

STAFF RECOMMENDATION



Witherell

NCPC File No. 7110

THE NATIONAL MALL TURF RECONSTRUCTION ON THREE EASTERNMOST CENTER PANELS

The National Mall
Washington, DC

Submitted by the National Park Service

May 27, 2010

Abstract

The National Park Service (NPS) has submitted a concept design for the reconstruction of the turf and soil on the National Mall. The scope of the current project is the three easternmost center lawn panels (Panels 29, 30, and 33), bounded by 3rd Street, NW on the east and 7th Street, NW on the west. NPS intends to reconstruct all the center lawn panels in three phases. The scope of the current project includes reengineering the subsurface soil, planting new turf, constructing shallow, mountable curbs and gutters around the panels to harvest rainwater and contain the engineered soil, grading the panels with a slight crown on the center line, and constructing a below-grade irrigation and water storage system for the turf. In concert with these physical improvements, NPS will develop and implement new guidelines for managing events on the National Mall. The proposed work is consistent with the goals of the draft National Mall Plan.

Commission Action Requested by Applicant

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

Executive Director's Recommendation

The Commission:

Comments favorably on the concept design for the reconstruction of the turf and soil and the construction of a curb and gutter around the three easternmost center lawn panels of the National Mall, as shown on NCPC Map File No. 1.41(70.00)43062.

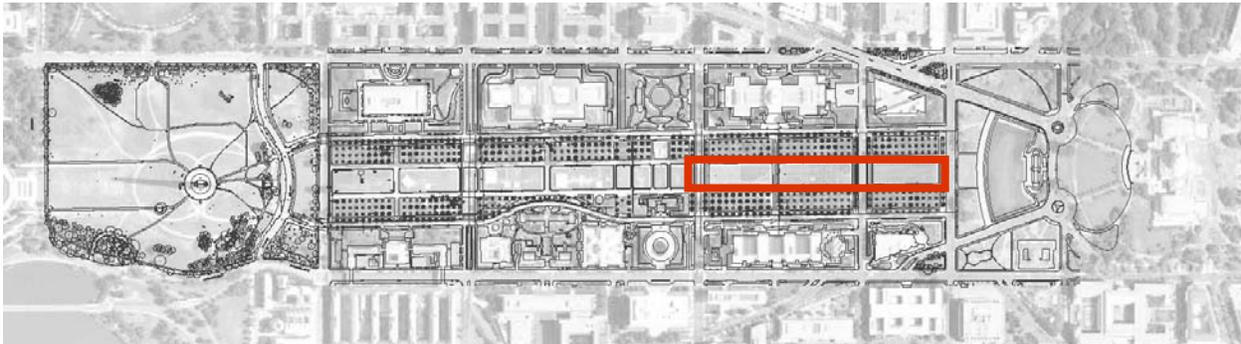
Recommends that the curb be constructed of granite and **notes** that NPS will continue consultation on the dimension of the curb radius as the design is developed further.

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PROJECT DESCRIPTION

Site

The National Park Service (NPS) proposes the first phase of an anticipated three-phase project to reengineer the turf and soil on the center lawn panels of the National Mall. The proposed first phase will extend from 3rd Street to 7th Street, NW. The turf and gutter construction for the first phase is solely for three center lawn panels, and does not include tree panels.



Background

One of the highest priorities in the National Mall Plan, approved in draft by the Commission at its March 4, 2010 meeting, is the improvement of the health, appearance, durability, sustainability, and recoverability of the Mall turf. The soil is heavily compacted and doesn't drain well, the turf is often worn away and presents an irregular and uneven appearance, and the irrigation system doesn't function. The impact of heavy and sustained use creates a strain on the soil and turf, and also on the elm trees. There has been no major reconstruction on the Mall since the Bicentennial. Since that time, demands on the National Mall have increased with more frequent and longer events and higher visitation. The proposed project is the first phase in addressing these conditions. NPS anticipates funding the turf and soil reconstruction of the center panels from 3rd to 14th Street, NW in three phases.

Proposal

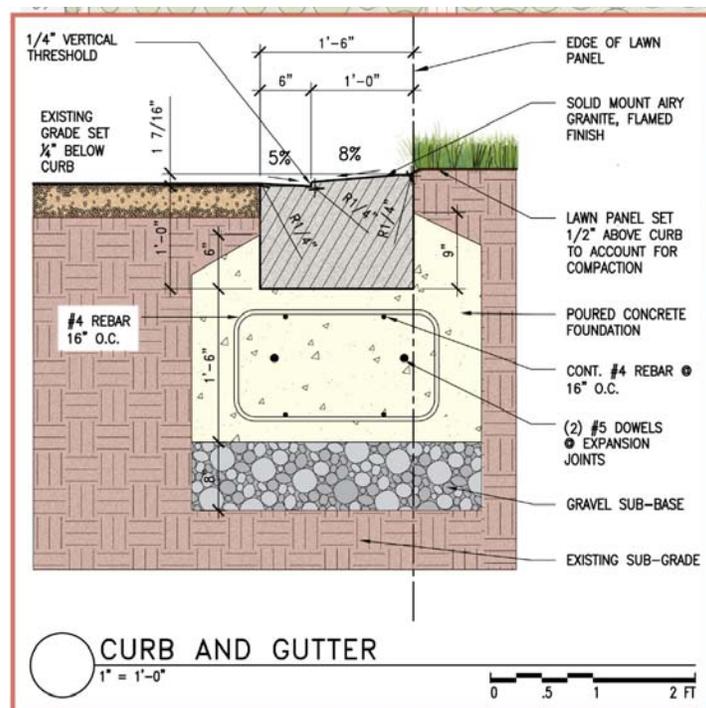
The goals for the turf and soil reconstruction project, as defined by NPS, are:

- Develop and establish a healthy and sustainable natural resources baseline for soils, turf and trees so that the Mall can host anticipated types and levels of use.

- Accommodate the high levels of use in a manner that sustains the character and integrity of the Mall.
- Maximize the site’s potential for stormwater absorption and minimize reliance on public water use.
- Preserve existing trees and other vegetation to reinforce the historic landscape and emphasize native species.
- Improve the visual quality of the Mall.

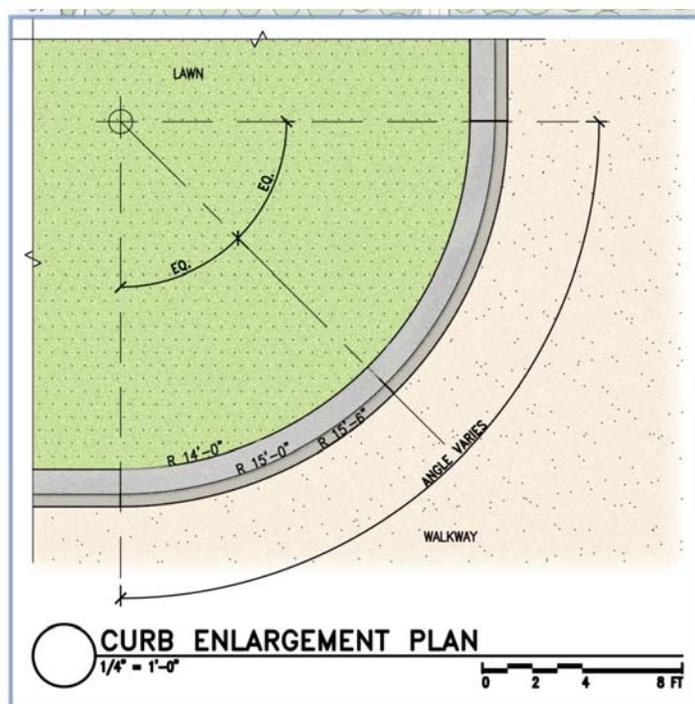
Most of the improvements associated with the current proposal are below grade and not visible to the public. The proposed visible feature would be a shallow, mountable curb and gutter 18 inches in width and ¼ inch in height around the perimeter of the three easternmost center lawn panels. The purpose of the curb is to provide structural support and containment for the engineered soil and to direct the run-off to the below-grade water management system.

The curb and gutter would be barely perceptible in height, and fully accessible to those using wheelchairs and strollers. The curb, comprising 12 inches in width of the total 18-inch width, will have an 8% slope with a ¼-inch vertical threshold. The gutter, comprising the outermost 6 inches of the 18-inch width, will have integrated grating-covered catch basins every 36 feet (and possibly farther apart) that will direct runoff into a stormwater drainage line under the lawn panels. The drainage lines will convey the collected runoff to below-grade storage cisterns.



NPS proposes White Mount Airy granite with a flame finish for the curb and gutter. A second choice is precast concrete. Staff strongly recommends the use of granite. Fifteen-foot curb radii are proposed for the corners of the lawn panels, which would return the curb radii to the dimension in use on the Mall from the 1930s--when Frederick Law Olmsted, Jr. implemented the McMillan Plan--until the 1970s, when Skidmore, Owens, and Merrill redesigned the roads and paths on the National Mall by, in part, filling the east-west street beds with gravel.

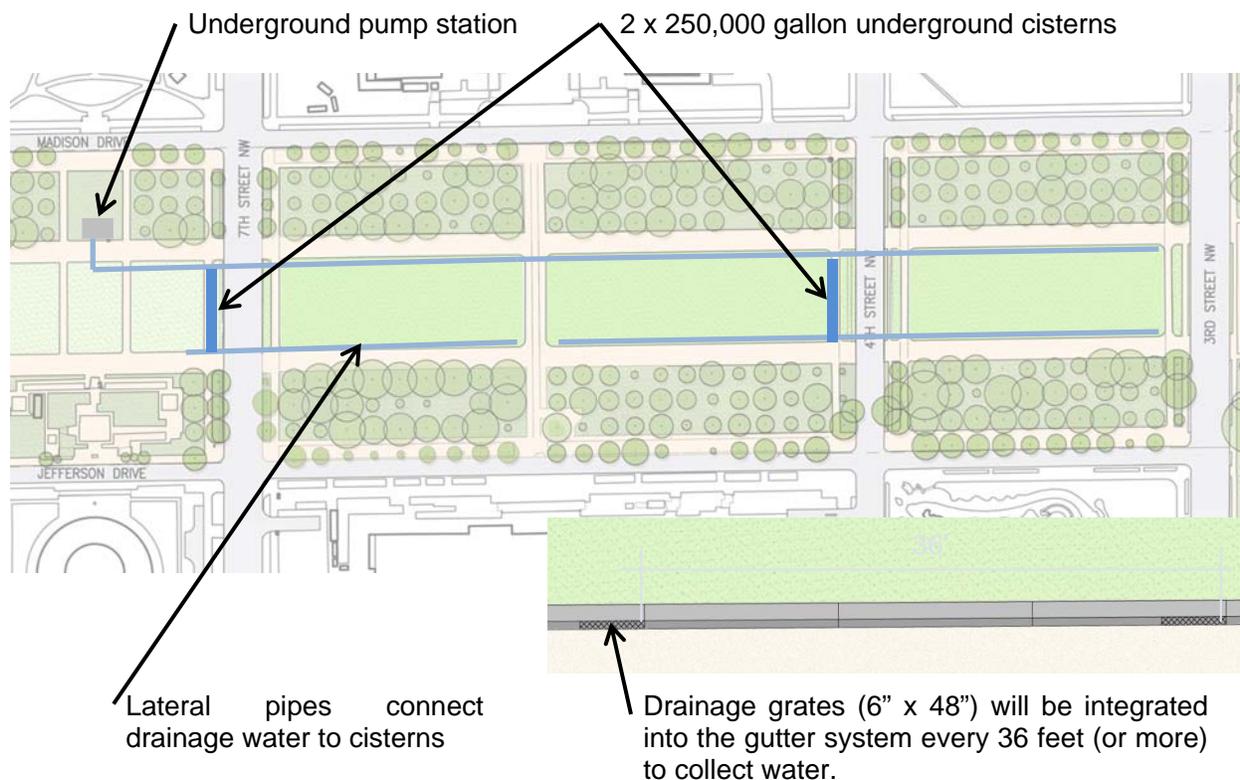
NPS recommends the 15-foot curb radii in part to restore the earlier appearance of the lawn panels, but also as a method of minimizing the compaction of the soil in the lawn panels and the deterioration and loss of turf at the corners, a typical and unsightly condition with the current gravel paths. In addition, gravel migrates to the lawn panels and soil migrates to the paths. Rainwater ponds at the edges of the gravel paths because it does not drain adequately.



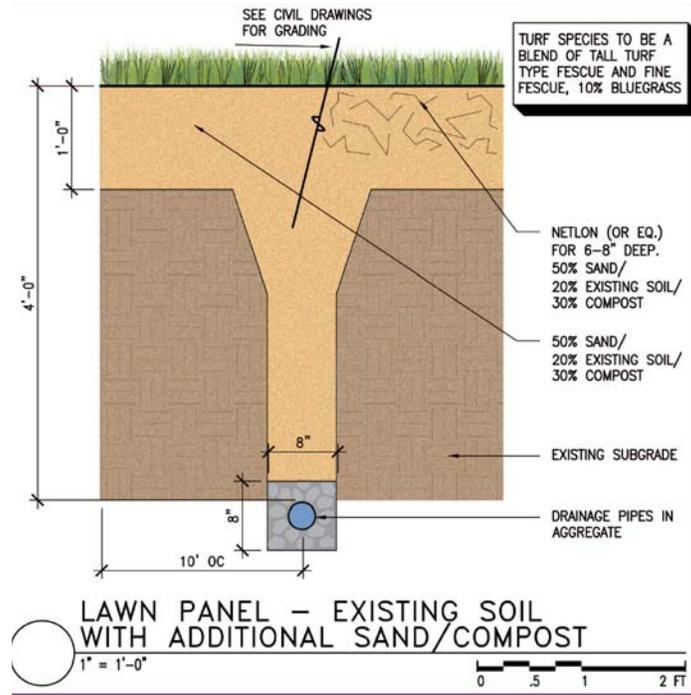
Rapid drainage of soil water is critical if the Mall is to continue to be scheduled for use for events, regardless of rain. The center panels will be re-graded with a slight crown in the center line to facilitate capture of stormwater runoff in the gutters and drains. The slight rise in the grade will also have the benefit of visually connecting the lawn panels as they are seen in long views. In addition, the gravel pedestrian paths will be re-graded slightly to drain toward the lawn panels and the gutters. Low points conducive to ponding will be eliminated, especially in the area west of 4th Street, NW.

Rainwater will be harvested through the new system of gutters. A reliable and durable drip irrigation system will be installed beneath the turf, deep enough to avoid puncture by tent stakes. Two 250,000-gallon cisterns to be installed below the north and south walkways west of 7th

Street, NW and west of 4th Street, NW, connected to the network of lateral pipes and a below-grade pump station. The irrigation pump station will be constructed below the treeless, open panel on the 8th Street cross-axis south of Madison Drive.



Accompanying the proposed water management system is the full reengineering of the soil under the turf. The top six inches of existing soil will be removed and stockpiled at the site. Up to an additional 12 inches of soil will be removed from the site. The subgrade will be fine-graded to contours parallel to the proposed finish grades and with a 2% cross slope on the lawn panels. An aggregate drainage layer will be laid. Coarse concrete sand will be added to the topsoil. The soil mix will then be added and compacted to the optimum density. The addition of Netlon (a soil mesh reinforcement product) or a similar product will be laid to a depth of six to eight inches below the finished grade to improve compaction resistance. The mesh is a benign, extruded plastic with a strong memory that is resilient to compaction. Finally, the turf (at present, proposed to be a blend of tall, turf-type fescue and fine fescue, mixed with 10% bluegrass) will be grown. The turf blend must accommodate short-term repairs and replacement after events, but also long-term health and viability.



NPS anticipates an appropriation for this phase of the work in Fiscal Year 2011, awarding a construction contract in March 2011, and completing construction work by June 2013.

Below are a current photograph of the edge of a center lawn panel showing an irregular turf edge and ponding of rain water (“before”) and a rendering of the panel with the curb and gutter (“after”).



PROJECT ANALYSIS

Staff comments favorably on the proposed concept design for the reconstruction of the turf and soil on the National Mall, including the construction of a curb and gutter around the center lawn panels. The scope of the current proposal is the three easternmost center lawn panels, between 3rd and 7th Streets, NW.

Staff supports the goals of the National Park Service, as stated in the draft National Mall Plan, of improving the health and appearance of the Mall turf and trees, improving the level of sustainable management of the Mall and its resources, improving the durability and recoverability of the turf for events and recreational activities, and providing accessibility throughout the Mall.

At the design concept stage, the project is still in design development and will require further analysis and consultation. The environmental assessment, when it is completed, will provide additional information and analysis, as will the Section 106 consultation.

An initial public scoping meeting for the project was held on March 9, 2010, and several consultation and technical meetings have been held with review agency staffs, consulting parties, and experts, including members of the project team. The team includes HOK, Jim Urban, and Patricia O'Donnell, experts in the design and maintenance of turf fields, tree protection, and historic landscape preservation.

The subject of most discussion, and the visible alteration in this project, is the installation of a low curb and gutter around the perimeter of the center lawn panels. Staff recommends that granite be used. The vertical height of the "curb" will be imperceptible to the eye, but the 18-inch width of the curb and gutter will be a change from the current condition. The SOM scheme, as planned, had 90-degree corners where the lawn panels met the gravel paths. The corners soon deteriorated, however, due to visitors and vehicles crossing them, and it has become difficult if not impossible for NPS to re-sod and maintain the corners. The gravel has migrated into the grass panels not only at the corners but along the edges, so that it is difficult to discern the true edges of the panels.

NPS has proposed, therefore, to return to the radii of the previous era of the Mall, where street curbs implemented to the designs of Frederick Law Olmsted, Jr. in the 1930s were dimensioned with a 15-foot radius curve. NPS hopes that the curbs will provide a visual clue to visitors to stay on the gravel paths when reaching a path intersection, rather than cutting across the panel corners. On the other hand, the curb and gutter are shallow and easily mountable by wheelchair and stroller users who wish to use the center lawn panels. More important, the curb and gutter will mark where vehicles should not drive more emphatically than the current irregular edges can do.

The 15-foot radius dimension is one of several aspects of the design that will require further consultation as the design is developed. The dimension is consistent with the curbs in use on the Mall from the 1930s to the 1970s. Staff would like to ensure through further discussion with NPS and study on site that the radius remains appropriate for the lawn panels now that the streets have been converted to pedestrian paths.

While construction of the curb and gutter represents an alteration to the current 1970s scheme of gravel paths and grass panels, and therefore a diminution of integrity of the SOM design to some degree, Commission staff has determined that the poor and unhealthy appearance of the grass panels and the damage to the turf and to the elm trees from soil compaction and the erosion of the corners very strongly diminish the integrity of the SOM design and intention for the National Mall.

NPS proposes using current turf science and technology to improve the Mall lawn panels beyond what was envisioned or implemented in the 1970s. The need for improved sustainability of the Mall and protection of the health and appearance of its natural and cultural resources demands new thinking about how to preserve the features and character of the National Mall, including the lawn panels and elm trees.

The irrigation proposal alone—part of the overall project—will minimize the need for the Mall to be watered with District of Columbia potable water, will improve the appearance of the turf, will reduce ponding of water, and will improve the environment for the elm trees.

The installation of a system for rainwater harvesting, water run-off collection, water storage in cisterns, and drip irrigation are forward-looking best practices for managing turf durability and sustainability so that the National Mall can serve the functions and have the healthy appearance expected by the American people.

CONFORMANCE

Comprehensive Plan for the National Capital

By providing improved stewardship of the cultural and natural resources on the National Mall as our nation's symbolic gathering place, by improving the physical conditions for permitted and informal activities on the National Mall, and by improving the sustainability of resources and management practices, the proposal is consistent with the Parks and Open Space and Environment Elements of the Comprehensive Plan for the National Capital. The policies of the Preservation and Historic Features Element guide strengthening the significant architectural and planning character of the National Mall. The implementation of best management practices for the protection of the turf lawn and trees and a balanced and thoughtful approach to the introduction of a curb from an earlier historic era will help NPS achieve its stewardship responsibilities for this preeminent historic landscape.

Relevant Federal Facility Master Plan

The project is consistent with the goals and objectives in the National Mall Plan, reviewed in draft by the Commission at the March 4, 2010 meeting. The draft Plan describes future opportunities for improving the health, appearance, and sustainability of the Mall soil, turf, and trees. The current project is a first step in the implementation of Plan goals.

National Environmental Protection Act (NEPA)

NPS held a scoping meeting on March 9, 2010 and is currently developing an environmental assessment for the project. The goals for the project are covered more broadly in the draft Environmental Impact Statement for the National Mall Plan.

National Historic Preservation Act (NHPA)

NPS began consulting this spring with consulting parties, including staff, the District of Columbia State Historic Preservation Officer (DCSHPO), the Commission of Fine Arts, the Smithsonian Institution, the Coalition to Save Our Mall, and interested individuals.

The DC SHPO has made a preliminary determination of *No Adverse Effect* to the qualities that qualify the National Mall for listing in the National Register of Historic Places.

The SOM landscape plan falls just within the end date of the period of significance for the National Mall—1975. Staff, the DC SHPO, and others have consulted with NPS on the effect of the proposal on the integrity of the SOM design and will continue to do so as the project is developed. While construction of the curb and gutter represents an alteration to the current scheme of gravel paths and grass panels, and therefore a diminution of integrity to some degree, Commission staff notes that the poor and unhealthy appearance of the grass panels and the damage to the turf and to the elm trees from soil compaction and the erosion of the corners very strongly diminishes the integrity of the SOM design and intention for the National Mall.

The installation of a system for rainwater harvesting, water run-off collection, water storage in cisterns, and drip irrigation are forward-looking best practices for managing turf durability and sustainability so that the National Mall can be the national gathering place the American people expect it to be.

Section 106 consultation is ongoing. There are several matters that require further consultation as the design is developed, including the degree to which the proposal alters the SOM landscape plan, the dimension of the radii at the lawn panel corners, the relationship of this project to overall conservation and sustainability measures and designs at the eastern end of the National Mall, and the potential for future plans for the improved health of the elm trees.

CONSULTATION

Coordinating Committee

The Coordinating Committee reviewed the proposal at its May 12, 2010 meeting, and forwarded the proposal to the Commission with the statement that the project was coordinated by all agencies represented. The participating agencies were: NCPC; the National Park Service; the General Services Administration; the District of Columbia Office of Planning; the District Department of Transportation; the District Fire and Emergency Medical Services; and the Washington Metropolitan Area Transit Authority.

Commission of Fine Arts

The Commission of Fine Arts reviewed the project at its May 20, 2010 meeting, approving the concept design and strongly supporting the proposal.