SOF: Statement of Findings

T&E: Threatened and Endangered

TMDL: Total Maximum Daily Load

TRRA: Terminal Railroad Association

USACE: United States Army Corps of Engineers

USDA: United States Department of Agriculture

USFWS: United States Fish and Wildlife Service

USGS: United States Geological Survey

WPA: Works Progress Administration

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



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