



Executive Director's Recommendation

Commission Meeting: July 11, 2019

PROJECT United States Air Force Memorial Lighting Replacement 1 Air Force Memorial Drive Arlington, Virginia	NCPC FILE NUMBER 8085
SUBMITTED BY United States Department of Defense Department of the Air Force	NCPC MAP FILE NUMBER 1.61(73.10)44952
REVIEW AUTHORITY Federal Projects in the Environs per 40 U.S.C. § 8722(b)(1)	APPLICANT'S REQUEST Approval of preliminary site development plans
	PROPOSED ACTION Approve preliminary site development plans with comments
	ACTION ITEM TYPE Consent Calendar

PROJECT SUMMARY

The Department of the Air Force, Air Force District Washington has submitted preliminary site development plans for a lighting replacement project for the United States Air Force Memorial. The current memorial is lit with many different fixture types. Over the last several years, the Air Force has learned of several deficiencies relative to these lighting fixtures and the initial installation. The deficiencies have become more problematic in recent years and contributed to an unreliable installation. The primary issues they have cited include:

- Water infiltration contributing to shorting of the fixtures.
- Availability of the fixtures for replacement.
- Lack of energy efficiency.
- Above ground tripping hazards.

As part of this proposal, the Air Force will replace approximately 174 fixtures at the memorial to address these deficiencies.

In January 1992, the Air Force Memorial Foundation was formed to begin development of a national memorial to honor members of the United States Air Force. The site can be easily viewed as part of the capital skyline and from several major arterials leading into and out of Washington, DC. Renowned architect James Ingo Freed of Pei Cobb Freed & Partners was commissioned to develop the inspirational design that can be viewed today. Groundbreaking for the memorial was held in September of 2004 and construction was completed by Centex Construction Company in September of 2006. The memorial was dedicated in October 14, 2006.

The primary element of the memorial includes a promontory containing three spires ranging in height from 201 feet to 270 feet high. The stainless-steel spires are intended to portray an image of the "contrails of the Air Force Thunderbirds as they peel back in a precision 'bomb burst'

maneuver." Only three of the four contrails are depicted, at 120 degrees from each other, as the absent fourth suggests the missing man formation traditionally used at Air Force funeral fly-overs. Between the spires is the Air Force "star". The spires are illuminated at night by metal halide lamps installed on lighting stands that are concealed from view at opposite ends of a Pedestrian Plaza.

The Pedestrian Plaza is located between the promontory to the east and the adjacent entrance drive to the west. The surface of the plaza is a combination of granite and turf. The north and south ends of the plaza terminate at granite inscription walls behind which the spire lighting stands are located. The walls are 56 feet in length, 10 feet in height and one foot thick. The north wall bears the names of Air Force recipients of the Medal of Honor, and the south wall bears inspirational quotations regarding core values, particularly the Air Force's three core values; "integrity first, service before self, and excellence in all we do". Near the south end of the plaza stand four 8-foot-tall bronze statues sculpted by Zenos Frudakis that represent the United States Air Force Honor Guard. Near the north end of the plaza, a free-standing glass contemplation wall depicts the images of four F-16s flying in a "missing man" formation engraved on both sides of the 5-ply panel. All Pedestrian Plaza elements are accented with subgrade lighting.

KEY INFORMATION

- The Commission approved the final design for the United States Air Force Memorial in August 2004.
 - The memorial was completed and opened in 2006 and is located adjacent to Arlington National Cemetery in Arlington County, Virginia.
 - James Ingo Freed of Pei Cobb Freed & Partners was commissioned to develop the memorial's inspirational design.
 - The three spires have different heights that are between 201 and 270 feet.
 - The existing lighting is not as durable as it should be, is difficult to maintain, is not energy efficient and needs to be replaced.
 - The Air Force Memorial is identified in the NCPC draft *Monumental Core Streetscape Project: Lighting Policy and Framework* as a Tier 2 site under the lighting hierarchy, requiring it to be less prominent as a Tier 1 site such as the Washington Monument or U.S. Capitol.
 - The proposal includes the installation of 174 new lighting fixtures at the memorial, including ones illuminating the three spires that will be capable of being dimmed. These will replace the original fixtures and will not change the overall lighting strategy for the memorial.
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RECOMMENDATION

The Commission:

Approves the preliminary site development plans to replace 174 existing lighting fixtures at the United States Air Force Memorial located in Arlington County, Virginia to address deficiencies in their installation and operation.

Notes the memorial is located in Arlington County and is sited on a hillside at an elevation of 130 feet above sea level. With spires 201 to 270 feet in height, the memorial is visible during the daytime and nighttime from multiple, long-range vantage points, including from Washington, DC.

Notes that the Air Force Memorial has been included as a Tier 2 site, within the draft Lighting Policy and Framework that NCPC has developing in consultation with other agencies, defining it as a structure that should be visually less prominent than Tier 1 sites, which include the Washington Monument and the U.S. Capitol.

Recommends that the Department of the Air Force coordinate with NCPC, CFA, the Federal Aviation Administration and others to determine the appropriate lighting levels for the memorial after the replacement lighting is installed to ensure it fits within the overall lighting hierarchy established for the Monumental Core while meeting the safety requirement for aviation.

PROJECT REVIEW TIMELINE

Previous actions	Aug 2005 – Final approval of memorial.
Remaining actions (anticipated)	– Final approval of site development plans for replacement lighting

PROJECT ANALYSIS

Executive Summary

The Department of the Air Force's replacement lighting proposal at the United States Air Force Memorial in Arlington County, Virginia is fairly simple. It will replace the damaged and hard to find lighting fixtures with more reliable ones that are more readily available. The Air Force notes that there are existing lighting deficiencies and issues at the memorial that need to be addressed and this lighting proposal is intended to correct them. Overall, the project will rectify these issues and will not alter the character of the memorial. Therefore, staff recommends that the **Commission**

approve the preliminary site development plans to replace 174 existing lighting fixtures at the United States Air Force Memorial located in Arlington County, Virginia to address deficiencies in installation and operation.

While the project itself is straight forward, the prominent location of this memorial in approximately 130 feet above sea level in Arlington, adjacent to Arlington National Cemetery, allows long reciprocal views to and from the National Mall. The intensity of the memorial light level is important, so that the memorial does not compete with other prominent sites along the National Mall such as the Washington Monument and the U.S. Capitol.

Analysis

The Department of the Air Force's replacement lighting project will address several identified issues at the Air Force Memorial. As noted earlier, the primary issues that the Air Force cited that need to be addressed include the following:

- Water infiltration contributing to shorting of the fixtures.
- Availability of the fixtures for replacement.
- Lack of energy efficiency.
- Above ground tripping hazards.

The Air Force notes this proposal will address all of these issues by replacing the fixtures infiltrated by water, using U.S. based manufactures to ensure availability and reduce delivery time, having LED lighting that are more energy efficient and finally installing flush mounted fixtures that are even with the ground. Staff is supportive of these changes.

The Commission reviewed and approved the memorial project itself in August 2005, which included memorial lighting. At that time the Commission was concerned about the Air Force including red aviation warning lights on the tips of the spires and included a recommendation for the Air Force to work with the Federal Aviation Administration in developing an alternative. The FAA was involved due to the height of the proposed spires and the close proximity of Ronald Reagan National Airport. The Air Force did not install any warning lights after reaching an agreement with the FAA. The Air Force notes that it has been in consultations with FAA on this current proposal as well.

Monumental Core Streetscape Project: Lighting Policy and Framework

The potential impact of any lighting project, especially a memorial, is important in Washington, DC given the visual proximity of the National Mall to this site. The nighttime views are especially sensitive since the Washington Monument and the U.S. Capitol are nearby. The illumination intensity of this memorial needs to be determined within the broader context of this setting. In the past, the Commission has requested to understand and verify illumination impacts projects including the U.S. Institute of Peace and more recently regarding several bridge projects.

NCPC staff have been developing the *Monumental Core Streetscape Project: Lighting Policy and Framework* which is intended to provide guidance on lighting in the downtown core of Washington, DC of structures, landscapes and streets. This policy will build upon the Comprehensive Plan policies including this important Urban Design Element policy:

Utilize building, street, and exterior lighting that respects the hierarchy of memorials, monuments, and important civic buildings and spaces in the nation's capital, with the U.S. Capitol and Washington Monument the most prominent features in the nighttime skyline.

This draft policy and framework document describes a lighting hierarchy for structures in and around the Monumental Core and identifies the Air Force Memorial along with many other buildings and structures. While this memorial is not one of the preeminent buildings included in Tier 1, it is identified as a Tier 2 structure given its location and importance. This means that it should be seen but it should not be the most illuminated structure which might detract from other more important structures such as the Washington Monument.

The intention of the project is to not significantly alter the lighting character of the memorial. However, as with the installation of any new technology, testing and recalibration will be necessary to determine the most appropriate lighting levels. The applicant has already begun some initial testing, and additional work will be necessary after installation. Therefore, staff suggest the **Commission recommends that the Department of the Air Force coordinate with NCPC, CFA, the Federal Aviation Administration and others to determine the appropriate lighting levels for the memorial after the replacement lighting is installed to ensure it fits within the overall lighting hierarchy established for the Monumental Core while meeting the safety requirement for aviation.**

CONFORMANCE TO EXISTING PLANS, POLICIES AND RELATED GUIDANCE

Comprehensive Plan for the National Capital

The proposed replacement lighting project is consistent with the relevant policies in the Urban Design, Federal Environment and Parks and Open Space Elements of the Comprehensive Plan for the National Capital.

National Historic Preservation Act

The Air Force has a responsibility under Section 106 of the National Historic Preservation Act for this project. The Air Force has initiated Section 106 consultation, and anticipates concluding this process prior to final review by the Commission. As this project is in the environs, NCPC does not have a Section 106 responsibility.

National Environmental Policy Act

The Air Force has a responsibility under the National Environmental Act (NEPA) and will submit a categorical exclusion when this project is submitted for final review. As this project is in the environs, NCPC does not have a NEPA responsibility.

CONSULTATION

U.S. Commission of Fine Arts

The Commission of Fine Arts approved the concept design for the replacement lighting project on its consent agenda on June 20, 2019.

ONLINE REFERENCE

The following supporting documents for this project are available online at www.ncpc.gov:

- Submission Package

Prepared by Carlton Hart
07/01/2019

POWERPOINT (ATTACHED)

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United States Air Force Memorial Lighting Replacement

1 Air Force Memorial Drive, Arlington Virginia

Approval of Preliminary Site Development Plans

United States Department of Defense, Department of the Air Force

Project Summary

Commission Meeting Date: July 11, 2019

NCPC Review Authority: 40 U.S.C. § 8722(b)(1)

Applicant Request: Approval of Preliminary Site Development Plans

Session: Consent Calendar

NCPC Review Officer: N/A

NCPC File Number: 8085

Project Summary:

The Air Force has submitted preliminary review of a lighting replacement project for the United States Air Force Memorial. The current memorial is lit with many different fixtures types as described within the submittal. Over the last several years, several deficiencies have been cited relative to the lighting fixtures and the initial installation. These deficiencies have become more problematic in recent years and contributed to an unreliable installation. The primary deficiencies that have been cited include:

- Water infiltration contributing to shorting of the fixtures.
- Many of the fixtures are no longer produced and/or replacement parts are expensive or not available.
- Many fixtures are only available through non-US suppliers that cannot respond in a timely manner.
- Existing fixtures are not energy efficient.
- Some of the fixtures create tripping hazards.

As part of this proposal, the Air Force will replace approximately 174 fixtures currently at the memorial to address these deficiencies.

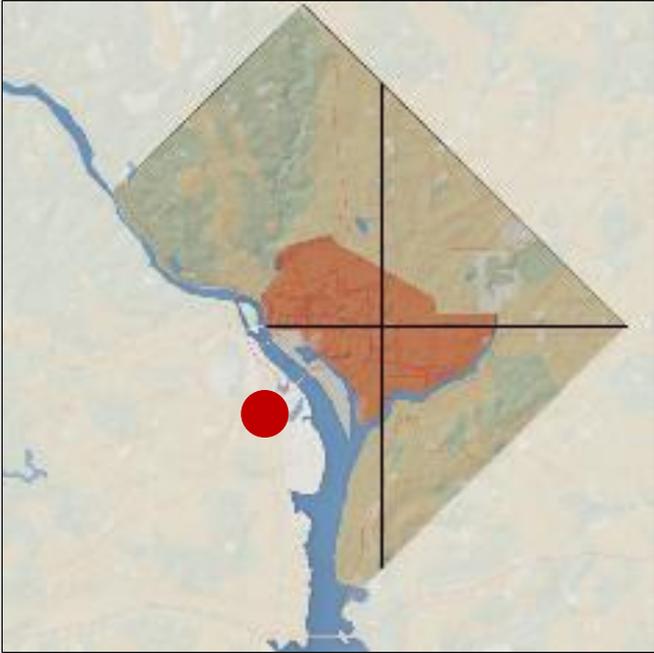
Project Summary

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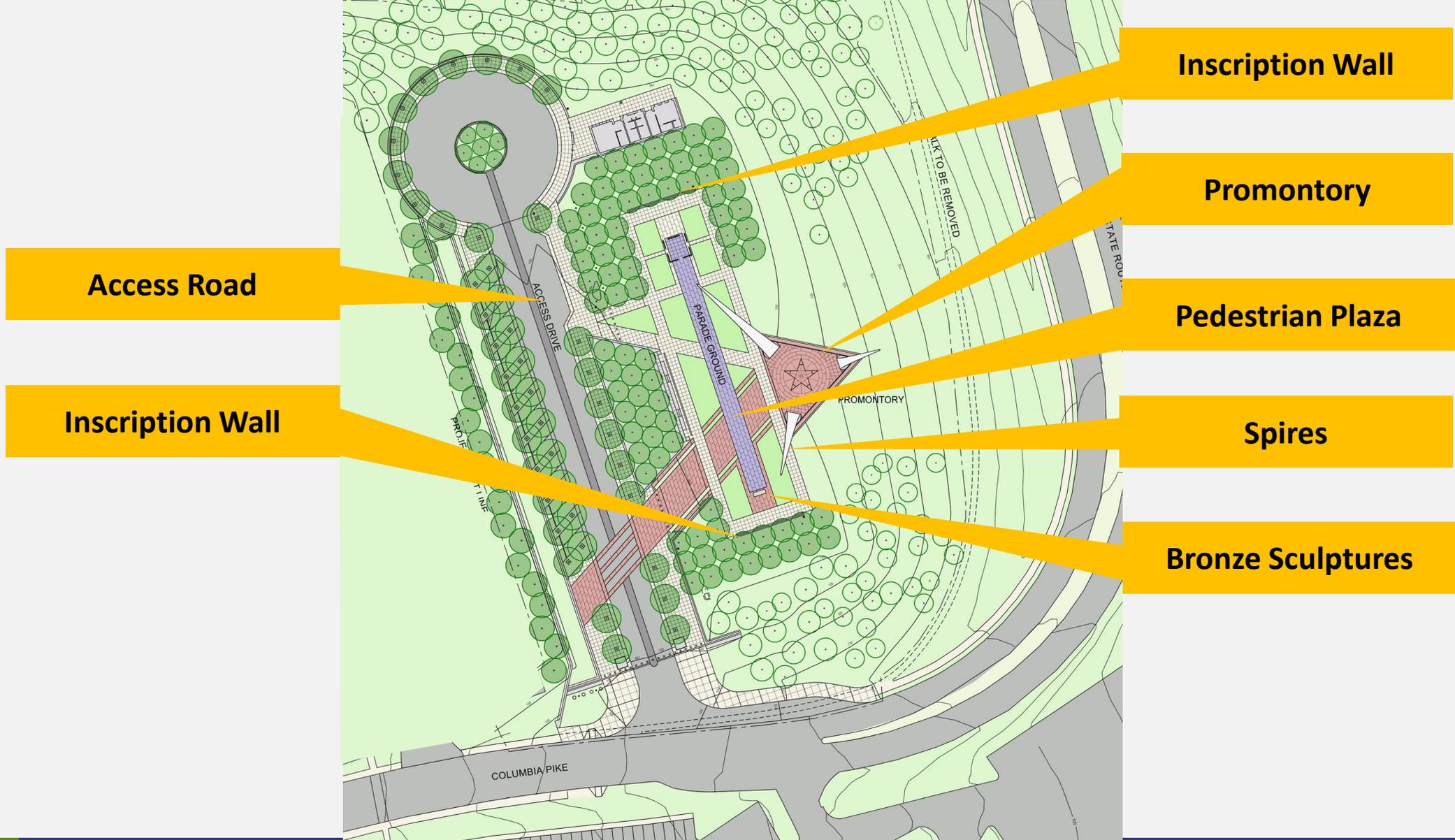
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Site Location



Air Force Memorial Site

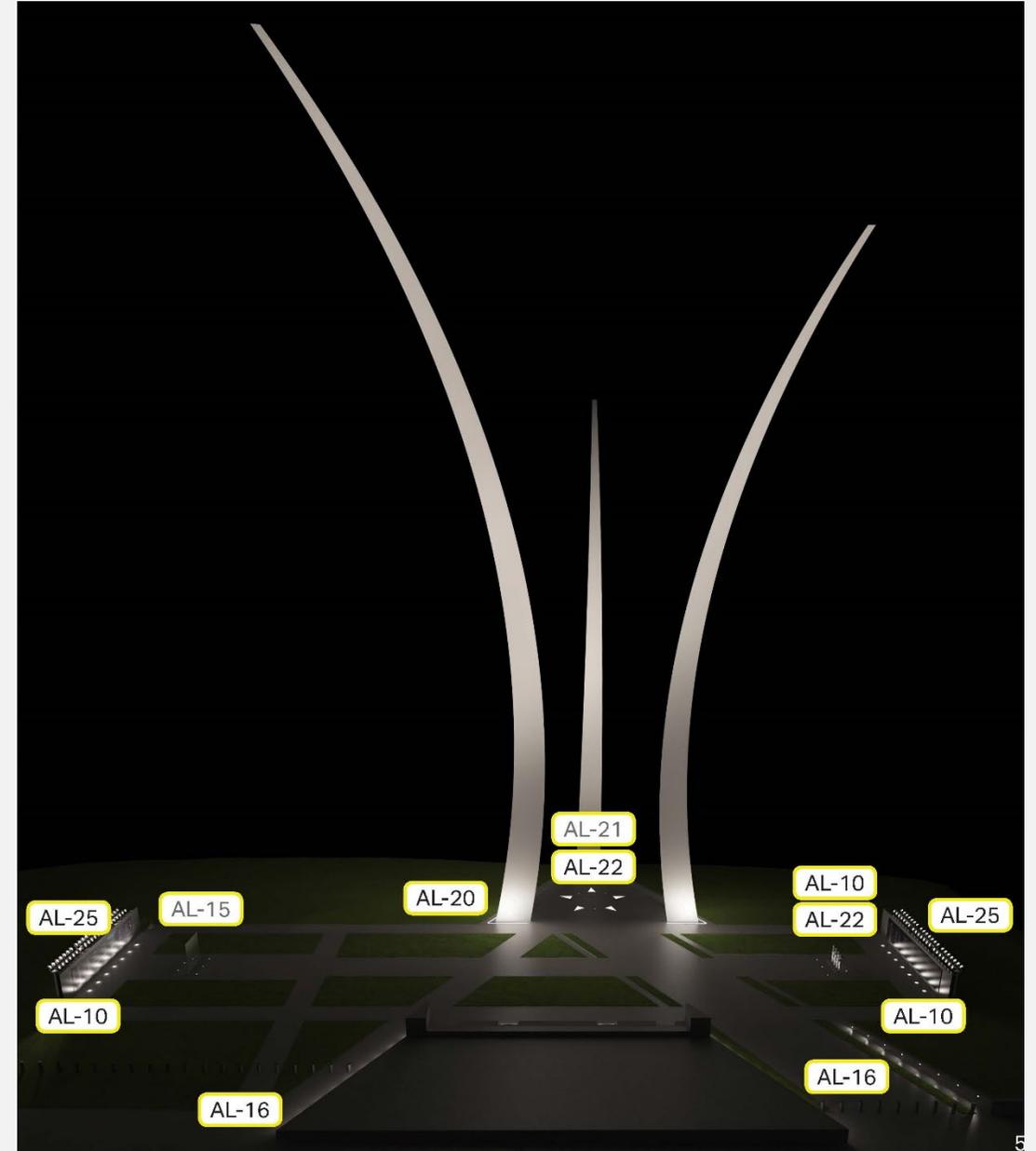


Existing Lights



Replacement Lighting

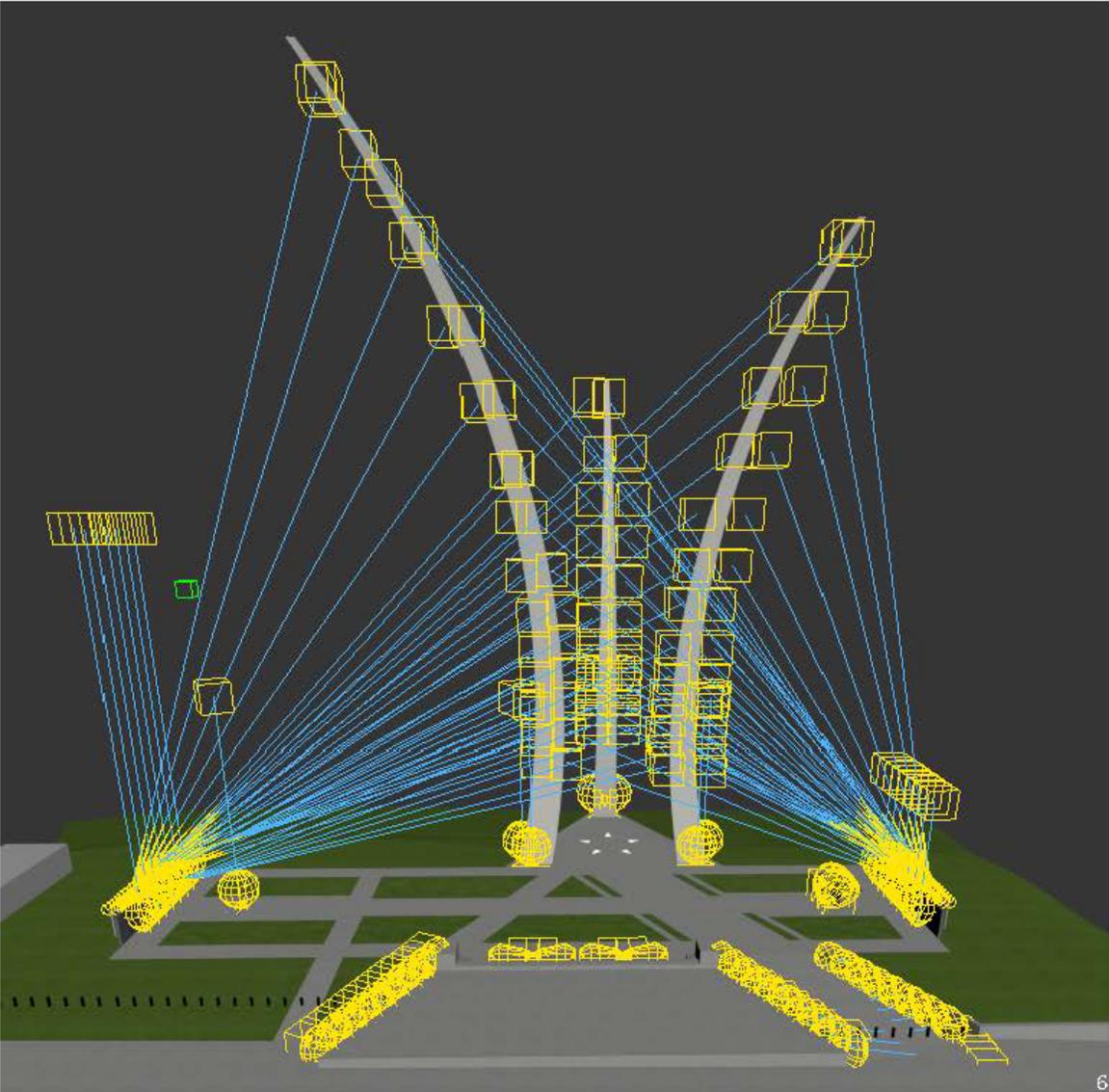
Air Force Memorial Lighting Fixture Replacement Schedule								
Fixture Location	Fixture Quantities							
	AL-10	AL-15	AL-16	AL-20	AL-21	AL-22	AL-24	AL-25
Flag Poles							4	
Gate West Inscription Wall	5							
Gate East Inscription Wall	5							
Support Bldg. Inscription Wall	3							
North Inscription Wall	7							
North Spire Stand								42
South Inscription Wall	7							
South Spire Stand								30
Honor Guard	2					5		
Contemplation Chamber		Excl.						
Memorial Steps (retaining walls)			32					
Promontory					Excl.	3		
Spire 1				11				
Spire 2				9				
Spire 3				9				
TOTAL	29	Excl.	32	29	Excl.	8	4	72



Light Modeling

Light Modeling Precision

The following lighting renders were fine tuned to mimic the proposed lighting scheme as closely as possible.



Simulation #1

Highway View



Existing Photo

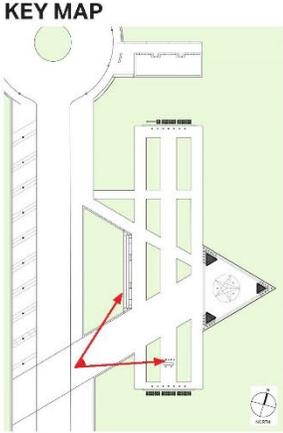
(Photo taken from Prospect Hill Park)



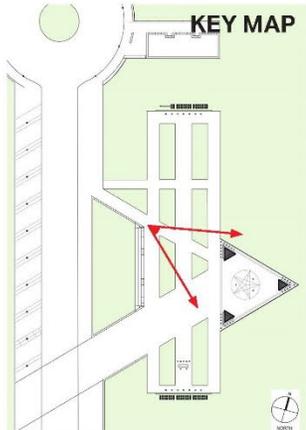
Proposed Render

Simulation #2

Southern Approach

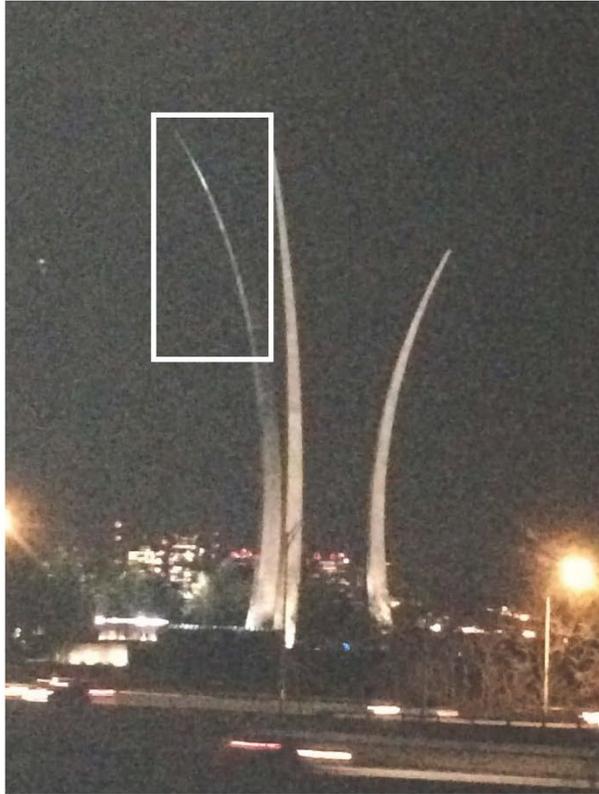


Simulation #3

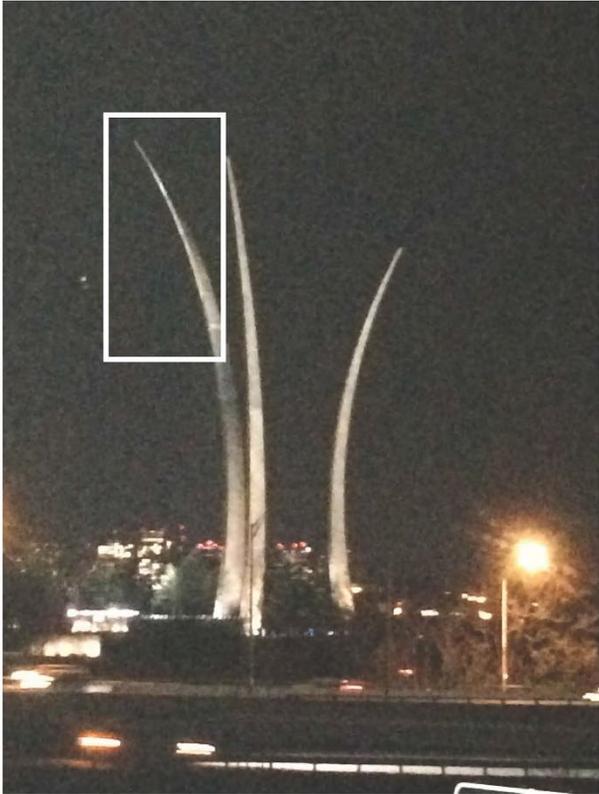


Real Lighting Test

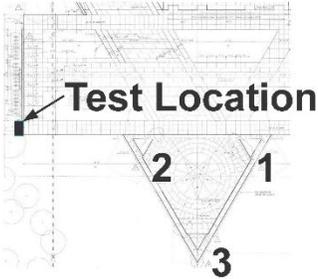
Spire 1 Test (approx. distance = 1/2 mile)



Existing Fixtures Only

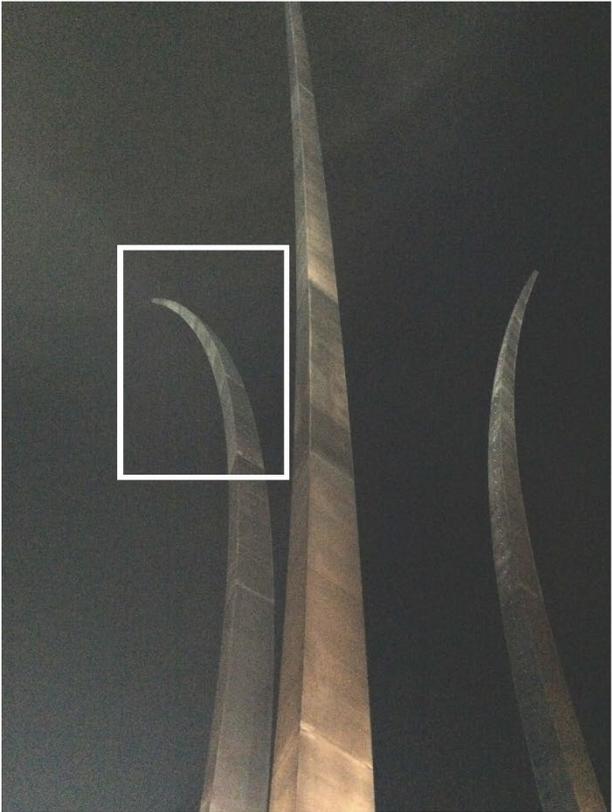


Test Fixtures Energized

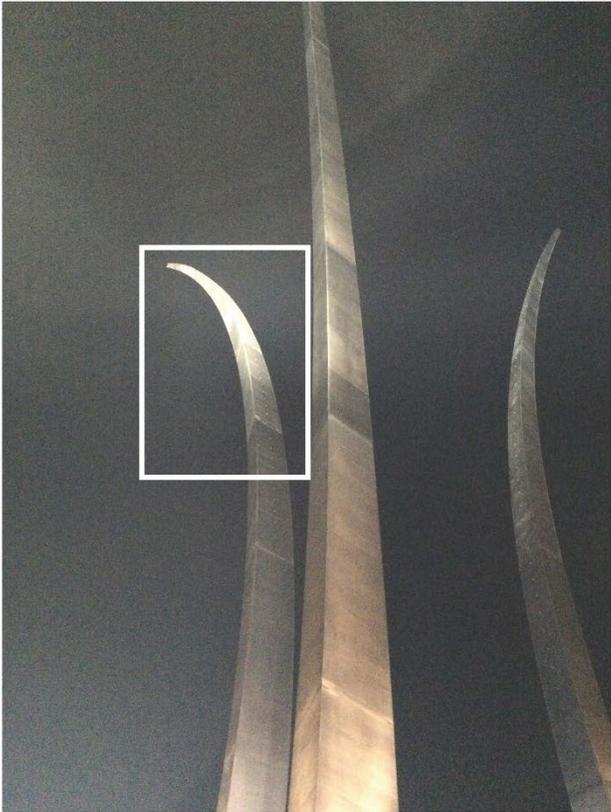


Real Lighting Test

Spire 1 Test (approx. distance = 50 feet)



Existing Fixtures Only



Test Fixtures Energized

