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EVALUATION OF VISUAL IMPACT ANALYSIS FOR TEMPORARY STRUCTURES ON THE NATIONAL MALL: *CULTURAL LANDSCAPE VISTA AND VIEW PRESERVATION*

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Resource Stewardship and Science Cultural Resources Division

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Prepared by:

National Capital Region Resource Stewardship and Science Cultural Resources Division

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EXECUTIVE SUMMARY

This report developed out of an effort to help evaluate and define appropriate locations and heights for temporary structures to be located on the National Mall managed by the National Park Service (NPS). This study evaluates the findings in the *Preliminary Visual Impact Analysis National Mall and Memorial Parks & President's Park* (April 2018). The evaluation is limited to the visual and view analysis tools provided by the previous study. It does not take into account other factors related to security, direct resource damage to soft or hardscapes, or other criteria and guidelines that may influence when, where, and how long a temporary structure can appropriately be placed.

Using a series of graphic tools provided by the previous study, this visual resources evaluation assesses the extent and type of impacts to the National Mall from the placement of structures at selected locations. The evaluation resulted in several key conclusions and recommendations.

Key Findings:

- Visual analysis generally supports past and current practices and known sensitivities across the National Mall.
- The analysis reinforces the axial nature of the primary vistas within and through the National Mall.
- Vegetation and topography influence the visual impacts of individual structures and viewpoints.
- Some Structure Locations would cause broad/diffuse impacts to the National Mall, while others have more limited and localized impacts.
- Structures set close to memorials and monuments and within the primary east-west and north-south axial vistas will detract from the visitor experience and alter the understanding of the significant National Mall design.
- Structures can be located in areas offset from the major monuments and memorials and outside the primary axial vistas, but height limits scaled to the specific location will help minimize impacts to the National Mall.
- There are opportunities to locate and design structures to lessen impacts to the National Mall.
- More work is needed to refine these finding and to translate them into management documents, guidelines, and policy.

Map 1 & 2 (see pages 61 and 63): Evaluation of Visual Impact Analysis for Temporary Structures on the National Mall defines areas where restrictions on the location and heights of temporary structures are proposed based on this evaluation of the visual impacts analysis tools. The analyzed areas are limited to park properties managed by the NPS as part of the National Mall and Memorial Parks and White House and President's Park and located within the Monumental Core of Washington, DC. No recommendations are made for areas not tested in the visual impact analysis, including areas north of the White House and the White House Grounds (inside the security fence).

The appendices in this document contain the visual impact map and visualization analysis tools developed as part of the *Preliminary Visual Impact Analysis National Mall and Memorial Parks & President's Park* report (April 2018), by GIS technical staff from the National Capital Region Office and the Denver Service Center. In May 2018, staff expanded the analysis by generating Viewable Area Maps for additional Structure Location (S26 through S32). Appendix A contains all the Viewable Area Maps created in April and May 2018. Appendix B includes all of the Ground-Level Visualizations generated for the important visi-tor viewpoints identified in April 2018 Visual Impact Analysis. See the April 2018 Visual Impact Analysis report for a full explanation of the procedure and methodology used.

In April and May 2018, the National Capital Region's Cultural Resources staff used the maps and visualization analysis to evaluate the types and levels of impacts that temporary structures would have if introduced at the selected locations. Using this evaluation and assessing how those impacts would affect both visitor experiences and the historic character of the National Mall, staff made recommendations for appropriate locations and height limits for temporary structures. The conclusions for the evaluation of each Structure Location are found in the section titled "Evaluation of 'Preliminary Visual Impact Analysis." Recommendations for height and placement zones based on these conclusions related to cultural resource concerns are found on Map 1, Map 2, and Table 1.

INTRODUCTION

This report developed out of an effort to help evaluate and define appropriate locations and heights for temporary structures to be located within the subset of National Park Service (NPS) lands managed by National Mall and Memorial Parks and by the White House and President's Park known as the National Mall. For the purpose of this report, the National Mall is defined as it is in the 2016 update and expansion of the National Register nomination. It encompasses the iconic cross axis of the L'Enfant and McMillan plans for the city of Washington. The district comprises contiguous parcels of public land developed over the nation's history into the central symbolic and commemorative landscape of the Nation's Capital.¹

This study evaluates the findings of the *Preliminary Visual Impact Analysis National Mall and Memorial Parks & President's Park* (April 2018) and the two reports should be used in combination. The evaluation is limited to the visual and view analysis tools provided by the previous study. It does not take into account other factors related to security, direct resource damage to soft or hardscapes, or other criteria and guidelines that may influence when, where, and how long a temporary structure can appropriately be placed.

The information generated by the *Visual Impact Analysis* included Viewable Area Maps (Appendix A) for 32 potential Structure Locations. These maps show where potential structures would be visible and at what heights using colors to represent different heights. These maps were used to evaluate where structures at the selected locations and of different heights would be visible. This was used to

- 2. Washington Monument Grounds: Reservation No. 2.
- 3. West Potomac Park: Reservation No. 332, with the exception of the strip of Constitution Avenue between Virginia Avenue and 23rd Street, NW.
- 4. President's Park South: That portion of Reservation No. 1 bounded by the Dwight D. Eisenhower Executive Office Building (Old Executive Office Building), the White House Grounds, and the Treasury Department on the north; 15th Street, NW, on the east; Constitution Avenue, NW, on the south; and 17th Street, NW, on the west.

¹ The parcels included within the historic district are described below using current streets and U.S. reservation numbers to define boundaries:

^{1.} The Mall: Reservation Nos. 3, 3A, 3B, 4, 5, 6, 201, and 553, plus the Agriculture Building and Grounds. The small, triangular portion of Reservation No. 5 that lies south of Independence Avenue at 6th Street, SW, is not included within the historic district boundaries.

determine if the impacts of a structure at that location would have either localized or broad effects on the National Mall and to develop recommended height limits at these locations (Figures 1 and 2).

The other tool developed was a series of Ground-Level Visualizations (Appendix B) which placed test structures with a 10 foot by 10 foot footprint at the selected Structure Locations and developed ground-level views from the viewpoint of an average height person. The structures were simulated at 20-foot and 45-foot heights. These visualizations provide an understanding of the real-life implications of the structures on the scene and supported the evaluation of effects and the development of recommended height restrictions.

The conclusions and recommendations found in the evaluation section of this report reflect the visual analysis using these tools along with the Google Street Views photographs to "ground truth" some of the visualizations and to supplement where we did not have a simulated viewpoint.

In April and May 2018, the National Capital Region's Cultural Resources staff used the map and visualization analysis to evaluate the types and levels of impact that temporary structures introduced at the selected locations. Using this evaluation to assess those impacts and their effect on both visitor experiences and the historic character of the National Mall, staff made recommendations for where temporary structures could be located and at what heights they could stand and not diminish the historic character of the landscape or the visitor's experience of the park.

A note on terminology: The National Park Service defines views and vistas as the visual scene afforded by a range of vision in the landscape, conferred by the composition of other landscape characteristics and associated features. Views and vistas are distinguished as follows:

- Views are expansive and/or panoramic prospects of a broad range of vision which may be naturally occurring or deliberately contrived.
- Vistas are the controlled visual prospect of a discrete, linear range of vision, which is deliberately contrived or framed.

In this document, the terms are used generally interchangeably, but vista specifically is used when describing the primary axial views designed into the National Mall in the L'Enfant and McMillan Commission plans.



Figure 1. Overview Map-West Showing Analyzed Structure Locations & Visitor Viewing Locations.



Figure 2. Overview Map-East Showing Structure Locations & Visitor Viewing Locations.

SIGNIFICANCE OF THE RESOURCE

SUMMARY

The National Mall encompasses some of the oldest and most iconic public lands in our nation. Its development reflects two seminal historic design plans for the federal city - the 1791 L'Enfant Plan and the 1901-02 McMillan (Senate Park) Commission Plan. Central to both these landmark plans is the great cross axis of the National Mall, composed of the public land extending west from the Capitol to the Potomac River and south from the White House to the Thomas Jefferson Memorial. The north-south visual corridor between the White House and Thomas Jefferson Memorial historically has been defined as 150 feet wide centered on the White House. The east-west corridor was defined by the McMillan Plan as a swath of open space 890-feet wide extending west from the U.S. Capitol and centered on the axis between the Capitol building and the Washington Monument. Since the implementation of the McMillan Plan, the Federal government has overseen development in these open corridors in order to protect the historic design of these pivotal public lands. For example, the NPS's "National Capital Region Event Planning Guide, National Mall and Memorial Parks," provides that "[s]tructures must not disrupt the historic view shed."

The analysis and recommendations in this report align closely with many of the recommendations outlined in the 2010 National Mall Plan. Between 2006 and 2010, the NPS and its partners completed an intensive public planning process that resulted in the National Mall Plan. The National Mall Plan is a publicly vetted master plan-level document that lays out the long-term vision for the National Mall. It encompasses the best thinking of numerous public and private groups and organizations, including the National Park Service. The document and the public record accompanying it demonstrates that the National Park Service and its partners are committed to preserving the historic vista between the Capitol and the Washington Monument, and the reciprocal views between the White House, the Washington Monument, and the Thomas Jefferson Memorial. Under the Preferred Alternative that became the National Mall Plan, temporary structures would no longer be erected in the elm tree panels. Further, the Plan protects and improves both the east-west and north-south vistas of the National Mall. Permanent infrastructure and support areas are proposed in lieu of temporary, harmful ones. Under the Plan, improvements at Union Square¹ and the Washington Monument would increase availability of space for events and infrastructure. During the

¹ Note: Union Square is no longer under NPS jurisdiction, so this report does not address it.

planning process, several proposals to improve the National Mall were dismissed because of their harmful impact on views and vistas.²

The National Mall Historic District ("National Mall") is listed in the National Register of Historic Places at the national level of significance. It was administratively listed in the National Register of Historic Places on October 15, 1966. The NPS subsequently submitted National Register documentation for the National Mall, which was accepted by the Keeper of the National Register (Keeper) on May 19, 1981. On November 29, 2016 the Keeper accepted the NPS' submission of additional documentation detailing the significance and history of the National Mall and supporting an expansion of the boundary of the Historic District (Figures 3 and 4).

The Washington Monument and Grounds Historic District is listed in the National Register of Historic Places at the level of national significance. Having been recognized as a landmark by the District of Columbia on November 8, 1964, it was administratively listed in the National Register of Historic Places on October 15, 1966. National Register documentation for the Washington Monument and Grounds was accepted by the Keeper of the National Register ("Keeper") on May 19, 1981. On November 7, 2016, the Keeper accepted the NPS' submission of additional documentation regarding the Washington Monument and Grounds.

IMPORTANT VISUAL RELATIONSHIPS

One of the key features of the National Mall is the visual relationships established as part of the original plan and expanded and embellished in subsequent plans and efforts. These include planned vistas along the principal north-south and eastwest axes of the National Mall, reciprocal views between major memorial sites, extended views along contributing streets and avenues, multidirectional views across open expanses, and periodic views of resources from circulation routes, among others.

Pierre Charles L'Enfant developed his 1791 plan for the city of Washington with keen attention to visual relationships among the sites he dedicated to public buildings and monuments. Nowhere was that concept more important than along the Mall where the primary vista west from the U.S. Capitol along L'Enfant's "Grand Avenue" to the site for a proposed equestrian statue of George Washington intersected with views south from the White House (Figure 5 on page 9). L'Enfant's

² The 2016 Mall Turf Management Guidelines address the protection of the turf and include guidelines for setting up events and structures on the Mall. They do not address visual impacts or view shed protection.



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planned vistas also extended beyond the statue to the Potomac River. L'Enfant's complete plan for the city is itself listed in the National Register of Historic Places.

The McMillan (Senate Park) Commission Plan of 1901-02 also focused on visual relationships, adapting L'Enfant's visual corridors as the basis for their planning for the Mall and advancing it to take in new memorial sites. The McMillan Commission conceived of sites ultimately occupied by the Lincoln and Thomas Jefferson memorials as the termination of principal vistas from the U.S. Capitol and the White House, respectively – creating the great cross axis of today's National Mall. The McMillan Plan also established a setback for new buildings to ensure that the vista along the east-west axis remained unimpeded, and subsequent development honored the National Mall's principal vistas (Figure 6).

The construction of the Washington Monument itself established significant new views across the Mall, the city of Washington, and the developing region, and it became the focus of important views from beyond the Mall. The full extent of the axial north-south vista, or what L'Enfant had originally envisioned as the north cross arm of the National Mall, was finally realized in 1943 with the completion of the Thomas Jefferson Memorial. Frederick Law Olmsted, Jr. was the principal author of the Olmsted Plan written in 1934-35 in response to encroachments to the original landscape design. Throughout the report he took great pains to emphasize the paramount importance of the north-south vista, which he specifically defined as being "about 150 feet wide on the axis of the White House" (Olmsted Brothers 1935: 51). The axial relationship originally envisioned by L'Enfant, implemented by the McMillan Commission, and preserved by Olmsted's plan is clearly evident and remains one of the defining attributes for the entirety of Washington, DC's, Monumental Core. This primary viewing corridor is still interpreted as being approximately 150 feet wide through President's Park South, as identified in the Olmsted Brothers report of 1934-35. (White House & President's Park Cultural Landscape Report 2001; President's Park South Cultural Landscape Inventory 2012)

Other significant views were established as the landscape developed and were incorporated into the principal vistas or developed as new monuments, memorials, and buildings were constructed. These and many other views and visual relationships contribute to the significance of the National Mall.

While the principle cross axis that is the primary design feature of the National Mall contains the dominant long vistas, there are many important viewing locations that allow the visitor to orient themselves and to capture broad views of the city and its famous city plan. These include high points like the knoll upon which

the Washington Monument stands and the raised platforms that form the bases of the Lincoln and Thomas Jefferson Memorials. In addition, there are distinct areas of the National Mall that display their own separate character; many of these relate to individual national memorials. These designs are part of the dignified setting necessary for these contemplative spaces. Examples include the Vietnam Veterans Memorial and the Franklin Delano Roosevelt Memorial. Places like Constitution Gardens and the Tidal Basin area create their own sense of place that is distinctive from the broader National Mall. All of these places incorporate both designed and incidental views that support the visitor experience and underscore its historic and symbolic significance.

EVALUATION OF *PRELIMINARY IMPACT ANALYSIS* REPORT

WHAT DO THE MAPS & VISUALIZATIONS INDICATE?

The key conclusions presented are derived from the detailed analysis and evaluation of the impacts at each Structure Location. Detailed conclusions and recommendations for each Structure Location or cluster of locations is available at the end of the analysis discussion of each Structure Location. Below are some key conclusions or takeaways after evaluation of each location. The discussion of individual Structure Locations or clusters of locations is found in the next section of the report. Refer to Appendix A and Appendix B for the images referenced in the text.

KEY CONCLUSIONS ARE ILLUSTRATED ON THE FOLLOWING PAGES

KEY CONCLUSIONS:

- Map analysis reinforces the axial nature of the dominant views within and through the National Mall
 - ^o The Viewable Area Maps for each Structure Location reinforce the strongly axial vistas that characterize the landscape of the National Mall (see Appendix A, pages 79, 90-93: S06, S17, S18, S19, and S20).
 - ^o EXAMPLE: Structure Location 06 Lincoln Memorial Staging Area is the most highly visible location for a structure that was tested in this Visual Impact Analysis. The structure was visible at any height from 13 of the 33 tested visitor viewing points. The Viewable Area Map for Structure 06 shows the linear nature of the views east from the Lincoln Memorial. It shows that a 15-foot structure set at the this location is visible anywhere within the open space that extends between the Lincoln Memorial and the Washington Monument and that the open space forms a generally linear prism west to east and east to west. This prism is directly representative of the original design intent of the McMillan Commission Plan (1901) and implemented during the design and construction of the Lincoln Memorial and the Reflecting Pool (Figure 7).



Figure 7. Viewable Area Map S06 showing high visibility (areas in red) along primary east-west vista east of Lincoln Memorial.

- Map analysis demonstrates how topography and vegetation influence visibility
 - The maps and visualizations demonstrate that the relatively open and elevated Washington Monument Grounds are highly sensitive to visual intrusions. (see Appendix B, pages 141-150: Viewpoints 17, 18, 19, and 20)
 - ° At elevated points such as at the base of the Washington Monument, or in the chamber or on the steps of the Lincoln or Thomas Jefferson Memorials, the visitor will perceive many more temporary structures than when standing at viewpoints at lower elevations, or at points buffered by structures, trees, or other vegetation.
 - EXAMPLE: Viewpoints 17, 18, 19, 20 are all set at the base of the Washington Monument at the four cardinal points. Those four points account for four out of the five viewing points from which the most structures can be viewed (Figure 8).



Figure 8. Viewable Area Map S17 showing high visibility (areas in red) along primary east-west and north-south axes that align with the historic L'Enfant and McMillan Plans.

- There is a limited correlation between visual impacts and selected viewing points and structure points
 - [°] The relationship between the view points and the Structure Locations is not the full story.
 - In many cases, the structures, as illustrated, would be visible from many other points not captured in the 33 selected priority visitor viewing points.
 - ^o EXAMPLE: Structure Location S05 Lincoln Memorial, Mid-Mall hardscape where there is only one selected priority view point in the vicinity of the Structure Location and other viewpoints are screened by the Lincoln Memorial itself. This might suggest that this is not a sensitive location, however, the Viewable Area Map shows that a structure in that location would be highly visible from the Potomac River side of the Lincoln Memorial, from the Roosevelt and Arlington Memorial bridges, and from NPS park lands along the Virginia shoreline; potentially blocking important views to the Lincoln Memorial from this direction (Figure 9). (see Appendix A, page 77: S05)



Figure 9. Viewable Area Map S05 showing high visibility from Arlington Memorial Bridge and areas across the Potomac River.

- Viewable Area Maps reveal local versus broad/diffuse impacts to views
 - ° When the areas shown in red are confined to the structure's immediate surrounding, then the impacts to the landscape can be said to be localized. This means that the structure is visible at any height within the red area.
 - [°] If the red area expands well beyond the structure's immediate locale, then its impacts are broader and more diffuse.
 - EXAMPLE: Structure location S04 at the Ellipse At all heights this structure is only visible within the oval space of the Ellipse. It only becomes visible beyond when it reaches 40-50 feet in height (Figure 10).
 - [°] Generally, localized impacts are less significant and less adverse to the landscape than diffuse or broad impacts (Figure 11).



Figure 10. Visual Simulation at viewpoint 02 looking south showing the largely localized impacts within the Ellipse. Structure becomes visible outside the Ellipse above 35 feet in height.



Figure 11. Viewable Area Map S04 showing largely localized (areas in red) impacts within the Ellipse (areas in red). Structure becomes visible outside the Ellipse after reaching 40-50 feet in height (turquoise & blue).

- Analysis reveals that structures close to memorials and within primary view corridors detract from the visitor experience and alter the perception of the historically significant characteristics of the National Mall's landscape
 - EXAMPLE: Structure location S06 at the Lincoln Memorial (at Memorial Drive) – A structure at this location within the immediate setting of the Memorial blocks views toward the main structure and distracts from the dignity and significance of the setting (Figure 12 and 13). (see Appendix B, pages 123-125: Viewpoint 9)



Figure 12. View Simulation at Viewpoint 09 showing how on-axis 20-foot-tall structure blocks views to the Memorial.



Figure 13. View Simulation at Viewpoint 09 showing how on-axis 45-foot-tall structure blocks views to the Memorial.

- Structures set back from major Memorials and substantially offset from primary views and vistas are less disruptive to the characteristics that make the National Mall and individual memorials significant
 - EXAMPLE: S19 on the central panel of the Mall between 7th and 9th Streets is offset from the central axis. S19 is less intrusive in the view because it is off the primary axis. While visible at 20 and 45 feet, S19 has less dramatic impacts on the view corridor. (Figures 14 and 15) (see Appendix A, page 93: S20)



Figure 14. View Simulation at Viewpoint 23 looking west showing how 45-foot-tall structures located within the central panels of the Mall intrude on the primary vista between the U.S. Capitol and Washington Monument. Structure 20 is the closest; Structure 19 to the right and further away is set off the main Mall grass panels and is thus less intrusive. The farthest distant simulated structure is S18; it sits in the center of one of the cross-paths within the main grass panels of the Mall. See below for view direction (arrow) and Structure Locations (right to left: S20, S19, S18).



Figure 15. See previous image caption (see Appendix B, page 156: Viewpoint 23).
EVALUATION OF STRUCTURE LOCATIONS

The following evaluations were conducted on individual and groups of Structure Locations. Note, the conclusions found in each of the Structure Location evaluations are drawn from the Visual Impact Analysis and do not take into account other factors or criteria like security restrictions or existing rules and regulations.

For Viewable Area Maps and Ground-Level Visualizations referenced in the text below, please refer to Appendix A and Appendix B of this report. The images in Appendix A and Appendix B were generated for the *Preliminary Visual Im-pact Analysis National Mall and Memorial Parks & President's Park* (April 2018) and from additional Structure Location Viewable Area Maps completed in May 2018 by the National Capital Region's GIS staff (Structure Locations 26 through 32). See the April 2018 Visual Impact Analysis report for a full explanation of the procedure and methodology.

The lettered "Zone" designations for each of the following entries refer to MAP 1 and MAP 2 (pages 61 and 63), which show recommended temporary structure restriction areas and recommended height limits.

S02 ELLIPSE, NE QUADRANT

See Appendix A, pages 73-76 for Viewable Area Maps See Appendix B, pages 109-113 for Ground-Level Visualizations MAP 1, Zone H

Note: The following evaluation correlates closely with the other Structure Locations on the Ellipse (S01-NW Quadrant, S03-SE Quadrant, and S04-SE Quadrant) because they are in close proximity and the immediate setting and topography are similar.

Located in the northeast quadrant of the Ellipse, this structure is visible throughout the open oval space of the Ellipse landscape at a 15-foot height and for all other heights through 50 feet. Visibility is limited beyond the Ellipse open space until the structure reaches 30- to 35-feet in height. At 35-feet, the structure becomes visible from the area from outside the Ellipse area at the base of the Washington Monument. At 40- to 50-feet in height, the structure is visible from a broader area of the Washington Monument Grounds near the base of the obelisk. This demonstrates that structures 30 feet or less in height placed at this location, as well as at the other Structure Locations set within the Ellipse (S01 and S03), will have locally significant impacts, but that they will not impede visitor views from the Washington Monument or other areas of the National Mall. These could be characterized as local impacts versus broad or diffuse impacts.

An analysis of the Ground-Level Visualization for the viewpoints from which Structure 02 is visible (Viewpoints 2, 18 and 20, 29 and 31) helps us to visualize how a structure at this location would appear. They can be used to judge the level of impacts to the historic character of the views, the setting of the Memorials, and the visitor experience. In this case, the Ground-Level Visualizations support the conclusion that while visible in the landscape when standing at the north side of the Ellipse and looking southward, Structure 02 (plus S01 and S03) at 20 feet tall has relatively localized and limited impacts. Because the structure is set off the centerline of the major north-south axis between the White House and Thomas Jefferson Memorial, it does not block the reciprocal views and does not block any major memorials. At 45 feet, the structures become much more obvious in the landscape and starts to appear more like a competing memorial. Depending on the width of the structures at each of the Ellipse locations, they may start to impede views to distant buildings and memorials.

From the Washington Monument base (Viewpoint 18), 20-foot structures on the Ellipse appear fairly small and because of the elevated viewpoint, they do not block views toward the White House. At 45 feet, the structure S04 in the SE quadrant of the Ellipse appear to be tall enough to partially block the view to the White House. Otherwise, the 45-foot structures within the Ellipse become more visible and could detract from the landscaped open space of the Ellipse.

Conclusion

Structures under 30 feet tall will have visual impacts local to the immediate Ellipse setting. They will not block primary views.

SO6 LINCOLN MEMORIAL AT MEMORIAL DRIVE

See Appendix A, page 79 for Viewable Area Map See Appendix B, pages 116-131 for Ground-Level Visualizations MAP 1, Zone A/B

Structure Location 06 – Lincoln Memorial at Memorial Drive is the most highly visible location for a structure that was tested in this Visual Impact Analysis. The structure was visible at any height from 13 of the 33 visitor viewing points. The Viewable Area map for Structure 06 shows the linear nature of the views east from the Lincoln Memorial. It shows that a 15-foot structure set at the this location is visible anywhere within the open space that extends between the Lincoln Memorial and the Washington Monument and that this open space forms a generally linear view prism west to east and east to west. This prism is directly representative of the original design intent as established in the McMillan Commission Plan (1901) and implemented during the design and construction of the Lincoln Memorial.

Structure 06 is visible from multiple viewpoints located to the east, west, NE, and SE. From viewpoints located inside the Lincoln Memorial chamber, and on the approach stairs, looking east, the proposed Structure Location causes problems for the visitor in understanding the grand reciprocal vistas planned by the McMillan Commission. Ground-Level Visualizations for Viewpoints 06, demonstrate how a structure at this location disrupts the clear axial view from Lincoln to the Washington Monument. Because of the perspective, the disruption to the view of the memorial worsens as the viewer descends to the reflecting pool level. From the Lincoln steps, at 45-feet tall a structure would partially obscure the Washington Monument from view (see Viewpoint 07 Ground-Level Visualization). If the mass of the structure were wider than the 10-foot-wide structure rendered in these test cases, the problem would be amplified. Stepping down to the base of the Lincoln steps at Memorial Drive (Circle), a 20-foot structure blocks much of the view of the Washington Monument and much of the intervening landscape, including the Reflecting Pool.

Because a structure, even one just 15-feet in height at this location would be visible from great distances as far east as the Washington Monument, the impacts are considered broad versus localized.

Looking back west toward the Lincoln Memorial at Viewpoint 9 near the steps at Memorial Drive (Circle), you can see the impact a structure at this location would have on the visitor's experience at the Lincoln Memorial. A 20-foot structure significantly blocks views toward the Memorial. We can visualize that a structure wider than the tested 10 feet would have greater impacts. The 45-foot structure visualization demonstrates how the structure becomes dominant in the foreground and blocks direct line of sight between the Reflecting Pool and the Lincoln, thus altering the historic designed relationship. See also Viewpoint 11 Ground-level Visualization.

Conclusion

This Structure Location falls directly within the primary vista that dominates the historic designed landscape of the National Mall; the vista formed by the axial arrangement of the Capitol, the Washington Monument and the Lincoln Memorial. In addition, it falls in close proximity to the Memorial itself within the structured landscape that serves to set off and highlight the Memorial. Introducing structures within this immediate setting is likely to detract from the experience of approaching and viewing the Memorial from multiple points, not just along the primary vista.

Because of the significant disruption that structures placed in this location would cause, the broad impacts, and nature of the obstruction of primary characteristics of the historic designed landscape, this location is not considered an appropriate location for structures. Likewise, similar impacts would occur if structures were placed anywhere within the inner edge of Lincoln Circle all around the memorial. Thus, the recommendation is that no temporary structures be permitted in the grassy areas that surround the Lincoln Memorial, or on the stairs, plazas, and landscaping that fronts the memorial and extends east down to the western edge of the Reflecting Pool. This essentially coincides with the security perimeter for the Lincoln Memorial.

S08 [ALSO S07] - WEST CONSTITUTION GARDENS

See Appendix A, pages 80-81 for Viewable Area Maps
See Appendix B, pages 116-120, 138-140, 145-146, 148-150 for Ground-Level Visualizations
MAP 1, Zone D

Structure Location 08 is located within Constitution Gardens at the western end of the lake. It sits in close proximity to Structure Location 07, just to the west. Both structures will have similar impacts to the Constitution Garden landscape. Constitution Gardens is a designed landscape located in a relatively contained enclave to the north of the Reflecting Pool and the linear elm panels that line the walks flanking the pool. Constitution Gardens is characterized by curvilinear walks, an organic shaped lake, and naturalistic groupings of trees that define the edges. With leaves on, trees block most views out to the surrounding spaces. The exception to this relatively enclosed landscape is at the east end where there are limited views out to the east and the Washington Monument and filtered views toward the World War II Memorial. The Washington Monument is visible from most open spaces within the park.

In general, the Viewable Area Map for Structure Location 08 demonstrates that the impacts of the structure are localized to Constitution Gardens except for when the structure reaches 50 feet in height. Then the structure has limited external viewability for some areas near the base of the Washington Monument and from far distant spots like the eastern shore of the Tidal Basin and from elevated bridges to the southeast of the Tidal Basin. It is likely that, from these distances, the structure would have only minimal effects on the scene.

The exception is a narrow view corridor that aligns with the eastern arm of the Vietnam Veterans Memorial wall. It appears that even at 15 feet, a structure at location S07 and S08 would be visible as you walk eastward along the eastern arm of the Vietnam Veterans Memorial. That view is dominated by an open grassy hill, trees, and the Washington Monument. An intervening structure would disrupt this clear axial arrangement. The arms of the wall of the Vietnam Veterans Memorial were intentionally designed to point to the Washington Monument to the east and the Lincoln Memorial to the west. Thus structures in these locations should be low in height so they do not dominate or obstruct the view outward toward the Washington Monument or the Lincoln Memorial.

Within Constitution Gardens, a structure at S08 is highly visible from the west and south at any height from 15 feet upward. The structure is not visible from the east side of Constitution Gardens until it reaches 20-25 feet high. At 25 feet, it is visible

from two main corridors extending east and southeast from the Structure Location.

The Ground-Level Visualizations for viewpoint V06 shows that from the Lincoln chamber level, structure 08 is not visible at 20 feet tall, but at 45 feet tall it appears in the distance above the trees (as does Structure 07). At this distance and set within the heavily treed area to the northeast of the Lincoln Memorial the 45-foot structure has limited impacts on this view. Because the location is well off the primary axis between the Washington Monument and the Lincoln Memorial, the structure does not affect the understanding of that historic design element.

Ground-Level Visualization for Viewpoint 16 shows the localized impacts of the placement of structures at structure points 07 and 08. Both structures are clearly visible within the open areas where they sit. The visitor passes in close proximity via curvilinear paths through an open grass lawn. While the structures are clearly visible, they do not appear to disrupt an understanding of the essential character defining features of Constitution Gardens. With greater mass than shown in the test scenarios, the structure may have bigger impacts, but the essential design and organization of the landscape will still be apparent. Note: The Ground-Level Visualization models depict fewer trees than in reality. A comparison with the Google Street Views illustrates the actual condition.

Localized impacts may be greater in Constitution Gardens because the design and scale of the landscape is more intimate than the large open spaces in other areas of the National Mall. Therefore, the size, scale and number of clustered structures should be carefully considered and limited.

Conclusion

Because of the topography, intimate scale of the landscape, and the potential for disruption to the view from the east end of the heavily visited Vietnam Veterans Memorial, only very low structures, under 15 feet in height, should be located in these areas.

S09 CONSTITUTION GARDENS, EAST

See Appendix A, page 82 for Viewable Area Map See Appendix B, pages 116-120, 141-142, 145-150 for Ground-Level Visualizations MAP 1, Zone E, Protected Line of Sight T

The Viewable Area Map illustrates how a structure placed at the east end of Constitution Gardens between the lake and 17th Street would be highly visible in the direct vicinity at any height but would not become visible outside Constitution Gardens until it reached approximately 35-40 feet tall. At this height the structure would be visible from scattered areas throughout the Washington Monument Grounds to the east and southeast. Based on the Viewable Area Map, at 40- 50 feet, it would be visible from some locations across the Tidal Basin near the Thomas Jefferson Memorial.

The Ground-Level Visualizations show that at 45 feet, a structure at S9 extends above the trees as viewed from the Lincoln Memorial chamber and stairs (V06, V07). Although, the structure is off-center from the primary vista, it calls attention to itself and partially blocks views of background buildings across Constitution Avenue.

V16 – At this point the view is dominated by the informally landscaped lake, clusters of trees, and the Washington Monument emerging from behind the perimeter trees in the background. A 30-foot-tall structure at S09 would likely not disrupt the view here. The Viewable Area Maps suggest that at 35-40 feet, the structure will become visible above the trees along the north shore of the lake.

V17, V19, V20 – The Ground-Level Visualizations don't appear to include many of the trees. From the Washington Monument Grounds it appears that a 20-foot structure would be visible from the base of the Monument; however, Google Street Views 360-degree photos suggest that it is likely that trees (with or without leaves) would largely screen a structure at that height. A 45-foot-tall structure at S09 however, may break the tree line and be observable from the Washington Monument plaza.

V26 & V31 – These are distant views from the top of the U.S. Capitol steps and from the Thomas Jefferson Memorial chamber. Due to distance and intervening trees, while potentially visible at 50 feet, a structure at 09 would not dominate the view, nor is it within one of the primary view corridors.

Previous cultural resource consultations, including the 17th Street levee project, identified a critical line of sight to be protected along Virginia Avenue, one of the main avenues conceived in the L'Enfant Plan. The sight line provides views to the Washington Monument Grounds and the Monument itself. Structures located within this view corridor should maintain visual access to the Monument.¹

Conclusion

A structure 30 feet in height or less would not disrupt views outside of the immediate vicinity of the location. Note that the permanent pavilion proposed for this location in 1977 was to be approximately 30 feet tall at the roof peak. In order to preserve these sight lines, temporary structures should be avoided along the line of sight leading from the foot of Virginia Avenue at Constitution Avenue southeast to the Washington Monument (see MAP 1, Protected Line of Sight T).

Finding of No Significant Impact, Potomac Park Levee System, National Mall and Memorial Parks, Washington, DC, May 2009.

S10 AND S11 JFK HOCKEY FIELDS (SOUTH OF REFLECTING POOL)

See Appendix A, pages 83-84 for Viewable Area Maps See Appendix B, pages 116-127, 145-147 for Ground-Level Visualizations MAP 1, Zone G

These Structure Locations are set within a long and narrow open field bounded on the north by the elm walk that parallels the south side of the Reflecting Pool and on the south by Ash Woods where the U.S. Park Police Stable and the DC War Memorial are located. The area is off the primary east-west vista of the National Mall.

The Viewable Area Maps for both S10 and S11 demonstrate that structures in this area would have mainly localized impacts until the structures reached more than 45 feet in height. This is because of the substantial tree cover to the north and south and the long narrow configuration.

While the Viewable Area Maps (S10 and S11) show that structures at these locations would be visible from the chamber level of the Lincoln Memorial, the Visualizations demonstrate that they would not impinge on the primary axial views and that even at 45 feet, they would not break the horizon line from this perspective.

Conclusion

The visual analysis shows that structures located within the JFK Hockey Fields area could be as tall as 45 feet without significant visual impacts to the National Mall.

S12, S13, S14, S15 WASHINGTON MONUMENT GROUNDS

See Appendix A, pages 85-88 for Viewable Area Maps
See Appendix B, pages 111-112, 116-118, 136-137, 141-150, 154-155 for Ground-Level Visualizations
MAP 1, Zones K & L, Protected Line of Sight T

Note: The evaluation is specific to S12, but it correlates closely with the other Structure Locations on the Washington Monument Grounds (S13, S14, S15) because of similar topography and vegetation conditions.

Structure Location 12 is located on the Washington Monument Grounds in its northwest quadrant. The location is set on the diagonal walkway that approaches the Monument from the intersection of Constitution Avenue and 17th Street, NW.

This Viewable Area Map shows how a structure at this location would be highly visible throughout the Washington Monument Grounds, except in areas blocked by the monument itself. Any height structure would be visible from these areas. At 35-40 feet, the structure becomes visible from the southern shoreline of the Tidal Basin, west of the Thomas Jefferson Memorial. However, the Ground-Level Visualization and Google Street Views suggest that visibility would be limited. The map supports the conclusion that a structure in this location mainly would have direct impacts on the Washington Monument Grounds. The structure is set well off the centerline of the primary vista between the Monument and the Lincoln Memorial and thus it does not directly obstruct that historic visual relationship. The Viewable Area Maps for Structures 013, 014, and 015, all on the Monument Grounds, show similar conditions.

Viewpoint 2 – At 45 feet, the structures on the Washington Monument Grounds become more prominent, however, the visualizations do not appear to account for the trees lining Constitution Avenue. Also Structure Locations S12 and S13 are far enough west from the monument that they do not appear, at this distance, to compete with the Washington Monument.

Viewpoints 6 & 7– From the Lincoln chamber and stairs, Structure 12 and 13 are visible at 45 feet tall, but do not appear to block a primary vista. The distance also renders them relatively minor intrusions in the view. At greater mass, they may be more obtrusive.

Viewpoint 15 looking east from the World War II Memorial – Structures 12 and 13 are readily visible at both 20- and 45-foot heights. The visualization does not appear to account for a grove of young trees on either side of the diagonal path

which would provide minimal screening. At 45 feet, the structures appear taller than the federal buildings that provide the backdrop. Structure 15 is also readily visible from this viewpoint, but because of the distance from the Monument and the offset from the central view corridor, it does not appear prominent in the view. At 45-feet, it does appear taller than the red brick U.S. Forest Service Building (on 14th Street) that serves as the backdrop.

Viewpoints 17 & 20 – Washington Monument North and West Sides -These Ground-Level Visualizations demonstrate that Structure 12 is readily visible from the Washington Monument plaza, looking west and northwest. Because of the openness of the surroundings and the elevated position, all of the Structure Locations sited around the Monument Grounds are readily visible. While none align with the primary axes, they are apparent and depending on the number, massing, and color (note the white tent in V20 Google Street Views) the structure could become distracting to the visitor attempting to take in the 360-degree views available at the base on the Washington Monument. At 20 feet, the structures do not appear to break the horizon line and thus are relatively minor insertions in the open landscape. At 45 feet, from Viewpoint 20, S15 breaks the horizon line and the other structures nearly do. At this height the structures begin to compete for attention with the focal point at the Lincoln Memorial to the west.

V17 & V20 also indicates that because of its proximity to the Washington Monument, S14 at 45 feet becomes very prominent in the view. While no views were rendered looking at S14 from the north, it is clear that a 45-foot-tall structure set near the base of the ha ha² that surrounds the Monument mound would be readily visible and block portions of the Monument as you approach it from 15th Street and Constitution Avenue.

V28 & V29 – The Ground-Level Visualization does not account for trees that appear to largely block all views of the base of the Monument. Thus, it is unlikely that any structures on the Monument Grounds would be visible to the viewer across the Tidal Basin, or would be only minimally visible and thus would not detract from the overall experience of the Tidal Basin and its water and Monument views.

Previous cultural resource consultations, including the 17th Street levee project, identified a critical line of sight to be protected along Virginia Avenue, one of the main avenues conceived in the L'Enfant Plan. The sight line provides views to the

A ha-ha is a recessed landscape design element that creates a vertical barrier while preserving an uninterrupted view of the landscape beyond. <u>https://en.wikipedia.org/wiki/Ha-ha</u>

Washington Monument Grounds and the Monument itself. Structures located within this view corridor should maintain visual access to the Monument.³

Conclusion

Structures placed at Structure Locations 12, 13, 14, and 15 will affect the views from the Washington Monument Plaza, especially the panoramic, 360-degree views that allow the visitor to orient themselves and understand the historic design of the National Mall. In order to minimize the impacts, it is recommended that any structure placed on the outer elliptical paths at the base of the ha ha wall be limited to 20 feet or less. Structures set on the paths radiating out from there and on the grassy areas set back from the ha ha could step up to taller heights, perhaps with a limit of 30 feet.⁴

In order to preserve these sight lines, temporary structures should be avoided along the line of sight leading from the foot of Virginia Avenue at Constitution Avenue southeast to the Washington Monument (see MAP 1, Protected Line of Sight T).

The findings also suggest that it may be helpful to limit the number of structures for any given period of time, as cumulatively clusters of structures especially spread across this open landscape will exacerbate the disruptions.

³ Finding of No Significant Impact, Potomac Park Levee System, National Mall and Memorial Parks, Washington, DC, May 2009.

⁴ One approach might be to define appropriate heights based on mass/scale of the structure, e.g., A structure over X-feet wide at its base can be no taller than X feet. Or as the base widens, the height has to proportionally be lowered.

S16 - WASHINGTON MONUMENT LODGE

See Appendix A, page 89 for Viewable Area Map See Appendix B, pages 141-144, 151-163, 168-169 for Ground-Level Visualizations MAP 1, Zone N

This Structure Location is set on the grassy area just east of the Washington Monument Lodge that sits on axis between the Monument and the Capitol building to the east. The Viewable Area Map for this location suggests that it is one of the most highly visible Structure Locations that was tested in this study. At any height a structure at this location would be readily visible from the central Mall panel stretching east to 12th Street and beyond, as well as to the west within the eastern half of the Washington Monument Grounds. At 20 - 25 feet, the structure would become visible throughout the northwest quadrant of the Washington Monument Grounds. At 30-50 feet, it would become visible throughout most of the Washington Monument Grounds.

The Structure is also visible from the Capitol Building steps and terraces at any height. At 25 to 50 feet the structure is also visible for a large swath of the central Mall panels between 1st and 7th Streets. This analysis shows that the structure has broad impacts throughout the Washington Monument Grounds and along the primary view corridor between the Monument and the U.S. Capitol.

Ground-Level Visualizations

V17 – At 20 feet, the structure just peaks out from behind the Lodge that partially blocks the view. At 45 feet, S16 towers above the Lodge and blocks the view toward the Smithsonian Castle on the Mall.

V18 – At 20 feet, S16 is visible over the roof of the Lodge but does not block the primary vista east to the U.S. Capitol; at 45 feet, S16 towers above the Lodge and blocks the view of the U.S. Capitol dome. This directly interferes with the ability to perceive the historic design of the historic landscape and alters the visitor experience.

V21 – At 20 feet, looking at S16 from the south, the structure appears to compete with the historic Lodge building. At 45 feet, from this viewpoint, the structure is much taller and more prominent in the scene than the Lodge.

V22 – The Lodge is partially visible from this viewpoint with no structure at S16. A 20 foot tall structure at that location obscures the façade of the Lodge and draws attention from the Monument and the axial alignment of the Lodge, the Wash-

ington Monument, and the Mall's central panels. At 45 feet, the S16 structure is highly prominent in this main Mall vista.

V23 – Looking west from 3rd Street along the primary Mall vista, the Lodge and S16 are a good distance away. The top of the Washington Monument Lodge is just discernible in the distance below the Monument itself. Because the visualizations include the intervening test structures, we are not able to see if the structure at the Lodge is visible. If it is, it will be only minimal in the scene from this distance at 20 feet. At 45 feet, it will perhaps be more discernible and certainly block any view of the Lodge.

V24-V25 – These views demonstrate that the test structures arrayed along the Mall's central panels are all visible. S16 itself is far distant and likely to not have major impacts to these views.

V26 – This is the elevated view from the top of the U.S. Capitol's West steps. At this elevated level, the Mall's central panels are visible from Union Square all the way west to the Washington Monument Grounds. The Lincoln Memorial is visible behind the Monument. Structures (S20, S19, S18, and S17) placed in the panels are clearly visible. S16 is visible in the far distance at the base of the Monument. At 20 feet S16 and the Mall panel structures are visible but are perceived as relatively minor in the view because it is so long and expansive a view and because the trees in the elm panels on either side are significantly taller. As the structures increase in mass, they would become more prominent and potentially distracting to the viewer at this location. At 45 feet, S16 and the other structures in the central Mall panels are more prominent in the scene. The ones that are centered on the axis appear to intentionally align with the formal axis and thus gives them a more prominent location and draws attention away from the primary vista as well as the memorials and monuments.

V29 - The Ground-Level Visualization does not account for trees that appear to largely block all views of the base of the Monument. Thus, it is unlikely that any structures on the Monument Grounds would be visible to the viewer across the Tidal Basin, or would be only minimally visible and thus would not detract from the overall experience of the Tidal Basin and its water and Monument views.

Conclusion

A structure located at S16 blocks views of the Washington Monument Lodge and inserts a structure in the primary view corridor between the Washington Monument and the U.S. Capitol. This is not a recommended location for temporary structures.

S17, S18, S19, & S20- STRUCTURE LOCATIONS ON THE MALL SET ON THE PRIMARY EAST-WEST VIEW CORRIDOR

See Appendix A, pages 90-93 for Viewable Area Maps See Appendix B, pages 116-118, 141-147, 154-163 for Ground-Level Visualizations MAP 1, Zone O

All four of these Structure Locations are visible from multiple locations at a similar range of heights. Their similarity of location within the open central Mall panels between 4th and 12th Street makes it possible to evaluate their impacts together. S17 and S18 are located within the gravel cross paths that extend north-south between Madison Drive NW and Thomas Jefferson Drive SW at 12th Street and 9th Street respectively. S19 is located just off the centerline of the primary east-west axis east of S18 on a gravel path aligned with the Hirshhorn Museum and the National Gallery Sculpture Garden. S20 sits at the centerline of the axial view along the walkway that parallels 4th Street.

The Viewable Area Maps are similar for all four of these Structure Locations. They all reinforce how linear the views are east to west and west to east along the central panels of the Mall. They also illustrate how visible a structure of any height would be in these locations. For all these Structure Locations, the structures would be viewable along the full length of the Mall from the U.S. Capitol, looking west to the Washington Monument Grounds. S20, the farthest east Structure Location would not be visible at the Monument Grounds until it reached 35-40 feet, though at the very top of the knoll at the base of the Monument, a structure between 20-25 feet would be visible.

The Viewable Area Maps also show that each of these Structure Locations would have impacts to cross-axial views along north-south streets that run perpendicular to the Mall. For example, drivers or pedestrians traveling south on 12th Street toward the Mall would likely see a 20–25-foot structure at S17. However, since 12th and 9th streets have been tunneled under the Mall, the importance of these cross axes has been diminished somewhat since the physical connections across the space and views toward it are altered.

V22 – Looking east from viewpoint 22, S17 is readily visible at 20 feet. At 20 feet it blocks the view of the Capitol façade below the dome level. At 45 feet, it blocks all but the very top level of the U.S. Capitol dome.

V23 – Looking west, this view shows all four Structure Locations at both 20 and 45 feet. However, the visualization does not include the elm panel trees, so the

Structure Location set off the central axis near the elm panels (S19) would be less visible, especially at 20 feet tall, than what is shown in the visualization. That said, the structures set on the center line are readily observable. At 20 feet they stand out and block far distant views of the base of the Washington Monument. At 45 feet, S20 in the middle ground of this view, competes with the Washington Monument for attention. If the structure were wider than the 10 feet shown, it would obscure the view to the Monument significantly.

V24 – Similar to V23 but from a view farther east. At 45 feet S18 blocks the lower quarter of the Washington Monument. S19 which is off center, is less obtrusive in the view because it is off the primary axis. While visible at 20 and 45 feet, S19 has less dramatic impacts on the view corridor. It could also be tucked farther north into the elm panel area where there is a gravel paved plaza at this location. This would further diminish its impact on the primary view corridor.

V25-V26 – These views from the U.S. Capitol stairs further reinforce the impacts of placing structures directly in alignment with the primary central view corridor. From these elevated points all structures are more visible, but tend to block the view of the Washington Monument less.

Conclusion

Placement of structures in alignment along the centerline of the principle vista between the U.S. Capitol and the Washington Monument is not recommended due to the negative effects it creates within this highly significant designed landscape. If offset from the primary axis, structures have less negative impact. The recommendation is to limit heights along the central Mall panels to a maximum of 30 feet and require that they be offset from the centerline of the Mall thus protecting the visual connectivity along the primary axial vista between the U.S. Capitol and the Washington Monument.

The findings also suggest that it may be helpful to limit the number of structures for any given period of time, since, cumulatively, clusters of structures especially spread across this open landscape will exacerbate the disruptions. If structures are required here, their height, massing, and numbers should be limited to minimize fragmentation of the landscape and disruption of the vista.

S21, S22, S23 - TIDAL BASIN, NORTH [CONSTRUCTION STAGING AREA AND PADDLE BOAT PARKING LOT]

See Appendix A, pages 94-96 for Viewable Area Maps See Appendix B, pages 164-173, 176-177 for Ground-Level Visualizations MAP 1, Zone R

150-Foot Cross-Axis View Corridor – Location S21 is set within or very close to the 150-foot view corridor defined by F.L. Olmsted, Jr. in his 1934 plan for the White House Grounds. The intent was to retain an open corridor to a proposed new memorial that became the Thomas Jefferson Memorial on the opposite side of the Tidal Basin. The NPS has attempted to maintain this corridor since the plan was implemented. Satellite photos show how trees have been held back from the corridor except for at the Tidal Basin seawall where Japanese Cherry trees were in place prior to 1934. Standing near S21 on Independence Avenue, the viewer can look north to the White House. Moving a few steps to the east, there is a direct view of the Thomas Jefferson Memorial to the south. The Viewable Area Maps suggest that a structure at this location would be discernible from both the White House and the Thomas Jefferson Memorial at a height of 40-50 feet.

The Viewable Area Maps for S22, and S23 Structure Locations demonstrate that structures set close to the northern edge of the Tidal Basin have the potential to be viewed from the opposite shoreline. The closer the structures are to the shore (S22 and S23), the more visible they are at lower heights. Google Street Views suggest that the trees along the Tidal Basin shore and behind would provide some screening for the structures especially at lower heights. The Ground-Level Visualizations do not depict all of the trees and thus they do not completely capture the character of the impacts.

The Viewable Area Maps show that structures at these three locations would be visible to varying degrees at 15-25 feet tall from the opposite shore of the Tidal Basin. In general, to be visible to the north toward the Washington Monument Grounds, the structures would need to reach 40 feet in height.

Views from the Washington Monument Grounds – V19 suggests that S21, S22, and S23 would all be visible at both 20 feet and 45 feet tall; however, due to tree cover, it is likely that structures below 30 feet would be well screened from view. Taller and more massive structures may become discernible, but if placed off central view lines, will not block primary views/vistas.

Tidal Basin Views (V28, V29)– These visualizations do not include the Tidal Basin trees so likely S22 and S23 that are nearest the seawall will be partially screened and will only become more apparent if they extend above the tree line.

Views from the Thomas Jefferson Memorial (V30, V31) – This analysis is similar to the Tidal Basin Views from V28 and V29 except that as you move up the Memorial steps to the chamber level, the structures become more apparent. At 45 feet, the structures appear more prominently in the landscape; they likely break the tree line and thus impact the visitor's perception of the scene.

View from Thomas Jefferson Memorial stairs looking north towards the Washington Monument. Note tents (approximately 10-15 feet tall) for Cherry Blossom Festival in the vicinity of S22 and S23. Demonstrates the visibility of lower structures during the leaf-off seasons (Figure 16). (Google Image capture March 2017.)

Conclusion

Structures at S21 should be limited in height to 30 feet or lower and set off the center line of the 150-foot view corridor between the White House and Thomas Jefferson Memorial. This will avoid any structure from extending above the pre-



Figure 16. View from Thomas Jefferson Memorial stairs looking north towards the Washington Monument. Note tents (approximately 10-15 feet tall) for Cherry Blossom Festival in the vicinity of S22 and S23. Demonstrates the visibility of lower structures during the leaf-off seasons. (Google Image capture March 2017.)

dominant tree line and blocking the view corridors to the White House and the Thomas Jefferson Memorial.

Structure located at S22 and S23 and similar locations within the paddle boat parking area will be visible from the opposite shores of the Tidal Basin at any height. If limited in height to 20 feet or lower, they will be below the tree canopy and thus won't disrupt the understanding of the landscape design around the Tidal Basin. Above this height, structures will begin to break the horizon line for viewers on the opposite bank and thus draw more attention to themselves. Fifteen- to 20-foot-tall structures in colors that blend with the surroundings will be less obtrusive than white or brightly colored structures.

S24 AND S25 - THOMAS JEFFERSON MEMORIAL EAST AND THOMAS JEFFERSON MEMORIAL SOUTHWEST

See Appendix A, pages 97-98 for Viewable Area Maps See Appendix B, pages 164-171 for Ground-Level Visualizations MAP 1, Zone Q

The Viewable Area Maps for Structure Locations S24 and S25 show that a structure set at S24 that is under 35 feet in height will be mainly visible in the immediate vicinity of the Thomas Jefferson Memorial. It will be readily viewable from within the chamber of the Memorial, but the view looking east is not a primary external view, nor is the Memorial largely approached from this direction. Visualization for V33 does not include trees, but show clearly that a 45 foot structure breaks the horizon line from this viewpoint. Looking at Google Street Views, it appears that a structure under 30 feet would not likely be visible above the tree line from across the Tidal Basin.

A structure located at S25 would be visible to the west and northwest across the Tidal Basin at 15 feet, however, it would not be visible to the north until it stood 25 feet or more. The Viewable Area Maps suggest that the structure would be visible from the Thomas Jefferson Memorial chamber at 35 feet tall, though it's clear from the visualizations (V32) that without trees, a structure of any height is visible. There are significant trees, so it's likely that the structure would only be partially visible at 15 feet in height. By 45 feet, the structure breaks the horizon line and becomes dominant in this relatively constrained landscape. The V29 visualization shows how a 45-foot structure at S25 approaches the height of the Thomas Jefferson Memorial's cornice and thus draws attention away from the primary resource. Trees may mitigate this effect, but from various angles, the structure would likely be visible above the tree line.

S24 and S25 are located outside the circular path that allows viewing of the memorial from its perimeter, thus a structure at this location will not block any important avenues of approach or viewing of the Memorial. While Structure Location 25 is on a main pathway of approach, the view to the Memorial is largely blocked by trees.

Conclusion

It is recommended that structures placed outside the paved path that surrounds the Thomas Jefferson Memorial be restricted to no taller than 30 feet so that they are not visible above the tree line from a distance and are not dominant in the landscape within the localized area surrounding the Memorial. Number and massing of structures should also be limited so as not to distract from the commemorative setting.

S26 AND S27 - BALL FIELDS SOUTH OF WEST BASIN DRIVE

See Appendix A, pages 99-100 for Viewable Area Map MAP 1, Zone U

The Viewable Area Maps for S26 and S27 show that a structures at these locations would be intermittently viewable from areas near the Martin Luther King Memorial, however, they would not stand within a primary view shed or vista. The maps indicate that a structure of 45 feet set at S26 would be visible from the Lyndon Baines Johnson Grove presidential memorial across the Potomac River since there is a sizable gap in the vegetation along the parkway and within the Grove. A structure at these two locations would also be visible from the Arlington Memorial Bridge, but they would not impact any significant views. Generally, the most obvious impacts would be within the ball field space looking outward. Since these spaces are recreational in character rather than formal, the introduction of structures within the localized setting would not be harmful to the visitor experience. Based on the Viewable Area Maps, structures over 40 feet in height at these location become more highly visible outside the immediate vicinity.

Conclusion

It is recommended that structures placed within the primary ball field spaces south of West Basin Drive be limited to 40 feet in height. The exception is the area along West Basin Drive just across from the Martin Luther King Memorial where the recommended height restriction is lower because of potential impacts to the Memorial setting. See S28 analysis below. **S28 – EASTERN EDGE OF BALL FIELDS ADJACENT TO WEST BASIN DRIVE** See Appendix A, page 101 for Viewable Area Map MAP 1, Zone V

Like locations S26 and S27, a structure at S28 would mainly have localized impacts and would generally not impact primary views or vistas. This location does have higher potential to effect views toward Martin Luther King Memorial and the Tidal Basin because of its close proximity to both. The Viewable Area Maps also accentuate the fact that this location near the south bank of the Tidal Basin means that structures here will be more visible from the opposite shore. It appears that a structure 20-25 feet tall would come into view from the opposite shore, though it would likely not dominate the view until it extended over 30 feet tall.

Conclusion

The recommendation is to limit the height of structures near West Basin Drive to 30 feet. This will prevent the structures from looming over the approach to the Martin Luther King Memorial and prevent it from being prominent in the distant views from across the Tidal Basin.

S29 - OHIO DRIVE - BALL FIELD NEAR NATIONAL MALL AND MEMORIAL PARKS HEADQUARTERS

See Appendix A, page 102 for Viewable Area Map MAP 1, Zone X

The Viewable Area Maps indicate that this location is not highly visible from any portion of the Monumental Core. A structure 45 – 50 feet tall would begin to be visible from select locations around the Tidal Basin and along the Southwest waterfront; however, views toward this location are not primary vistas.

Conclusion

The recommended height limit at location S29 is 45 feet. The site is not highly visible from areas outside the field mainly because of the highway and railroad bridges to the south, west, and northeast. Large trees also help screen the location from outside views.

S30 - OHIO DRIVE BALL FIELDS BETWEEN WEST BASIN DRIVE AND INLET BRIDGE

See Appendix A, page 103 for Viewable Area Map MAP 1, Zone W

The Viewable Area Maps reveal that a structure at this location would be highly visible from the water and shorelines of the Potomac River and the Tidal Basin however, because of trees and distance from the viewable areas, the structure would not be disruptive until it was over 30 feet tall and then visible mainly from the George Washington Memorial Parkway and the Mount Vernon Trail. The structure is also highly visible from the chamber level of the Thomas Jefferson Memorial; however, this view is not a primary vista from the Memorial.

Conclusion

If structures in this area are limited to 30 feet in height they will be largely screened from the Parkway, and where they are visible they would not disrupt views by breaking above the tree line. This is also true for views of this location from the Thomas Jefferson Memorial.

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S31 – HAINS POINT – SOUTHERNMOST POINT IN EAST POTOMAC PARK
See Appendix A, pages 104-105 for Viewable Area Maps
MAP 2, Zone Z
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While the Viewable Area Maps for Structure Location S31 show that a structure at this site would be highly visible from the wide swaths of water that surround the tip of the peninsula, it would not be visible from any part of the Monumental Core. The historic areas that would have views to this site include St. Elizabeths Hospital (National Historic Landmark), Joint Base Anacostia Bolling (JBAB), Reagan National Airport, and Fort McNair, including the Army War College (National Historic Landmark). Because these properties are relatively distant from the Structure Location and because the area is characterized by an informal landscape, a structure inserted here temporarily would not be likely to be problematic for these historic locations.

Although a structure would be visible, even at 15 feet in height, from portions of the George Washington Memorial Parkway near National Airport and from the river bridges near 14th Street Bridge, this view to Hains Point is not an important view.

Conclusion

The recommendation is to allow structures at this location up to 50 feet in height. This keeps the structure below the height of the tallest building on Hains Point, the National Capital Region Headquarters which stands approximately 57 feet tall with a 16-foot-tall penthouse on top. Though a 50 foot structure at this location would be highly visible, its impacts would be minor because of the nature of the surroundings and distance to outside viewpoints.

S32 - RECREATION FIELD SOUTH OF WASHINGTON MONUMENT; WEST OF HOLOCAUST MUSEUM

See Appendix A, page 106 for Viewable Area Map MAP 1, Zone Y

Viewable Area Maps for location S32 suggest that in order for a structure at this location to be visible beyond the immediate setting, it would have to be over 35 feet tall. While there are a few isolated areas where a lower structure (circa 20-30 feet tall) would be visible, these areas are not within primary vistas. In addition, the site is surrounded by mature trees and the backdrop is a series of buildings ranging in height from 40 to 75 feet tall. This means that any structure visible above the trees would not be prominent in the view because they would blend with the buildings that form the backdrop.

There are breaks in the trees surrounding the recreation field where lower structures (15 feet) would be visible, but these areas do not comprise primary views or vistas. Another area of visibility is the Tidal Basin shoreline just north of the Thomas Jefferson Memorial as well as from the chamber level of the Memorial itself. Visibility from these locations is limited by intervening mature tree cover. In addition, this vista is not a primary axial view; nor would the structure block visibility toward an important feature of the Monumental Core.

The existing goal posts that stand on the recreation field are approximately 23 feet tall and do not cause view shed issues.

Conclusion

It is recommended that structures up to 35 feet are appropriate in this location. This keeps the structures below the backdrop buildings and largely below the tree line as viewed from a distance.

CONCLUSIONS

This limited Visual Impact Analysis for the National Mall generally supports past practices and known sensitivities in the historic landscape. The evaluation suggests that locations that are especially vulnerable to impacts from the introduction of structures include:

- Locations in close proximity to major monuments and memorials. Some memorials require more buffering because of their elevated locations, the open nature of their setting, and their scale
- Locations directly aligned with either of the two primary east-west and north-south axes, and
- Elevated and open locations

The review of Viewable Area Maps and Ground-Level Visualizations reveals that the massing of structures will influence the extent of the impacts to the setting and to the associated views and vistas across the National Mall. Clusters of structures and taller/wider structures will cause greater negative effects than single structures and less massive structures.

There appear to be a number of Structure Locations that would result in only limited localized impacts. These include:

- The area south of the Reflecting Pool's south elm panel known as the JFK Hockey Fields
- The eastern end of Constitution Gardens outside of the Virginia Avenue line of sight
- The quadrants of the Ellipse

There may be strategies that minimize the impacts of the structures. These include:

- Limiting the numbers, heights, and massing of structures
- Clustering structures in less exposed areas
- Using materials and colors that blend with the setting

In exposed areas where structures will not interfere directly with a monument or memorial or with the primary views and vistas, there may be ways to define the allowable heights of structures based on visibility or massing:

- This report recommends some diagrammatic height limits at specific locations (see Map 1)
- With further study this could be extrapolated into more detailed height zoning maps
- Alternatively, a formula for devising appropriate heights based on the proposed mass of the structure could be studied. In this approach, the more massive the structure, the lower the height would be allowed.

Finally, the tools developed during this limited study could be further advanced to provide management with ways to analyze each permit application if needed. More recommendations for follow-up study are included in "Options for Further Analysis" in the *Preliminary Visual Impact Analysis National Mall and Memo-rial Parks & President's Park* (April 2018).

Ultimately, the parks must balance the need to provide open and fair access to the public lands for visitor enjoyment and for first amendment activities, as well as for civic events. Likewise, access needs to be balanced with the NPS mission to "... conserve the scenery and the natural and historic objects and the wild life 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." To do this management will need to determine what criteria to apply when establishing the appropriate location, size, and duration of temporary installations on the National Mall. These could include criteria related to resource impacts for both direct and indirect effects on hardscape and softscape and to historic structures and land-scapes. Other possible criteria would include the safety of visitors and security for both visitors and the primary monuments, memorials and infrastructure elements of the parks.

Map 1 & 2: Evaluation of Visual Impact Analysis for Temporary Structures on the National Mall defines areas where restrictions on the location and heights of temporary structures are proposed based on this visual impacts analysis. The analyzed areas are limited to park properties managed by the NPS as part of the National Mall and Memorial Parks and White House and President's Park and located within the Monumental Core of Washington, DC. No recommendations are made for areas not tested in the visual impact analysis, including areas north of the White House and the White House Grounds (inside the security fence).

Table 1 – Evaluation of Visual Impact Analysis for Temporary Structures on the National Mall describes the same recommended height and location restrictions that are illustrated in Map 1 & 2.

APPENDICES

- MAP 1 Evaluation of Visual Impact Analysis for Temporary Structures on the National Mall Monumental Core
- MAP 2 Evaluation of Visual Impact Analysis for Temporary Structures on the National Mall Hains Point
- TABLE 1 Evaluation of Visual Impact Analysis for Temporary Structures on the National Mall
- APPENDIX A Temporary Structures Viewable Area Maps (S01 through S32)
- APPENDIX B-Ground-Level Visualizations
- APPENDIX C Selected list of management policies guidelines and reports used to develop conclusions

MAPS 1 & 2




TABLE 1

Location	Description	Structures Allowed (Y/N)	Height Limit	Visual Resource Protected	Notes
A/B	Lincoln Memorial	N	N/A	Visual access to memorial; formal setting; Important views west to Potomac River and Arlington Memorial Bridge & Arlington Cem- etery	
С	Reflecting Pool and walks on north & south	N	N/A	Primary east-west vista	
D	Constitution Gardens-West	Y	15 feet	Intimate scale; views from Vietnam Memorial east to Washington Monument	
E	Constitution Gardens - East	Y	30 feet		Avoid structures in the line of sight from Virginia Ave. to Washington Monu- ment
F	World War II Me- morial	Ν	N/A	Visual access to memorial; formal setting	
G	JFK Hockey Fields (S. of Reflecting Pool)	Y	45 feet		
Н	Ellipse	Y	30 feet	Views to and from Washing- ton Monument Grounds; Views from White House	Restrict structures in 150-foot-wide vista centered on White House
I	Washington Mon- ument – security perimeter	N	N/A	Visual access to memorial; formal setting	
J	Washington Monument Grounds – Central panel west	N	N/A	Primary east-west Mall vista	
К	Washington Monument Grounds-NW & NE Corners	Y	30 feet	Monument setting; taller structures more appropri- ate at lower elevation and farther from the Monument	The four corners are identified for civic infrastructure in Na- tional Mall Plan
L	Washington Mon- ument Grounds 1st tier outside restricted area	Y	20 feet	Monument setting; shorter structures more appropriate closer to the Monument & at higher elevation	Limit numbers of structures closer to the Monument
М	North-South 150-foot-wide view corridor	Ν	N/A	Primary north-south cross axis of the National Mall	

Location	Description	Structures Allowed (Y/N)	Height Limit	Visual Resource Protected	Notes
N	Washington Mon- ument Grounds- central east	N	N/A	Views toward the Monu- ment & primary east-west Mall vista	
0	The Mall – 3rd Street to 14th Street	Y	30 feet set off center	Primary east-west Mall vista	Offset all temporary structures from the centerline of the Mall vista; consider massing and num- bers of structures
Р	Thomas Jefferson Memorial – Secu- rity perimeter	Ν	N/A	Visual access to memorial; formal setting	
Q	Thomas Jefferson Memorial-East & West precincts	Y	30 feet		Location of memo- rial, below the tree line, offset from primary views
R	Tidal Basin Parking Lot	Y	20 feet		Keep below tree line; retain views from Thomas Jef- ferson
S	Independence Ave. Staging Area	Y	30 feet		Keep structures west of the 150-foot north-south view corridor
Т	Virginia Avenue sight line to Wash- ington Monument	Avoid	N/A	Avoid blocking the line of sight to the base of the Monument	Virginia Avenue is a primary L'Enfant roadway and vista to Monument is important
U	Polo Fields – near Ohio Drive	Y	40 feet	Views from George Wash- ington Memorial Parkway and LBJ Presidential Memo- rial monolith plaza	Keep below heights of buildings in background (Con- stitution Avenue, Virginia Avenue Federal Buildings)
V	Polo Fields – near West Basin Drive	Y	30 feet	Views to Martin Luther King Memorial and Tidal Basin cherry trees	Keep below tree line
W	Ohio Drive – ball fields between West Basin Drive and Inlet Bridge	Y	30 feet	Views west from Thomas Jefferson Memorial; Views across river from George Washington Memorial Parkway and LBJ Memorial monolith	Keep below tree line; retain views from Thomas Jef- ferson Memorial
X	Ohio Drive – ball field near National Mall and Memorial Parks Headquar- ters	Y	45 feet		Keep below height of Thomas Jefferson Memorial; retain views to the Memo- rial

 $TABLE\,1-Evaluation \ of \ Visual \ Impact \ Analysis \ for \ Temporary \ Structures \ on \ the \ National \ Mall$

Location	Description	Structures Allowed (Y/N)	Height Limit	Visual Resource Protected	Notes
Y	Recreation field south of Washing- ton Monument; west of Holocaust Museum	Y	35 feet	Views from north of Thomas Jefferson Memorial across Tidal Basin; views looking across the Tidal Basin	Keeps structures lower than the federal buildings on east side of Raoul Wallenberg Place
Z	Hains Point – southernmost point within East Potomac Park	Y	45 feet		No visibility from Monumental Core; high visibility from water and Federal facilities

APPENDIX A—TEMPORARY STRUCTURES VIEWABLE AREA MAPS





APPENDIX A
































































APPENDIX B—GROUND LEVEL VISUALIZATIONS



Viewpoint 1, page 1



Viewpoint 1, page 2







No Viewshed Results for Viewpoints 3 & 4











Viewpoint 6, page 1





Viewpoint 6, page 3



Viewpoint 7, page 1

Viewpoint 7, page 2





Viewpoint 8, page 1



Viewpoint 8, page 2



Viewpoint 9, page 1











Viewpoint 11, page 1











Viewpoint 13, page 1





Viewpoint 14, page 1










Viewpoint 16, page 1

Viewpoint 16, page 2



APPENDIX B



Viewpoint 16, page 3







Viewpoint 17, page 1



Viewpoint 17, page 2



Viewpoint 18, page 1



Viewpoint 18, page 2



Viewpoint 19, page 1



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Viewpoint 20, page 3



Viewpoint 21, page 1

EVALUATION OF VISUAL IMPACT ANALYSIS FOR PERMITTED TEMPORARY STRUCTURES ON THE NATIONAL MALL



Viewpoint 21, page 2





Viewpoint 22, page 1







Viewpoint 23, page 1

Viewpoint 23, page 2





Viewpoint 24, page 1





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Viewpoint 26, page 2









Viewpoint 28, page 1







Viewpoint 29, page 1

Viewpoint 29, page 2










Viewpoint 31, page 1













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APPENDIX C

SELECTED LIST OF MANAGEMENT POLICIES GUIDELINES AND REPORTS USED TO DEVELOP CONCLUSIONS

What past practices and management documents support the regulation of temporary structures on the Mall and at President's Park South?

- Original design intent L'Enfant, McMillan, Olmsted axis, views, connections/corridors
- Review of permanent installations or construction in these areas
- National Mall Plan reinforces public and federal review agencies' commitment to protecting the special nature of the spaces
- Lincoln Memorial guidelines
- Special Event Guidelines
- NAMA Turf Management Guidelines
- 2016 Mall Turf Management Guidelines

National Mall Plan Reinforcing Protection of Views & Vistas and addressing installation of temporary structures.

Summary

The National Mall Plan is a publicly vetted master plan-level document that lays out the long-term vision for the National Mall. It encompasses the best thinking of numerous public and private groups and organizations, including the National Park Service. The document and the public record accompanying it demonstrates that National Park Service and its partner are very concerned with preserving the historic vista between the Capitol and the Washington Monument, and the reciprocal views between the White House, the Washington Monument, and the Thomas Jefferson Memorial. Under the Preferred Alternative that became the National Mall Plan, temporary structures would no longer be erected in the elm panels. Further, the Plan protects and improves both the east-west and north-south vistas of the National Mall. Permanent support structures are proposed in lieu of temporary, harmful ones. Other temporary structures, like stages or screens, would not be allowed to obstruct historic views during temporary events. Under the Plan, improvements at Union Square and the Washington Monument would increase visibility. Several proposals to improve the National Mall were dismissed because of their harmful impact on views and vistas.

