

# STAFF RECOMMENDATION



C. Kelly

NCPC File No. 7214

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## NATIONAL ZOOLOGICAL PARK NORTH ROAD RETAINING WALL

3001 Connecticut Avenue, NW  
Washington, DC

Submitted by the Smithsonian Institution

February 24, 2011

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### Abstract

The Smithsonian Institution has submitted a concept design for a retaining wall adjacent to North Road at the National Zoo. The proposed retaining wall would replace temporary hillside stabilization measures that have been in place since 1976. The current stabilization measures were put in place as part of the General Services Building and parking construction. These measures are now failing and as a result causing the General Services Building to become structurally unstable.

### Commission Action Requested by Applicant

Approval of comments on concept design pursuant to 40 U.S.C. § 8722(b)(1) and (d).

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### Executive Director's Recommendation

The Commission:

**Comments as follows** on the proposed North Road retaining wall at the National Zoological Park in Washington, DC, as shown on NCPC Map File No. 2.00(38.00)43262:

**Recommends** that in the continued development of the project the Smithsonian Institution:

- Evaluate ways to replace the tree canopy lost due to the construction;
- Evaluate opportunities to screen views of the retaining wall from Rock Creek Park; and
- Continue consultation with the National Park Service to ensure preservation of the natural quality of Rock Creek Park.

**Requests** that for the next submission the Smithsonian Institution submit:

- Detailed landscape plans; and
- Massing views of the proposed retaining wall from Beach Drive, points along Adams Mill Road, and the Rock Creek Trail.

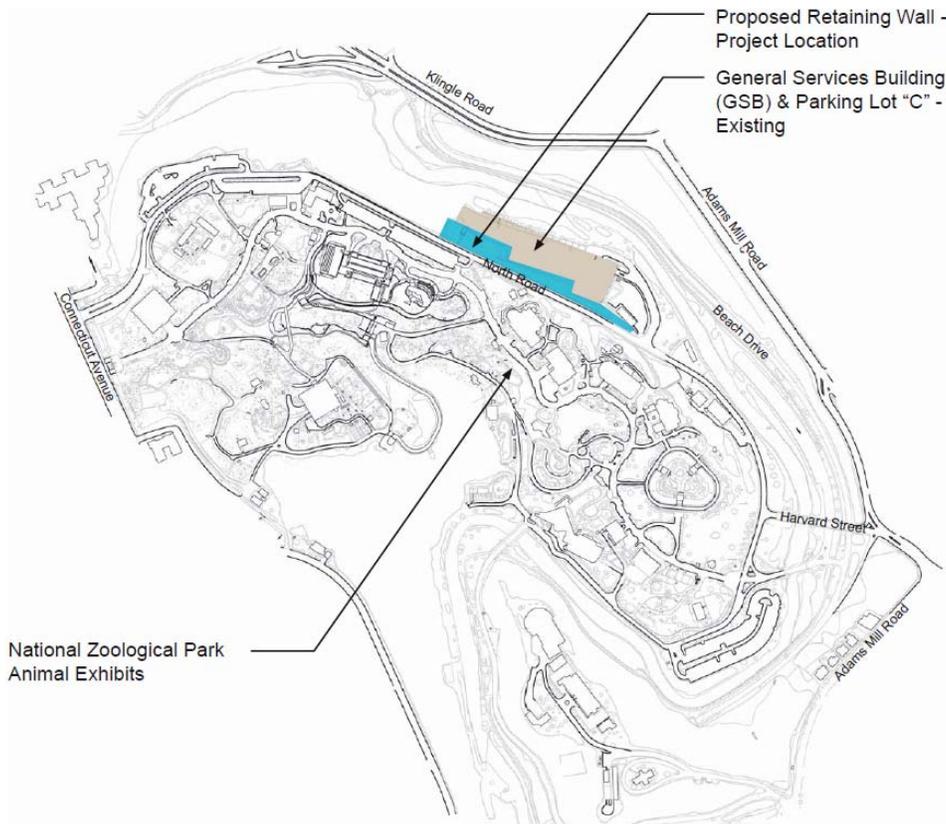
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**PROJECT DESCRIPTION**

Site

North Road traverses the northern edge of the National Zoo from Connecticut Avenue, NW on the west to just below Harvard Street, NW on the east. The proposed retaining wall would be located approximately at the mid-point of North Road between the roadway and the General Services Building. Adjacent to the General Services Building is Rock Creek Park with Rock Creek trail and Beach Drive, NW in close proximity. The site slopes significantly downward from North Road to Rock Creek. On the opposite side of Rock Creek, the valley slopes up to the intersection of Klinge Road, NW and Adams Mill Road, NW.

**Project Location**



Background

In 1975, the Commission approved the General Services Building and Parking Facility (NCPC File #1362) and commended the Smithsonian Institution for, “the design of the facility, which through its sensitivity to the environment, accommodates parking requirements for the National Zoological Park with minimal visual impact on the Zoo and the adjacent Rock Creek Parkway.” The final development plans approved by the Commission included a 515,000 square foot facility containing 127,000 square feet of service space and offices, 7,500 square feet for Protective Services, 368,000 square feet of parking and access, including 76,500 square feet of open decks, and 30,500 square feet of planting spaces. The parking garage would provide parking for 956 vehicles.

For the final design of the General Services Building, the Smithsonian Institution worked closely with the National Park Service to ensure views of the building and parking garage from the park and adjacent roadways would be minimized. To achieve this, the final design of the General Services Building and parking garage included an earthen berm and additional vegetation to help screen the building from the Rock Creek Park.

Existing General Services Building and Parking



View of General Services Building from Rock Creek Trail

Due to budgetary constraints, the Smithsonian Institution only built the General Services Building with parking only on the roof of the building. To support the hillside until the remainder of the parking structure could be constructed, the Smithsonian used temporary timber sheeting and shoring walls. These temporary measures are now failing and as a result causing the General Services Building to be structurally unstable; this necessitates the need for the proposed retaining wall.

**Temporary Retaining Measures**



Existing Timber Shoring



Proposal

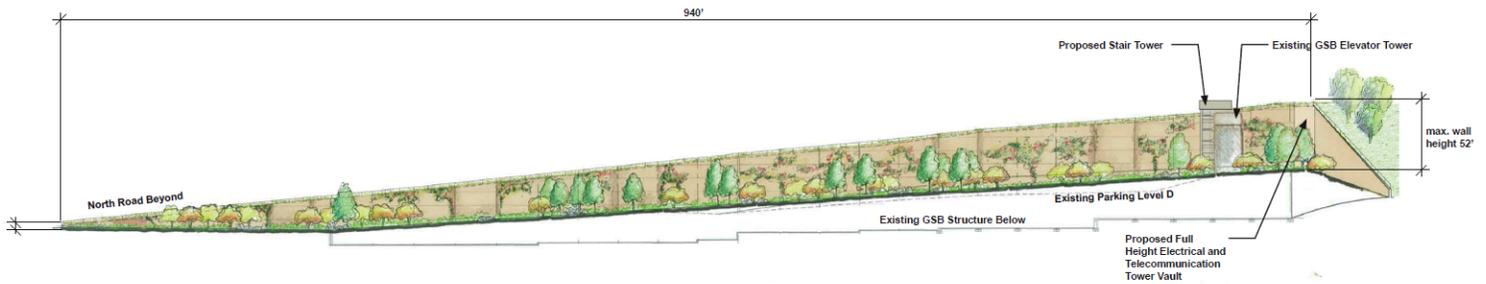
The Smithsonian Institution proposes to construct a retaining wall to stabilize the hillside adjacent to North Road in the National Zoo. The proposed retaining wall will be a concrete wall with an architectural finish and with steel tie backs. The architectural finish will resemble a stone pattern used in other parts of the Zoo. The wall will follow the alignment of North Road for 940 feet then extend northward 85 feet. The proposed retaining wall will follow the alignment and slope of North Road and maintain a constant height of approximately one foot above the existing grade of North Road. Along the General Services Building side of the retaining wall, a maximum height of 52 feet will occur at the western side of the project site and sloping down to one foot on the eastern side.

According to the submission materials, the Smithsonian Institution evaluated multiple wall geometries and determined that the straight wall would be best due to its simplicity of design and ease of site preparation and construction. It provides the maximum flexibility for design and placement of the future parking garage and access points.

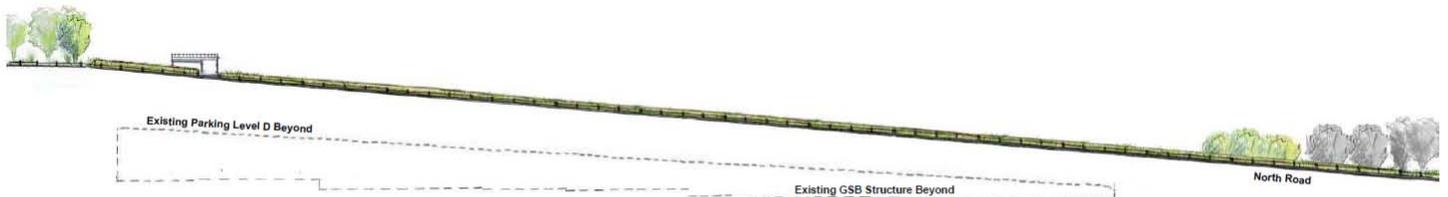


STONE PATTERNED CAST-IN-PLACE CONCRETE

**Proposed Retaining Wall Elevations**

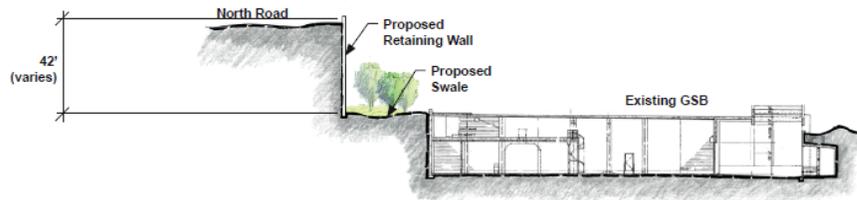
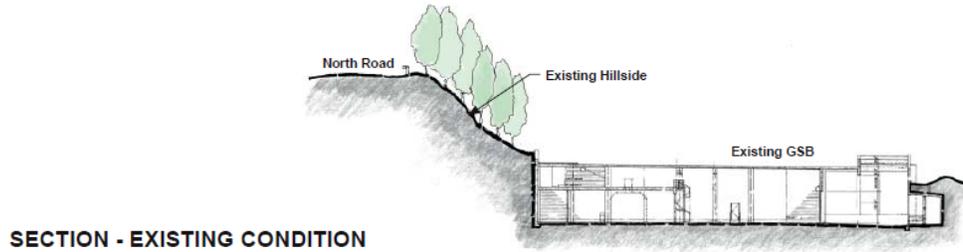


ELEVATION - PROPOSED RETAINING WALL WITH LANDSCAPING



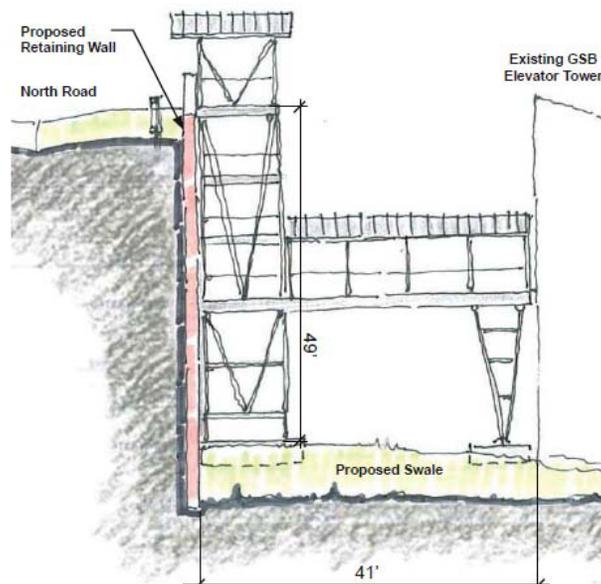
ELEVATION - PROPOSED RETAINING WALL FROM NORTH ROAD - SOLID WALL OPTION

**Proposed Retaining Wall Section**

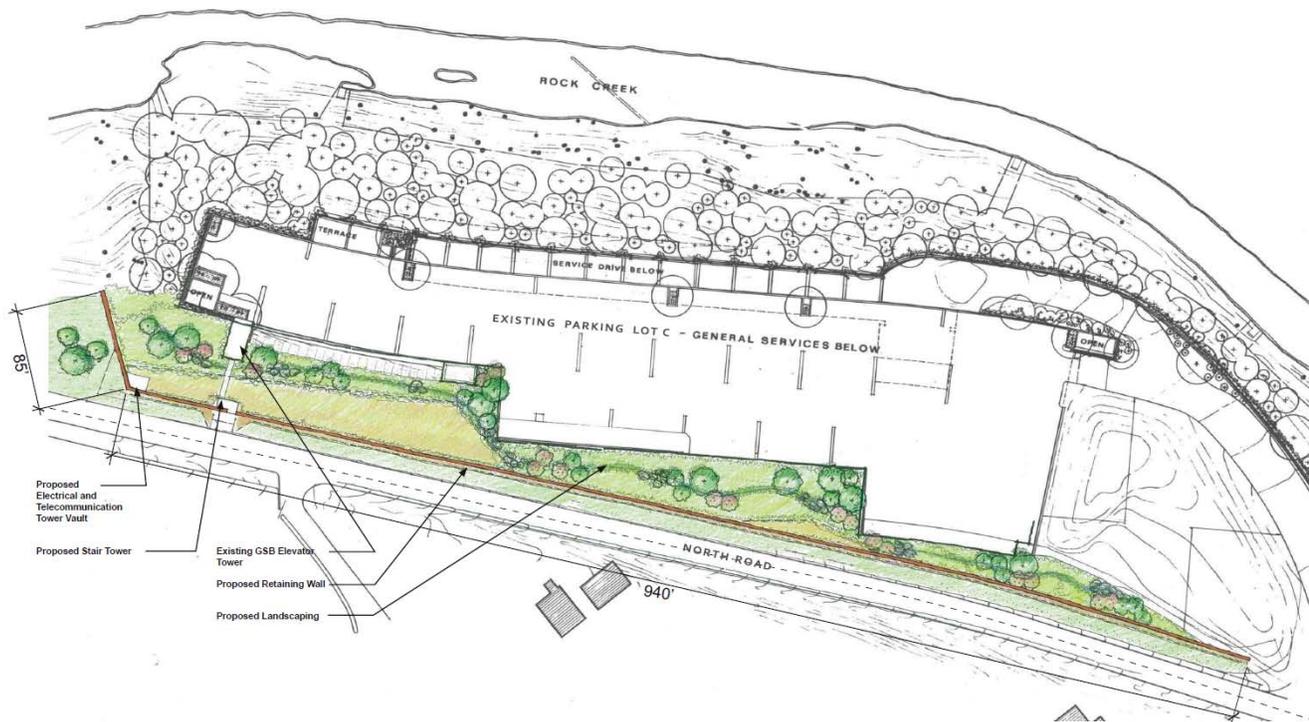


The Smithsonian Institution also proposes to construct a new pedestrian bridge that will allow access from the General Services Building to North Road on the west side of the project site. Currently, there is a timber stair leading from the General Services Building elevator tower to North Road. As a result of the proposed retaining wall excavation, the existing stair will need to be removed. The Smithsonian Institution is proposing a new bridge to maintain access from the building to the road. The new bridge would connect to the existing elevator tower with a new switchback stair tower adjacent to the proposed retaining wall.

**Proposed Bridge Connection from the General Services Building to North Road**



Landscaping is proposed for the area between the retaining wall and the General Services Building in order to soften the walls appearance. The Smithsonian Institution proposes to plant species that have a water filtering root system, provide screening, and have ornamental characteristics. In addition, support cables will be integrated into the retaining wall to accommodate the growth of vertical vines. Small boulders removed during construction may also be placed within the planting area.



### Development Program

The Smithsonian Institution anticipates that the proposed project will be federally funded in fiscal year 2012. The project is estimated to cost 4.5 million dollars and is anticipated to take between 12 and 14 months to construct. Quinn Evan Architects is the architects for the project.

### PROJECT ANALYSIS

Staff has reviewed the project submission and the proposed wall is necessary to retain the hillside and alleviate the loads on the General Services Building. The placement of a structure in this location was recommended and analyzed in the National Zoo Master Plan. Staff recommends that the Commission **as follows** on the proposed North Road retaining wall at the National Zoological Park in Washington, DC:

**Recommends** that in the continued development of the project the Smithsonian Institution:

- Evaluate ways to replace the tree canopy lost due to the construction;
- Evaluate opportunities to screen views of the retaining wall from Rock Creek Park; and
- Continue consultation with the National Park Service to ensure preservation of the natural quality of Rock Creek Park.

According to the submission documents, the proposed project will remove the hillside vegetation comprised of various native and invasive deciduous woodland tree species, understory shrubbery, and groundcover; approximately 100 existing trees would be removed. Staff recommends that the Smithsonian Institution evaluate ways to replace the trees lost due to construction as they move forward with the project's landscape plans. The Federal and District Elements of the Comprehensive Plan for the National Capital and the District government include policies that encourage the preservation of trees and the increase of the District's tree canopy. Opportunities to intensify the vegetation adjacent to the project site to minimize views of the retaining wall from Rock Creek Park and adjacent roadways should be evaluated. Furthermore, staff encourages the Smithsonian Institution to continue consultation with the National Park Service to ensure the protection of the natural qualities of Rock Creek Park.

Staff requests that the Smithsonian Institution submit information for the next submission to the Commission:

- Detailed landscape plans; and
- Massing views of the proposed retaining wall from Beach Drive, points along Adams Mill Road, and the Rock Creek Trail.

The Smithsonian Institution has submitted current views of the project site from various locations including along Adams Mill Road and the Rock Creek Trail. The photos, taken in winter season, indicates that there will be minimal views of the retaining wall due to vegetation and the earthen berm; however, staff requests that the Smithsonian submit photo simulations of the proposed retaining wall to permit an evaluation of the effects of the retaining wall. Views along Beach Drive are especially important to understand as it is the roadway directly adjacent to the General Services Building and has the most potential to be affected by the project.

## CONFORMANCE

### Comprehensive Plan for the National Capital

The proposed project will comply with the policies of the Federal Workplace Element of the Comprehensive Plan for the National Capital, which encourages agencies to:

- Ensure that safe and healthy working conditions continue to be provided and maintained at all sites and in all buildings occupied by the federal government.

### Federal Capital Improvements Plan

For the 2011- 2016 Federal Capital Improvements Plan (FCIP) for fiscal years 2011 – 2116, the Smithsonian submitted a project under the title Repair Structural Systems, National Zoological Park General Services Building and provided the following description:

“This project will strengthen and repair structural deficiencies such as cracked concrete, deteriorated steel reinforcement and degraded tie-back tension rods in the General Services Building and in the retaining wall that supports the North Road, the major thoroughfare through the Zoo. Internal strengthening is needed at the lower level of the building along the backside and for the full length of the loading and storage bay areas.

The project includes underpinning the back foundation wall, installing a new all interior of the perimeter wall with waterproofing membrane, adding shear walls and tie-backs into the hillside, replacing and reconfiguring structural mezzanines, and strengthening interior columns.”

Relevant Federal Facility Master Plan

The proposed project is located within the Middle Olmsted precinct of the National Zoo Master Plan, approved by the Commission in 2008. The master plan includes the future construction of the parking garage atop the General Services Building; a carryover project from the 1972 National Zoo Master Plan. The current master plan anticipates the proposed parking garage would act as the retaining wall to support the weight of the hillside; however, due to budgetary constraints and an urgent need to stabilize the hillside, the Smithsonian needs to construct the retaining wall separate from the parking garage. Although the parking garage has not been designed, the Smithsonian Institution has submitted drawings and elevations showing future potential massing and layout of the parking garage.

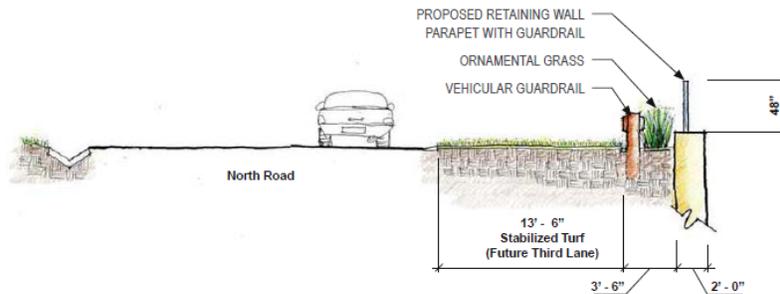
**Future Parking Garage Elevations in Relationship to the Retaining Wall**



ELEVATION - \*FUTURE PARKING GARAGE WITH RETAINING WALL BEHIND

The National Zoo Master Plan also recommends widening North Road from two lanes to three lanes to provide a left turn lane into the future parking garage access points. The proposed retaining wall will not hinder the widening of North Road.

**North Road Section**



BARRIER- GUARDRAIL OPTION (PREFERRED)

### National Environmental Policy Act (NEPA)

In accordance with the National Environmental Policy Act, the Smithsonian Institution prepared an Environmental Assessment (EA) in July 2008 for the National Zoo Master Plan. The EA resulted in a Finding of No Significant Impact for the Plan by the Executive Director on October 31, 2008. The Master Plan and associated EA assumed that the necessary retaining wall would be part of the parking garage project and implemented with it. The Smithsonian Institution is now in the process of preparing a supplemental EA for the project to evaluate the potential environmental impacts from building the retaining wall prior to the parking garage.

### National Historic Preservation Act (NHPA)

The completion of Section 106 review is not required by the Commission at the concept review. The Smithsonian Institution initiated consultation with the District of Columbia State Historic Preservation Officer in August 2010 with a site visit on December 20, 2010. The Smithsonian is currently conducting an archeological investigation for the site. Section 106 review will need to be completed prior to the Commission taking a final action on the project.

## CONSULTATION

### Coordinating Committee

The Coordinating Committee reviewed the proposal at its February 9, 2011 meeting and forwarded it to the Commission with the statement that the proposal has been coordinated with all participating agencies. The participating agencies were the NCPC; the National Park Service; the General Services Administration; the District of Columbia Office of Planning; the District of Columbia Department of Housing and Community Development; the District of Columbia Fire and Emergency Medical Services; the District of Columbia Department of Transportation; and the Washington Metropolitan Area Transit Authority.

### Commission of Fine Arts

The proposed retaining wall was reviewed by the Commission of Fine Arts at its February 24, 2011 meeting.