

# NATIONAL MALL UNDERGROUND

*"Making the Mall Resilient for America's 3rd Century"*

## Preliminary Financing Plan

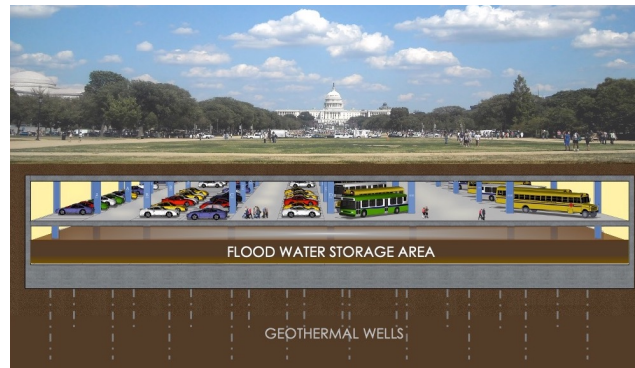
### Executive Summary

August 2020

#### **Introduction**

In 2014 the National Mall Coalition (Coalition) convened a group of volunteers with expertise in architecture, engineering, construction, law, finance, real estate development, and community development to prepare a conceptual study of a project to make the National Mall in Washington, D.C. more environmentally sustainable, visitor friendly, and resilient. This project is known as the National Mall Underground.

The Underground is a two-story, multi-purpose flood reservoir facility to be located beneath the grass panels between the Smithsonian Castle and the Natural History Museum. It will be able to take in 30 million gallons of stormwater, more than the volume of the 200-year flood that in 2006 inundated Mall museums and public buildings. Key additional elements of the project include: a Mall Welcome Center; tour bus and car parking for Mall visitors; geothermal wells to provide renewable energy for Smithsonian museums and federal buildings; and rainwater cisterns for irrigating Mall grass, trees, and gardens.



#### **The Preliminary Financing Plan**

In the summer of 2019, the Coalition asked Ram Island Strategies, Partners for Economic Solutions, and Bostonia Partners to form a “Financing Task Force” (Task Force) to develop a Preliminary Financing Plan for the Project. The Financing Task Force was specifically asked to design a plan that relies to the maximum extent possible on private sources of capital and minimizes the need for federal appropriations.

The National Mall Underground as currently envisioned has an estimated construction cost of \$300+ million. The Financing Task Force’s recommended financing plan has the following key attributes:

- 100% private financing after a small initial federal investment.
- Creation of a private not-for-profit entity as project sponsor, to control and manage the project in public-private partnerships through development, construction, operation and maintenance.
- Use of three primary revenue streams to secure the project debt financing(s) for a high credit quality, low-cost funding solution: 1) visitor center lease and parking revenues; 2) energy savings revenues; and 3) stormwater mitigation payments by federal agencies and DC Government.

The Financing Task Force finds that:

For stakeholders that have been investigating alternative solutions to the costly damage inflicted on their assets from chronic and recurring flooding, the National Mall Underground can achieve a stormwater mitigation solution at significant cost savings. Of equal value to these stakeholders is that the financing plan uses existing federal contracting authorization programs to pay for stormwater mitigation over time, avoiding the need for upfront appropriated dollars.

## **Next Steps**

The financing plan is based upon a project scope and other business and legal assumptions that need to be refined with the input of the key stakeholders in the project, including Congress, the General Services Administration, the National Park Service, the Smithsonian Institution, the Army Corps of Engineers, and the District of Columbia, among others.

The Coalition's objective is to demonstrate to key stakeholders the financial feasibility of the Underground based in large part on its revenue-generating potential. The Underground also reduces the need for future expenditures by the Smithsonian, General Services Administration, National Park Service, and others by consolidating their longstanding needs – flood control, tour bus parking, Mall visitors center, and more – in one underground facility. The long-term goal of the National Mall Underground is to ensure the resiliency of the National Mall, and to preserve the history and heritage it celebrates, into our country's third century.

For the full Preliminary Financing Plan, *contact Judy Scott Feldman, PhD, Chair, National Mall Coalition, [jfeldman@nationalmallcoalition.org](mailto:jfeldman@nationalmallcoalition.org) / 301-335-8490.*

## *Appendix I – Historical Background (3 pages)*

### **The Flooding Problem**

The National Mall in Washington DC, and the museums, monuments, and government buildings within and around it, have been subjected to destructive flooding repeatedly since the 19<sup>th</sup> century. While recent Potomac Park levee upgrades may help address Potomac River flooding, there is as yet no solution to equally destructive stormwater flooding, which occurs when heavy rains overwhelm storm drains. That is what happened in June 2006 when, after three days of heavy rain, floodwaters inundated the National Archives, Smithsonian museums, and federal buildings along Constitution Avenue, causing millions of dollars in damage.<sup>1</sup> The latest flood (a relatively minor one) in 2019 inundated parts of the White House, the National Archives building, and buildings around the Federal Triangle.



June 2006 flood

### **Recent Government Actions to Address Mall- Stormwater Flooding**

The dangers posed by stormwater flooding have long been recognized by the Federal and DC governments, but solutions have been elusive.<sup>2</sup> After the 2006 flood, which did serious damage to buildings and infrastructure around the Federal Triangle, a Stormwater Drainage Study Working Group comprising 14 Federal, DC, and regional agencies commissioned a study that analyzed the dangers of interior flooding and examined multiple remedial alternatives. The report, completed in 2011, put forward four viable solutions.<sup>3</sup> All were very costly, and each required a level of interagency cooperation that could not be easily attained.

In 2018, approximately the same group of stakeholders, now called the “DC Silver Jackets Team,”<sup>4</sup> held two workshops to discuss flood control options. They then held four meetings with key stakeholders, including local universities. Participants in the sessions learned that instead of the four viable solutions laid out in the 2011 Stormwater Drainage study, there were now only two – floodwater storage under the National Mall and a major new pumping station – due to changing circumstances (new construction

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<sup>1</sup> See [https://www.ncpc.gov/docs/Federal\\_Triangle\\_Stormwater\\_Drainage\\_Study\\_Jul2011.pdf](https://www.ncpc.gov/docs/Federal_Triangle_Stormwater_Drainage_Study_Jul2011.pdf)

<sup>2</sup> It is important to understand that DC has three different types of flooding. First, riverine flooding happens during and after heavy rains as the Potomac and Anacostia Rivers overflow their banks, as happened in 1889, 1936, as is common at Washington Harbour in Georgetown. The Potomac Park levee is intended to address riverine flooding. Second, coastal flooding or tidal flooding happens when tides and storm surges push the Potomac northward; the submerged walkways around the Jefferson Memorial result from Tidal Flooding. Third, interior flooding has nothing to do with the rivers. It happens when heavy rains overwhelm the storm drains, inundating streets and buildings, as happened in 2006. Despite numerous attempts, DC and federal government entities have been unable to come to agreement on a solution. See National Capital Planning Commission (NCPC): “Interior Flooding in the District of Columbia” (Urban Stormwater Workgroup Meeting, February 20, 2018): [https://www.chesapeakebay.net/channel\\_files/25880/interior\\_flooding\\_for\\_epa\\_20180215.pdf](https://www.chesapeakebay.net/channel_files/25880/interior_flooding_for_epa_20180215.pdf)

<sup>3</sup> See [https://www.ncpc.gov/docs/Federal\\_Triangle\\_Stormwater\\_Drainage\\_Study\\_Jul2011.pdf](https://www.ncpc.gov/docs/Federal_Triangle_Stormwater_Drainage_Study_Jul2011.pdf)

<sup>4</sup> See <https://silverjackets.nfrmp.us/Home/About-The-Silver-Jackets-Program>

covered over potential sites). The final 2019 report describes the group’s activities and pledge to continue cooperation, but does not present a clear way forward.<sup>5</sup>

Meanwhile, the Army Corps of Engineers continues to design and build higher and higher levees to control riverine flooding, but warns that these do not address interior flooding at all.<sup>6</sup>

As of midyear 2020, the multiple DC and federal Mall stakeholders have been unable to agree on a solution to stormwater flooding or to identify ways to fund comprehensive flood protection.<sup>7</sup> The flood threat remains urgent and unresolved. Congressional action is needed.

### Designing a Multi-Purpose Flood Reservoir Facility

Since 2013 the National Mall Coalition has developed the National Mall Underground flood reservoir to address the flooding problem and other needs, and has briefed and sought comments on the concept from leadership and staff in Congress and in relevant federal and DC agencies.

During those briefings, and in direct response to insights gained, the Coalition included in the project multi-purpose features and functions to meet other stakeholders’ needs, including tour bus and car parking and renewable geothermal energy. Key elements of the project’s conceptual plan include:

- A stormwater reservoir capable of collecting 30 million gallons of flood water (more than the predicted volume of a 200-year storm) to protect Mall and Federal Triangle buildings from flooding.
- Two levels of tour bus and car parking to relieve surface congestion on the Mall, improve visitors’ Mall experience, and reduce significant air pollution. (A 2015 study concluded the National Mall Underground “would be the most dramatic improvement in bus parking capacity if constructed.”)<sup>8</sup>
- A welcome center to provide visitors to the Mall with an orientation to its history and future as well as the neighboring museums and monuments; public amenities; and security and first aid facilities.



National Mall Underground

<sup>5</sup> See [https://silverjackets.nfmp.us/portals/0/doc/dc/FINAL\\_Fed\\_Triangle\\_Flood\\_Workshop\\_Rpt\\_and\\_Appendices\\_Oct2019.pdf](https://silverjackets.nfmp.us/portals/0/doc/dc/FINAL_Fed_Triangle_Flood_Workshop_Rpt_and_Appendices_Oct2019.pdf)

<sup>6</sup> See, for instance,

[https://www.nab.usace.army.mil/Portals/63/docs/Civil%20Works/Levees/DC\\_LFP\\_draft\\_FONSI\\_EA\\_April2020-reduced.pdf](https://www.nab.usace.army.mil/Portals/63/docs/Civil%20Works/Levees/DC_LFP_draft_FONSI_EA_April2020-reduced.pdf)

<sup>7</sup> See [https://silverjackets.nfmp.us/portals/0/doc/dc/Interior\\_Flooding\\_Report\\_20170825.pdf](https://silverjackets.nfmp.us/portals/0/doc/dc/Interior_Flooding_Report_20170825.pdf)

<sup>8</sup> Buses are among the major movers of visitors to and through the National Mall; the Mall is intended for use by all Americans, and tour groups are important sources of revenue for DC businesses. Lacking convenient parking, however, buses crowd the streets on and around the Mall, and contribute to air pollution. Despite numerous studies, no comprehensive solution has been found. See National Mall and Memorial Parks Tour Bus Study (NPS, 2015), A Review of Access and Circulation on the National Mall in Washington, D.C. (GMU, 2008), District of Columbia Motorcoach Action Plan (DoT, 2011), and Regional Bus Staging, Layover, and Parking Location Study (MWCOG, 2015). See p. 111 at <https://www.mwco.org/file.aspx?A=Z9yrfIE2M11TmRDEsiRnpSNQbqUHMmPucAVCCmp3NAY%3D>.

- Irrigation cisterns to collect rainwater and groundwater for sustainable irrigation.
- A geothermal field and related infrastructure to provide clean heating and cooling to nearby public buildings.<sup>9</sup>

In simple terms: Under ordinary circumstances, the National Mall Underground would provide secure and convenient parking for buses and cars, while gathering rainwater for irrigation and generating clean geothermal energy. When flooding became imminent, its lower parking deck would be evacuated and become a gigantic cistern to receive and control floodwaters until they could be pumped into the storm sewers.

### **The U.S. Army Corps of Engineers Review**

In 2018, at the request of the DC Council, the U.S. Army Corps of Engineers studied the feasibility of the project and found that flood risk “could be reduced significantly during a flood event by implementation of the Underground.” The Underground’s multi-purpose character also solves other longstanding problems and provides favorable financial opportunities:

“The Underground offers an innovative, multi-purpose potential alternative for stormwater retention and flood risk management on Constitution Avenue and in the Federal Triangle area. Concurrently, it could address the documented need for tour bus parking, as well as provide a tourism visitor center, geothermal energy, and irrigation for the National Mall turf grass and gardens. Additionally, revenue potential from parking fees and water credits may offer self-financing opportunities that attracts a public-private partnership.”<sup>10</sup>

This Preliminary Financing Plan, along with the Army Corps’ positive review, demonstrates that the National Mall Underground is a viable, mostly privately fundable, much-needed solution to creating a National Mall that is sustainable and resilient for the next 100 years.

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<sup>9</sup> This component was added to the Underground at the request of then-GSA Administrator Dan Tangherlini who said that government buildings would be required to have renewable sources of heating and cooling by 2030 or so. See <https://www.epa.gov/rhc/geothermal-heating-and-cooling-technologies>; the Mall Underground would deploy a large number of heat collection rods driven deeply into the ground below its lowest deck, and make the collected energy available to nearby buildings for use in heating and cooling.

<sup>10</sup> See [http://www.nationalmallcoalition.org/wp-content/uploads/2018/10/DC-Underground-Technical-Review-FINAL-SEPT-2018\\_LAST-TIME-100318.pdf](http://www.nationalmallcoalition.org/wp-content/uploads/2018/10/DC-Underground-Technical-Review-FINAL-SEPT-2018_LAST-TIME-100318.pdf)