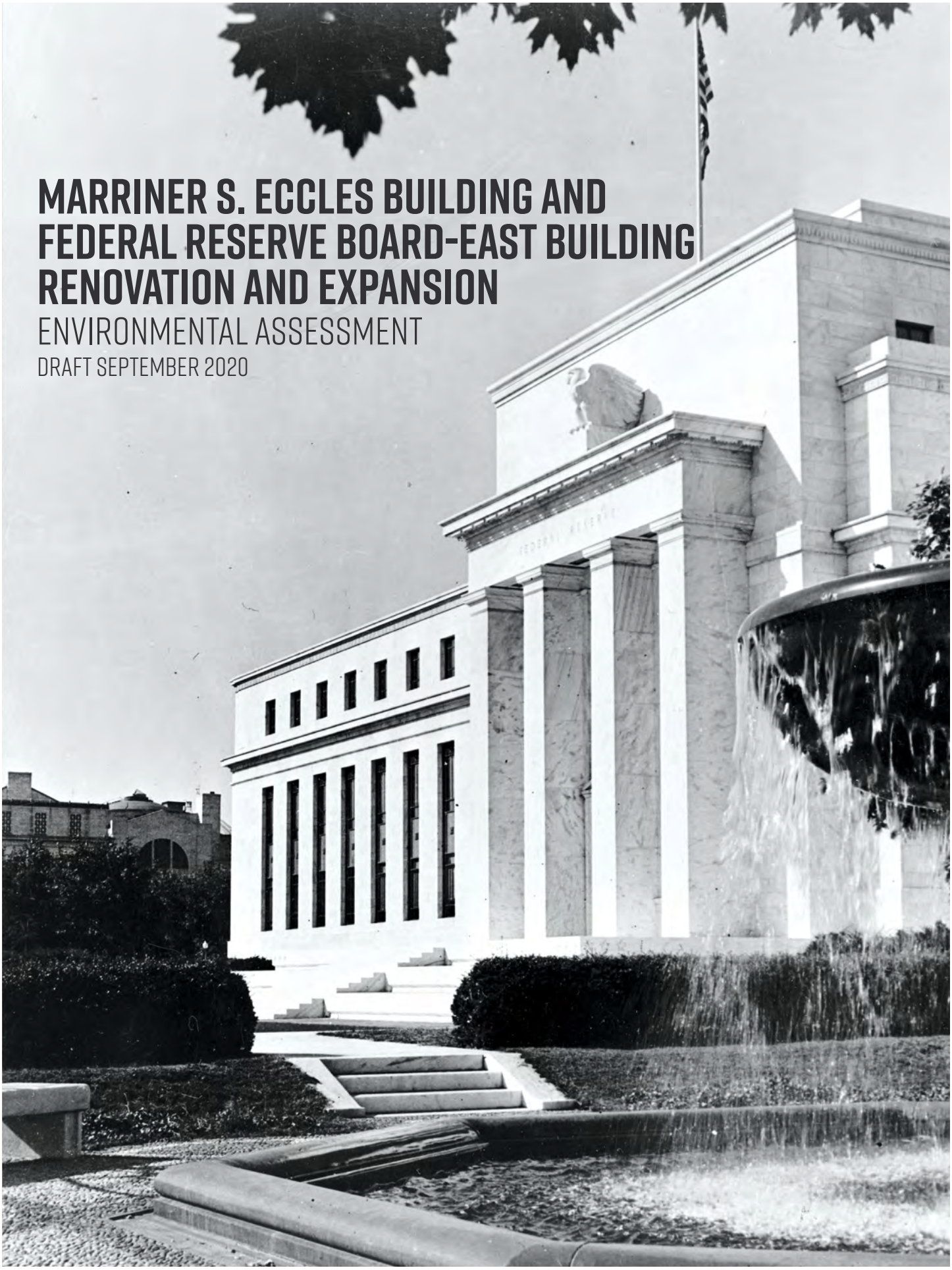
MARRINER S. ECCLES BUILDING AND FEDERAL RESERVE BOARD-EAST BUILDING RENOVATION AND EXPANSION

ENVIRONMENTAL ASSESSMENT

DRAFT SEPTEMBER 2020



EXECUTIVE SUMMARY

INTRODUCTION

The Board of Governors of the Federal Reserve System (Board or FRB), has prepared a Draft Environmental Assessment (EA) for the renovation and expansion of the Marriner S. Eccles Building (Eccles Building) at 2051 Constitution Avenue NW and the Federal Reserve Board-East Building (FRB-East Building) at 1951 Constitution Avenue NW. Concurrently, the Board is conducting Section 106 consultation in accordance with the National Historic Preservation Act (NHPA 800.8). The Board is acting as the lead responsible federal agency and the National Capital Planning Commission (NCPC) is a cooperating agency.

The proposed project includes the rehabilitation and expansion of the Eccles Building and FRB-East Building. This EA analyzes the potential environmental impacts that would result from the proposed action. The EA has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended (Title 42, US Code [USC], 4321-4347) and the Council on Environmental Quality's Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508). The proposed project is subject to the review of NCPC under the National Capital Planning Act (40 USC § 8722 (b)(1) and (d)); therefore, the EA has also been prepared in compliance with the National Capital Planning Commission's implementing regulations (69 FR 41299) and the National Capital Planning Act. Consultation under Section 106 of the NHPA is being conducted as a separate but parallel process.

PURPOSE AND NEED

The Board of Governors of the Federal Reserve System (Board) proposes to renovate and expand the Marriner S. Eccles Building at 2051 Constitution Avenue NW and to renovate and construct an addition on the Federal Reserve Board-East Building at 1951 Constitution Avenue NW.

The purpose of the proposed project is to renovate and expand the Eccles Building and the Federal Reserve-East Building to address a critical backlog of upgrades, to respond to changes in building codes and regulatory requirements, and to meet requirements for information technology, building security, environmental sustainability, and energy efficiency. The project will also address increased utility demands, a growing building population, and technology not anticipated at the time of the buildings' original design. The proposed programming changes and building additions are needed to increase spatial efficiency, reduce leased space and consolidate staff, and provide a secure environment for the buildings' occupants, while accommodating the growing needs of the Board and its visitors.

The proposed project will maintain the historic character of the existing buildings and their surroundings, reflecting qualities of stability, dignity, and security that are sensitive to the Board's civic responsibility as custodian of the central bank of the United States. It will include new state-of-the-art technology for the buildings' entire infrastructure, security, and technology systems. The project will also improve code compliance as well as enable the Board to

incorporate environmentally responsible design approaches that will help to reduce energy consumption and improve indoor environmental quality.

SUMMARY OF THE ALTERNATIVES

This EA analyzes the No-Action Alternative along with one Action Alternative. The No-Action Alternative provides a basis for comparing the environmental consequences of the other alternatives. Two additional alternatives were identified and evaluated, then dismissed from further consideration.

The Action Alternative, Alternative 2, would complete a comprehensive modernization and expansion of the Eccles Building and FRB-East Building that would consolidate groups located in leased spaces while also accommodating future organization growth.

At the Eccles Building, Alternative 2 would construct five-story infill additions on the east and west sides of the building that would connect the existing north and south wings. An addition on the roof of the north wing would connect the east and west infill additions to the existing fourth floor offices. The east and west exterior courtyards would be converted into atriums, with the east atrium becoming an entrance to the Eccles Building for staff and VIP's. The landscape between the south building façade and Constitution Avenue would be rehabilitated.

At the FRB-East Building, Alternative 2 would add a five-story above-grade addition to the north side of the existing FRB-East Building. The addition would physically connect to the east and west wings of the existing building and would include (3) three levels below grade, which would expand under 20th Street, and a mechanical penthouse. A skylight-covered atrium would be created between the existing building and the new addition. The construction of the addition would require the demolition of the center wing of the historic building. The landscape between the south building façade and Constitution Avenue would be rehabilitated.

Under Alternative 2, a new underground pedestrian tunnel below 20th Street would directly connect the Eccles Building to the FRB-East Building. Currently, the Eccles Building and the William McChesney Martin, Jr. Building (Martin Building), located directly north of the Eccles Building, are connected by a tunnel located under C Street.

Alternative 2 would also include a four-story, below-grade 250,654 GSF structure in an L-shaped configuration below 20th Street and the South Lawn in front of the existing FRB-East Building. The structure would provide three levels of parking and meet a parking a ratio of one space for every five employees (1:5). The current Governor's parking garage in the Eccles Building would become space for other programs.

Under Alternative 2, the existing site perimeter security of each property would be replaced with a combination of new anti-ram bollards, anti-ram knee and ha-ha walls, and other site elements.

COMMENTS ON THE EA

Government agencies and the public are encouraged to review and comment on the contents of this EA. The EA will be available for public review on the NCPC website: https://www.ncpc.gov/projects/8113/

Written comments must be submitted during the official 30-day comment period. The review period dates are posted on the NCPC website.

Questions or comments on the EA should be sent to:

Federal Reserve Board
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LIST OF ABBREVIATIONS

ABA	**Architectural Barriers Act**
ACHP	**Advisory Council on Historic Preservation**
APE	**Area of Potential Effects**
BMPs	**Best Management Practices**
Board	**Board of Governors of the Federal Reserve System**
CAA	**Clean Air Act**
CFA	**US Commission of Fine Arts**
CO	**Carbon Monoxide**
CSO	**Combined Sewer Overflow**
dB	**Decibels**
DC	**District of Columbia**
DCOP	**District of Columbia Office of Planning**
DC SHPO	**District of Columbia State Historic Preservation Office**
DDOE	**District of Columbia Office of Energy and the Environment**
DDOT	**District of Columbia Department of Transportation**
DOE	**Determination of Eligibility**
EA	**Environmental Assessment**
Eccles Building	**Federal Reserve Board Marriner S. Eccles Building**
EO	**Executive Order**
EPA	**Environmental Protection Agency**
FRB-East Building	**Federal Reserve Board East Building**
FIRM	**Flood Insurance Rate Map**
LEED	**Leadership in Energy and Environmental Design**
LOS	**Level of Service**
Martin Building	**Federal Reserve Board William McChesney Martin, Jr. Building**

NAAQS	**National Ambient Air Quality Standards**
NAS	**National Academy of Sciences**
NCPC	**National Capital Planning Commission**
NPS	**National Park Service**
NW	**Northwest**
SESC	**Soil Erosion and Sedimentation Control**
SF	**Square Feet**
TMP	**Transportation Management Plan**
WMATA	**Washington Metropolitan Area Transit Authority**

1 PURPOSE AND NEED

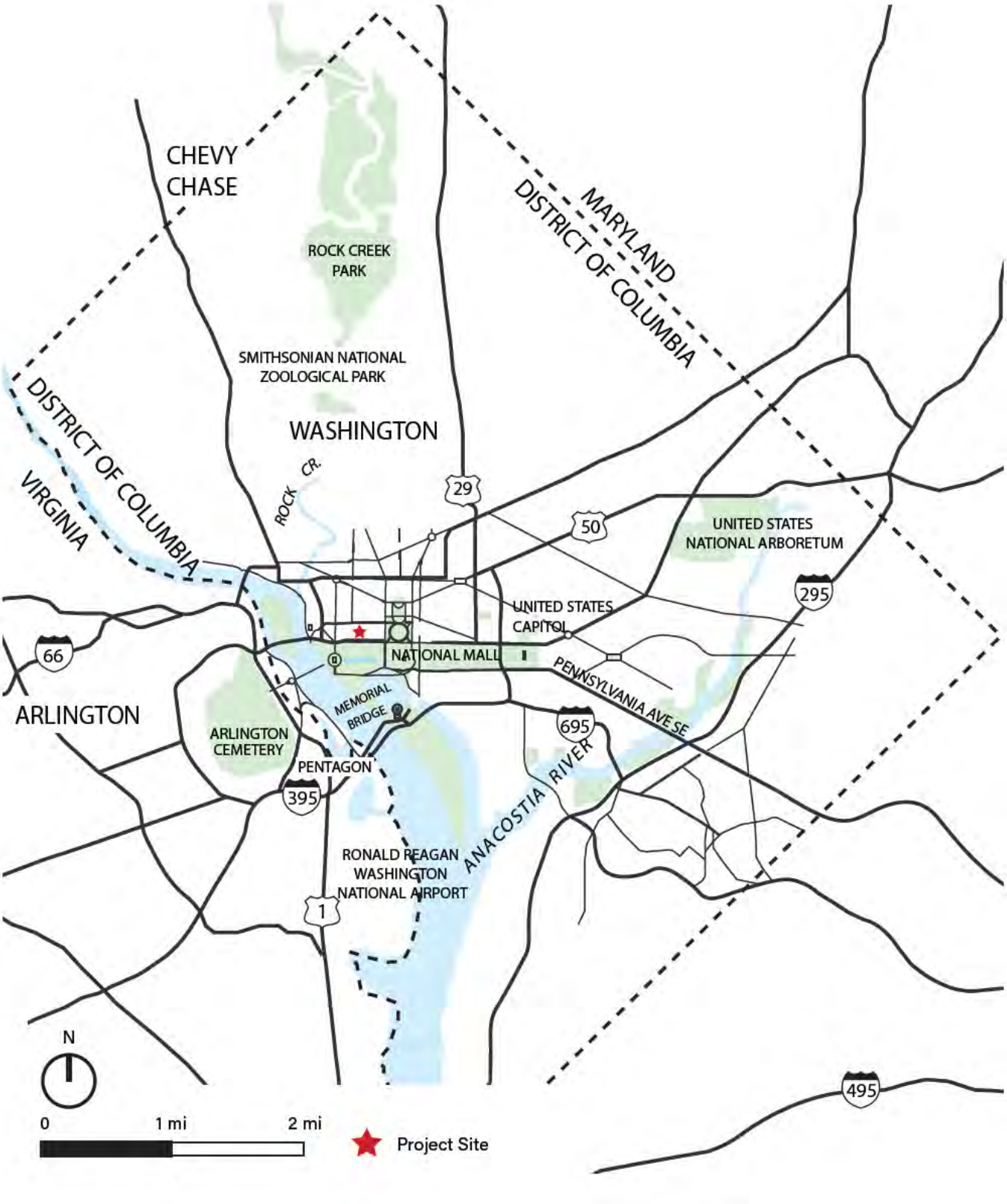


Figure 1.1: Project Site Location

1. PURPOSE AND NEED

1.1 INTRODUCTION

The Board of Governors of the Federal Reserve System (Board or FRB) proposes to renovate and expand the Marriner S. Eccles Building (Eccles Building) at 2051 Constitution Avenue NW and to renovate and construct an addition to the Federal Reserve Board-East Building (FRB-East Building) at 1951 Constitution Avenue NW. Serving as the lead federal agency and in cooperation with the National Capital Planning Commission, the Board has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality's Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); NCPC's Environmental and Historic Preservation Policies and Procedures (69 FR 41299). Concurrently, the Board is conducting consultation in accordance with Section 106 of the National Historic Preservation Act (NHPA).

1.2 BACKGROUND

The Board of Governors, located in Washington, DC, and headquartered in the Marriner S. Eccles Building, is the governing body of the Federal Reserve System. It is run by seven members, or Governors, who are nominated by the President of the United States and confirmed in their positions by the US Senate. The Board of Governors guides the operation of the Federal Reserve System to promote the goals and fulfill the responsibilities given to the Federal Reserve by the Federal Reserve Act.

The Eccles Building and the FRB-East Building were built in the 1930s within the Northwest Rectangle, an area of fifteen city blocks north of the National Mall developed specifically for the federal government and/or semi-private institutions following the acceptance of the 1901 McMillan Plan. The federal government constructed the FRB-East Building between 1931 and 1933 for the US Public Health Service. The Eccles Building followed in 1935-1937, built for the Board of Governors of the Federal Reserve System.

1.3 PURPOSE AND NEED FOR ACTION

The Eccles building was constructed between 1935 and 1937 as the headquarters of the Board. While there have been periodic modifications and renovations to the building over its 80-year history, many of the building systems are at the end of their useful life, and the building no longer fully serves the Board's needs.

The FRB-East Building was constructed between 1931 and 1933 for the US Public Health Service. The building has not undergone a comprehensive modernization in decades and does not effectively serve the Board's needs in its current condition and configuration.

The purpose of the proposed project is to renovate and expand the Eccles Building and the Federal Reserve-East Building to address a critical backlog of upgrades, to respond to changes in building codes and regulatory requirements, and to meet requirements for information technology, building security, environmental sustainability, and energy efficiency. The project will also address increased utility demands, a growing building

population, and technology not anticipated at the time of the buildings' original design. The proposed programming changes and building additions are needed to increase spatial efficiency, reduce leased space and consolidate staff, and provide a secure environment for the buildings' occupants, while accommodating the growing needs of the Board and its visitors.

The proposed project will maintain the historic character of the existing buildings and their surroundings, reflecting qualities of stability, dignity, and security that are sensitive to the Board's civic responsibility as custodian of the central bank of the United States. It will include new state-of-the-art technology for the buildings' entire infrastructure, security, and technology systems. The project will also improve code compliance as well as enable the Board to incorporate environmentally responsible design approaches that will help to reduce energy consumption and improve indoor environmental quality.

Ultimately, the proposed project will provide a superior work environment to help the Board attract and retain employees, enhance productivity, and foster improvements in operating practices. A contemporary, technology-rich, and collaborative work environment will support the employees' ability to work safely and effectively.

1.4 PROJECT GOALS

- Respect the character-defining features while modernizing the buildings
- Provide modern, efficient workspace with amenities that support health and wellness initiatives such as dining and fitness
- Make the buildings more energy efficient
- Increase the capacity of the Eccles Building
- Provide quality office space on the lower (concourse) levels of the Eccles Building
- Provide a multi-story addition to the FRB-East Building that contains above-grade and back of house services and increases the capacity
- Provide underground parking
- Provide a tunnel for utility and pedestrian use that connects the Eccles Building and the FRB-East Building and accommodates backup mechanical systems capable of supporting the Eccles Building.

1.5 DESIGN PRINCIPLES

A number of Design Principles have informed and shaped the development of alternatives for the Eccles and FRB-East Renovation and Expansion:

- Create a dialogue between old and new that is harmonious with the existing buildings' scale, details, and materials.
- Develop a design that is of enduring value and expressive of our own time.
- Demonstrate environmental and historic stewardship and promote workplace wellness through leading-edge strategies.
- Employ environmentally mindful design solutions to enhance the existing open space and more seamlessly integrate with the urban context within the public realm.

I.6 PRESERVATION GOALS AND TERMINOLOGY

I.6.1 PRESERVATION GOALS

This project proposes the most comprehensive renovation of the Eccles and FRB-East buildings since their original construction. The ambitious project goals and extensive scope of work require the careful consideration of potential effects to these historically significant properties. The proposed renovation and expansion aim to avoid or minimize the impacts to historic fabric across the project and sensitively manage change to significant spaces.

The overall treatment approach for the project, following the Secretary of Interior's Standards for the Treatment of Historic Properties, is rehabilitation. "Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."1

The preservation goals of the project are:

- Comply with the S*ecretary of the Interior's Standards for the Treatment of Historic Properties* for the overall project to the extent possible.
- Preserve and maintain high-character spaces, features and materials to the greatest extent possible.
- Restore the Eccles Building skylight.
- Accommodate more change in the FRB-East Building to permit higher levels of preservation ("light touch") in the Eccles Building .
- Manage change to significant spaces sensitively.

1 Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (Washington, DC: 1995, revised 2017), 27-30.

I.6.2 PRESERVATION TERMINOLOGY

Historic Preservation Zones are a planning tool used to provide general guidance regarding the level of importance and sensitivity of an area or space within the existing buildings and sites. These Historic Preservation Zones were established to guide the proposed project.

ZONE 1

Areas or features of the highest architectural and/or historical significance, many of which are the primary public and private spaces of the original designs of the buildings. These spaces retain most of the materials and features from the original construction with limited modifications to accommodate new systems or technology. Interventions required in Zone 1 spaces should result in little or no visible impact through the careful coordination of new work with existing architectural features and finishes. When existing historic features are damaged, restoration and repair of the historic material should be pursued as opposed to replacement.

ZONE 2

Areas or features of secondary architectural and/or historical significance, or areas that have been significantly altered and have lost some of the character-defining features and materials from the original construction. While these areas include fewer distinctive features or materials than Zone 1, interventions should avoid or minimize further removals or modifications to these features.

ZONE 3

Areas of minimal or no architectural or historical significance, or areas in which character-defining features have been completely removed in previous renovation projects. Many of these areas are not used by the public and are primarily back-of-house spaces including mechanical rooms and storage rooms. This category also includes spaces that have been created over the life of the building to meet functional needs, such as the Visitor Screening Facility, that are not sympathetic to or of a comparable design quality as the original design. Significant changes required to upgrade the building for contemporary use should primarily occur in this zone.

1.7 SUSTAINABILITY

The Federal Reserve Board is committed to sustainable design practices, conservation of resources, and creating healthy workplace environment. Early in the design, five guiding sustainability principles were established. These include:

- Energy/Carbon: Optimize energy performance through passive and active design strategies that minimize the load, maximize opportunities for renewables, and prepare the building for the future clean energy market of DC. Plan for whole building life cycle carbon reductions.
- Water: Decrease building demand for potable water and decrease the generation of wastewater.
- Access to Nature: Provide access to a natural environment reflective of the regional native systems.
- Workplace Experience: Create an environment that will enhance employee wellness and experience, resulting in greater productivity and retention.
- Resilience: Be prepared to address the current and future risks associated with climate change.

These commitments and guiding principles are reinforced by third party sustainable certifications. The proposed project is pursuing the Leadership in Energy and Environmental Design (LEED) v4 for New Construction and Major Renovations Gold certification through the US Green Building Institute. It is also pursuing Parksmart certification, also through the US Green Building Institute, for the parking garage areas. Additionally, to enhance and exemplify the health and wellness goals the project is pursuing WELL v2 certification through the International WELL Building Institute.

The project will provide leadership in sustainability and greenhouse gas emissions reductions and align with the goals and principles established in Executive Order 13693 (EO 13693), Planning for Federal Sustainability in the Next Decade. Improvements to federal operations and reduction of agency greenhouse gas emissions support preparations for the impact of climate change and establish more resilient federal facilities. On-site renewable energy production is being evaluated as it contributes to the Executive Order goals, LEED credits, reduces the building's energy needs, and improves the building's resiliency. High performing energy, water, and waste targets and resiliency planning measures contribute to supporting the goals of Executive Order 13693.

The Clean Energy DC (CEDC) Omnibus Amendment Act of 2018 establishes a new Building Energy Performance Standard ("BEPS") for existing privately-owned and District government buildings, the first of its

kind in the country. Beginning in 2021, the DC DOEE will conduct building energy performance assessments on all applicable buildings every five years. This standard will be no less than the median ENERGY STAR score for that type of building. In 2021, this will apply to all DC owned buildings of at least 10,000 square feet and private buildings of at least 50,000 square feet. Although it is not mandated for federal buildings, the project would substantially exceed the ENERGY STAR thresholds. Additionally, the bill mandates DC's Renewable Portfolio Standard on electricity to be from 100% renewable sources by 2032, meaning all electric buildings in DC would be Net Zero Carbon in 2032 when DC power sources are 100% renewable. The design of the project systems and fuel sources are evaluated for efficiency, cost, and, greenhouse gas emission impact with the intent to provide reliable service and flexibility now and in the future.

The project is pursuing sustainability targets above and beyond regulatory or LEED requirements. Sustainability is seen as an integral part of the design and a value deliverable. Strategies and criteria will be investigated throughout design to pursue all opportunities to demonstrate leadership and value that aligns with the Board's mission and project goals.

1.8 PROJECT AREA

The project area is located in the Foggy Bottom neighborhood in Northwest Washington, DC. Both buildings face south on Constitution Avenue NW across from the National Mall. The Eccles Building occupies the entire block bounded by 20th Street NW on the east, 21st Street NW on the west, and C Street NW on the north. Directly to the east, the FRB-East Building sits on an entire block bounded by 19th Street NW to the east, 20th Street NW to the west, and Reservation 108 to the north. Completed in the 1930s, both buildings stand prominently within a grouping of monumental buildings along Constitution Avenue NW that frame the Lincoln Memorial to the southwest. Located directly to the north of the Eccles Building and northwest of the FRB-East Building is the William McChesney Martin, Jr., Federal Reserve Building (Martin Building), which was completed and dedicated in 1974. The Martin Building is currently being renovated and will become the primary entrance point and security screening area for employees of the Martin, Eccles, and FRB-East buildings.

1.9 PUBLIC INVOLVEMENT

The Board held a public scoping meeting on September 17, 2019, at NCPC. The meeting was announced on the NCPC website and announcements were emailed to a list of potentially interested parties. The following review agencies and interested parties were directly invited to the meeting: CFA, DC SHPO, NPS, National Trust for Historic Preservation, General Services Administration, ANC 2C, ANC 6D, Committee of 100 on the Federal City, DC Preservation League, National Coalition to Save Our Mall, the National Academy of Sciences, the American Pharmacists Association, and the Department of State. Attendees included representatives of the Board, CFA, NCPC, and the DC SHPO. The Board held a second meeting open to the public and consulting parties at NCPC on October 16, 2019. Attendees included representatives from NCPC, CFA, DC SHPO, NPS, DC Preservation League, and the National Academy of Sciences. Additional public/consulting parties meetings were held on March 17, 2020, and June 24, 2020.

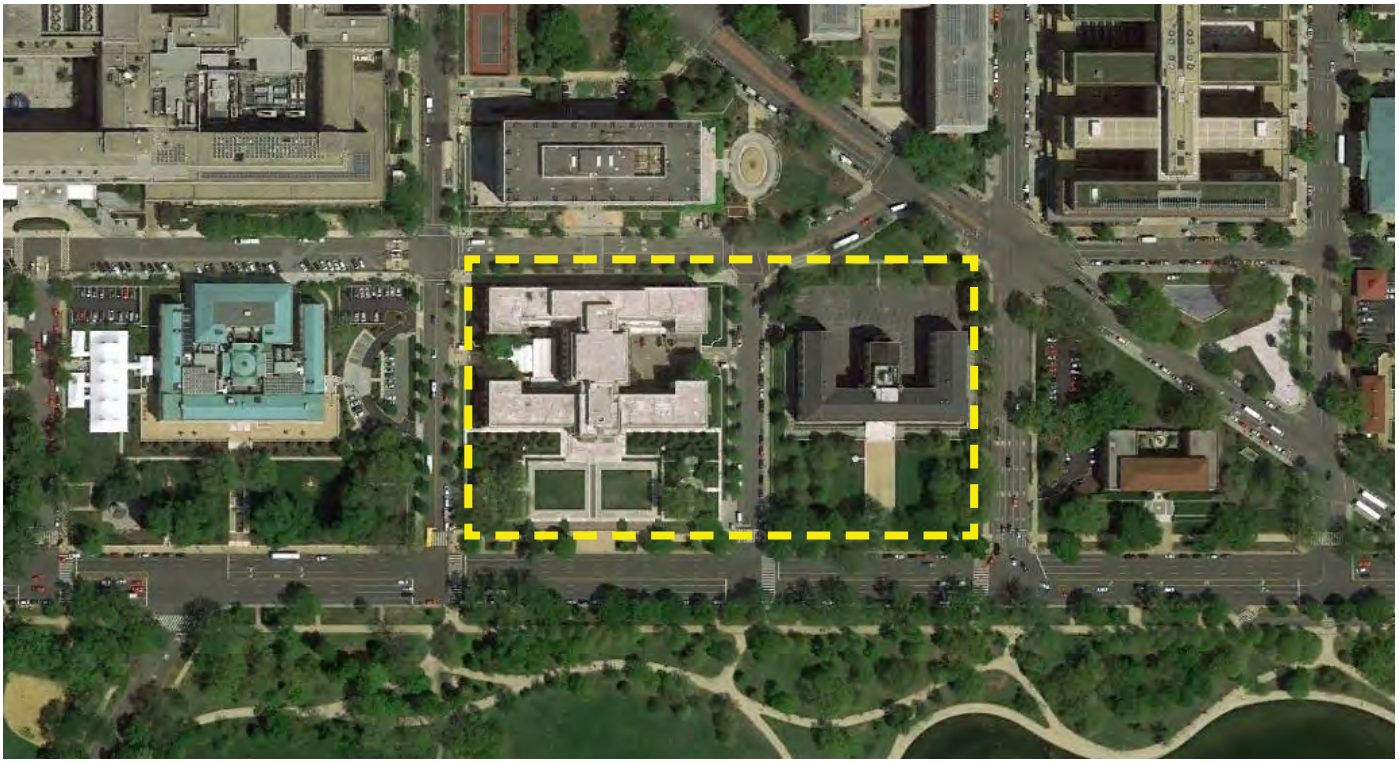


Figure 1.2: Project Location

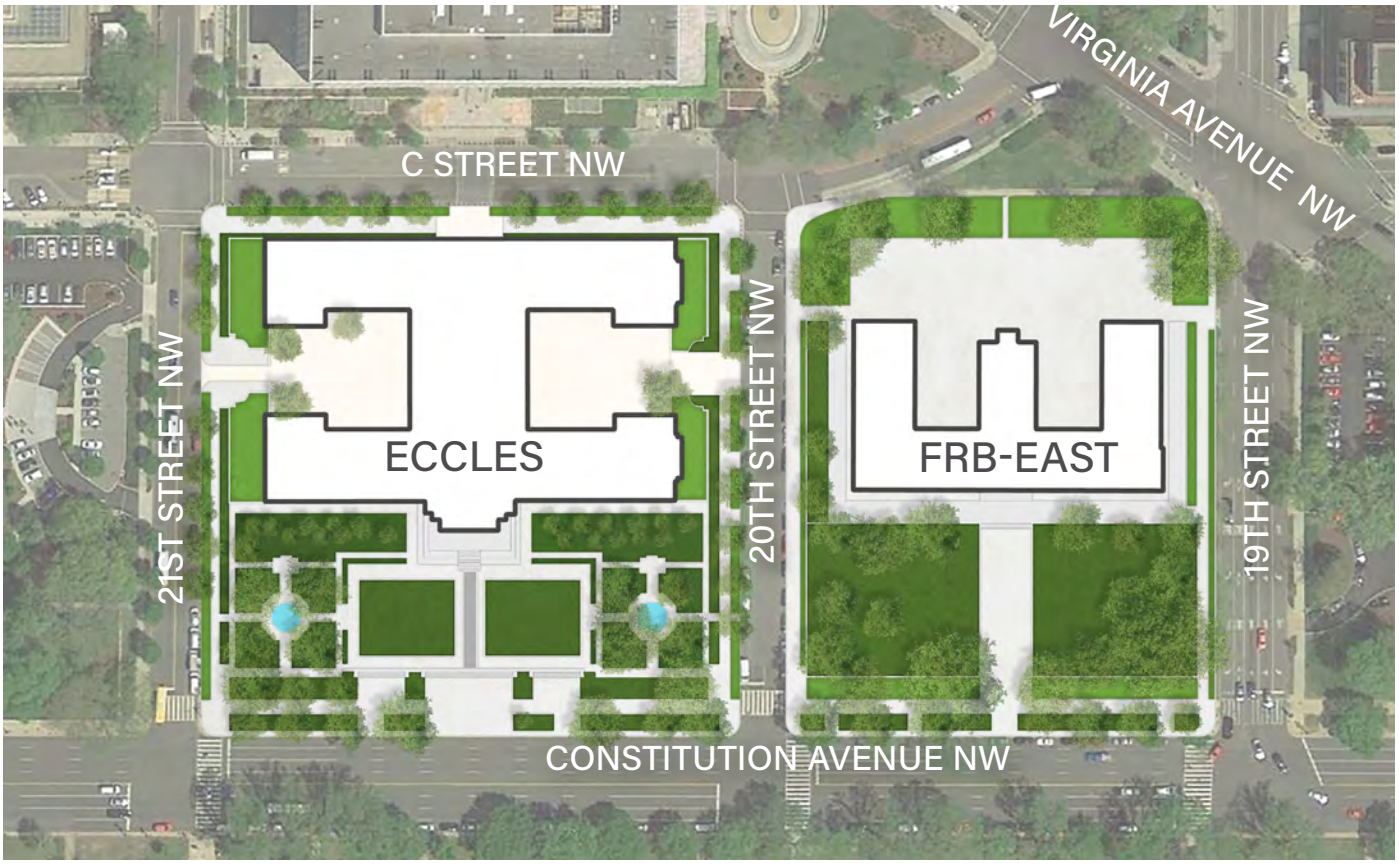


Figure 1.3: Project Area

In addition to holding public meetings, the Board consulted with federal and local agencies during the preparation of this EA:

- US Commission of Fine Arts (CFA)
- US Fish and Wildlife Service (FWS)
- District Department of Transportation (DDOT)
- District of Columbia State Historic Preservation Office (DC SHPO)

Additional information on the coordination and consultation with these agencies is included in Chapter 5 of this document.

1.10 DESCRIPTION OF THE ECCLES AND FRB-EAST BUILDINGS

1.10.1 ECCLES BUILDING

The Eccles Building, built in 1935-1937, was designed by French-born Philadelphia architect Paul Phillipe Cret as the headquarters of the Board. The building is located on three (3) tax lots owned by the federal government that form a contiguous property bounded by C Street NW to the north, 20th Street NW to the east, Constitution Avenue NW to the south, and 21st Street NW to the west. Together, the three (3) lots form a property with a cumulative recorded area of 181,071 square feet (4.16 acres). Approximately 66 percent of the property is impervious area comprising the building structure, driveways, site walkways and hardscape, and fountain plaza areas. The remaining site is permeable area consisting of turf, landscaping, and vegetation.

The northern half of the property consists of an H-shaped building with two interior courtyards. An elevated landscaped plaza is located on the southern half of the property. Site topography generally slopes down from the north to the south portion of the site, though the building's interior courtyards are lower than the adjacent street elevations. The topography surrounding the Eccles Building ranges between 29-feet above sea level at the northwest quadrant, down to 19-feet above sea level at the southeast quadrant.

Landscaping on the Eccles Building site is very well maintained with formal planting, walkways, and two fountains that serve as the centerpiece of the landscape design. The grounds have a high exposure to the public given the Constitution Avenue address and the significance of the building.

1.10.2 FRB-EAST BUILDING

The FRB-East Building was constructed from 1931 to 1933 to house the United States Public Health Service and was designed by Washington architect Jules Henri de Sibour. The FRB-East Building is located on a single tax lot that is bounded by an adjacent, National Park Service-owned property to the north, 19th Street NW to the east, Constitution Avenue NW to the south, and 20th Street NW to the west. This property has a recorded area of 138,512 square feet (3.18 acres). Approximately 65 percent of the property is impervious area comprising the building structure, parking lot, site walkways, and hardscape. The remaining site is permeable area consisting of turf, landscaping, and vegetation.

The northern half of the property consists of an E-shaped building with an asphalt surface parking lot adjacent to the north side. An elevated landscaped plaza is located on the southern half of the property. Site topography generally slopes down from the north to the south portion of the site, though the asphalt surface parking lot is lower

Figure 1.4: Eccles Building, 1937.

Figure 1.5: US Public Health Service Building (FRB-East Building), 1937.

in elevation than the adjacent street and green space elevations.

The landscape includes a set-back from Constitution Avenue, raised landscape and building terraces, a formal walkway and stairs axially aligned on the building entrance.

1.11 CUMULATIVE IMPACT TOPICS

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). As stated in the CEQ handbook, Considering Cumulative Effects under the National Environmental Policy Act (CEQ 1997), cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being affected and should focus on impacts that are truly meaningful. Cumulative impacts are considered for all alternatives, including the no-action alternative.

Several ongoing and planned projects in the area could generate cumulative impacts when considered together with the impacts of the proposed action. These actions were identified through the internal and external project scoping processes and are summarized in Table 1.1 below.

Table 1.1: Cumulative Projects

CUMULATIVE IMPACT PROJECT	DESCRIPTION OF PROJECT	STATUS
NPS Constitution Gardens Rehabilitation	NPS is planning to rehabilitate Constitution Gardens on the National Mall. The purpose of the project is to improve the functionality, ecology, accessibility, recreation, and visitor services of the park as well as improve the condition of natural and cultural resources. NCPC approved the Constitution Gardens Rehabilitation in October 2015. Phase 1 was completed in 2018 and included the relocation and restoration of the Lockkeeper's House and significant landscape improvements (stone plaza and garden) along the northeast corner of the site to establish a visual presence of the renewed Constitution Gardens along Constitution Avenue. Phase 2 includes improvements to the infrastructure, soils and topography, landscape, lake and lake ring, and pavilion.	Past, Future
NPS National Mall Plan	NPS is implementing the National Mall Plan / Environmental Impact Statement, which was approved by NCPC in December 2010 and was re-enforced by Secretarial Order 3326 (January 2013). The plan defines a 50 year future vision to respectfully rehabilitate the historic and symbolic National Mall so that very high levels of use can be perpetuated and the needs of visitors and users will be met in an attractive, universally accessible, convenient, high-quality, energy-efficient and sustainable manner. The plan protects and preserves memorials, improves resource conditions, and improves circulation, amenities and opportunities for pedestrians, bicyclists, tourists and other users. Projects such as Constitution Gardens, the Mall Turf, Circulator, and Capital BikeShare are examples of plan implementation.	Present
FDR D-Day Prayer Plaque	The placement of a plaque or inscription with the prayer that President Franklin D. Roosevelt gave on D-Day in the Circle of Remembrance of the World War II Memorial, in accordance with the Commemorative Works Act (40 U.S.C. 8905 et seq.) (CWA).	Future

CUMULATIVE IMPACT PROJECT	DESCRIPTION OF PROJECT	STATUS
Martin Building Rehabilitation	The renovation of the Martin Building includes a new 11,000+ SF Visitor Screening Center at the main C Street entrance of the building and a new 35,000+ SF Conference Center on the podium level of the existing building. The conference center includes new single-story east and west pavilions constructed within the footprint of the existing east and west plazas. The project also includes exterior changes to the Martin Building including perimeter security improvements and new landscape and site design.	Present
Lincoln Memorial Rehabilitation	The rehabilitation will renovate and create approximately 15,000 square feet of public space for new exhibits and ranger-led tours; allow for a larger museum store by relocating the store to the lower level and allow an area for the park police in the museum's current location; and upgrade the exhibit and restroom areas, allowing for a research and education center and expended restrooms. The rehabilitation will also open up the underground vault of the monument to the public for the first time.	Present
Purchase of the General Secretariat Building, Renovation of the Administration Building, and Construction of a New Class "A" Office Building at the Organization of American States Main Complex	The retrofit of the OAS Administration Building includes renovating/restacking the existing floors to increase occupancy; design and construction of a new class A office building adjacent to the Main Building at 17th Street and C Street; and the transfer of ownership of the OAS General Secretariat Building located at 1889 F Street NW.	Future
National Desert Storm and Desert Shield Memorial	The National Desert Storm and Desert Shield Memorial, a new national monument approved by Congress and President Trump (March 2017), will be built by 2021 on the National Mall (corner of 23rd Street NW and Constitution Avenue NW).	Future
Potomac River Tunnel Project	The project consists of a large-diameter deep sewer tunnel, diversion facilities, drop shafts and support structures to capture flows from existing combined sewer overflows (CSOs) along the Potomac River and convey them to the Blue Plains Advanced Wastewater Treatment Plant for treatment.	Future
23rd Street Levee Project	The US Army Corps of Engineers (USACE) and the National Park Service (NPS) propose to add up to four feet of earth to the berm north of the Reflecting Pool, construct new earthen berms at 23rd Street NW and Constitution Avenue NW and between the ramps of the Theodore Roosevelt Bridge, and remove 55 mature trees that threaten the levee's integrity.	Future

2 DESCRIPTION OF ALTERNATIVES

Figure 2.1: Marriner S. Eccles Building, looking north.

Figure 2.2: FRB-East Building, looking northeast.

2. DESCRIPTION OF ALTERNATIVES

2.1 INTRODUCTION

This Environmental Assessment (EA) evaluates alternative approaches to renovate and expand the Eccles and FRB-East buildings. The renovation and expansion is a complex project with numerous components to meet the purpose and need of the project, including building envelope, infill, additions, entrances, major building systems, and sitework. This chapter includes a description of the alternatives being assessed, including a no action alternative (Alternative 1) and one action alternative (Alternative 2, Five-Story Addition to FRB-East). Two additional alternatives were identified and evaluated, then dismissed from further consideration. These alternatives are described in Section 2.5 below.

2.2 DESCRIPTION OF THE PROPOSED ACTION

The Board of Governors of the Federal Reserve System is proposing to renovate and expand the Eccles Building and the FRB-East Building located at 2051 and 1951 Constitution Avenue NW, respectively. Specifically, the project would provide modern, efficient workspace with amenities that support health and wellness initiatives; make the buildings more energy efficient through the replacement of all building systems; increase the capacity of the Eccles Building through additions to the building; provide quality office space on the lower (concourse) levels of the Eccles Building; provide a multi-story addition to the FRB-East Building that would contain above-grade and back of house services and increase the capacity of the building; provide underground parking; and provide tunnels for utility and pedestrian use that would connect the Eccles Building with the FRB-East Building and accommodate backup mechanical and electrical systems capable of supporting the Eccles Building.

2.3 ALTERNATIVE 1: NO ACTION

The No Action Alternative describes continuation of present operations, conditions, and use. The Board would continue to use and maintain the Eccles Building in its current manner. The FRB-East Building would remain vacant and the Board would only continue to maintain the building and parcel in a caretaker status.

The No Action Alternative does not meet the Purpose and Need. However, CEQ guidelines (40 CFR 1502.14) stipulate that the No-Action Alternative should be analyzed to assess any environmental consequences that may occur if the proposed action is not implemented and to serve as a baseline for comparing impacts of the proposed action.

2.3.1 ECCLES BUILDING

Under the No Action Alternative, the Eccles Building would remain the headquarters of the Board and routine maintenance of the building would continue. Current conditions would remain the same and there would be no new programming or additional square footage beyond what exists today. The building systems and interior spaces would not be modernized and the Board would continue to lease office space for employees elsewhere. Perimeter and building security would not be upgraded.

2.3.2 FRB-EAST BUILDING

Under the No Action Alternative, the FRB-East Building would remain vacant and little routine maintenance of the building would occur. Current conditions would remain the same and there would be no new programming or additional square footage beyond what exists today. The building systems and interior spaces would not be modernized and the Board would continue to lease office space for employees elsewhere. Perimeter and building security would not be upgraded.

2.4 ALTERNATIVE 2: FRB-EAST FIVE-STORY ADDITION

2.4.1 OVERALL SITE

VEGETATION

The proposed planting design would include plants selected to thrive in the local/regional site conditions and to increase species diversity while retaining the character of the significant historic landscape. Native plants would be utilized whenever possible. The design includes a tree preservation strategy that would seek to protect as many healthy existing trees as possible. Tree protection strategies may include fences protecting tree root zones, temporary measures to prevent soil compaction and root damage where tree protection fencing is not practical, pruning, fertilization, air spading, or root pruning.

Missing historic trees along Constitution Avenue would be replaced.

All existing lawns would be stripped, fine graded and replaced with new sod. Underdrainage systems would be added to the south garden terraces as needed.

TERRACE VEGETATION

New tree plantings within the terraces would utilize large caliper trees, 8- to 10-inch.

Overgrown shrubs would be replaced with plants that better match the original design intent and are well adapted to the local environmental conditions.

RIGHT-OF-WAY / STREET TREE PLANTINGS

Street tree replacement in the right-of-way would follow DDOT requirements. Removal and replacement of bollards would require replacement of street trees with the exception of very large trees along Constitution Avenue. Street trees not along Constitution Avenue would be replaced with 5- to 6-inch caliper trees. Large elm trees along Constitution Avenue that are not in good condition would be removed and replaced with 10- to 12-inch caliper trees.

A minimum of 1500 cubic feet of soil for tree rooting would be provided. Structural soil or other systems may be utilized if required in selected areas. Trees in the right-of-way would be under drained, irrigated, and include aeration systems.

PLANTED AREAS INBOARD OF SIDEWALKS ON NORTH, EAST AND WEST

All large shrubs and trees would be removed and replaced due to site security (Eccles Building) and construction activities related to the garage and ramps (FRB-East Building). Trees would be replaced with 6- to 8-inch caliper trees. Shrubs would be replaced with large shrubs.

VEGETATED ROOF ON BUILDINGS

On select areas of the roof, a semi-intensive system would be provided to support a vegetated roof with an average of 7 inches of soil. Deeper

portions up to a maximum of 12 inches of soil would allow larger plant materials including shrubs. Roof plantings would maximize planting diversity of native and well-adapted species that are drought tolerant and can support urban wildlife and pollinators. The vegetated roof would be set back and not visible from the street.

PLANTING IN BIORETENTION AREAS

Bioretention areas would be located a minimum of 10 feet from the south side of the Eccles Building, east and west of the center stairs. Planting in bioretention areas would include native species that tolerate higher levels of saturation as well as dry conditions. More traditional shrubs would be planted at the perimeter of the bioretention areas to maintain consistency with the historic views from Constitution Avenue.

PARKING

Alternative 2 would include a four-story below-grade, 250,654 GSF structure in an L-shaped configuration below 20th Street and the south lawn in front of the existing FRB-East Building. The structure would provide three levels of parking and an employee parking supply of 318 spaces. Parking for the Martin, Eccles, and FRB-East buildings will meet the NCPC maximum parking ratio goal of one space for every five employees (0.2 spaces per employee), not including government owned vehicles.

The current Governor's parking garage in the Eccles Building would become program space. The new parking garage would contain a secure section dedicated to housing the Governor's parking and security vehicle fleet that would be displaced from the Eccles Building.

Access to the parking garage would be provided through single lane ramps that would be integrated into the existing historic building terraces of the FRB-East Building. The entry ramp would be accessed from 19th Street via a new curb cut provided immediately south of the proposed loading dock driveway. The exit ramp would ascend adjacent to the west terrace wall and allow cars to turn either left or right onto 20th Street. The removal in parking underneath the Eccles Building would result in the removal of curb cuts along 21st Street and 20th Street which previously served the parking uses.

Alternative 2 would remove the historic building terrace and areaways of the FRB-East Building to accommodate slurry walls that are needed for the below grade program and the parking garage. This construction, which includes the parking garage, entrance and exit garage ramps, egress pathway, and ventilation, would remove the existing terrace, marble steps and landing, and the granite steps on the east and west sides of the terrace. The terrace and areaways would be rebuilt in generally the same location. Where possible, the existing stone would be salvaged and stored during construction.

The east and west sides of the terrace would be shortened, to accommodate the vehicular ramps that would access the below grade parking area. The east building terrace would include a new stair that would provide access from 19th Street. The west building terrace would have a new stair from the building's west entrance plaza. Localized excavation of bedrock would be required to reach the proposed P4 level elevation of the parking garage.

Work on the existing FRB-East building terrace is anticipated to include the following: restoration of cast aluminum and marble terrace railings;

new steel center handrail at main entrance stairs; rebuilding of main entrance stairs and east secondary stairs; and replacement of the terrace floor with concrete bed and exposed aggregate finish to match the original.

The slurry wall and excavation at the western edge of the parking garage would approach the eastern edge of the Eccles Building. These actions would require the removal and replacement of the existing landscape and site elements at the east side of the Eccles Building, with the exception of the existing eastern porches. Where possible, materials would be salvaged or replaced in-kind and reinstalled.

CIRCULATION, SIDEWALKS, AND STREETSCAPES

Primary pedestrian access to the Eccles Building would take place from 20th Street NW. Primary visitor access to the Eccles Building would take place from the Martin Building directly to the north. An underground pedestrian tunnel would connect the Eccles and FRB-East buildings, joining the existing tunnel that connects the Eccles and Martin buildings (see Pedestrian and Service/ Utility Tunnels below).

20th Street NW would be completely removed and replaced between Constitution Avenue and C Street due to underground garage and tunnel construction. A new mid-block crossing on 20th Street NW would connect the main entrance of the Eccles Building with the main entrance of the FRB-East Building. Special paving at this mid-block crossing would provide a gestural connection between the two sides of the FRB campus separated by 20th Street NW. A precedent for this approach exists between the Martin Building and the Eccles Building on C Street NW, which has pavers crossing over the street in front of the main staff entrance to the Eccles Building.

The streetscape and sidewalks would be completely removed and replaced due to disturbance from construction activities and the removal and replacement of the perimeter security. Existing curb lines would be maintained throughout; however, the need to repour a portion of the curbs at crosswalks and for unforeseen reasons is anticipated. It is assumed that the entirety of 20th Street curbs and drainage would be demolished and completely rebuilt to current DDOT standards.

PEDESTRIAN AND SERVICE/UTILITY TUNNELS

The Eccles Building and FRB-East Building are separated above grade by 20th Street NW. The proposed project would provide a high level of interconnectivity between the two buildings below grade. Alternative 2 would create a new underground tunnel below 20th Street that directly connects the Eccles Building to the FRB-East Building. Currently, the Eccles Building and Martin Building are connected by a tunnel located under C Street. The new pedestrian tunnel would connect all three buildings and facilitate communication, permitting staff and escorted visitors to move freely between buildings without having to go through security screening at each building. The tunnels would intersect in the new atrium space within the Eccles Building's east courtyard, which would become the hub for the three buildings. A new entry for staff and VIP visitors would allow entry into the atrium at grade level and a new set of monumental stairs within the atrium would provide a connection from the entry to Paul Cret's existing, monumental stair and the new pedestrian tunnel below.

A below-grade service and utility tunnel would connect the loading dock, located on the northeast corner of the FRB-East Building addition, to all three buildings and be accessed via a service elevator. The new service and utility tunnel would connect the Eccles and FRB-East buildings and tie into the existing utility tunnel between the Eccles Building and the Martin Building.

ON-SITE BICYCLE ELEMENTS

Long-term spaces bicycle parking spaces would be provided within the FRB-East Building garage. Up to 154 long-term spaces within a secure room are proposed for the FRB-East Building. Additional amenities, including a maintenance station and charging ports for e-bikes are also proposed. Employees would have direct access to the fitness center and shower facilities.

Available at the recently renovated Martin Building are 125 long-term spaces, located immediately north of the Eccles Building. A pedestrian tunnel would connect the two buildings beyond the security checkpoint, providing bicycle commuters an additional option.

The short-term spaces would be placed curbside along the 21st Street and 19th Street frontages of the Eccles and FRB-East buildings, respectively and would be of the inverted U-rack variety. Bicycle access to the site is primarily expected to occur via bicycle trails running along the National Mall and the planned cycle track along 21st Street. Bicycles would utilize the garage entrance ramp on 19th Street and exit out onto 20th Street.

PERIMETER SECURITY

The proposed approach to site perimeter security would integrate a combination of new anti-ram bollards, anti-ram knee and ha-ha walls, and other site elements. The appearance of security barriers around the campus and their effects on the historic integrity of the Eccles and FRB-East buildings would be minimized through screening and softening with planting, incorporation into site amenities, and integration of multiple barrier types.

Anti-ram bollards with an updated sleek and modern profile would be erected around the perimeters of both the Eccles and FRB-East buildings. The proposed perimeter security elements would be consistent for both buildings and simplify the alignment, consisting of either a post-and-rail system with an internal cable located in planting areas, or simpler individual bollards in paving at entry locations or where pedestrian circulation is required. The post-and-rail system has 10- to 11-foot spacing between the posts and two simple covered cables between the posts, significantly reducing the visual impact compared to traditional bollards spaced at about 5-feet apart. All bollards surrounding the buildings would be bronze tested and certified to meet minimum performance criteria. Bollards with a post-and-rail design, similar to the design intervention at the US Department of Commerce Building, would be installed at streetscape planting beds. The profiles of the bollards and posts would be minimized to reduce visibility.

Bollards outside of building entrances in areas of paving and adjacent to arrival plazas would be solitary anti-ram structures. Bollards that are not within areas of paving or adjacent to arrival plazas would have a post-and-chain design similar to the National Park Service post-and-chain detail that is present along Constitution Avenue at Constitution Gardens.

In front of the Eccles Building along Constitution Avenue, the existing marble walls would be

retained in place and serve as anti-ram knee walls to protect against a vehicular attack and/or pedestrian access into the site. At the FRB-East Building along Constitution Avenue, the post-and rail-system would be installed in a planting zone set back about 15 feet from the north side of the sidewalk. The post-and-rail only penetrates the soil zone every 10 to 11 feet, thus preserving the tree root zone. Low shrub planting in front of the post-and-rail would merge the dark colored security elements into the landscape at the edge of the terrace.

Retractable bollards that form a sally port around the car for screening and controlling vehicular access onto the premises would control vehicular access at the garage entrances. Air-conditioned parking-control guard booths with security systems would be provided at each vehicular sally port.

New air-conditioned guard booths would be provided to replace the existing Federal Reserve Board Law Enforcement Unit (LEU) guard booths in the south garden terraces at the Eccles and FRB-East buildings. New guard booths would be provided at the east and west side of the FRB-East Building adjacent to the parking garage ramps. Guard booths would be designed to blend in with the landscape and architectural character to the extent possible.

The exterior areas at the Eccles and FRB-East buildings screening entrances would be designed with high-quality materials that match the character of the architecture and landscape. The plazas at the screening entrances include a building overhang to protect from the elements. Drop-off and pick-up for persons arriving by vehicle on 20th Street NW are anticipated, but have not been specifically designed, as the roadway curbs and lanes would remain intact.

STORMWATER MANAGEMENT

Alternative 2 would involve measures to reduce stormwater runoff, improve stormwater quality, and will adopt strategies to support a sustainable and resilient site. These strategies would also support local stormwater code requirements, reduction in stormwater runoff, and may support achieving LEED benchmarks. Specifically, the stormwater management practices could be sized to manage runoff for the 80th percentile storm event which contributes to meeting LEED benchmarks.

A rainwater harvesting tank would capture rainwater to be reused for irrigation and cooling tower makeup. Stormwater management would also include vegetated roofs, incorporated into the new and structurally upgraded roof areas. Additionally, the open space over the below-grade parking structure would be utilized as vegetated roof using turfgrass that would be indistinguishable with the rest of the lawn. Proposed Bioretention areas to the south of Eccles building would be oversized to control larger storm events. The proposed stormwater management plan includes the use of permeable pavement within 20th Street. Porous asphalt pavement and pervious concrete pavement would best match existing conditions. This stormwater management approach is subject to the District Department of Transportation (DDOT) approval.

DOEE considers tree preservation and planting a stormwater retention practice. A large number of trees are assumed to be preserved on site, many of which are heritage and special trees. In addition, tree plantings are planned along 20th street and within the Eccles and FRB-East south lawns.

BUILDING SYSTEMS

Alternative 2 would include the replacement of all major building systems including mechanical, electrical, plumbing, fire protection, life safety, information technology, and security.

The proposed mechanical systems would be based on current heating, ventilation and air conditioning (HVAC) standards, building codes, and state of the art technologies capable of providing sustainability, reliability, maintainability, improved efficiency, and lower operating cost.

Except for portions of the incoming 15 kV service from the Martin Building, the proposed project would require the replacement of all building electrical systems and equipment. A new utility Potomac Electric Power Company (PEPCO) service would be provided from an alternate PEPCO substation and would be used to also feed the Eccles Building. The proposed electrical power design for both buildings is based on the buildings' designed load and equipment plus 20 percent capacity with additional monitoring and controls.

To facilitate the planned renovations and additions of the Eccles and FRB-East buildings, a complete removal of all internal plumbing systems as well as all utility services would occur. With longevity and sustainability as the primary goals, the proposed building design would focus on providing efficient and durable fixtures and equipment.

2.4.2 ECCLES BUILDING

SUMMARY

A comprehensive modernization and expansion of the Marriner S. Eccles Building is required to meet the current and future needs of the Board. This modernization is intended to consolidate groups located in leased spaces while also accommodating future organization growth. The proposed project would include the following modifications and expansion of the Eccles Building, described in more detail below:

- The existing building would be modernized, and high-character spaces, features, and materials would be preserved to the greatest extent possible.
- The exterior of the historic building would be preserved and upgraded for security (blast mitigation), seismic performance, and energy performance.
- Five-story infill additions would be constructed on the east and west sides of the building that would connect the existing north and south wings.
- A fourth floor addition would be constructed on the roof of the north wing that would connect the east and west infill additions to the existing fourth floor offices.
- The east and west exterior courtyards would be converted into atria, with the east atrium becoming an entrance to the Eccles Building for staff and VIPs. The east atrium would also contain vertical circulation connecting the C-1 (entrance) level up to the first floor and down to the C-2 level where the existing tunnel between the Eccles Building and the Martin Building is located and new tunnel between the Eccles Building and FRB-East Building would be located. The west atrium would function as a space of respite for Board employees with an interior garden and a flexible event space.
- A natural light shaft would be restored to the existing laylight over the center wing/grand stair. The 1977 center-wing office additions would be partially removed and a new skylight at the roof level of the penthouse would be installed.

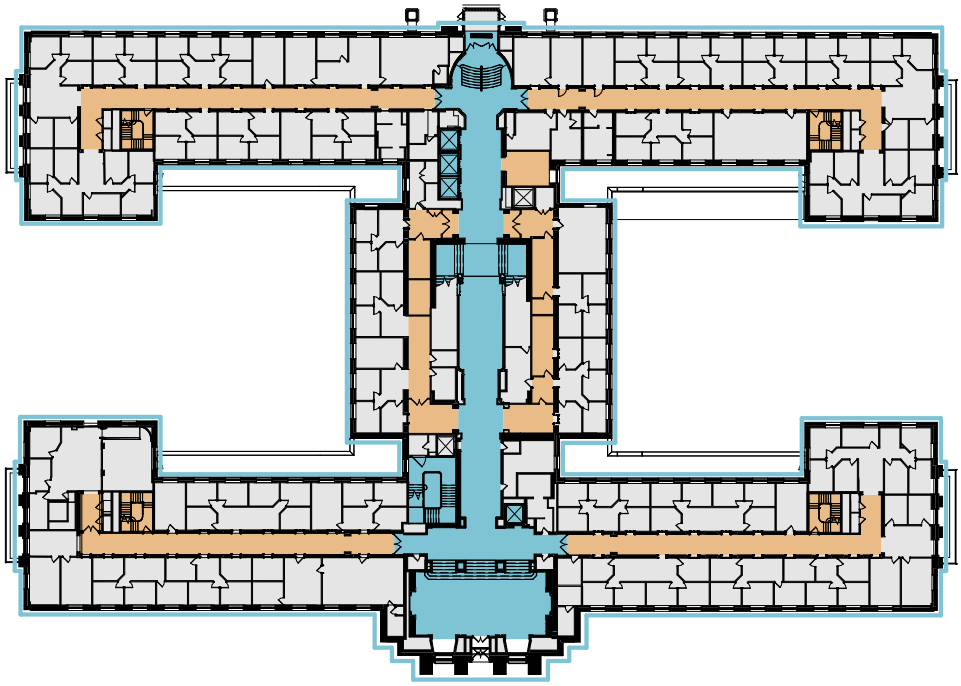


Figure 2.3: Eccles Building Level 01 preservation zone diagram.

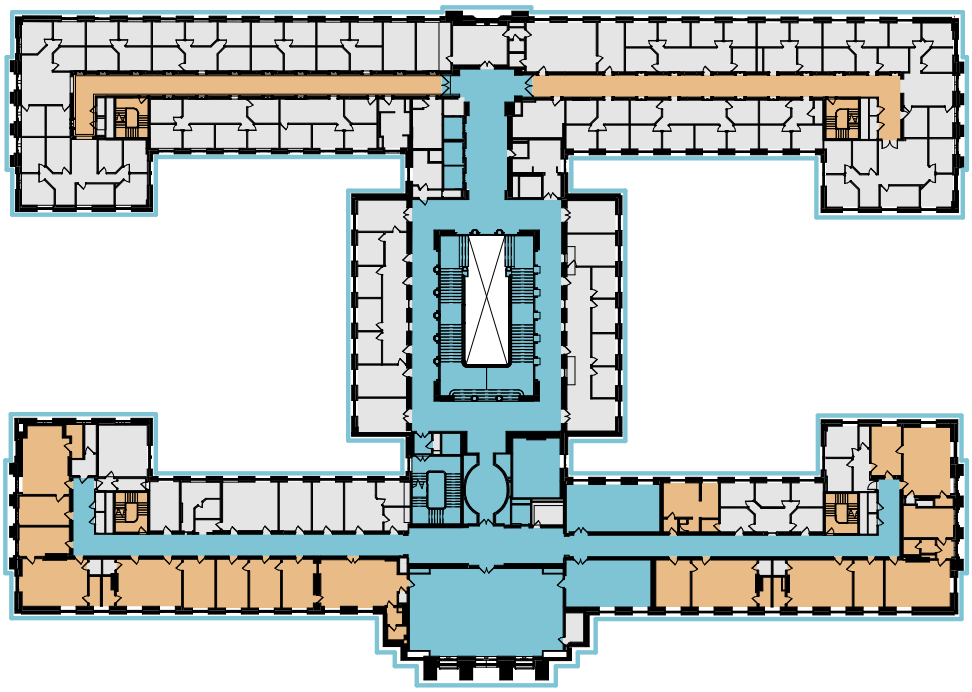


Figure 2.4: Eccles Building Level 02 preservation zone diagram.

Zone 1 Zone 2 Zone 3

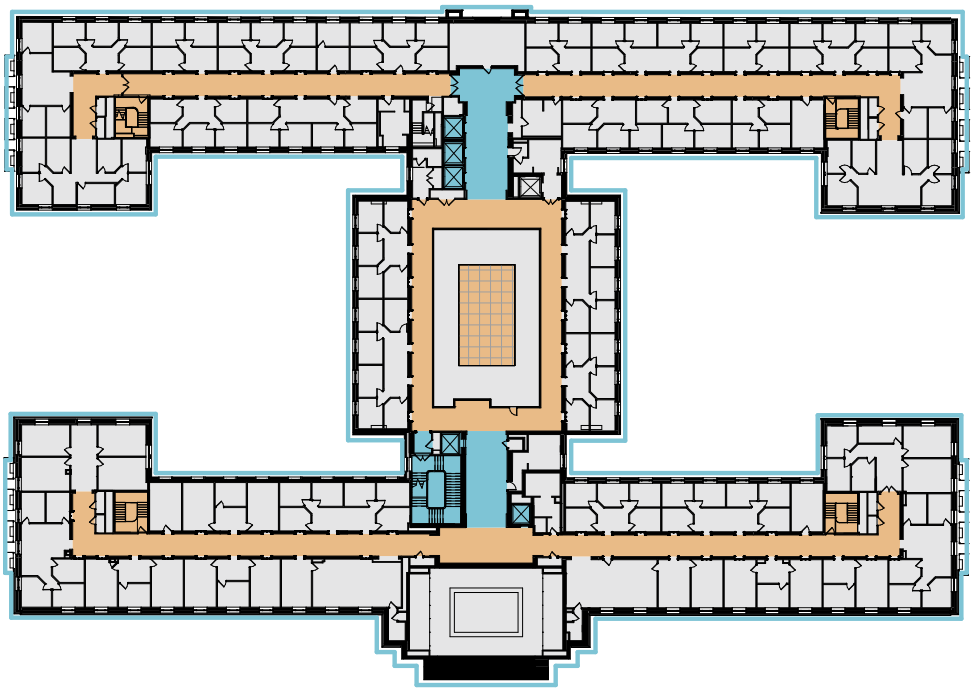


Figure 2.5: Eccles Building Level 03 preservation zone diagram.

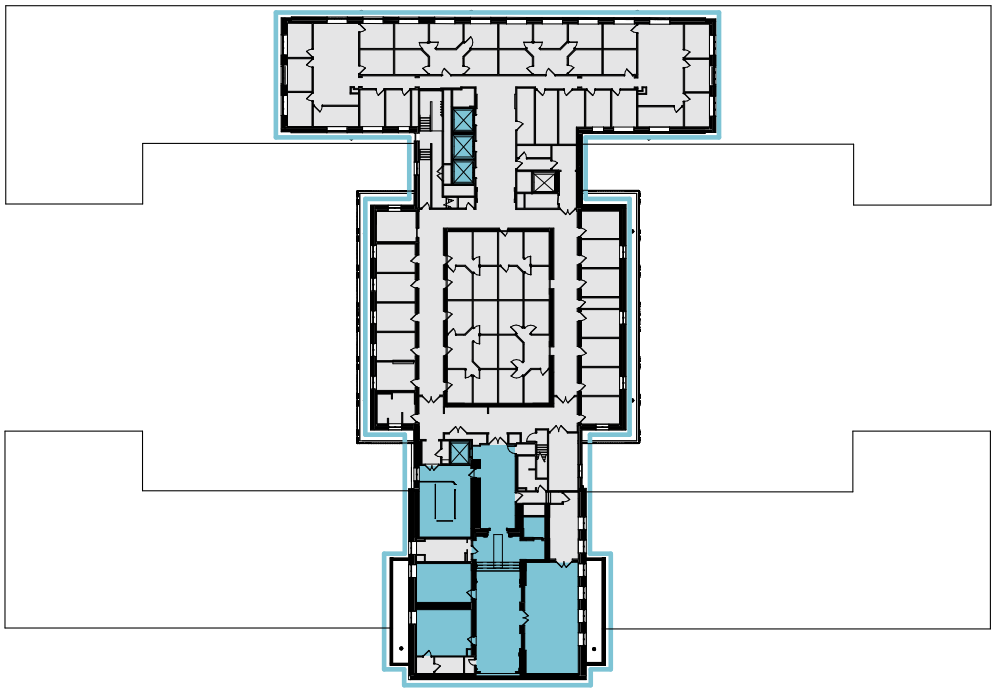


Figure 2.6: Eccles Building Level 04 preservation zone diagram.

Zone 1 Zone 2 Zone 3

- The addition would expand the C2 level with extensive excavation under the existing building and courtyards allowing for additional program below grade.
- All existing systems within the building would be completely replaced.
- The existing Governors' parking in the Eccles Building would be converted into program space.
- The landscape between the south building façade and Constitution Avenue would be rehabilitated. Some landscape features would be removed and replaced in-kind, including the landscape adjacent to the building foundation and at the east garden terrace. Other modifications would be made in order to provide universal accessibility to the lawn and garden terrace and to improve site security. The proposed landscape on the east would provide an accessible entry into the building while the west would create an accessible route, but would be utilized as an egress path to the street. Both sides would reflect the formality and symmetry of the historic design.

EXTERIOR

EXISTING EXTERIOR ENVELOPE

The existing exterior elevations of the Eccles Building are designated Historic Preservation Zone 1, features of the highest architectural and/or historical significance (see Figures 2.3 through 2.6). The exterior of the historic building would be preserved. Preservation procedures would be designed to maintain integrity of character-defining features and not further exacerbate existing distress and would meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Work on the existing exterior walls would include: gentle cleaning of exterior marble, removal of sealant at all joints, repointing joints with mortar to match historic, lead Ts in sealant paired with a backer rod at skyward facing joints, injection crack repair of marble units at cracks greater than 1/16", stabilization of marble at full-depth cracks, patching with Dutchman or composite material patch, securing of incipient spalls to parent stone, preservation of bronze railings and other bronze features, preservation of courtyard fountains, and preservation of historic light fixtures.

Proposed work on the existing roof assemblies would include: providing permanent safe access to all roof areas to allow periodic maintenance; replacement of all low-slope membrane roof assemblies providing proper slope, drainage, flashing, and to meet energy code requirements; replacement of third floor water table corrugated metal with stainless steel cap flashing; replacement in kind of south portico flat seam copper sheet metal roofing with rigid insulation to improve thermal performance; replacement of roof paving system at balconies and locations requiring pedestrian access; replacement of internal rain leaders; addition of lightning protection; installation of extensive and semi-intensive vegetated roof assemblies at existing Level 4 roofs of the north and south wings; installation of low-profile photovoltaic arrays at existing and new Level 5 roofs of the center wing, infills, and overbuilds. The photovoltaic arrays would consist of low-profile photovoltaic panels (approximately the height of the existing and new parapets) with a 5-foot setback from the existing and new roof parapets. The photovoltaic arrays would not be visible from the adjacent streets.

The project will preserve the monumental bronze doors at the Constitution Avenue entry and the

bronze doors at the C Street entry. The project also includes the preservation of the exterior-facing historic bronze windows and ornamental grilles, replacement of broken glazing in kind, and installation of serviceable blast-resistant interior storm windows throughout the building to meet the Board's design, security, and energy requirements. Select windows will also be ballistic-resistant. The historic bronze windows that will be enclosed within the new atria will be preserved and retrofitted with new low-iron, fire-rated glazing to replace the single glazing. The glazing replacement is necessary to meet the required fire-rated barrier between each new atrium and the adjacent interior spaces.

INFILL ADDITIONS

Approximately 110,000 GSF would be added to the Eccles Building with two 5-story infill additions and extensive below grade expansion. The addition would expand Level C2 under the existing building and into the courtyards, infill the north and south wings along 20th and 21st streets, and expand the Level 4 office spaces above the existing building. The east and west exterior courtyards would be converted into atria, with the east atrium becoming an entrance to the Eccles Building for staff and VIPs with a small garden space. The east atrium would also contain vertical circulation connecting the C-1 (entrance) level up to the first floor and down to the C-2 level where the existing tunnel between the Eccles Building and the Martin Building is located and a new tunnel between the Eccles Building and FRB-East Building would be added. The west atrium would function as a space of respite for Board employees: an interior garden and a flexible event space.

The proposed infill additions for Eccles would respond to—and maintain—the civic scale and rhythm of Cret's original design. The intervention would build on the modernity of Cret's stripped classicism. The infill additions proposed on each side of the Eccles Building would create a dialogue with the attic order in the original design and respond to Cret's strong focus on proportion and "restraint in detail." On the east and west elevations of the existing building, Cret achieved a "lightness of touch" with the juxtaposition of the smooth piers with the meander carvings and delicate metal grilles in the balconies. Set back 15 feet from the main facades, with a slightly projecting center section, the infill additions would allow the returns of each wing to be maintained and read as they did historically. Conceived as ligaments, the glass infills proposed for the Eccles Building would maintain the original massing while connecting the existing wings with a new language of transparency. The interventions would be detailed to echo the restraint of Cret's stripped classicism using large-format glazing and curtain walls to create a dynamic relationship with the marble exterior of the existing building. Vertical mullions relate directly to the 5-foot 8-inch window-wall spacing of the Cret elevations on 20th and 21st Streets, and within the existing courtyard. Sculpted vertical bronze shading fins provide solar control and reference the historic palette of decorative bronze of the existing building.

At the entry elevation on 20th Street, the existing site walls would be slightly widened and lowered to signal entry into the Eccles Building. The recess at the first floor would create a small forecourt between the infill and site walls and serve as the new threshold into the building. The historic gates would be displayed within the forecourt. The western site wall and gate would be maintained but modified to allow egress to the exterior from the west courtyard.

The infill additions would expand the C-2 level with extensive excavation under the existing building and courtyards allowing for additional programs in the building. This would include installing a new concrete foundation wall three feet outboard of the existing exterior wall face and would require all elements at the perimeter of the Eccles Building, including the area ways and site walls, to be removed and rebuilt with the exception of the main south stairs. All materials would be salvaged or replaced in-kind and reinstalled. The design team continues to study means of reducing—or eliminating—areas of site disturbance due to the extensive excavation beneath the existing building.

SKYLIGHTS

The existing east and west courtyards—currently occupied by utilitarian dining and security structures—would be converted into atria: the east atrium would become a building entrance for staff and VIPs and a circulation node between the Eccles Building, the Martin Building, and the FRB-East Building; the west atrium would become a restorative garden for Eccles Building staff that could also be utilized for Board events.

The new atria at the Eccles Building and the FRB-East Building would incorporate custom-fabricated high-performance glazed skylights with a consistent formal and material language, which would deliver design uniformity among the Eccles and the FRB-East buildings. The Eccles Building skylights would be situated at the Level 5 roof elevation such that they do not disrupt significant historic features (the existing Level 4 cornice and the bronze metalwork at the existing central wing). At the south edge, the skylights would ‘step’ down to the Level 4 roof elevation so that they would not be visible from Constitution Avenue.

The formal and material language of the skylights would be simple and quiet—compatible and subordinate to the stripped classicism of the existing building. Large-format glazing panels (approx. 11’ by 11’) would be supported by a simple grid of framing that responds to the structural rhythm of the existing building. The glazing panels would incorporate a ceramic frit that would balance the energy performance of the atria with a desire for daylight levels similar to the existing outdoor space.

INTERIOR

EXISTING BUILDING INTERIORS

The Eccles Building contains many significant interior spaces that retain integrity and character-defining features. The proposed project applies a hierarchy based on best practice treatment standards for preservation, restoration, and rehabilitation. Proposed work within Preservation Zones 1 and 2 would meet the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* and include:

- Preservation of historic finishes including marble, limestone, decorative plaster, flat plaster, bronze bas-relief plaques, bronze and wrought-iron decorative railings, decorative cast bronze, steel, and wood.
- Preservation of character-defining features, including monumental, carved wood doors into the Governor’s Board room; fireplaces in the Governor’s wing; historic light fixtures; decorative plaster ceilings (including coffered, vaulted, and flat), and cornices, wood doors, and chair rails.
- Sensitive integration of new systems into historic finishes, including AV/IT, sprinkler, HVAC, electrical, security, and lighting.

- Sensitive rehabilitation of non-compliant historic handrails and guardrails with intent to comply with life safety code and accessibility requirements.
- Lighting would consist of a combination of preserved, replicated, and re-created luminaires (aka historic luminaires or fixtures) and devices (wall switches and plates) and modern luminaires and devices to meet the present-day/near-future-anticipated needs of the respective buildings' occupants. All existing non-historic lighting would be removed.

Proposed work within areas designated as Preservation Zone 3 would weave flexible, contemporary workspace and sustainable building systems into the renovation, including:

- A mixture of private and open workspace.
- The restoration of historic ceiling heights.
- Access to natural light and views.
- Modern office amenities and support spaces.

CORRIDORS AND OFFICES

Modifications would be made at areas of intersection between historically significant spaces and work space to balance preservation and modern office needs. Different strategies for the central corridors relate to the hierarchy of importance and level of finish at each floor.

- First Floor: The corridors would be retained in the south wing with modifications to the existing openings to relate to the new rhythm of enclosed and open offices. The corridors at the north wing would be retained for a length to provide a view of the historic condition from the C Street lobby, after which they would be removed.
- Second Floor: As the most important floor and highest level of finish, all corridors would be retained at this level. Only minor modifications would be made to existing openings in the south Governor's wing. Greater modifications would be made to the north wing to relate to the new rhythm of enclosed office and open offices. The vaulted ceilings, cornice, and original light fixtures would be retained throughout.
- Concourse, Third and Fourth Floors: All corridor walls would be removed to provide the greatest flexibility for workplace layouts. Original flooring and ceilings may be retained and sensitively incorporated into the compatible design of adjacent offices.

Within the office corridors that remain, most existing interior office partitions throughout Preservation Zone 3 would be removed to accommodate workplace renovations.

INFILL ADDITIONS

Where the infill additions would adjoin the existing building, the removal of historic fabric to interface new construction with the existing structure would occur, and door openings would be cut on each level to connect the historic building with the new addition. Where possible, existing window openings would be used for the connections between the existing building and the infill additions. Historic fabric would be replaced in-kind such that the appearance of the existing building is restored within the interior of the infill additions. A former secretary's office in the Governor's Wing, designated Zone 2, would become the new connection into the infill addition.

BLAST AND SEISMIC UPGRADES

The design team is considering options for upgrades at the existing exterior walls of the Eccles Building to meet blast, seismic, and energy requirements. This work would include the removal of the existing hollow clay tile furring assembly at the interior side of the existing walls, which would be replaced with new bracing and furring to accommodate the Board's standards for blast and seismic performance throughout the Eccles Building. Additionally, the existing exterior walls lack a reliable air and vapor barrier as well as a dedicated thermal barrier to meet current codes and standards for envelope performance or the Board's sustainability goals. Insulation and an air and vapor barrier would be added to the interior side of the exterior walls. This work would include the salvage and reinstallation and/or replication of interior finishes in-kind to match existing historic finishes at perimeter exterior walls where blast, seismic, lateral resistance, and progressive collapse interventions are required. The required upgrades would likely avoid the historic interior spaces in Zone 1: the first floor lobbies and the second floor Governor's wing. It will likely avoid the fourth floor dining rooms.

LAYLIGHT RESTORATION

The existing laylight over the center wing/grand stair would be restored. The 1977 fifth floor office addition would be partially removed and a new skylight at the roof level of the fifth floor would be installed, restoring a condition like that of the original building prior to previous alterations.

VERTICAL CIRCULATION AND EGRESS

New stairs, elevators, and horizontal egress corridors would be provided throughout the infill addition and existing building. All existing stairs would be extended down to Level C-2 in a manner consistent with existing architecture. A new egress stair would be provided from Level C-2 to the fourth floor behind the existing bank of three passenger elevators. The level of finishes would be consistent with the existing corner stairs, but would be of contemporary architectural expression. A new set of monumental stairs in the east atrium with a high level of finish would connect Level C-2 up to the first floor. Two new six-stop passenger elevators would be installed in the center wing of the existing building, opposite the three existing elevators. The new elevators would require new openings in the east lobby walls and would remove the "Press Release Room," identified as a Preservation Zone 2 space. Egress from existing stairs 1-4 would require new egress corridors at Level C-1 for discharge to a public way. The historic elevators and cabs in the Eccles Building would remain in place. The central service elevator would be rebuilt and enlarged.

INTERIOR ACCESSIBILITY

The proposed project addresses accessibility deficiencies to make the building fully accessible to people with physical, visual, and hearing impairments. Design of accessible elements for all new construction would adhere to the 2015 Architectural Barriers Act (ABA Accessibility Standards).

Existing deficiencies at the exterior entry to the building would be addressed by a new, fully accessible entrance located at the new addition along 20th Street NW. The current main entry on C Street NW, as well as the Constitution Avenue NW entry would be closed and not regularly used.

Existing deficiencies on the interior of the building would be addressed with the following proposed modifications:

- A new accessible entry into the Constitution Avenue lobby would be provided from the interior entry foyer by a new half-stop elevator or ramp accessed from a new opening in the lobby.
- The existing pedestrian tunnel connecting the Eccles and Martin buildings is currently entered at the concourse (C-1) level and requires navigating a stair or escalator. The proposed project would provide a new fully accessible circulation path to the Martin Building tunnel entrance in the Eccles Building. Improvements to the Martin-Eccles pedestrian tunnel would be made to provide a comfortable and easily navigable path between the Martin and Eccles buildings. Accessible ramps or elevators would be provided to negotiate level changes from the tunnel entry to the levels above (first floor) and below (sub-concourse level).
- The historically significant fourth floor lounge and adjoining executive dining rooms currently have an 18" level change between the entry hall and the lounge suite. The proposed project would extend the elevated floor slab to the north, relocate the existing marble stairs and provide a new accessible ramp along the east side of the entry hall up to the level of the lounge suite. Additionally, the Governor's private elevator would be extended to discharge at the dining suite level. Special care would be taken to sensitively modify historic wall and floor finishes in new elevated areas.
- With the exception of the Governor's wing (second floor south), the current office layout would be demolished, and new office arrangements would be designed to provide accessible routes through all offices.
- Door widths, weights, and clearances, as well as door hardware components, would be reviewed and addressed as needed to comply with accessibility requirements. Many existing doors are original, well-preserved character-defining features. Doors would be carefully studied to address deficiencies while limiting impact to historic character. At a minimum, door hardware would be retrofitted to provide an accessible path of travel to restrooms and exits. Some doors may receive additional lever-handles. Others may need mechanical door operators or be held open during operating hours depending on their location and use. Door thresholds would also be studied to ensure compliant transitions between adjacent flooring.
- Existing restrooms, classified as Preservation Zone 3, would be demolished in full. Private bathrooms associated with historically significant offices in the Governor's wing, designated as Zone 2, would remain with the exception of one Governor's office that would be retrofitted with a new accessible private toilet room. One men's room in the Governor's wing, classified as Preservation Zone 2, would be removed. New restrooms on each floor, including family restrooms, would be constructed in new locations. The new restrooms would be designed for accessible use and would include ABA-compliant stalls and fixtures. Additionally, new drinking fountains would be provided to meet current accessibility standards.

Figure 2.7: View of Eccles Building and proposed infill looking southeast from C Street showing 21st Street elevation.

Figure 2.8: View of Eccles Building and proposed infill looking northwest showing 20th Street elevation at dusk.

Figure 2.9: View of Eccles Building and proposed infill looking northwest showing 20th Street elevation.

Figure 2.10: View of Eccles (left) and FRB-East (right) showing proposed skylights and roof systems.

Figure 2.11: Proposed east atrium in the Eccles Building showing location of skylight.

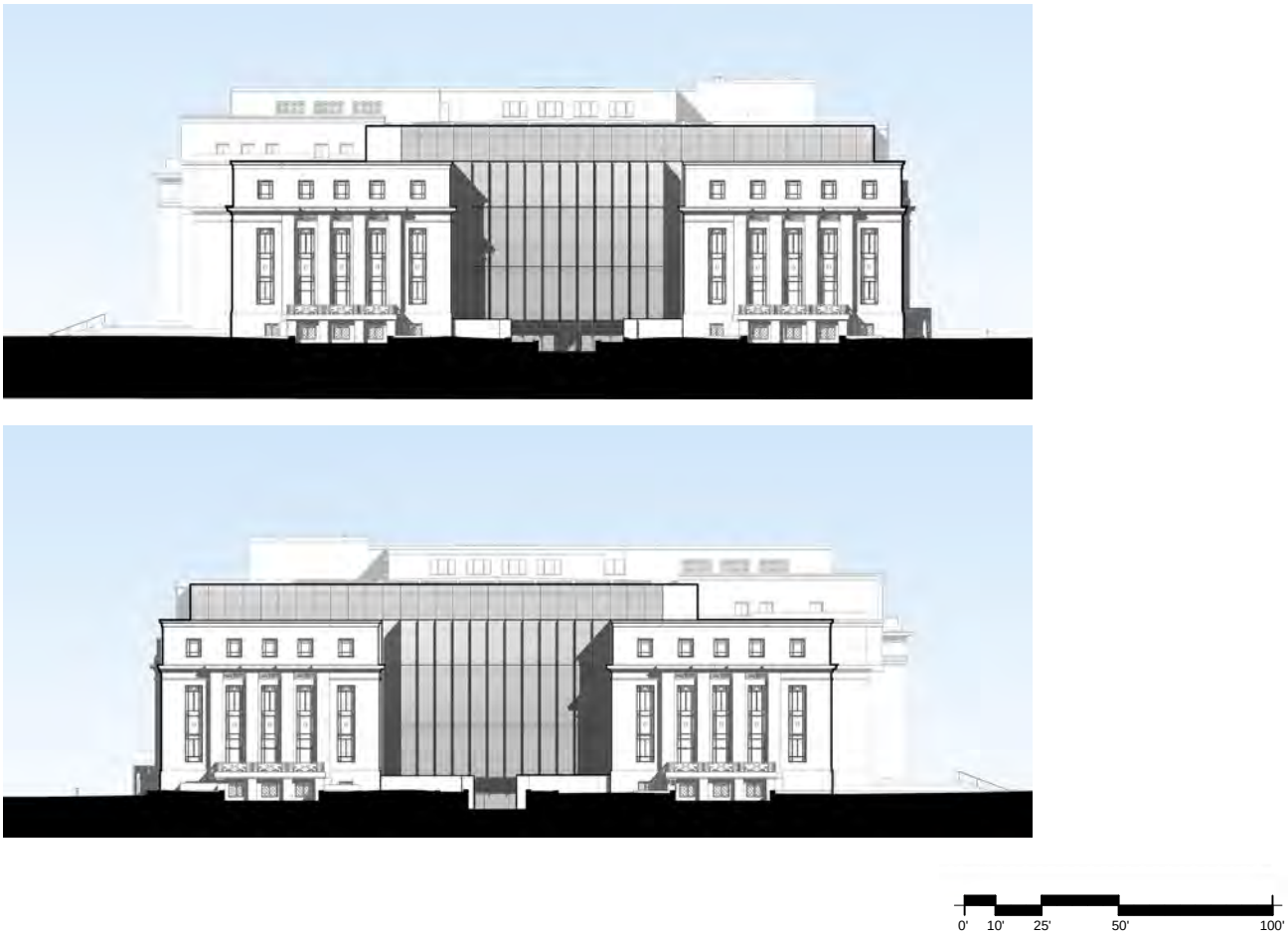


Figure 2.12: Alternative 2: East (top) and west (bottom) elevations of the Eccles Building.

LANDSCAPE

Under Alternative 2, the Eccles Building landscape would preserve some landscape character-defining features while rehabilitating circulation to create universally accessible routes, improving perimeter security (described in the overall site perimeter security section), modifying the east and west courtyards, and a portion of the fountain gardens. The proposed design retains a symmetrical site layout with geometrically ordered gardens on each side of a central walk leading up a flight of steps to elevated front gardens.

Accessible pathways would be provided to the lawn and garden terrace from the southwest and southeast corners with new sloped walks. The two fountain gardens would both be accessible by sloped walks from the south that would remove existing stairs. The existing historic pebble stone mosaic paving surface material may not meet ABA requirements, but the new pathways would improve the current accessibility into garden.

The east and west courtyards would be enclosed on all four sides and by an overhead skylight, converting these spaces into atria described above in the infill additions section.

Most changes to vegetation are described in the above Overall Site Vegetation section. Changes to vegetation specific to the Eccles Building and site include:

- Courtyards / Infill Areas (Atria): All plantings would be removed from existing courtyards. Proposed atria would include indoor plantings.

Changes to perimeter security are described in the above section.

Exterior lighting would be updated across the site. Landscape accent lighting would highlight garden features and complement plantings. Street lighting would meet DDOT and Monumental Core Street standards. To more effectively illuminate the site for aesthetic and security-related reasons, the current exterior lighting along the Constitution Avenue frontage would be supplemented with building façade lighting. Façade lights will use precision LED optics to limit coverage to building surfaces, will be lamped with more circadian-and star-gazing-appropriate warm white and very warm white LEDs and will be tuned based on time-of-night (using very warm white LEDs during later hours). Postlights for lighting of vehicular and pedestrian site access will use precision warm-white-LED optics and will be cut-off type to minimize light pollution and light trespass. Where supplemental security lighting is necessary, precision warm-white-LED optics will be used.

Other landscape elements would be removed, salvaged, and rebuilt in original locations. Portions of the east fountain garden would be removed and rebuilt due to the extent of underground work. Both fountains would undergo repair work. The marble walkway at the edge of the building's south façade would be salvaged and rebuilt to accommodate the below-grade foundation work on the building. A biorention area is proposed south of the marble walkway in place of the row of magnolias to help satisfy stormwater requirements. An evergreen hedge would be installed surrounding the bioretention areas based on the original design. Other landscape elements that would be salvaged and rebuilt include the marble curb at the east side, the areaways on the east, west, and north sides, and the marble steps and bronze light fixtures at the north entrance.

Landscape character-defining features, as described in a Cultural Landscape Assessment that was completed as part of this project, are illustrated in Figure 2.13. The character-defining features are preserved with the following exceptions. Those with an asterisk (*) next to them would be modified or removed; those marked with two asterisks (**) would be carefully removed, stored and reinstalled. Their treatment is described in the following description of the landscape design.

Topography/Spatial Organization

- East courtyard and west courtyard* (changes to the two courtyards are described in the Infill Additions section above)

Circulation

- Central walkway*
- Marble steps**
- Marble walk at building edge**
- East courtyard stone pavers* (would be removed)
- East and west courtyard slate walks* (would be removed)
- East and west courtyard vehicular driveways* (would be removed)
- Constitution Avenue streetscape sidewalk*

Vegetation

- East garden terrace ivy* (majority preserved; a portion would be removed)
- Yew shrubs at building edges* (would be removed and replaced with species selected to represent original design intent and thrive in the environmental conditions)
- Lawn, throughout entire property*(majority would be replaced in kind)
- DC Heritage trees (1 of 8 would be removed and replaced)*
- DC Special trees (5 of 13 would be removed and replaced)*

Small-scale Features

- Marble curb**

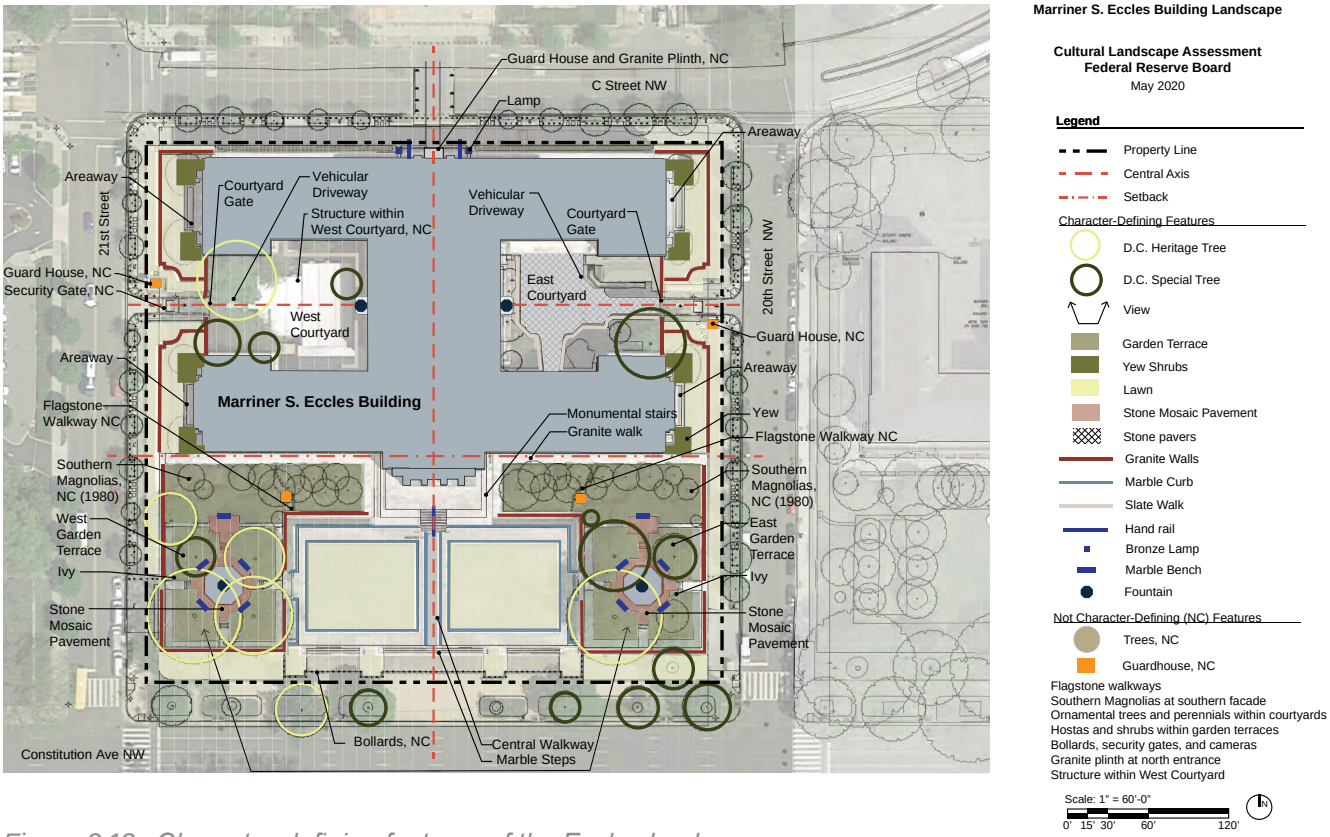


Figure 2.13: Character-defining features of the Eccles landscape.

Figure 2.14: Alternative 2: Landscape Plan for the Eccles Building.

2.4.3 FRB-EAST BUILDING

SUMMARY

A comprehensive modernization and expansion of the Board's recently acquired and currently vacant building at 1951 Constitution Avenue (FRB-East Building) is required to meet the current and future needs of the Board. In combination with the work planned at the Eccles Building, this modernization is intended to accommodate and retain future organization growth while consolidating groups located in leased space throughout the city. The proposed project includes the following modifications and expansion of the FRB-East Building, described in more detail below:

- The existing building would be modernized, and high-character spaces, features, and materials would be preserved to the greatest extent possible.
- The exterior of the historic building would be preserved and upgraded for security (blast mitigation), seismic performance, and energy performance.
- The center wing of the historic building would be demolished.
- A five-story above-grade addition would be built on the north side of the existing FRB-East Building. The addition would physically connect to the east and west wings of the existing building and would include three levels below grade, which would expand under 20th Street, and a mechanical penthouse.
- A skylight-covered atrium would be created between the existing building and the new addition.
- All existing systems within the building would be completely replaced.
- The proposed landscape design reflects the formality and symmetry of the historic design, while addressing program needs related to creating a new main building entrance, improving universal accessibility, and addressing site security needs. Included are the rehabilitation of the building terraces and the south lawn and garden spaces and improvements on-site as well as in the public right-of-way and 20th Street.

EXTERIOR

EXISTING EXTERIOR ENVELOPE

The existing street facing south, east, and west exterior elevations of the FRB-East Building are designated Historic Preservation Zone 1, features of the highest architectural and/or historical significance (see Figures 2.15 through 2.18). The treatment would be designed to maintain the integrity of the character-defining features of the stone and not further deteriorate or exacerbate the existing distress and would meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Work on the existing exterior walls would include: cleaning exterior marble and limestone, removal of sealant at all joints, repointing joints with mortar to match historic, lead Ts in sealant paired with a backer rod at skyward facing joints, injection crack repair of marble units at cracks greater than 1/16", stabilization of marble and limestone at full-depth cracks, patching with Dutchman or composite material patch, and securing of incipient spalls to parent stone.

Work on the existing roof assemblies would include the following: demolition of the central wing; permanent safe access to all roof areas to

allow periodic maintenance; replacement of all low-slope membrane roof assemblies providing proper slope, drainage, and flashing; replacement of all steep-slope clay tile roof assemblies and flashing; modification of roof structure to accommodate for a dormer with ventilation louvers; removal of non-historic hung gutters and external downspouts; replacement of built-in gutter and internal downspout system; replacement of marble units at cornice which were cut to accommodate hung gutters; addition of lightning protection; and addition of snow guards. A small portion of the existing roof at the north ends of the east and west wings would be removed and replaced to facilitate the interface of the new addition with the existing building.

The courtyard facing facades of the east and west wings and all facades of the central wing are designated Historic Preservation Zone 2, features of secondary architectural and/or historical significance. The central wing would be demolished, and the remaining existing facades would become interior faces to a new atrium space. Selective demolition would be required to accommodate the new addition and interior configuration. In areas where the existing limestone would remain the repair procedures would be designed to maintain the integrity of the character-defining features of the stone and not further deteriorate or exacerbate the existing distress.

The north facing walls of the east and west wings are faced with a light-colored stucco applied directly to brick. The north facing walls and courtyard-side corners of the east and west wings would be carefully removed allowing space for slurry wall construction and addition of new shear walls for lateral bracing. The new north-facing replacement walls would be sheathed in marble similar to the east, west, and south elevations of the existing building. In the addition, the limestone cladding on the north side of the main block and the east and west sides of the wings that would face the interior atrium would be replaced with new limestone cladding.

The project will preserve the three sets of glass entry doors, transom and aluminum spandrel panels, and the sliding cast aluminum double pocket doors. The existing operable aluminum windows will be replaced with high-performance, blast-resistant fixed aluminum window units to match the existing sight lines and appearance of the existing windows, and to achieve the Board's design, security, and energy requirements. The existing decorative cast aluminum ornamentation at the window openings will be salvaged, restored, and reinstalled. The existing decorative cast aluminum spandrel panels will remain, and will be restored in place. The existing operable steel windows on the building that will be enclosed within the new atrium will be replaced with new fixed and fire-rated glazed aluminum window assemblies to match the existing window configuration and sight lines.

FIVE-STORY ADDITION

Approximately 564,000 GSF total would be added to the FRB-East Building, 158,794 GSF of which is a five-story above-grade addition. The addition would expand three levels below grade underneath the addition footprint and infill the created courtyard area between the existing building east and west wings for another 406,000 GSF of area. The addition would connect to the Eccles Building via an underground pedestrian tunnel located at Level C-2 below 20th Street. The addition would also connect to the existing FRB-East Building at all finish floor elevations so that

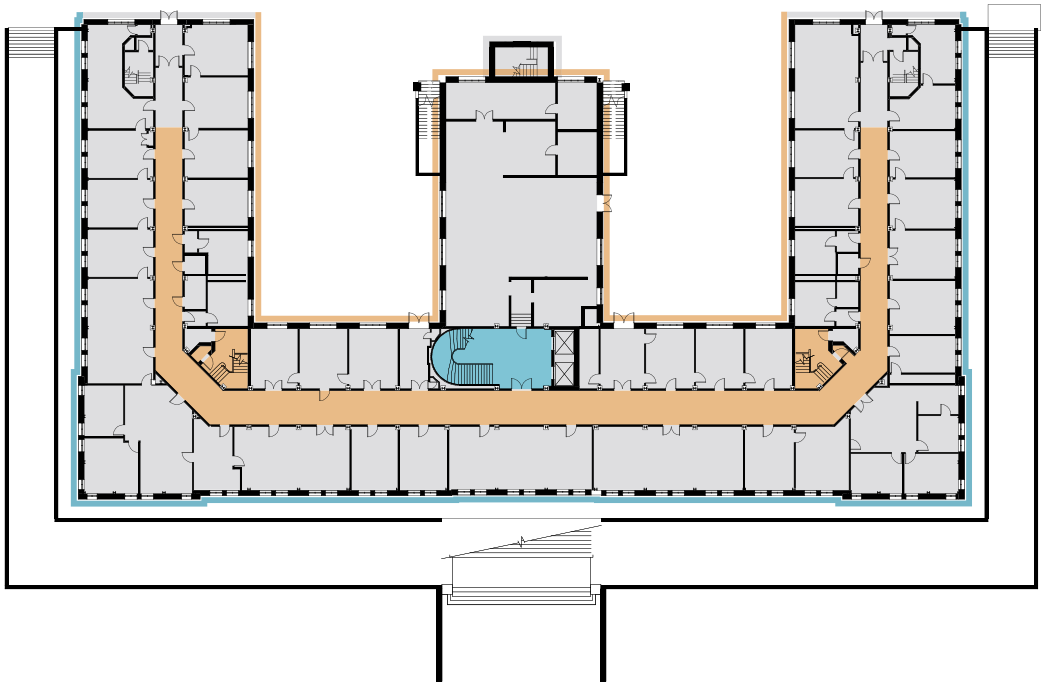


Figure 2.15: FRB-East Building Concourse preservation zone diagram.

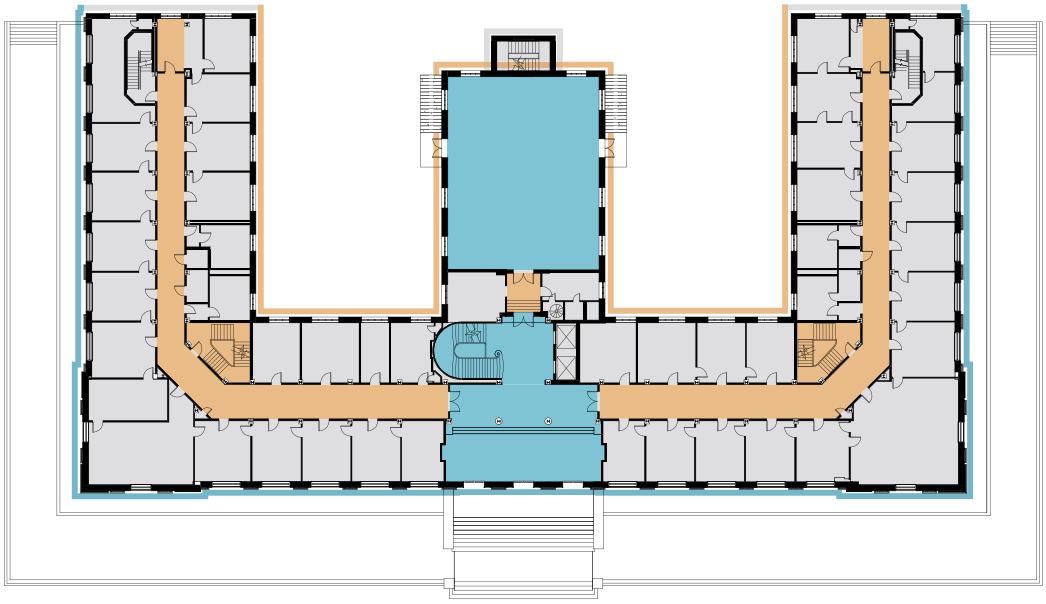


Figure 2.16: FRB-East Building Level 01 preservation zone diagram.

Zone 1 Zone 2 Zone 3

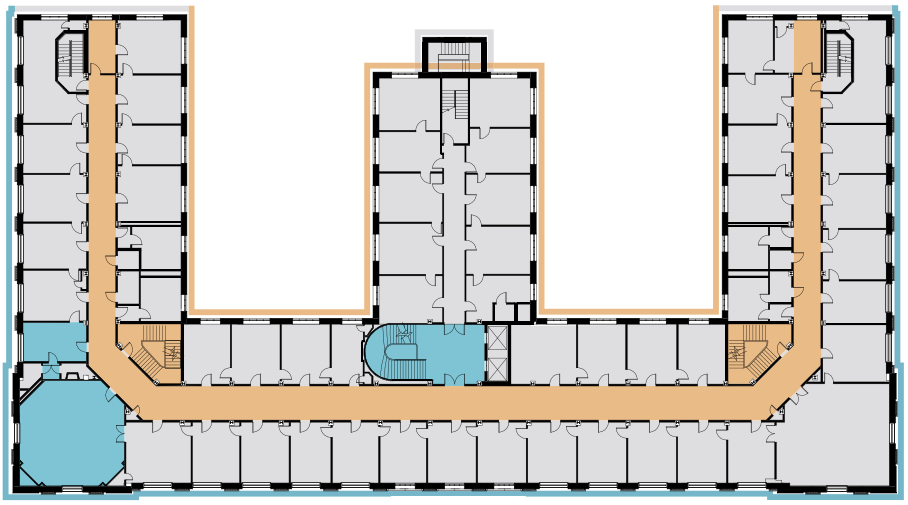


Figure 2.17: FRB-East Building Level 02 preservation zone diagram.

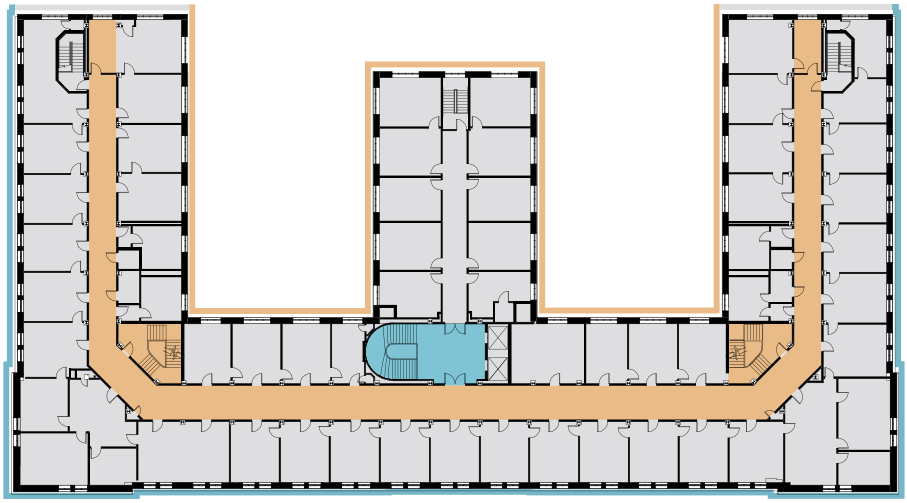


Figure 2.18: FRB-East Building Level 03 preservation zone diagram.

Zone 1 Zone 2 Zone 3

no grade changes would be required. Below-grade construction would require localized excavation of bedrock.

In order to achieve the most efficient and flexible office floorplate for the new addition, the entire center wing of the existing building would be demolished, which includes exterior skin, windows, roof, structure, and all interior spaces. Selective demolition would be required to partially remove the roof and the walls at the corners of the east and west wings where the new addition ties into the existing building. Existing stone would be salvaged for reuse on remaining elevations with reconfigured openings.

The addition to the FRB-East Building would respond to the architecture of the historic US Public Health Service Building, which is also clad in Georgia White marble. The new five-story addition would align with the fifth floor of the Eccles Building. The mechanical penthouse would be minimized and placed to nearly eliminate views from C Street and Constitution Avenue, protecting the row of low marble buildings that frame the Lincoln Memorial on the National Mall. On the east and west sides, the fifth floor of the addition would align with the ridge lines of roofs on the FRB-East Building wings. With the exception of the corners, the historic building has a consistent bay spacing of 3.5-foot-wide pilasters and 8.5-foot-wide window openings. The addition would use a similar cadence, with 3-foot-wide diffusing glazing (referencing the historic building's pilasters) and 9-foot-wide window openings. The addition would be lined with glazed pilasters. Two-story high, 30-foot-tall openings, similar to the historic building, would be located between the pilasters and articulated to create a civic scale. While the openings in the historic building are recessed by 14 inches, the openings in the addition would project out by 14 inches beyond the face of the wall. The addition's glazing would be recessed 2 inches from the outside face of the stainless steel frames. The 2-story-high glazing at the addition would have a pattern acid-etched into the glass that relates directly to important datums from the historic building, including the entablature, the spandrel panel, and the sill.

The pilasters would be composed of 4-inch-thick insulating diffusing glass panels (with sandblasted appearance) that would render the material in a similar tone as the marble in the building. The glass panels would permit diffused daylight into the building during the day and glow softly at night.

At the cornice, the material would be marble laminated within insulating glass. The eave line in the addition would correspond with the eaves of the historic building and the base of the building would be white Georgia marble to match the historic building. The corners in the historic buildings are relatively simple with little ornamentation. To complement this feature, the corners of the addition would be flush glass.

SKYLIGHT

The existing east and west courtyards would be combined into a single atrium, which would house a food service operation, conference functions, and facilitate primary building circulation. The new atrium at the FRB-East Building would incorporate a custom-fabricated high-performance glazed skylight with a consistent formal and material language, which would afford design uniformity among the Eccles and the FRB-East buildings. The FRB-East Building's skylight would be situated at the Level 4 roof elevation to reduce the impact at the existing sloped roof, and to conceal the skylight from view from Constitution Avenue.

The formal and material language of the skylights would be simple and quiet—compatible and subordinate to the existing building. Large-format glazing panels (approx. 11' by 11') would be supported by a simple grid of framing that responds to the structural rhythm of the existing building. The glazing panels would incorporate a ceramic frit that would balance the energy performance of the atriums with a desire for daylight levels similar to the existing outdoor space.

INTERIOR

EXISTING BUILDING INTERIORS

Significant interior historic spaces and elements would be carefully preserved and, where needed, restored to their original condition to the extent practicable. As shown in the Historic Preservation Zone diagrams, a hierarchy would be applied based on best practice treatment standards for preservation, restoration, and rehabilitation. The following spaces with the highest or secondary architectural significance (Zones 1 and 2) would be preserved meeting the Secretary of the Interior's Standards for the Treatment of Historic Properties:

- Constitution Avenue entrance lobby
- Stair and elevator lobby
- Central stair
- Surgeon General's office
- Surgeon General's reception room
- Attendant spaces associated with the Surgeon General's office including a private bathroom, a vault, a large closet and a passageway.
- Southwest and southeast (triangular) egress stairs.

Additional preservation work, meeting the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, would include:

- Preservation of historic finishes including marble, decorative plaster, flat plaster, faux marble painted finishes, decorative aluminum railings, cast aluminum plaque, bronze bas-relief plaque, aluminum grilles, steel, and wood.
- Replication of nonextant historic paneled, wood double doors (east and west) into the entrance lobby.
- Preservation of fireplace within Surgeon General's office.
- Preservation of wood parquet flooring and Georgian style wall paneling in the Surgeon General's office and reception room.
- Preservation of wood doors and surrounds in Surgeon General's office.
- Preservation of existing historic light fixtures.
- Sensitive integration of new systems into historic finishes, including AV/IT, sprinkler, HVAC, electrical, security, and lighting.
- Non-compliant historic handrails and guardrails would be addressed sensitively and with intent to comply with life safety code and accessibility requirements.

ADDITION

Where the new addition and atrium would adjoin the existing building, some historic fabric would be removed to interface new construction with the existing structure, and door openings would be cut on each level to connect the historic building with the new addition. Where possible, existing window openings would be used for the connections between the existing building and the infill additions.

CORRIDORS AND OFFICES

Modifications would be made at areas of intersection between historically significant spaces and work space to balance preservation and modern office needs. The central corridor would be retained along the south side of the building on all floors to relate to the central stair and elevator lobby, as well as the former Surgeon General's office. Along the east and west wings, the corridor location would remain but the walls would be removed to allow for open, flexible workspace. Within the office corridors that remain, most existing interior office partitions throughout Preservation Zone 3 would be removed to accommodate workplace renovations.

BLAST AND SEISMIC UPGRADES

The design team is considering upgrades to the FRB-East Building to meet blast, seismic, and energy requirements. This work would likely include the removal of the existing hollow clay tile furring assembly at the interior side of the existing walls, which would be replaced with new bracing and furring to accommodate the Board's standards for blast and seismic performance throughout the FRB-East Building. Additionally, the existing exterior walls lack a reliable air and vapor barrier as well as a dedicated thermal barrier to meet current codes and standards for envelope performance or the Board's sustainability goals. Insulation and an air and vapor barrier would be added to the interior side of the exterior walls. This work would include the salvage and reinstallation and/or the replication of interior finishes in-kind to match existing historic materials at perimeter exterior walls where blast and seismic interventions are required. The required upgrades would avoid the main lobby, a Preservation Zone 1 space.

VERTICAL CIRCULATION AND EGRESS

The historic monumental lobby stair (Zone 1) would be preserved. The two existing historic (Zone 1) stairs at the southeast and southwest corners would be preserved and modified to comply with current codes to the extent possible while preserving character-defining features. The three existing non-historic egress stairs added in previous modernizations would be demolished. One new stair would be provided in the existing building west wing primarily to aid in accommodating larger assembly occupancies in the lower levels and shorten travel distances in the upper office levels. This stair would access levels C-4 to the fourth floor, would exit directly to the exterior in the existing areaway, and would require excavation and underpinning of the existing building below-grade in construction. The two existing hydraulic passenger elevators adjacent to the south entrance lobby would be replaced with new traction elevators. The hoistway doors and elevator cabs are not original to the building.

INTERIOR ACCESSIBILITY

The proposed project addresses accessibility deficiencies to make the building fully accessible to people with physical, visual, and hearing impairments. Design of accessible elements for all new construction would adhere to the 2015 Architectural Barriers Act (ABA) Accessibility Standards.

The existing FRB-East Building has many accessibility deficiencies. As part of the renovation design, accessibility of all spaces and building components would be addressed to make the building fully accessible to people with disabilities and meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Existing deficiencies at the exterior entry to the building would be addressed by a new, fully accessible entrance located at the new addition along 20th Street. The Constitution Avenue entry would be closed and not regularly used.

Existing deficiencies on the interior of the building would be addressed with the following proposed modifications:

- A new accessible entry into the Constitution Avenue lobby space would be provided from the interior entry foyer by a new half-stop elevator or ramp accessed from the historic opening at the east side of the lobby.
- The current office layout would be demolished, and new office arrangements would be designed to provide accessible routes through all offices.
- Door widths, weights, and clearances as well as door hardware components would be reviewed and addressed as needed to comply with accessibility requirements. Many existing doors are original, well-preserved character defining features. Doors would be carefully studied to address deficiencies while limiting impact to historic character. At a minimum, door hardware would be retrofitted to provide an accessible path of travel to restrooms and exits. Some doors may receive additional lever-handles. Others may need mechanical door operators or be held open during operating hours depending on their location and use. Door thresholds would also be studied to ensure compliant transitions between adjacent flooring.
- Existing restrooms would be demolished in full. New restrooms on each floor, including family restrooms, would be constructed in new locations. The new restrooms would be designed for accessible use and would include ABA-compliant stalls and fixtures. Additionally, new drinking fountains would be provided to meet current accessibility standards.
- The new addition would align on all floors with the existing building floors so that no ramps would be required.

LANDSCAPE

The proposed landscape design reflects the formality and symmetry of the historic design, while addressing program needs related to creating a new main building entrance, improving universal accessibility, and addressing site security needs. Included are the replacement of the building terrace and the south lawn and garden spaces.

Most changes to vegetation are described in the above Overall Site Vegetation section. Changes to vegetation specific to the FRB-East Building and site include:

- The configuration of the underground garage would avoid impacting Heritage trees along Constitution Avenue.
- Vegetated Roof over garage: Planting over the parking garage would be treated as a vegetated roof with an approximate 5-foot depth of soil. The overall design and planting intent is to maintain the historic character-defining features by creating a soil profile that supports the planting design.

Changes to perimeter security are described in the above section.

Figure 2.19: Alternative 2: View of FRB-East Building looking northwest toward the Eccles Building. Landscape elements are not shown on this rendering.

Figure 2.20: Alternative 2: View of FRB-East Building proposed addition, looking southeast.

Figure 2.21: Alternative 2: View of FRB-East Building and proposed addition looking northeast toward main entrance.

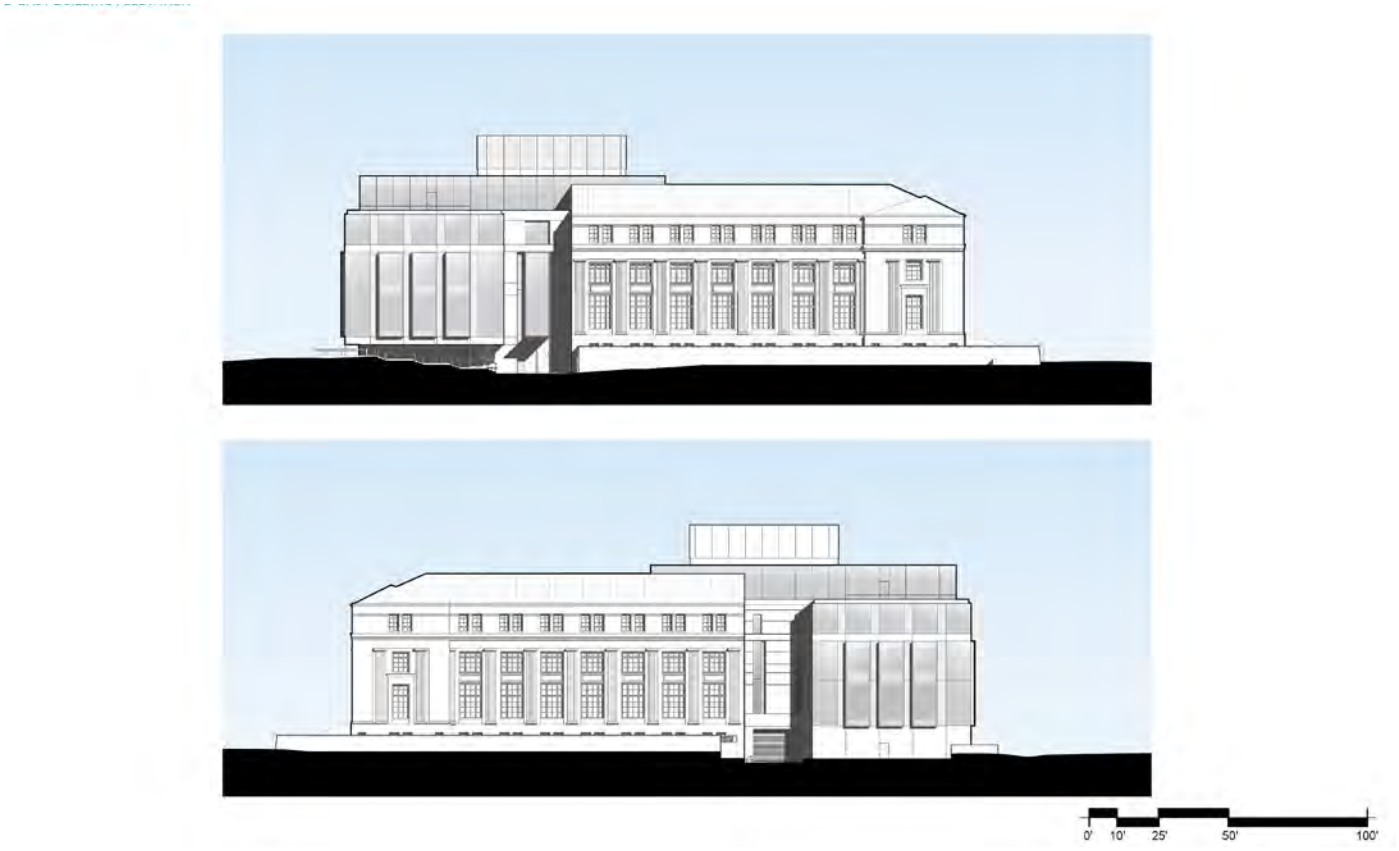


Figure 2.22: Alternative 2: East (top) and west (bottom) elevations of the FRB-East Building (proposed).

Exterior lighting would be updated across the site. Landscape accent lighting would highlight garden features and complement plantings. Street lighting would meet DDOT and Monumental Core Street standards. To more effectively illuminate the site for aesthetic and security-related reasons, the current exterior lighting along the Constitution Avenue frontage would be supplemented with building façade lighting. Façade lights will use precision LED optics to limit coverage to building surfaces, will be lamped with more circadian-and star-gazing-appropriate warm white and very warm white LEDs and will be tuned based on time-of-night (using very warm white LEDs during later hours). Postlights for lighting of vehicular and pedestrian site access will use precision warm-white-LED optics and will be cut-off type to minimize light pollution and light trespass. Where supplemental security lighting is necessary, precision warm-white-LED optics will be used.

Like most of the historic buildings along this section of the Constitution Avenue, the exterior of the FRB-East Building has always been illuminated at night. The current areaway floodlights would be replaced with more subtle lighting achieved with two proposed “layers” of warm-white and very-warm-white LEDs reminiscent of incandescent lighting of the original period. One layer positions small luminaires primarily in the areaway to softly graze the lower façade with light fading from bottom to top. A second layer would position miniature luminaries at the base of the upper cornice for a more elegant, yet crisp expression of the linearity of the monumental architecture. Both layers use LEDs that can be dimmed up and down just like incandescent lighting so that as they are dimmed, the color of the light turns warmer for a very soft effect later in the evening.

The addition will not have exterior lights washing the building faces. Interior workplace lighting will be intermittently visible depending on the room function and on one’s viewing vantage point. From the pedestrian and vehicular perspective, the DC city street trees will obscure direct vision and only long oblique views will reveal lighted office space. Light levels will not be bright enough to spill out, nor will the addition have a harsh or glary “glowing effect.” Using indirect lighting, ceilings will be softly washed using linear, low-profile sized fixtures. The same lighting concept is used within the historic building. With low-iron glass used through the project and a tunable LED lighting system internally as the day transitions into the evening, the interior lighting color temperature will smoothly transition to warmer color temperature (between 2700 to 3000K). The blend of lighting effects from lighted façade stone to the curtain wall should be very gentle, if not seamless. It will have a soft warm coherent look. By code and for energy conservation, the lighting control system will automatically turn off lights when spaces are unoccupied.

Landscape character-defining features, as described in a Cultural Landscape Assessment that was completed as part of this project, are illustrated in Figure 2.23. The character-defining features are preserved with the following exceptions. Those with an asterisk (*) next to them would be modified or removed; those marked with two asterisks (**) would be carefully removed, stored and reinstalled. Their treatment is described in the following description of the landscape design.

Topography/Spatial Organization

- Building terrace* (would be removed and reinstalled)
- Terrace that raises the site above street level* (would be removed and reinstalled)

- Shrub beds* (would be removed and reinstalled)

Circulation

- Central walkway* (would be removed and replaced)
- Entrance plaza* (would be removed and reinstalled)
- Building terrace - marble steps, bi-color paving, and landing*
- Building terrace granite steps* (east & west) (would be removed)
- Areaway at east, south, and west sides* (would be removed and reinstalled)
- Constitution Avenue streetscape/sidewalk* (would be removed and reinstalled)

Vegetation

- D.C. Heritage trees (5)* (2 of 5 would be removed and replaced)
- D.C. Special trees (42)* (34 of 42 would be removed and replaced)
- Lawn* (removed and replaced in-kind)
- Ivy beds* (removed and replaced)
- Two bosques of trees* (removed and replaced)

Small-Scale Features

- Lamp Posts (4)** (would be removed)
- Building terrace walls** (would be removed and reinstalled)
- Granite curb surrounding property* (would be removed)
- Marble curb along central walkway** (would be removed and reinstalled)

BUILDING TERRACE (SEE PARKING ABOVE)

SOUTH LAWN TERRACE

The proposed design would add a new underground parking garage below the south garden terrace at the FRB-East Building. The south garden terrace within the limit of the new garage would be completely demolished and replaced, except for the trees along Constitution Avenue. Two water features would be added in the garden spaces on either side of the lawn. Historic site and building materials would be salvaged, cataloged, and protected for reuse, to the extent possible. An accessible route would be provided by cutting through the existing wall and creating a sloped walk/ramp to reach the existing terrace elevation on the southwest and southeast corners. Wall materials would be marble to match the existing material. New post-and-rail barriers in planting would be installed in alignment with the historic marble walls to minimize impacts to the existing tree roots systems. Where the proposed walls meet the stairs, bollards would be utilized to maintain pedestrian circulation.

GARAGE RAMP RELATED CONSTRUCTION (SEE PARKING ABOVE)

MAIN BUILDING ENTRANCE

The existing grand stair entry would be rehabilitated.

NEW BUILDING ENTRANCE

The new FRB-East building entrance would be located at the northwest corner of the addition. The generous entry includes two sets of wide stairs, a universally accessible ramp, and a wall system with stone walls to provide access to the building. Terraced garden beds would be incorporated into the entry spaces.

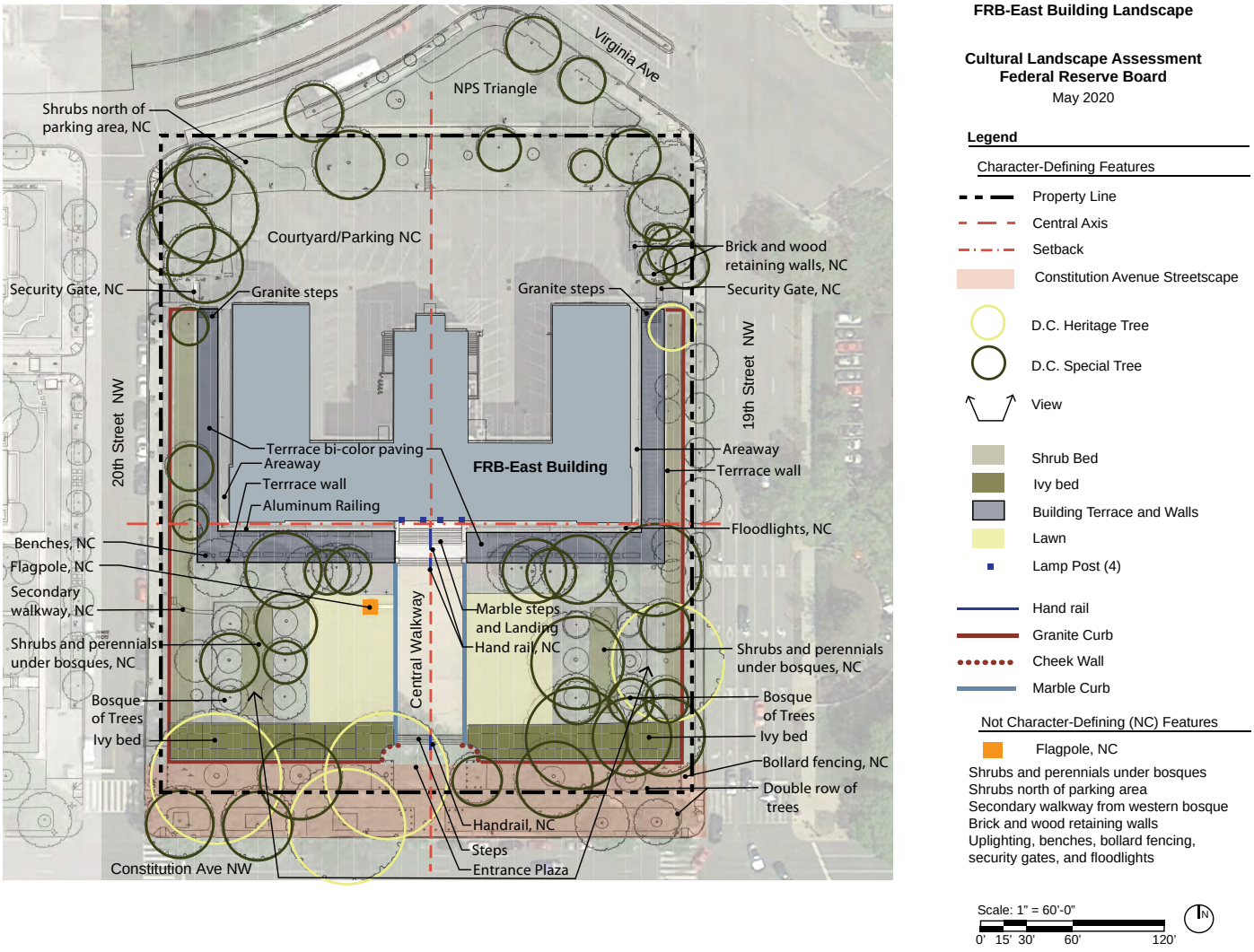


Figure 2.23: Character-defining features of the FRB-East Building landscape.

A new sunken outdoor terrace would be created for employee use adjacent to the entry to help activate the corner of 20th Street and C Street. The terrace would have moveable furniture and would be bordered by a linear water feature on the north side that faces south toward the new glazed lobby space. The water feature would be subtle and inward facing so that it does not compete with the more monumental fountains along Constitution Avenue.

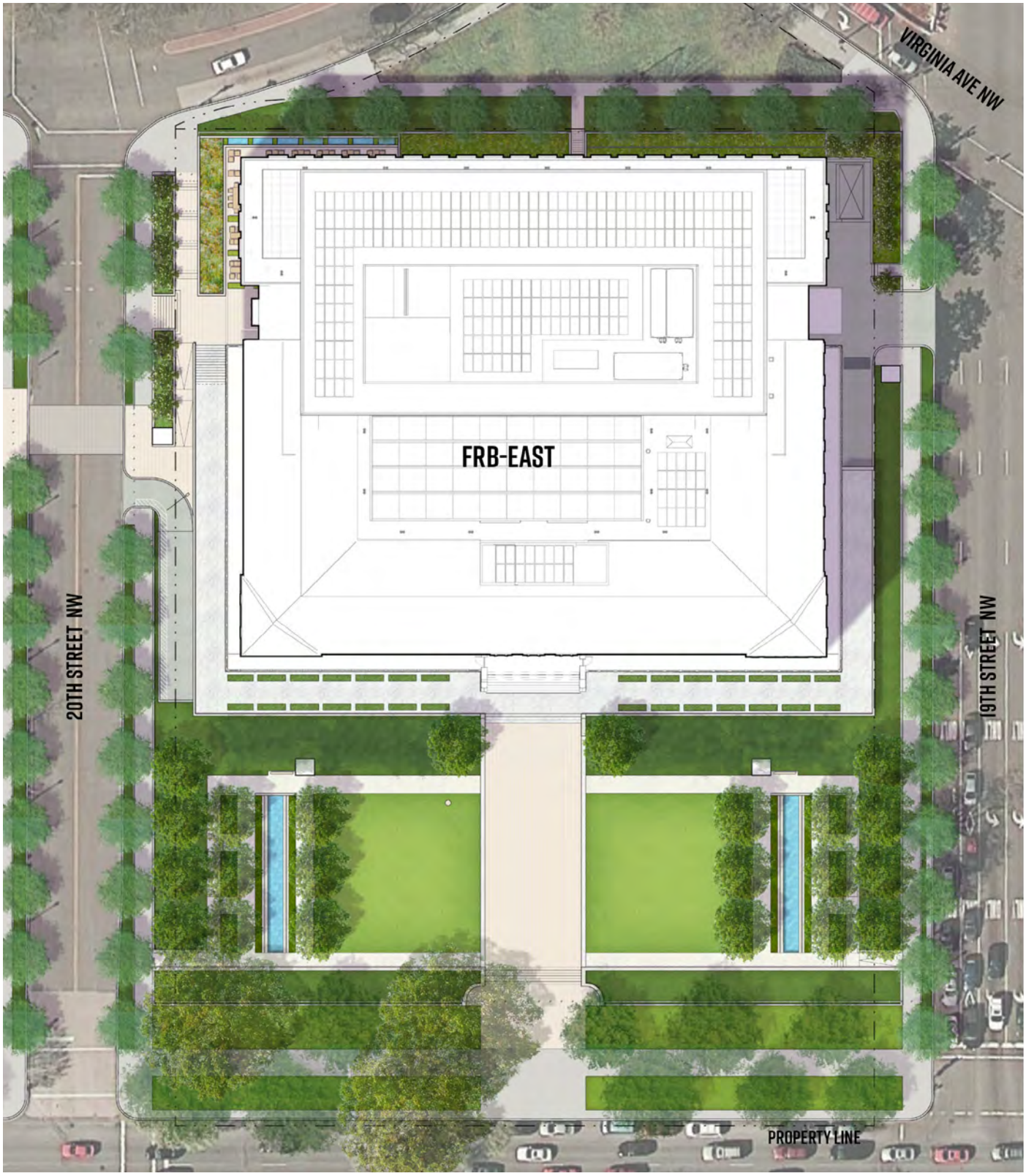


Figure 2.24: Alternative 2: Landscape Plan for the FRB-East Building (proposed).

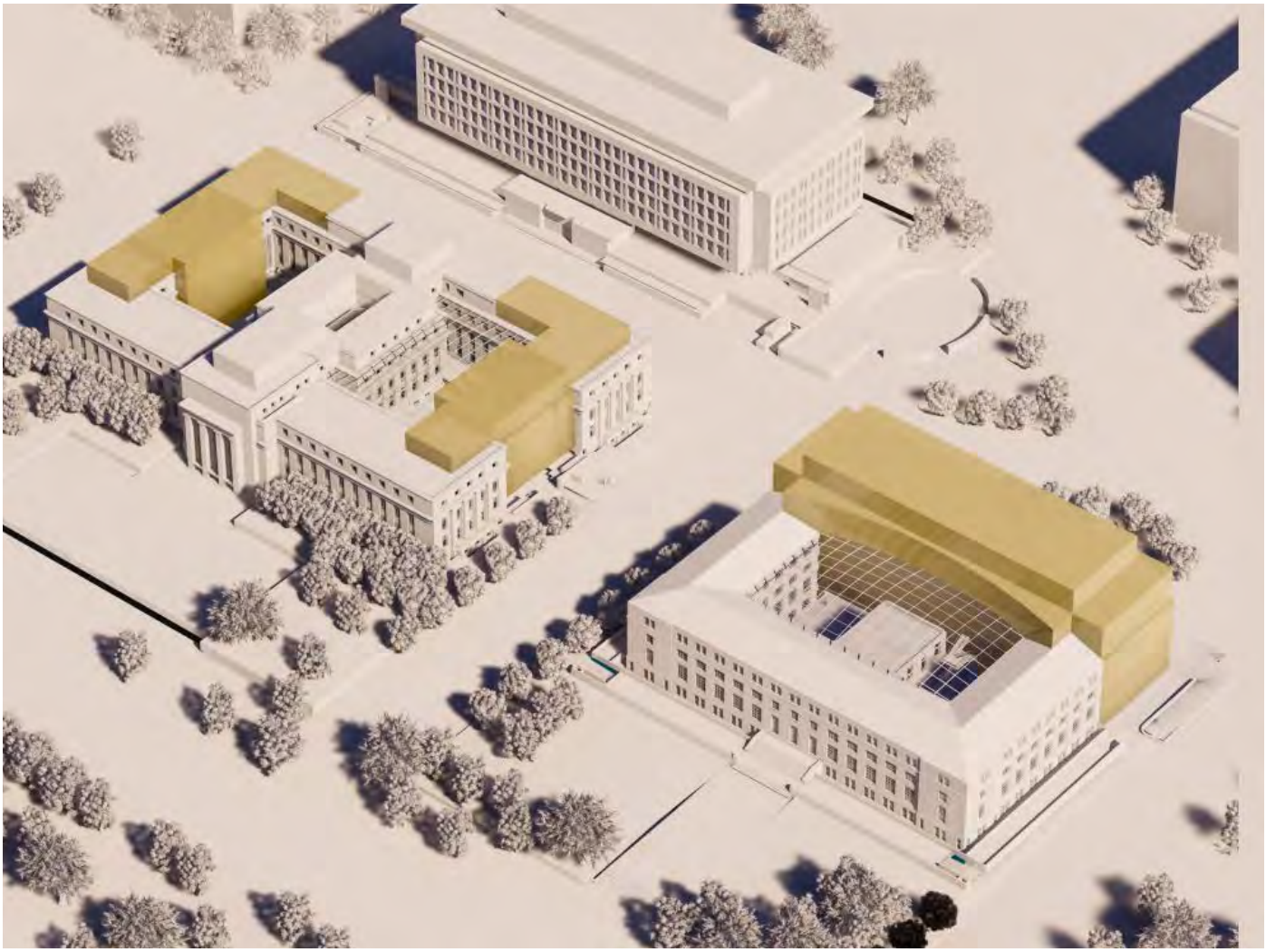


Figure 2.25: Alternative 3: 6-Story Addition to FRB-East (dismissed).

2.5 ALTERNATIVES CONSIDERED AND DISMISSED

2.5.1 ALTERNATIVE 3: FRB-EAST SIX-STORY ADDITION

The Board considered an alternative that would locate the parking garage in its entirety underneath the south lawn of the FRB-East Building within the property line boundaries and allowable vault projections. The center wing of the FRB-East Building would be maintained and the addition to the FRB-East Building would be a total of six stories above grade. The total new construction area, not including parking, would be approximately 248,000 GSF, with 145,000 GSF attributed to the above grade addition and 103,000 GSF below grade.

Alternative 3 would include the careful dismantling, salvaging, and reconstructing of the center wing of the FRB-East Building at a higher elevation to align with Level 1 of the existing building and new addition. Since Alternative 3 would maintain the center wing, the floor plate of the addition would be smaller. Although the addition would be six

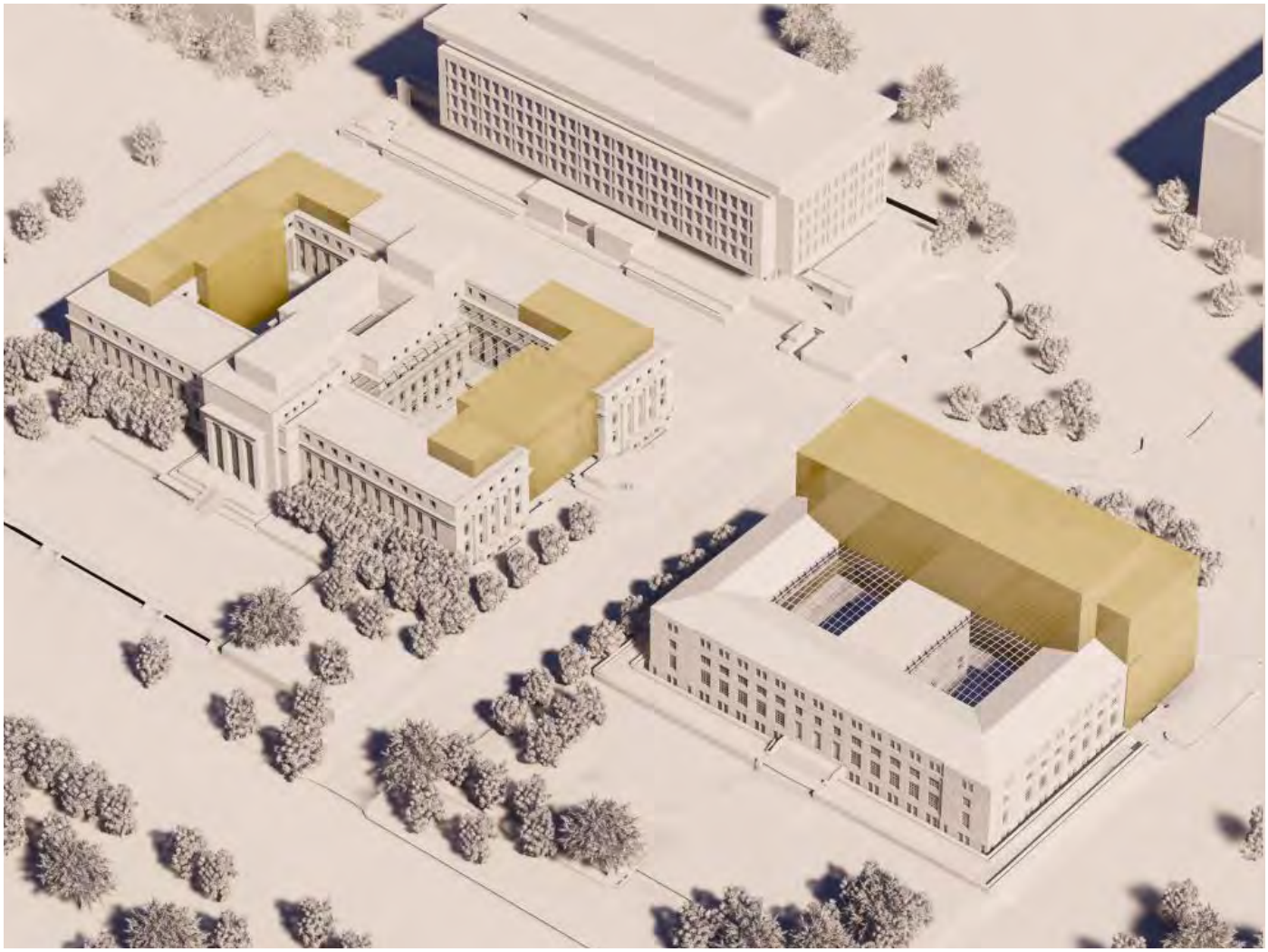


Figure 2.26: Alternative 4: 7-Story Addition to FRB-East (dismissed).

stories, it would not meet the Board's program goal to house 1,750 desks; it falls approximately 180 desks short.

In Alternative 3, the new parking garage would accommodate 243 parking spaces in a 111,520 GSF below grade structure. In order to save heritage trees on the south lawn of the FRB-East Building, the footprint would be very narrow and would be four (4) levels below grade. Both the entrance and exit garage ramps would be located underneath the existing building terraces, requiring modifications similar to Alternative 2. The Board of Governors parking would be maintained in its current location and the entrance to this garage would remain on the west side of the Eccles Building on 21st Street NW.

The Eccles Building infill additions would be constructed to connect the north and south wings similar to Alternative 2. However, only the east courtyard would be converted into an atrium.

Following consultation with CFA and NCPC staff, the Board determined that Alternative 3 was not feasible due to the height of the FRB-East Building

addition, which would be visible from prominent locations along Constitution Avenue and the National Mall. Additionally, Alternative 3 does not meet the Board's program needs of 1,750 desks. Therefore, this alternative was dismissed from further consideration.

2.5.2 ALTERNATIVE 4: FRB-EAST SEVEN-STORY ADDITION

The Board considered an alternative that would maintain the center wing of the FRB-East Building and would not include parking under the south lawn of the FRB-East Building. In this alternative, the addition to the FRB-East Building would be seven stories above grade. A new parking garage would be located underneath the new addition in four below grade levels. The total new construction area, not including below grade parking, would be approximately 210,000 GSF. 183,000 GSF would be attributed to the above grade addition. The penthouse on the FRB-East Building addition would be larger in Alternative 3 to accommodate some of the air handling units.

The new parking garage would accommodate 194 parking spaces in a 111,000 GSF structure. Vehicular entrances would be located north of the historic terraces of the FRB-East Building from both 19th Street NW and 20th Street NW. The terraces would be rebuilt with stairs, as parking garage ramps occur within the building and not under the terraces. The Board of Governors parking would be maintained in its current location and the entrance to the garage would remain on the west side of the Eccles Building on 21st Street NW.

The Eccles Building infill additions would be constructed to connect the north and south wings similar to Alternative 2. However, only the east courtyard would be converted into an atrium.

The Board determined that Alternative 3 would have significant physical security implications on the FRB-East Building since parking would be located beneath the new addition. Additionally, this alternative would not meet the Board's program requirement of 1,750 desks, as it would only provide 1,533.

Following staff consultation with CFA and NCPC, the Board determined that in addition to not meeting its program and security needs, Alternative 4 was not feasible due to the height of the FRB-East Building addition, which would be visible from prominent locations along Constitution Avenue and the National Mall. Consequently, this alternative was dismissed from further consideration.

3 AFFECTED ENVIRONMENT

3. AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter of the Environmental Assessment describes the existing conditions of the human environment in the project area and the impacts of implementing the proposed renovation and expansion of the Eccles and FRB-East buildings. Specific impact topics are identified in this chapter for analysis and to allow comparison of the environmental consequences of each alternative.

Impact topics that are analyzed for this project are: historic resources and cultural landscapes, archaeological resources, visual resources, planning policies, sustainability, air quality, noise levels, vegetation, climate change and carbon footprint, stormwater management, topography, geology and soils, solid waste, hazardous materials and wastes, and transportation. Impact topics that are dismissed from further analysis are: land use, environmental justice, socioeconomics, floodplains, surface water, wetlands, water supply, wildlife, special status species, and topography. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

These conditions serve as a baseline for understanding the resources that could be impacted by implementing the project. This chapter then analyzes the beneficial and adverse impacts that would result from implementing any of the alternatives described in Chapter 2.

3.2 IMPACT TOPICS DISMISSED

Resource issues are dismissed from further analysis when the proposed action would cause a negligible or no impact. Negligible impacts are impacts that are localized and immeasurable at the lowest level of detection. These topics are briefly discussed below and then dismissed from further consideration or analysis. The impact topics dismissed are:

- Land use
- Environmental Justice
- Population and Housing
- Floodplains
- Wetlands
- Surface Water
- Wildlife
- Special Status Species
- Topography

3.2.1 LAND USE

The Eccles Building and FRB-East Building are federally owned properties located in the Northwest Rectangle, an area in the District of Columbia composed of federal government buildings and/or semi-private institutions. The immediate vicinity of the project area consists primarily of federal and private offices and NPS-managed land. The DC Office of Planning's 2006 land use map indicates both the Eccles Building and FRB-East Building parcels as Federal Public. In addition, the DC Office of Planning's 2013

Comprehensive Plan Future Land Use map indicates both parcels as Federal. The land use will not be changed or affected by the current project, therefore this impact was dismissed from further consideration.

3.2.2 ENVIRONMENTAL JUSTICE

Executive Order 12898 requires all federal agencies to incorporate Environmental Justice into their programs and policies and to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations and communities. The project area, located within Ward 2 in Census Tract 62.02, and its immediate surroundings, does not contain sizeable residential populations. According to the 2017 U.S. Census, Tract 62.2 contains 72 residents. All residents identified as white. There should not be communities of concern with regard to environmental justice within the immediate area surrounding the project. Therefore, this impact topic was dismissed from further consideration.

3.2.3 POPULATION AND HOUSING

No housing is located on or adjacent to the project area. The proposed project would not require the relocation of residents or employees into or out of the project area, therefore it would have no impact on population. No housing immediately adjacent to the alternative sites would be impacted by the proposed project. Consequently, population and housing has been dismissed from further analysis.

3.2.4 FLOODPLAINS

Federal activities within floodplains must comply with EO 11988: Floodplain Management, 33 C.F.R. 1977. Per this executive order, federal agencies are required to avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains to the extent possible, thereby minimizing flood risk and risks to human safety.

The Eccles and FRB-East buildings are outside of the 100-year (1% Annual Chance)and the 500-year (0.2% Annual Chance) flood hazard areas, according to FEMA flood insurance rate map (Map Number 1100010018C dated 9/27/10). The FEMA 500-year flood plain is located approximately 150’ from the property.

Because the proposed project is located outside the floodplain, the project is not expected to have a measurable effect on the frequency, elevation, intensity or duration of floods, nor would it impact floodplain function. Therefore, floodplains were dismissed from further analysis within this EA.

3.2.5 WETLANDS

A desktop review of the FWS National Wetland Inventory (FWI) and the DOEE map of Known Wetlands within the District indicate that no wetlands or Waters of the US (WOUS) are present in the project area. Therefore, this impact topic was dismissed from further consideration.

3.2.6 SURFACE WATER

There are two human-made fountains within the project area, both located on the south lawn of the Eccles Building. Because the features are human-made fountains and are closed systems, the proposed project will not affect any natural water body. Therefore, this impact topic was dismissed from further consideration.

3.2.7 WILDLIFE

The project area is located in an urban environment, in which the natural environment has been previously disturbed and developed.

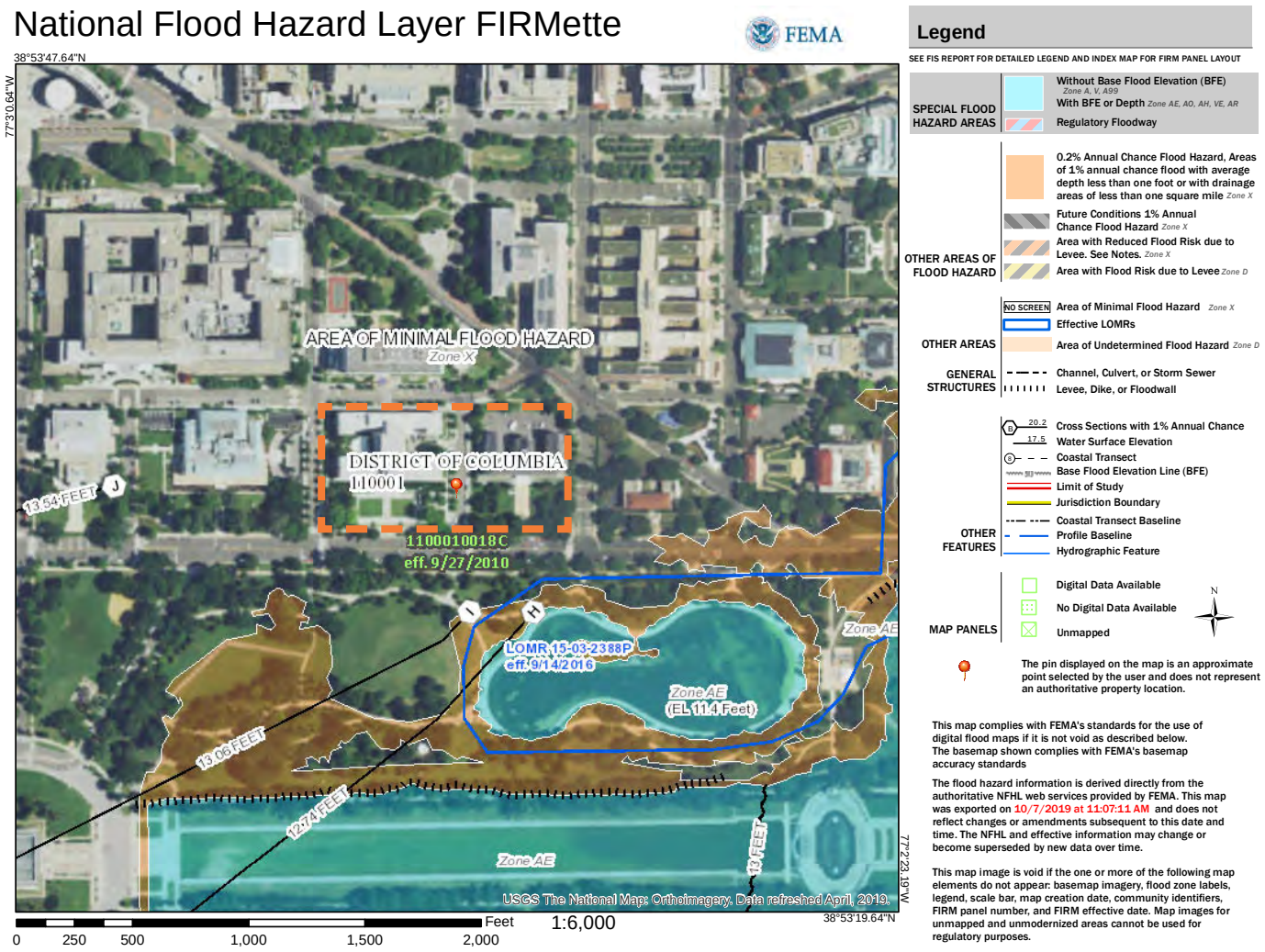


Figure 3.1: FEMA Flood Hazard Map, 2019.

Therefore, the area does not provide natural habitat for plant and animal species. The existing wildlife community likely includes common urban species of small mammals and birds, such as gray squirrels (*Sciurus carolinensus*), Norway rats (*Rattus norvegicus*), house sparrows (*Passer domesticus*), pigeons (*Columba livia*), and starlings (*Sturnus vulgaris*). The current project will not affect wildlife in the project area. Therefore, this impact topic was dismissed from further consideration.

3.2.8 SPECIAL STATUS SPECIES

The United States Fish and Wildlife Service (USFWS) was contacted on March 6, 2020, through its Information Planning and Consultation (IPaC) system to determine whether any known critical habitats or listed rare, threatened, or endangered species have been documented in the project area. Consultation indicated that there are no critical habitats, National Wildlife Refuge lands, fish hatcheries, or wetlands in the project area.

Within the project area is one threatened species, the Northern Long-eared Bat (*Myotis septentrionalis*). According to USFWS, this species needs to be considered for projects within the federal nexus that have tree clearing equal or great than 15 acres. The project area is less than 15 acres and no clearing equal to or greater than 15 acres would occur.

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Twenty-four (24) migratory birds of conservation concern are expected to occur or may be affected by activities in this location. Because of its highly urbanized environment in downtown Washington, DC, it is highly unlikely that the proposed work would affect the migratory birds of concern. Therefore, this impact topic was dismissed from further consideration.

3.2.9 TOPOGRAPHY

Topography in Washington, DC, is generally of moderate relief and defined by level to gently rolling uplands, steep valley walls, widely separated interstream divides, and narrow valley bottoms. The greatest relief occurs approximately 260 feet upstream from Great Falls. For the most part, the topographic boundary between the mid-Atlantic Piedmont and the mid-Atlantic Coastal Plain is gentle, causing sediments to “feather out” in the mid-Atlantic Piedmont when deposited. The proposed project area resides on nearly level lowland topography, formed on river terrace deposits, alluvium, and artificial fill.

The Federal Reserve Board complex is situated on a relatively flat area located to the northwest of the Washington Channel and Tidal Basin and east of the Potomac River at Peters Point. The ground slopes up to about elevation 90 ft at Peters Hill 0.3 miles to the northwest and down to elevation 0 ft at the Tidal Basin 0.5 miles to the southeast. At the Eccles Building parcel, existing site grades are relatively level, varying between 20 ft to 30 ft elevation above sea level.

The existing topography of the FRB-East Building parcel naturally slopes downward in elevation to the south. Existing site grades range from a high of 25 feet at the northern property edge, to 18 feet at the edge of Constitution Avenue. The parking area is sunken below the adjacent topography, dropping off to approximately 19 feet at the bottom of the parking area. The south lawn that fronts the building along Constitution Avenue is at approximately 22 to 24 feet above sea level.

The current project will include minor changes to topography to revitalize the building entrances and improve accessibility but will not change topography at property edges. Therefore, this topic is dismissed from further consideration.

3.3 IMPACT TOPICS ADDRESSED

Impact topics are resources of concern that would be affected, either beneficially or adversely, by the range of alternatives. Impact topics were identified based on federal laws, regulations, Executive Orders, and Federal Reserve Board (Board) and National Capital Planning Commission (NCPC) knowledge of limited or easily impacted resources. Specific impacts were addressed to ensure the alternatives were compared based on the most relevant topics. Impact topics included in this document were analyzed to compare the environmental consequences of the No Action Alternative with the action alternatives. The resources analyzed in detail in this EA are:

- Cultural Resources
- Public Health and Safety

- Economic Resources
- Planning Policies
- Public Services and Utilities
- Sustainability
- Climate Change and Carbon Footprint
- Stormwater Management
- Vegetation
- Hazardous Materials and Wastes
- Waste Management
- Air Quality
- Noise Levels
- Geology, Soils, and Groundwater
- Transportation

3.3.1 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108), requires federal agencies to consider the effects of the proposed action on historic properties. Historic properties, as defined by the NHPA, are any prehistoric or historic districts, sites, buildings, structures, or objects that are eligible for or already listed in the National Register of Historic Places (NRHP). Also included are any artifacts, records, and remains (surface or subsurface) that are related to and located within historic properties and any properties of traditional religious and cultural importance to Tribes or Native Hawaiian organizations.

In order to be listed in, or be considered eligible for, the NRHP, properties must meet one of the following criteria:

- Be associated with events that have made a significant contribution to the broad patterns of our history; or
- Be associated with the lives of persons significant in our past; or
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
- Have yielded, or are likely to yield, information important in prehistory or history.

Historic properties must also possess sufficient integrity to convey their significance, including their location, design, setting, materials, workmanship, feeling, and association.

An early step in the Section 106 process is the determination and documentation of the Area of Potential Effects (APE). As defined by 36 CFR § 800.16 (d), an APE is “the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.” Upon initiation of Section 106 consultation, the Board identified a preliminary APE, which was refined in consultation with the DC State Historic Preservation Office (DC SHPO) and other consulting parties.

AREA OF POTENTIAL EFFECT

An Area of Potential Effect, as defined in 36 CFR Part 800.16, is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.

The Area of Potential Effect for this undertaking was delineated in consultation with the District of Columbia Historic Preservation Office and other consulting parties. The Area of Potential Effect includes the cultural resources that could be impacted as a result of the undertaking, as well as the area from which the project site is readily visible.

Figure 3.2 provides the Area of Potential Effect boundary for proposed project. Cultural resources located within the Area of Potential Effect are listed in Table 3.1. More detailed descriptions of the Eccles Building property and the FRB-East Building property and their significance are below.

CULTURAL RESOURCES IN THE APE

MARRINER S. ECCLES BUILDING

2051 Constitution Avenue NW, DC Designation 1964

ECCLES BUILDING

The Marriner S. Eccles Building (Eccles Building) was built in 1935-1937 as the headquarters of the Board. French-born Philadelphia architect Paul Phillipe Cret won the competition to design the building in 1935. The design and construction of the new building followed legislation passed in 1933 that determined that the Board would no longer be chaired by the Secretary of the Treasury and have its headquarters in the Treasury Building. Authorized to acquire land for its new headquarters in 1934, the Board ultimately secured a prominent site along Constitution Avenue, between the National Academy of Sciences Building (1924) and the Public Health Service Building (1933). Cret designed a monumental building of white Georgia marble that combined a classical vocabulary and plan inspired by his training at the Ecole des Beaux Arts and his preference for modernism. Called by Cret "New Modernism" and subsequently by others as "Stripped Classicism," the result was a classically proportioned building with spare and austere ornamentation and detailing.

Documentary evidence indicates that as Cret was designing the new building, he was instructed to consider an expansion to accommodate additional staff. Renderings produced by Cret's office show the 20th Street elevation, one as it was constructed (and much as it exists today), and a second drawing with "infills" connecting the north and south wings. These infill sections on the east and west side were not purely speculative. Foundation plans and recently discovered physical evidence indicates piles and footings for these infill sections were installed at the time of construction.

Cret also designed the formal south plaza on Constitution Avenue that fronts the Eccles Building. Cret's design included central terraces that are flanked on either side by a formal garden with a central fountain of black granite. In addition, Cret included private courtyards on the east and west sides of the building, enclosed by stone walls.

In 1982, by act of Congress, the building was named after Marriner S. Eccles, who had served as Chairman of the Federal Reserve Board from November 15, 1934, through April 14, 1948.

Since its dedication by President Franklin Delano Roosevelt in 1937, the Eccles Building has undergone several small- and large-scale renovations to its interior, exterior, and systems. The building was renovated in the 1970s in response to the completion of the Board's William McChesney Martin, Jr. Building in 1974, located directly north of the Eccles Building. The offices on each side of the double-loaded corridors were

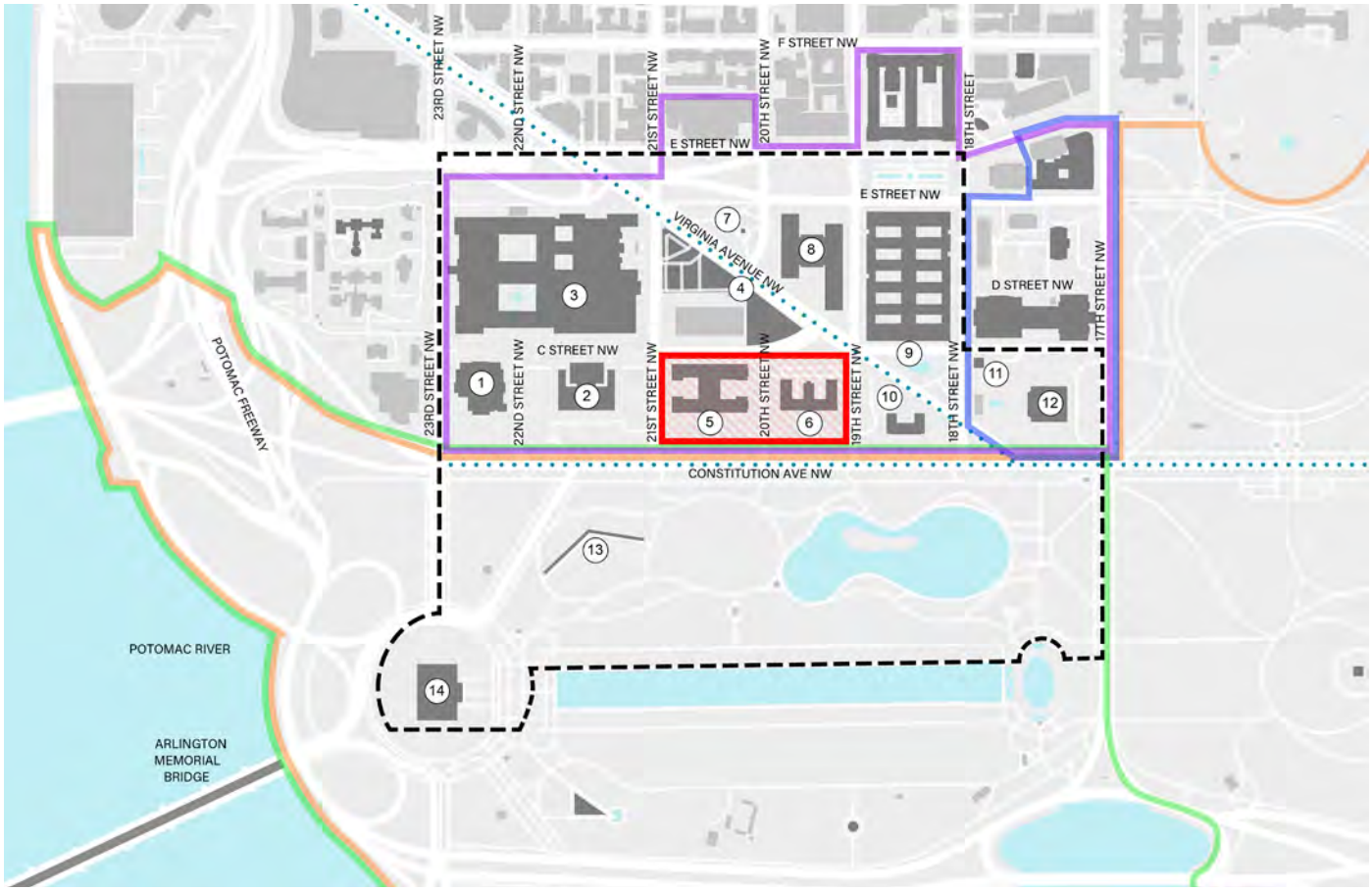


Figure 3.2: Area of Potential Effect.

KEY

- National Register of Historic Places (NR), DC Inventory of Historic Sites (DC), and/or National Historic Landmark (NHL)
- APE Boundary
- Project Site
- L'Enfant Plan Streets
- East and West Potomac Parks Historic District
- Seventeenth Street Historic District
- Northwest Rectangle Historic District
- National Mall Historic District

INDIVIDUAL LANDMARKS

1. **American Pharmacists Assn** (NR & DC) 2215 Constitution Ave NW
2. **National Academy of Sciences** (NR & DC) 2101 Constitution Ave NW
3. **Harry S. Truman Federal Building** (NR Eligible) 2201 C St NW
4. **Reservation 378 (NR Pending)** Virginia Ave btwn C St & 21st St NW
5. **Marriner S. Eccles Building** (DC) 2051 Constitution Ave NW
6. **US Public Health Service Building** (NR & DC) 1951 Constitution Ave NW
7. **Gen. Jose de San Martin Memorial** (NR & DC) 511 20th St NW
8. **Theodore Roosevelt Federal Building** (NR Eligible) 1900 E St NW
9. **Department of the Interior** (NR & DC) 1849 C St NW
10. **Org. of American States Annex** (NR Eligible) 1801 Constitution Ave NW
11. **Van Ness House Stables** (NR & DC) 18th & C Streets, NW
12. **Pan American Union** (NR & DC) 200 17th St NW
13. **Vietnam Veterans Memorial** (NR) 5 Henry Bacon Dr NW
14. **Lincoln Memorial** (NR & DC) 2 Lincoln Memorial Cir NW

Table 3.1: Historic Properties within the APE

NAME OF PROPERTY	LOCATION	DESIGNATION
Marriner S. Eccles Building	2051 Constitution Avenue NW	DC
US Public Health Building (FRB-East Building)	1951 Constitution Avenue NW	DC, NRHP
Northwest Rectangle Historic District	Constitution Avenue, 17th, E, and 23rd Streets NW	NRHP-Eligible
L'Enfant Plan of the City of Washington		DC, NRHP
National Mall Historic District	Capitol Grounds on the east, Independence Avenue/Potomac River on the south, the Potomac River to the west, and Constitution Avenue on the north	DC, NRHP
East and West Potomac Parks Historic District	Potomac River from Constitution Avenue to Hains Point	DC, NRHP
Seventeenth Street Historic District	17th Street NW, west side between New York and Constitution avenues	DC
American Pharmacists Association	2215 Constitution Avenue NW	DC, NRHP
National Academy of Sciences	2101 Constitution Avenue,	DC, NRHP
Harry S. Truman Federal Building (US Department of State Building)	2201 C Street NW	NRHP Eligible
Reservation 378	Virginia Avenue between 20th Street NW and 21st Street NW	NRHP Eligible
General Jose de San Martin Memorial	Reservation 106 (Virginia Avenue and 20th Street NW)	NRHP
Office of Personnel Management (Theodore Roosevelt Federal Building)	1900 E Street NW	NRHP-Eligible
US Department of the Interior (New Interior Building)	1849 C Street NW	DC, NRHP
Pan American Union Administration Building (Annex)	1801 Constitution Avenue NW	NRHP-Eligible
Van Ness House Stables	18th & C Streets, NW	DC, NRHP
Organization of American States (Pan American Union)	17th Street and Constitution Avenue NW	NRHP
Vietnam Veterans Memorial Lincoln Memorial	West Potomac Park	NRHP
Lincoln Memorial	23rd Street NW	NRHP
Virginia Avenue Cultural Landscape	Virginia Avenue NW between 8th Street NW and New Hampshire Avenue NW	NRHP-Eligible
Constitution Gardens Cultural Landscape	Constitution Avenue and 17th Street NW	NRHP-Eligible

modified with partitions to create office clusters. The staff cafeteria, located on the fourth floor of the Eccles building, was relocated to the new Martin Building and the former cafeteria was retrofitted with office space. In addition, a skylight above the building's grand stair was removed and infilled on the fourth and fifth floor levels for additional office space. Although the laylight above the stair was left in place, it was subsequently lit artificially. The 1970s renovation of the Eccles Building also infilled the area between the two fifth floor penthouses with new office space. Other improvements and changes to the building and site include perimeter security barriers, a visitor screening facility located in the east courtyard, and the retrofitting of the original windows with internal metal framed windows for blast protection. The Eccles Building was listed in the DC Inventory of Historic Sites in 1964, the year of the inventory's establishment. The Eccles Building was one of the initial 289 buildings designated. An inventory form was not prepared for the building as part of its listing. Although not formally evaluated for listing in the National Register of Historic Places, the property is being treated as eligible, with significance under Criterion A, Government and Community Development, as the first permanent headquarters of the Federal Reserve Board of Governors and as part of the development of monumental buildings along Constitution Avenue in accordance with the McMillan Plan in the early decades of the 20th century. The property also meets National Register Criterion C, Architecture, as a significant example of Paul Cret's stripped classicism style for a monumental federal building. The property contributes to the National Register-eligible Northwest Rectangle Historic District. A Cultural Landscape Assessment for the Eccles Building was completed in 2020 as part of the proposed project.

ECCLES BUILDING LANDSCAPE

The Eccles Building site design was completed by Architect Paul Phillipe Cret and his studio, who envisioned the building and landscape as one cohesive design. The landscape architecture mirrors the building's classical style, symmetrical order, and an emerging modernism that emphasized clean lines and sparse ornamentation.

The Eccles Building occupies the entire block between 20th Street NW on the east and 21st Street NW on the west and extending to C Street NW to the north and Constitution Avenue NW on the south. The marble-clad building faces south and is set back approximately 200 feet from Constitution Avenue. The entire site perimeter is protected with security bollards, with vehicular access to two courtyards at the east and west sides of the building, restricted by retractable security barriers.

The Constitution Avenue frontage creates an imposing composition of terraces and steps that lead up to the main entrance. These terraces are flanked on either side by twin formal gardens with central fountains of black granite surrounded by pebble mosaics and marble borders. The H-shaped building has two private courtyards to the east and west that are enclosed behind stone walls, with decorative iron gates. The drive lane through the east court provides access to the loading dock, while the west courtyard is a parking entrance for building users. Stone fountains that are integrated with the building façades at the east and west courtyards provide an axial focal point for the open spaces. The west courtyard has a building at the center of the courtyard.

The landscape of the Eccles Building demonstrates its historic character and retains most of its original character-defining features.

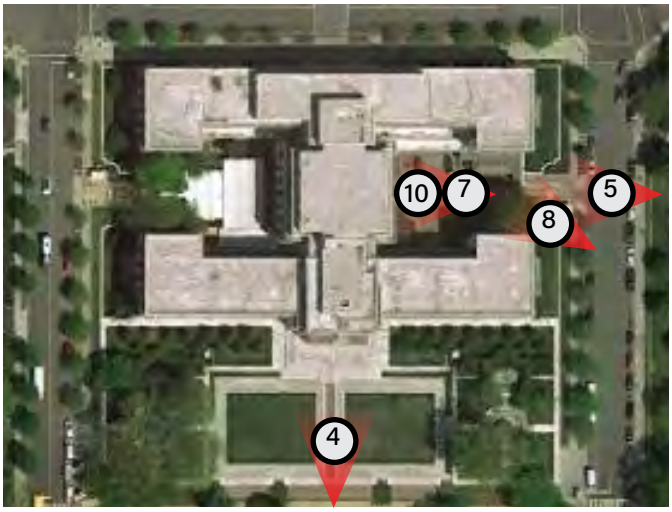


Figure 3.3: Key plan.

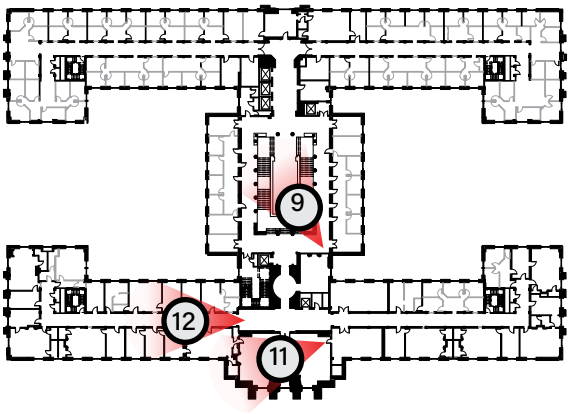


Figure 3.6: Key plan of the Eccles Building second floor.

Figure 3.4: South elevation and landscape of the Eccles Building.

Figure 3.5: East elevation and courtyard of Eccles Building.

Figure 3.7: East courtyard of Eccles Building.

Figure 3.8: Site walls of east courtyard.

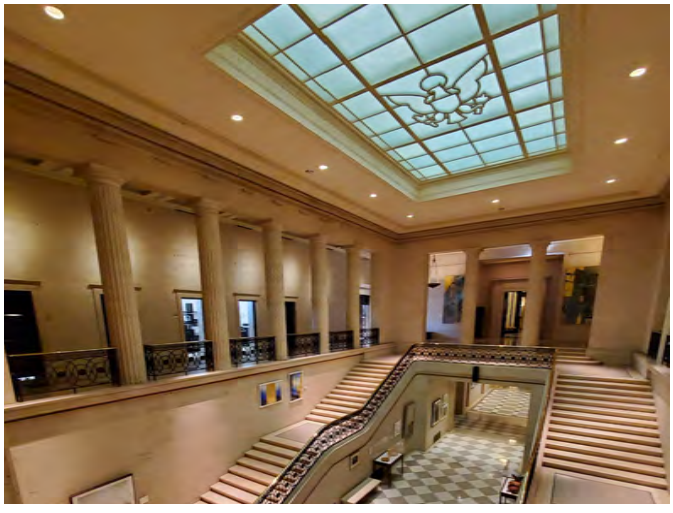


Figure 3.9: Main stair of the Eccles Building.

Figure 3.10: Eccles Building courtyard fountain.

Figure 3.11: Board Room in the Eccles Building.

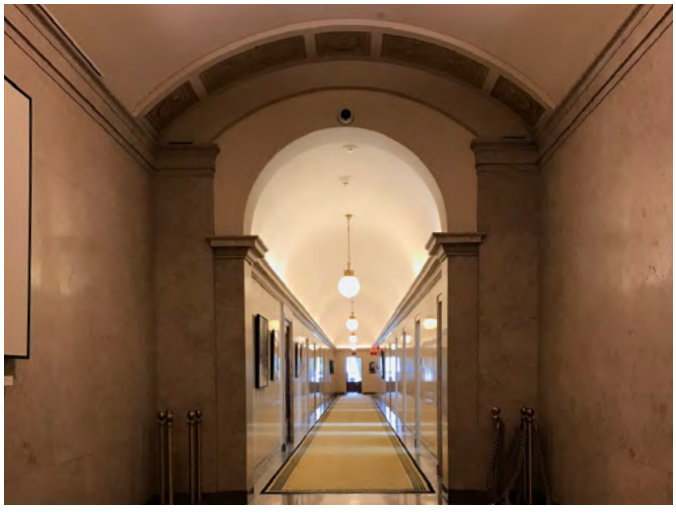


Figure 3.12: South corridor, second floor of the Eccles Building.

Key elements are in the same location as originally constructed, including the building, site walls, fountains, courtyards, trees, lawn, and gardens. The building setback, in line with other buildings along Constitution Avenue, frames the overall setting of the National Mall. The generous amount of green space between the building and Constitution Avenue creates a balance between the visual weight of the building and the open space. Set upon a raised terrace, the building is prominent from the street, creating a formal and imposing feeling. This feeling is accentuated by the strong central axis and symmetrical plantings that create a formal, monumental space with an overall feeling of order and authority. In contrast, intimate, semi-public areas of the courtyards and fountain gardens reflect Cret's integration of human-scaled elements into the design of the otherwise monumental space.

The original 1930s design is evident in today's landscape. A characteristic of Cret's design was the holistic thinking that unified the design for both the landscape and building. Circulation routes, vegetation patterns, and site walls are symmetrical throughout the site, arranged by the strong central axis formed by the building's main entrance. Walls and paths are perpendicular and parallel to the building's lines. Vegetation was designed to be in balance with the building, never to obstruct views to the building's façade, but to balance the weight of it with the large void of the front lawn and tall trees at the edges. The design incorporated multiple scales with characteristics of monumentality and intimacy. Features such as the wide stairs, broad lawn with central walkway, and large stepped granite blocks attest to the monumental, imposing character of the building and landscape. In contrast, the detailed design of the fountain gardens with mosaic pavements, courtyards with small fountains and detailed plantings, reveal a human-scaled design. The detail found in the metalwork and stonework throughout the site exhibit the original workmanship of the 1930s. Original materials have been retained, including marble walls and benches, black granite fountains, and ornamental stone mosaic pavement in the courtyards.

Changes since the period of significance (1935-1937), established in the Cultural Landscape Assessment, are relatively minor, including additions of guard booths, bollards, and vehicular barriers. The addition of a one-story structure within the center of the west courtyard has diminished the integrity of the courtyard by disrupting the open character of the courtyard and removing original materials. The maturation of original vegetation has outgrown its intended size in some locations (e.g. evergreen shrubs around the west garden terrace), and in other locations plants have been added where none were intended in the original design (e.g. the line of Southern magnolias along the building's south façade).

FRB-EAST BUILDING (US PUBLIC HEALTH SERVICE BUILDING)

DC Designation 2007, NRHP Listing 2007

FRB-EAST BUILDING

The FRB-East Building was constructed between 1931 and 1933 to house the United States Public Health Service. Washington architect Jules Henri de Sibour designed the building, which was one of several new monumental buildings constructed in the area known as the Northwest Rectangle after the acceptance of the 1901 McMillan plan. De Sibour designed the new federal building to align with the adjacent Pan American Union Building (1910) to the east and the National Academy of Sciences Building (1924) to the west. The

E-shaped building is three stories and features a façade of white Georgia marble with double-height colonnade of fluted Doric pilasters.

The firm of Wheelright and Stevenson created the landscape plan for the south lawn of the building in 1933, but due to funding it was not executed until 1937. Design elements include a building terrace, a raised lawn terrace with a stone border, and a double row of American elm trees planted along Constitution Avenue. Additional landscape elements were added to the south lawn by 1940.

Since its completion in 1933, several government agencies have occupied the building. The Public Health Service outgrew the building shortly after its construction and although it was designed for an addition on its north side, funding did not materialize. The Public Health Service began relocating some of its employees to temporary offices as early as 1938 and vacated the building by 1947. During World War II, the building also served as the offices for the Joints Chiefs of Staff and Combined Chiefs of Staff. The building later housed the Atomic Energy Commission, the National Science Foundation, and most recently the Department of the Interior. The Board acquired the building in 2018.

As several different agencies and organizations occupied the building since its construction, the FRB-East building has been modified numerous times to accommodate each organization's needs. In the 1970s, a new story was added to the central wing of the building. Original metal office partitions have been modified over the years through the installation of gypsum board or plywood paneling over the original partitions and the addition of partitions to create more individual office spaces. In order to address life safety concerns, wall and fire doors have been installed at certain locations and the main stair hall enclosed with a solid wall. The north ends of the east and west wings have also been reconfigured with additional fire stairs.

The FRB-East Building was listed in the DC Inventory of Historic Sites and the National Register of Historic Places in 2007 with a period of significance of 1931 to 1947. The property meets National Register Criterion A, for its association with the growth of the US Public Health Service and as part of the development of monumental buildings along Constitution Avenue built in accordance with the McMillan Plan in the early decades of the 20th century. The FRB-East Building is also listed under Criterion C, as an excellent example of classically inspired federal architecture in the 1930s.[1] A Historic Structures Report was prepared for the building in 1992. A Cultural Landscape Assessment for the FRB-East Building was completed in 2020 as part of the proposed project.

FRB-EAST LANDSCAPE

The NRHP listing for the FRB-East Building does not count the site as a contributing feature, however it is an integral part of the building's setting and overall character. The landscape was designed by Robert Wheelwright and Markley Stevenson, who developed a scheme that was integral to the overall design. The classical, symmetrical composition of the landscape, with a series of elevated terraces, combined with details such as cast aluminum lamp posts and railings, unified the landscape and building into a cohesive composition.

1 Erin E. Brasell, Earth Tech Inc. National Register Nomination, US Public Health Service Building. Washington, DC: General Services Administration, 2006.

Figure 3.13: Key plan.

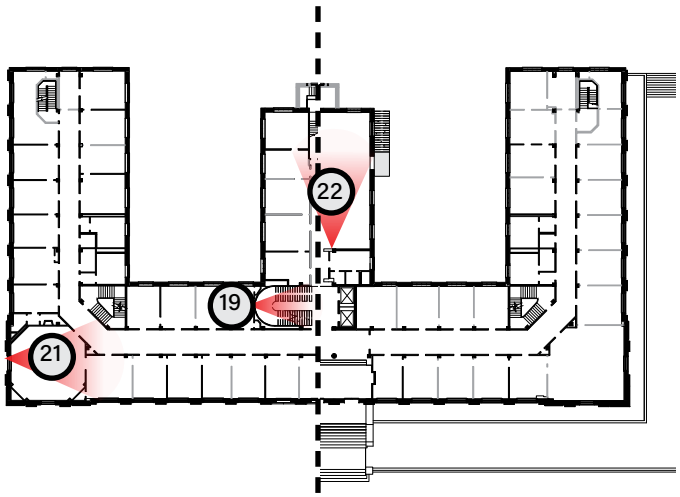


Figure 3.16: Key plan of the second (left) and first (right) floor of the FRB-East Building.

Figure 3.14: South elevation and landscape of the FRB-East Building.

Figure 3.15: North elevation, FRB-East Building.

Figure 3.17: View of building terrace, FRB-East Building.

Figure 3.20: FRB-East south lawn, granite curb with groundcover. Bosque is in middle background.

Figure 3.18: North Elevation, center wing, FRB-East Building.

Figure 3.21: Surgeon General's office, FRB-East Building.

Figure 3.19: Main lobby and stair, FRB-East Building.

Figure 3.22: Meeting room in center wing, FRB-East Building.

The FRB-East Building is located on the north half of the site, set back from Constitution Avenue on a raised terrace. The building terrace is a 9-foot wide marble-paved landing that surrounds the building on three sides. Marble steps descend from the building terrace to a lawn terrace that borders the building on the south, east, and west sides. A formal walkway of exposed aggregate concrete, flanked by low marble curbs connects the building entrance to Constitution Avenue. A small plaza at the south end of the walkway is framed by a pair of low curved walls of white Georgia marble. The north side of the building includes two courtyards, both paved in asphalt and open to a parking lot behind the building. The landscape of the FRB-East Building demonstrates its historic character and retains many character-defining features. The landscape retains integrity of location, setting, and feeling. Key elements are in the same location as originally constructed, including the building, terrace, walkways, lawn, granite curb, and bosques. The building setback, in line with other buildings along Constitution Avenue, frames the overall setting of the National Mall. The generous amount of green space between the building and Constitution Avenue creates a balance between the visual weight of the building and the landscape. The building is raised above street level, creating a sense of prominence. This feeling is accentuated by a central axis and symmetrical arrangement that create formality and order.

The original 1930s design is evident in the landscape today. Circulation routes and vegetation patterns are symmetrical throughout the site, arranged by the central axis of the building. Vegetation was designed to balance the weight of the building and frame views, with low vegetation along the building's façade and higher vegetation on the sides. The entire composition was enclosed by a granite curb with an edging of evergreen groundcover. Design details found in the metalwork of the handrails and lamp posts, and the stonework throughout the site exhibit the 1930s workmanship. Original materials have been retained, seen in the marble steps and walls, granite curb, and bronze lamp posts.

Changes since the period of significance (1931-1947) are relatively minor, including additions of bollards and vehicular barriers. The variety of plant species has expanded since the period of significance, and shrubs are now located in places where none were intended historically (e.g. underneath the bosques). In the 1960s a flagpole was added to the left of the central walkway, disrupting the symmetrical design of the front façade. Overall, the landscape remains mostly unaltered from the original design and construction.

ARCHAEOLOGICAL RESOURCES

The Board completed a Phase IA Archaeological Assessment study in consultation with DC SHPO. The goal of the study was to assess whether there was potential within the archaeological area of potential effect (APE) for the presence of intact cultural resources that could be eligible for the National Register of Historic Places (NRHP). For the purposes of the assessment, the archaeological APE was confined to the proposed limits of disturbance (LOD) of the two lots containing the Eccles Building and the FRB-East Building, Tax Lots 0088 East 0812 and 0128 0805, respectively. The Phase IA Archaeological Assessment was conducted in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation and the Guidelines for Archaeological Investigations in the District of Columbia as adopted by the DC SHPO.

The study consisted of a review of the historical mapping and land use of the properties, a GIS cut/fill analysis, and the completion of a geoarchaeological survey to assesses the potential for encountering intact precontact and historic archaeological resources within the archaeological APE. A review of the available environmental and soil data, historical background research, and the results of the GIS cut/fill analysis and the geoarchaeological survey indicate that there is the potential for precontact and historic period archaeological resources within the archaeological APE. Specifically there is the potential for encountering deeply buried, intact precontact archaeological deposits in the southwestern quadrant of the FRB-East property and the potential for encountering intact historic archaeological deposits and structural features associated with the early twentieth-century occupation of the archaeological APE north and south of the FRB-East Building. The study also determined there is minimal potential for intact precontact and historic period archaeological resources to be impacted by the project on the Eccles Building property.

On April 13, 2020, the Phase IA Archaeological Assessment Report was provided to DC SHPO for their review and comment. In a letter dated May 20, 2020, the DC SHPO concurred with the recommendations of archaeological potential. DC SHPO also agreed that further Phase IB archaeological investigations are warranted in the specified areas stated in Phase IA Archaeological Assessment Report and provided comments regarding the methodology to complete the future investigations. The Board is continuing to consult with the DC SHPO. Further investigations will be conducted using a phased approach developed in consultation with the DC SHPO.

3.3.2 PUBLIC HEALTH AND SAFETY

SECURITY

Visitors to the Eccles Building enter through a temporary screening facility located in the building's east courtyard. This facility houses screening equipment, including x-ray machines. The Eccles Building perimeter is secured by guards, bollards, and retractable vehicle barriers. There are guard booths on the south side of the building as well as at the courtyard entrances on the east and west sides of the building. Perimeter security at the FRB-East Building consists of bollards at the main entrance sidewalk along Constitution Avenue and vehicular barriers at the entrances to the north parking area on 20th Street and 19th Street.

EXISTING EMERGENCY RESPONSE

DC Health is the primary local agency tasked to promote and protect the health, safety, and quality of the life of residents, visitors, and those doing business in Washington, DC. Metropolitan Police Department District 2, Police Service Area 207 provides police protection within the project area. In addition, various federal law enforcement agencies provide security for the Board's property. The Washington, DC, Fire and Emergency Medical Service Department (FEMS), Engine Company #23, Battalion 6, provides fire protection and medical attention to residents and visitors in the project area. The nearest hospital to the project area is George Washington University Hospital, located at 900 23rd Street NW.

3.3.3 ECONOMIC RESOURCES

The Federal Reserve Board currently has a workforce of approximately 3,400 employees with a projected growth of approximately 130

employees through 2028. Employees currently work at the following buildings owned by the Board:

- Marriner S. Eccles Building
- 1709 New York Avenue Building
- William McChesney Martin, Jr., Building.

Additionally, Board employees are currently housed in two leased buildings in the District:

- 1801 K Street NW
- International Square (1875 I Street NW)

Currently the Eccles Building accommodates approximately 630 employees and the FRB-East Building is vacant. The proposed project would provide workspace for approximately 1,700 staff between the Eccles Building and the FRB-East Building. With the exception of staff currently working at the Eccles Building, these employees would relocate from the Board's leased buildings within the District.

3.3.4 PLANNING POLICIES

The Eccles Building and FRB-East Building are located in Northwest Washington, DC, in a medium- to high-density area primarily consisting of commercial and institutional uses. Both buildings are owned by the federal government and are therefore "Unzoned," according to the DC Office of Zoning.

The District of Columbia Zoning Enabling Act of 1938 gives the NCPC approval of the location, height, bulk, number of stories, and size of federal public buildings in the District of Columbia and the provision for open space in and around the same. NCPC makes decisions on these aspects on a case-by-case basis.

The Comprehensive Plan for the National Capital, Federal Elements, provides guidance for the development of the proposed project. Guidance from the Comprehensive Plan of particular importance to the proposed project includes:

- Urban Design Element policies that focus on the preservation and enhancement of the defining characteristics of Washington's monumental core as established by the L'Enfant Plan and the McMillan Plan, including prominent viewsheds and view corridors, the design of federal buildings, and security planning/design, are relevant to the proposed project.
- The Federal Workplace Element policies related to modernization, repair, and rehabilitation of existing federally owned facilities for workplaces; managing federal facilities to support federal goals related to sustainability, energy, and efficiency; and policies regarding reducing federal space utilizing existing properties relate to the proposed project.
- Transportation Element policies related to parking and parking ratios, Transportation Management Plans (TMPs), transportation demand management, and active commuting and bicycling for federal employees are directly related to the Eccles Building and FRB-East Building project.
- Environment Element policies that address climate change, stormwater, tree canopy and vegetation, and energy conservation are directly relevant to the proposed project.
- Historic Preservation Element policies that address preservation, protection and rehabilitation of historic properties and promote respectful design and development are directly relevant to the proposed project.

The Comprehensive Plan for the National Capital, Federal Elements, indicates that Constitution Avenue and Virginia Area within the project area are considered Special Streets. Special Streets are defined as:

- Streets that radiate from the U.S. Capitol and White House.
- Streets that radiate from the Washington Monument and Lincoln Memorial, or within the setting of the Jefferson Memorial.
- Streets that frame or contribute to defining major scenic or symbolic areas or that serve as important connections, edges, or boundaries to special settings of national importance.
- Preeminent view corridors as defined within this element.
- Significant vistas as defined in this element and documented in the National Register of Historic Places registration for the Plan of the City of Washington.

In addition to being a Special Street, Constitution Avenue NW forms the northern border of the primary east-west vista from the National Mall to the western horizon as identified in the Comprehensive Plan.

The NCPC and CFA Monumental Core Framework Plan envisions precincts near the National Mall as distinctive new city destination and identifies opportunities to enhance existing areas. The plan directs the connections between the Northwest Rectangle and the National Mall and the establishment of the area as an accessible, walkable cultural destination and high-quality workplace. In particular, the plan identifies a key axis directly north of the Eccles Building on E Street to enhance connections east and west along E Street NW and north and south on 20th Street NW.[2]

3.3.5 PUBLIC SERVICES AND UTILITIES

The Eccles Building is served by the following service connections:

- Water: A dedicated 8-inch fire supply line (circa 2000) and a combined 8-inch domestic water and fire supply line enter the building from 20th Street. The combined service line splits into separate fire and domestic supply lines inside the building. These lines have an interior meter, with no reduced pressure zone valve, and only a check valve for backflow prevention
- Water: A dedicated 8-inch (possibly 6-inch) domestic supply line (circa 1937) enters the building from 21st Street.
- Water: A redundant domestic water supply exists within the nearby Martin Building water system, via the C Street tunnel.
- Sanitary Sewer: one 6-inch and one 8-inch collector pipe (circa 1937) that run parallel underneath the building, flow from north to south, and discharge into the combined sewer system in Constitution Avenue.
- Stormwater: Two 10-inch collector pipes (circa 1937) run parallel underneath the building, flow from north to south, and discharge into the combined sewer system in Constitution Avenue.
- Storm Sewer: An extensive network of French drains, collection pipes, and inlets

2 National Capital Planning Commission, *The Comprehensive Plan for the National Capital, Federal Elements* (Washington, DC: NCPC: 2016), 26-27; National Capital Planning Commission and U.S. Commission of Fine Arts, *Monumental Core Framework Plan* (2009), .

are located in the vegetated and courtyard areas of the property and manage storm water surface runoff from the property.

- Natural Gas: An existing service connection enters the north side of the building from C Street.
- Electric: Existing electrical connections enter the south side of the building from Constitution Avenue.
- Steam: An existing steam connection enters the north side of the building from C Street but is not currently in use.

The FRB-East Building is served by the following service connections:

- Water: A 4-inch supply line (assumed domestic) entering the building from Constitution Avenue. This is the only known service connection line.
- Sanitary Sewer: One 15-inch combined sewer lateral near the northeast side of the property appears to potentially serve the building.
- Sanitary Sewer: Two 10-inch collector pipes (potentially combined storm and sanitary effluent) running parallel, flowing from north to south, and discharging into the combined sewer in Constitution Avenue.
- Storm Sewer: Two 10-inch collector pipes (potentially combined storm and sanitary effluent) running parallel, flowing from north to south, and discharging into the combined sewer in Constitution Avenue.
- Storm Sewer: Drain inlets and collector piping located in the surface parking lot and building areaways serving to manage storm water surface runoff from the property.
- Natural Gas: Two existing service lines extend south from the north side of the property, but do not appear to connect to the building.
- Electric: Existing electrical connections enter the north side of the building from 19th Street, Virginia Avenue, and 20th Street.
- Steam: Two existing steam connections enter the middle of the north side of the building from steam tunnels running along the north side of the property.

3.3.6 SUSTAINABILITY

The Eccles and FRB-East buildings project provides a tremendous opportunity to improve performance, resource efficiency, and enhance workplace experience, health, and wellness. Employing a holistic approach, where all interactions of building systems are considered, can result in substantially higher energy savings and water savings than a typical prescriptive code-compliant building. Energy modeling studies for the Eccles and FRB-East buildings indicate that the strategies proposed can reduce energy consumption, utility costs, CO2 emissions, and energy use intensity (EUI). There is no single strategy that produces these dramatic improvements. Rather, it is the interactions of the various systems in combination that have a cumulative effect.

The US Green Building Council's (USGBC's) Leadership in Energy & Environmental Design (LEED®) certification program provides a widely recognized third-party verification of green buildings, establishing a uniform benchmark by which the sustainability of buildings may be measured.

The Eccles and FRB-East buildings project is designed to meet Gold certification under the LEED program, at a minimum. At this stage, LEED Gold certification appears to be achievable for this project. It is possible that a Platinum certification can be achieved for this project; this will be determined through continued development of the design. Parksmart is a third-party verified sustainable certification program that is geared toward parking garages. Like LEED, it is also administered by the US Green Building Council. The project is pursuing Parksmart certification.

Additionally, the project will pursue WELL v2 Gold certification through the International Well Building Institute. This sustainable certification program emphasizes health and wellness and includes measurement of post occupancy conditions to validate the project performance.

The sustainable certifications demonstrate the comprehensive and holistic approach to sustainability across the FRB campus and bring an additional level of verification and accountability.

3.3.7 CLIMATE CHANGE AND CARBON FOOTPRINT

The Board is committed to sustainability and benchmarking environmental, energy and economic performance. Project goals align with Executive Order (EO) 13693, Planning for Federal Sustainability in the Next Decade, which set goals for federal agencies to improve sustainability and green house emissions reductions.

The greenhouse gas (GHG) Protocol provides a world recognized methodology for assessing carbon emissions and align with goals set forth in Executive Order 13693 and other corporate social responsibility tracking. Combustion of fossil fuels create carbon dioxide, a greenhouse gas, that then accumulates in the atmosphere. Buildings account for 40% of global GHG emissions which can be attributed to emissions generated by creating power to operate buildings and emissions from producing and transporting materials to create buildings. There are social, environmental, and health impacts associated with GHG. The social cost of carbon (SCC) is a metric designed to quantify and monetize climate damages, representing the net economic cost of carbon dioxide emissions. The Interagency Working Group on the Social Cost of Greenhouse Gases estimates the SCC to be approximately $50 per metric ton of CO2.

GHG emissions are categorized in three ways: Scope 1—All Direct Emissions from the activities of an organization or under their control. Including fuel combustion on site such as gas boilers, fleet vehicles and air-conditioning leaks. Scope 2—Indirect Emissions from electricity purchased and used by the organization. Emissions are created during the production of the energy and eventually used by the organization. According to EPA egrid data, current carbon emissions associated with electricity production in this region are about 25% below national average. DC has committed to 100% renewable electricity by 2032. Scope 3—All Other Indirect Emissions from activities of the organization, occurring from sources that they do not own or control. These are usually the greatest share of the carbon footprint, covering emissions associated extraction and production of purchased materials, business travel, procurement, waste and water.

The proposed design and energy reduction strategies track and benchmark the GHG impacts associated with energy consumption.

Design strategies to reduce GHG emissions:

- Reduce building energy demand
- Prioritize electric or renewable energy over fossil fuels
- Maximize reuse of existing building materials
- Use materials that have a smaller GHG footprint
- Reduce water consumption
- Reduce waste

Addressing climate change through the design of the Eccles and FRB-East buildings requires the reduction of direct Scope 1 fossil fuel emissions (i.e. gas boilers) and minimizing Scope 2 energy emissions (i.e. total energy consumption and demand on the electricity grid). Since DC's electricity grid is expected to leverage 100% clean sources of energy by 2032, utilizing electricity for building heating demands could address both strategies to reduce operational emissions.

Buildings are typically most associated with Scope 1 and 2 GHG impacts, but the carbon associated with extraction, production, and transportation of building materials (included in Scope 3 GHG) is a substantial carbon investment that can be mitigated by reusing and making long lasting buildings. Retrofitting a building generally saves 50-75% of the embodied carbon that it would otherwise take to build a new building. It can take decades for new, energy efficient buildings to overcome the carbon expended during the construction. Performing simplified carbon analysis comparing the carbon saving of reusing the Eccles and FRB-East buildings as opposed to building completely new to the same size concluded a savings of approximately 17,860 metric tons, or the equivalent of 466 acres of U.S. forests sequestering carbon for 50 years.

Other goals that are relevant to the Eccles and FRB-East buildings project are improving building energy efficiency, the use of clean and renewable energy, pollution prevention and waste reduction, and climate change resilience.

Climate change projections are established through studies conducted by the United States Army Corps of Engineers (USACE), the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA). The Department of Energy and Environment (DOEE) Climate Change Adaptation Plan for the District of Columbia provides current local predictions for planning purposes. FRB is using the upper range of predictions for planning purposes.

The annual average temperature in the Washington, DC, metropolitan area has increased 2 degrees F during the last 50 years and is expected to continue to rise. Historically, the average summer high temperature was 87°F. This is projected to increase significantly to between 93°F and 97°F by the 2080s. Mean summer temperatures and quantity of days with heat index over 95 degrees F are also critical factors that are projected to rise in coming years. Historically, DC averages 30 of these dangerously hot days each year. Heat emergencies are projected to increase to 30-45 days by the 2050s, and 40-75 days by the 2080s. Urban heat island effects (UHI) in locations where building materials absorb and retain heat, as opposed to areas with vegetation providing shade, exacerbate the heat intensity.

In association with projected increases in annual temperatures are predicted increases in precipitation and severity and frequency of storms. Today's one in 100-year precipitation event could

become a one in 25-year event by mid-century, and a one in 15-year event by the 2080s.

The projections of increased temperature, precipitation, and severity and frequency of storms have to be considered in conjunction with the projected rise in sea level. In Washington, DC, water levels for the Potomac and Anacostia Rivers, both tidal rivers, have increased 11 inches in the past 90 years due to sea level rise and subsidence. As a result, nuisance flooding along the riverfront has increased by more than 300%, according to the National Oceanic and Atmospheric Administration. By 2080, the U.S. Army Corps of Engineers predicts up to 3.4 feet of additional sea level rise in DC. These changes, combined with predicted frequency and severity of storms and sea level rise, would result in more frequent flash-floods that overwhelm the stormwater infrastructure and reduce water quality for the Potomac and Anacostia Rivers.[3]

3.3.8 STORMWATER MANAGEMENT

ECCLES BUILDING

At the present time, the Eccles Building does not have a stormwater management program in place. The Eccles Building relies on four sewer collector pipes to convey all storm water and sanitary flow from the facility to a combined sewer in Constitution Avenue. These pipes appear to be the original system installed when the building was constructed in 1937. The Eccles Building site currently generates very little uncontrolled storm water surface runoff from the property due to a comprehensive collection and conveyance structure. Drainage for stormwater is managed by rooftop inlet collection connected to the building's plumbing system, ground surface inlets connected to the building's plumbing system, and French drain and sump inlet network serving the vegetative grounds connected to the building's plumbing system. Each of these systems ties into one of two storm water collector pipes. Each are aligned on a north-south axis, installed under the structure slab, one on either side of the building's spine. Record drawings from 1937 indicate the building's drainage network is intended to serve as a dedicated stormwater system, independent and separate from the sanitary sewer system.

FRB-EAST BUILDING

The FRB-East Building currently does not have a stormwater management program in place. Storm water and sanitary effluent at the FRB-East Building is currently conveyed by two 10-inch laterals connecting to a 24-inch combined sewer along Constitution Avenue to the south. Separated storm water and sanitary flows are piped within the building, then combine into one of two manhole structures in the south lawn before conveying as combined flow to the city's water main. The FRB-East Building site currently generates very little uncontrolled storm water surface runoff from the building roof top, the areaway surrounding the building, and the parking lot. Most of the impervious surface runoff on the site is collected by a rooftop inlet collection and downspouts connected to the building's plumbing system, areaway drain inlets collected to the building's plumbing system, and parking lot area drain inlets connected to the building's plumbing system. Each of these systems ties into one of two 10-inch combined stormwater/sanitary sewer laterals. According to records, each are aligned on a north-south axis, connecting to the 24-inch combined sewer in Constitution Avenue NW. Available records and visual site inspections of the

3 DC Department of Energy & Environment, *Climate Ready DC: The District of Columbia's Plan to Adapt to a Changing Climate* (2016), accessed at https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/CRDC-Report-FINAL-Web.pdf.

south lawn of the FRB-East Building indicate that the lawn does not have any working area drains or other stormwater collection and conveyance systems. However, the south lawn does not show signs of water impoundment or ground subsidence issues.

3.3.9 VEGETATION

In November 2019 Wetlands Studies and Solutions performed a site and tree assessment for the project area. The purpose of the assessment was to inventory all the trees, significant shrubs, and shrub masses within the study area; and to record their condition, noting significant defects and health issues. The results of the survey are summarized below.

ECCLES BUILDING VEGETATION

The south lawn or terrace of the Eccles Building is characterized by large lawn panels toward the center, with lines of southern magnolia (Magnolia grandiflora 'Bracken's Brown Beauty') standing adjacent to the front elevation of the building. Mixed oaks stand along the east and west sides of the south lawn. The oaks frame two fountain plazas along with geometric plantings of inkberry (*Ilex glabra*) and Foster's holly (*Ilex* × *attenuata* 'Fosteri'), pruned as a shrub. Adjacent to the public sidewalk that borders the south lawn are planting strips with elms (*Ulmus spp.*) that echo the street tree plantings along Constitution Avenue.

The Eccles Building has large, impressive yew (*Taxus spp.*) shrubs, pruned into rounded shapes as topiary. The interior courtyards are also planted with trees and shrubs. These courtyard plantings are exceptions to the general symmetry of the landscape, as the uses of the spaces—a temporary structure on the west and parking and vehicle access on the east—determine the locations of the plantings.

There are no plantings on the north side of the Eccles Building other than street trees. Street trees are elms along Constitution Avenue NW and willow oak along the north, west, and east sides of the Eccles Building.[4]

FRB-EAST BUILDING VEGETATION

Similar to the Eccles Building, the south lawn of the FRB-East Building has large lawn panels toward the center. American hollies (*Ilex opaca*) are located near the primary (south) elevation of the building. Bordering the lawn on the south and adjacent to the public sidewalk are planting strips with elms (*Ulmus spp.*), similar to the street tree plantings along Constitution Avenue.

The east and west sides of the FRB-East Building have holly and magnolia plantings within beds of English ivy (*Hedera helix*). Larger planting beds with southern magnolias (*Magnolia grandiflora*) are located on the east and west sides of the parking lot on the north side of the building. Shrub masses of forsythia (*Forsythia spp.*) and winterberry holly (*Ilex verticillata)* are planted along the embankment on the north edge of the parking lot.

Street trees are elms along Constitution Avenue NW and sawtooth oak (*Quercus acutissima*) along 19th Street NW.

TREE CONDITION

The vast majority of trees and shrubs are either in good (39%) or fair (56%) condition. The

4 Wetland Studies and Solutions, Federal Reserve Board Site and Tree Assessment, 10 December 2019.

presence of many young trees indicates that trees are replaced following removals, which maintains the intention of the historic landscape design and ensures that the trees will not age out simultaneously.

Oaks (*Quercus spp.)*, hollies (*Ilex spp.*), and magnolias (*Magnolia spp.*) make up two-thirds of all trees. While there are several oak and holly species present, the limited palette is generally considered to be poor urban forestry practice. In this region, it is generally recommended to have no more than 20% of the tree population in one genus in order to reduce the risk of a pest or pathogen causing catastrophic losses. The lack of diversity is a limitation of the formal planting style of the landscapes.[5]

3.3.10 HAZARDOUS MATERIALS AND WASTES

ECCLES BUILDING

A hazardous materials inspection of the Eccles Building was conducted in 2018 in an effort to identify asbestos-containing materials (ACMs) and components finished with lead containing paint and surface coatings (LCP).

The asbestos investigation work was conducted in accordance with the Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763 regulation. The investigation team visually evaluated, quantified, and documented suspect ACM locations and collected bulk samples throughout the Eccles Building. A total of 155 bulk samples of suspect ACM were collected and submitted for laboratory analysis.
The investigation team conducted representative screening of suspect LCP on interior/exterior surfaces of the Eccles Building with the intent of identifying surfaces that may contain a detectable amount of lead. Additional investigations involved identifying other potential hazardous materials present.

The following hazardous materials were identified during the investigation: asbestos-containing materials (ACM); lead containing paint and surface coatings (LCP); PCB-containing or potential PCB-containing equipment, electrical transformers, fluorescent light ballasts, exit sign batteries or potential radioactive sources, and mercury-containing equipment such as fluorescent lights.[6]

FRB-EAST BUILDING

Limited hazardous materials inspections of the FRB-East Building were conducted in 2018 in an effort to identify asbestos-containing materials (ACMs) and components finished with lead containing paint and surface coatings (LCP).

The objectives of the Limited Asbestos Survey were to obtain detailed information related to the locations and quantities of asbestos-containing materials associated with the building. This survey encompassed all accessible areas of the building's interior and exterior, with the exclusion of the roofing.[7]

The Limited Lead Paint Screen determined the presence of any reasonably accessible interior and exterior building components containing lead-based paint and encompassed all accessible areas of the building's interior and exterior. A limited lead paint screen sampled 307 representative painted building components.

5 Wetland Studies and Solutions, *Federal Reserve Board Site and Tree Assessment*, 10 December 2019.

6 EYP, *Eccles Renovation Project Basis of Design Report*, 15 March 2018.
7 HP Environmental, *Limited Asbestos Survey Report, 1951 Constitution Avenue, NW, Washington, DC* (Herndon, VA: HP Environmental, 2018).

Access demolition of walls, ceilings, floors, etc. to expose potentially concealed materials was not conducted as part of this testing.

In addition, a miscellaneous hazardous/regulated materials investigation observed and documented the nature and extent of any light ballasts, fluorescent light tubes, mercury-containing devices, stored chemical, petroleum products, and miscellaneous hazardous/regulated waste materials and/or containers.[8]

The following hazardous materials were identified during the investigation: asbestos-containing materials (ACM); lead-containing paint and surface coatings (LCP); and potential PCB contamination beneath a vault under the parking lot. The miscellaneous hazardous/regulated materials investigation determined typical findings for an office building: fluorescent light tubes & ballasts, thermometers and thermostats that probably have mercury, ABC fire extinguishers on each floor, very few stored chemicals/oils, and two chillers with refrigerants in the boiler room. Exit signs and smoke detectors are operational and suspect for either batteries or radioactive sources.[9]

3.3.11 WASTE MANAGEMENT

At the Eccles Building, Board operations result in the generation of non-hazardous solid wastes on a daily basis. The waste material is removed for disposal at landfills or sent to recycling centers.

Solid waste at the FRB-East Building is currently not being generated since the building is vacant.

3.3.12 AIR QUALITY

In response to the Clean Air Act (CAA) of 1970 and the CAA Amendments of 1977 and 1990, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the protection of human health and welfare. EPA established NAAQS for the six most common pollutants including oxone (03), particulate matter (particulates less than 10 micrometers in aerodynamic diameter (PM10) and particles less than 2.5 micrometers in diameter (PM2.5)), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), and lead (Pb). When ambient air quality in an area exceeds the NAAQS for a criteria pollutant, the area is in "nonattainment" for that pollutant.

Washington, DC, is an urban environment with very few industrial facilities. Air quality issues in the District are primarily due to emissions from vehicles and air pollution transported from other states. Air quality trends in DC as of 2014 include:

- O3 – The District and the metropolitan area are in nonattainment of ground-level ozone (O3) standards, and the national ambient air quality standards (NAAQS) are expected to become even more stringent in the near future. Ozone continues to be the biggest air pollution challenge the region faces.
- PM2.5 – The U.S. Environmental Protection Agency (EPA) is redesignating the region as an attainment area for the 1997 annual standard. The monitored air quality levels in the recent several years were below the standards. Since the area previously was in nonattainment, demonstrations of continued

8 HP Environmental, *Miscellaneous Hazardous & Regulated Materials Inventory Miscellaneous Limited Lead-Based Paint Screen, 1951 Constitution Avenue, NW, Washington, DC* (Herndon, VA: HP Environmental, 2018).
9 Callison RTKL, *1951 Constitution Avenue DRAFT Written Report and Exhibits, Pursuant to Contract 201700420, Modification 1 – Supplemental Statement of Work, Section C.5.2.*, 2019.

maintenance with the standard are required for the next 20 years. A new fine particulate standard was finalized in 2012.

- CO – The District is in attainment for the carbon monoxide (CO) standards and the ambient air quality levels have been below the standards since 1996. In February 2010, EPA proposed to retain the existing CO standard.
- SO2, NO2 – The District has always attained both the sulfur dioxide (SO2) and nitrogen dioxide (NO2) standards, with monitored levels far below the NAAQS. New standards were developed for each pollutant in 2010. The District's monitoring networks are adding monitoring capacity to comply with the new NAAQS.
- Pb – In 2002, the District stopped monitoring for lead (Pb) because levels were consistently very low compared to the NAAQS. The new lead standard established in 2008 is 10 times more stringent than the previous standard. Monitoring for lead began in January 2012 to determine compliance with the new standard.[10]

The air toxics provisions of the CAA require the EPA to develop and enforce regulations to protect the public from exposure to airborne contaminants that are known to be hazardous to human health. The EPA establishes National Emission Standards for Hazardous Air Pollutants (NESHAP) in accordance with Section 112 of the CAA. The list of hazardous air pollutants (HAP), or "air toxics", includes specific compounds that are known or suspected to cause cancer or other serious health effects, including asbestos and lead.[11]

Due to the age of the existing Eccles and FRB-East buildings, both built in the 1930s, potential indoor air toxics such as asbestos, lead, and polychlorinated biphenyls (PCBs), that may have been used during construction were identified as part of the 2018 hazardous materials inspections. During these surveys, reportable levels of asbestos-containing materials (ACMs), lead-based paint (LBP), and polychlorinated biphenyls (PCBs), were identified. Further information on the results of the inspection is discussed in Section 3.3.9.

3.3.13 NOISE LEVELS

Noise levels are usually measured and expressed in decibels (dB) that are weighted to sounds perceivable by the human ear, or A-weighted sound level (dBA). Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of frequencies from distant sources, which create a relatively steady background noise in which no particular source is identifiable. Average noise levels over a period of time are usually expressed as dBA Leq, or the equivalent noise level for that period of time.

The District of Columbia Noise Code defines the maximum permissible noise level at the property line in terms of overall A-weighted sound pressure level (dBA). For all mechanical equipment located outdoors or which louver to the exterior of the building, all noise levels must not exceed 60 dBA at the property line.

10 DOEE, *District of Columbia's Ambient Air Quality Trends Report* (October 2014)..
11 EPA, "Summary of the Clean Air Act," accessed 6 July 2020 at https://www.epa.gov/laws-regulations/summary-clean-air-act; EPA, "Overview of the Asbestos National Emission Standards for Hazardous Air Pollutants," accessed 6 July 2020 at https://www.epa.gov/asbestos/overview-asbestos-national-emission-standards-hazardous-air-pollutants-neshap.

The only exemption to the Noise Ordinance for developments is for emergency generators. The emergency generators are exempt:

- While operating during an emergency.
- When tested between the hours of 4:00 p.m. and 6:30 p.m. on non-holiday weekdays.

If the generators are tested at any other time, they are required to meet the District of Columbia Noise Ordinance.

District noise regulations also establish maximum permissible sound levels for an operation, activity, or noise source on a property. The regulations require that from 7:00 a.m. to 7:00 p.m. on any weekday, construction and demolition noise levels (excluding pile drivers) shall not exceed 80 dB(A) Leq unless granted a variance. From 7:00 p.m. to 7:00 a.m., maximum noise levels of 60 dBA apply for commercial/institutional zoned areas, with no averaging time period specified. The noise limits of these regulations are designed to protect human activities or land uses that may be interfered with by noise levels. These are considered to be sensitive noise receptors, which include residential dwellings, hotels, hospitals, nursing homes, educational facilities, and libraries. Sensitive noise receptors also include threatened or endangered biological species and habitat, especially during breeding seasons. In the vicinity of the project area, sensitive noise receptors include the National Mall and associated memorials, George Washington University and Hospital, and small parks and parklets.

3.3.14 GEOLOGY, SOILS, AND GROUNDWATER

The project area is located within the Atlantic Coastal Plain physiographic province, a region underlain by a wedge of unconsolidated sediments including gravel, sand, silt, and clay. The Atlantic Coastal Plain overlaps the crystalline rocks of the Piedmont Province along the Fall Line, which is marked by waterfalls caused by rivers descending abruptly from the Piedmont upland to the Coastal Plain lowland. West to east, this wedge of unconsolidated sediments thickens to about 8,000 feet at the Atlantic coast line where it meets offshore Atlantic Continental Shelf physiographic Province. The Fall Line is approximately 1 mile to the west of the project site, on the west side of Theodore Roosevelt Island.

The soils overlying the Coastal Plain deposits at lower elevations are composed of fluvial gravel, sand, silt, and clay and are confined mainly to the river channels. This material has an alluvial or estuarine origin, but some are the result of historic filling operations.

The project area is underlain by disturbed ground and artificial fill, and the low-level fluvial and estuarine deposits consisting of gravel, sand, and silt, but can also contain clay. The project area is adjacent to areas where the near surface materials are composed of the upper-level fluvial and estuarine deposits and colluvium. Records of twelve boreholes made on the Eccles site in the 1930s and eleven boreholes made on the FRB-East site in the 1930s and 1960s, and preliminary test borings made for the project in 2018 and 2019, confirm the project area is underlain by thick, historical fill placed over estuarine and fluvial which in turn overlie Coastal Plain deposits.

Unconsolidated sedimentary formations form a continuous cover over the crystalline igneous and metamorphic bedrock in this area, and the bedrock level ranges from about El. 0 ft to about El. -300 ft within an approximately 1.5-mile radius around the site. Records of the twenty 1930s boreholes and the preliminary test borings indicate the bedrock

level ranges from about El. -10 to about El. -30 ft at the site and the bedrock type is schist.

Much of the project area was a tidal flat, subject to regular flooding by Potomac River waters, prior to historical filling. Groundwater measurements in preliminary observation wells installed for the project indicate groundwater levels range from about El. 6 to about El. 13. Fluctuations in groundwater are anticipated. While the project site above grade is unlikely to flood, groundwater levels are likely to briefly rise to the flood water elevation during an extended flood event. The 100-year and 500-year flood levels are EL.+14 and EL.+18 ft, respectively.[12]

3.3.15 TRANSPORTATION

A Transportation Impact Study (TIS) was conducted by Gorove/Slade Associates, Inc. in December 2019. The TIS was developed using the DDOT Design and Engineering Manual, and DDOT Guidelines for Comprehensive Transportation Review Requirements and included in Appendix C. The results of that study are summarized below.

The Marriner S. Eccles Building is located at 2051 Constitution Avenue and the FRB-East Building is located at 1951 Constitution Avenue. Both buildings are located in the Northwest quadrant of the Washington, DC and are separated by 20th Street. The two (2) buildings are bordered by 21st Street to the west, 19th Street to the east, C Street to the north, and Constitution Avenue to the south. Roadways within the study area that would be directly impacted by the proposed project are listed below.

- **Constitution Avenue, NW** — Constitution Avenue is classified as a principal arterial road, providing east-west connectivity. The roadway is four (4) lanes across in each direction with a speed limit of 25 MPH. During the morning and afternoon peak hour, on-street parking on the outer lane is restricted, allowing for all four (4) travel lanes to be used. Constitution Avenue serves as a major commuter route to and from the Arlington Memorial Bridge and I-66, which serve Virginia. Constitution Avenue carries approximately 32,000 vehicles per day according to the DDOT 2018 Traffic Volume Map.
- **Virginia Avenue, NW** — Virginia Avenue is classified as a minor arterial road, providing northeast-southwest connectivity. The road is two (2) to three (3) lanes across in each direction with a speed limit of 25 MPH. During the morning and afternoon peak hour, on-street parking on the outer lane is restricted, allowing all travel lanes to be used. Virginia Avenue carries approximately 5,000 vehicles per day according to the DDOT 2018 Traffic Volume Map.
- **19th Street, NW** — 19th Street is a southbound-only roadway. It is classified as a minor arterial road north of E Street and a local road from E Street to Constitution Avenue. The roadway is five (5) lanes across with a speed limit of 25 MPH. In the vicinity of the site, parking is prohibited at all times from Virginia Avenue to Constitution Avenue. Peak period parking restrictions are in effect from E Street to Virginia Avenue, allowing all five (5) lanes to be utilized during the morning and afternoon peak hours. 19th Street carries approximately 13,000 vehicles per day according to the DDOT 2018 Traffic Volume Map.

12 Haley & Adlrich, Inc., Report on Geologic Hazard Report Federal Reserve Board at the Eccles Building Constitution Avenue and 21st Street NW (McLean, VA: 2018).

- **20th Street, NW** — 20th Street is classified as a minor arterial road north of Virginia Avenue and a local road from C Street to Constitution Avenue. The two-way roadway is four (4) lanes across with a speed limit of 25 MPH and on-street parking allowed on both sides of the road. In the vicinity of the site, parking is restricted on the southbound side during the morning and afternoon peak hours and restricted on the northbound side during the morning peak hour. 20th Street carries approximately 8,000 vehicles per day according to the DDOT 2018 Traffic Volume Map.
- **21st Street, NW** — 21st Street is classified as a collector road. The roadway operates as one-way southbound north of C Street and operates as two-way from C Street to Constitution Avenue. On the two-way segment adjacent to the site, the roadway is four (4) lanes across with a speed limit of 25 MPH and parking allowed on both sides of the road. Parking is restricted on the southbound side during the afternoon peak hour and restricted on the northbound side during the morning and afternoon peak hours. 21st Street carries approximately 6,000 vehicles per day according to the DDOT 2018 Traffic Volume Map.
- **C Street, NW** — C Street is classified as a minor arterial road between 21st Street and Virginia Avenue. The two-way roadway is four (4) lanes across with a speed limit of 25 MPH. On-street parking is prohibited along C Street along the southern side of the road, with parking allowed on the northern side of the road from Virginia Avenue to 20th Street. Parking is restricted along both sides of C Street during the morning and afternoon peak hours. C Street carries approximately 3,000 vehicles per day according to the DDOT 2018 Traffic Volume Map.

3.3.16 PARKING

The Eccles Building currently has 29 parking spaces. The Martin Building will have 370 parking spaces when the current renovation project is completed. Prior to the renovation, the Martin Building had 567 parking spaces for Board employees. Thus, the renovation of the Martin Building will result in a net loss of 227 spaces for Board employees.

3.3.17 PUBLIC TRANSPORTATION FACILITIES

PUBLIC TRANSIT SERVICE

The site is well served by Metrobus, DC Circulation, Regional Buses, and is within walking distance of Metrorail. Combined, these transit services provide local, city wide, and regional transit connections and link the site with major cultural, residential, and commercial destinations throughout the region. Figure 3.23 identifies the major transit routes, stations, and stops in the study area.

The site is located approximately 0.7 miles (an approximately 15-minute walk) from the Farragut West and Foggy Bottom-GWU Metrorail stations (served by the Blue, Orange, and Silver Lines). The Blue Line connects the City of Alexandria with Largo, Maryland while providing access to the District core. The Orange Line provides service from Vienna in Fairfax County, VA to New Carrollton in Prince George's County, MD. The Silver Line provides service from Reston in Fairfax County, VA to Largo, Maryland. Blue, Orange, and Silver Line trains run every eight minutes during the weekday morning and afternoon peak hours between 5:00 a.m. to 9:30 a.m. and 3:00 p.m. to 7:00 p.m., approximately every 12 minutes during the weekday midday hours from 9:30 a.m. to 3:00 p.m., approximately every 12 minutes during the weekday evening hours from 7:00 p.m.

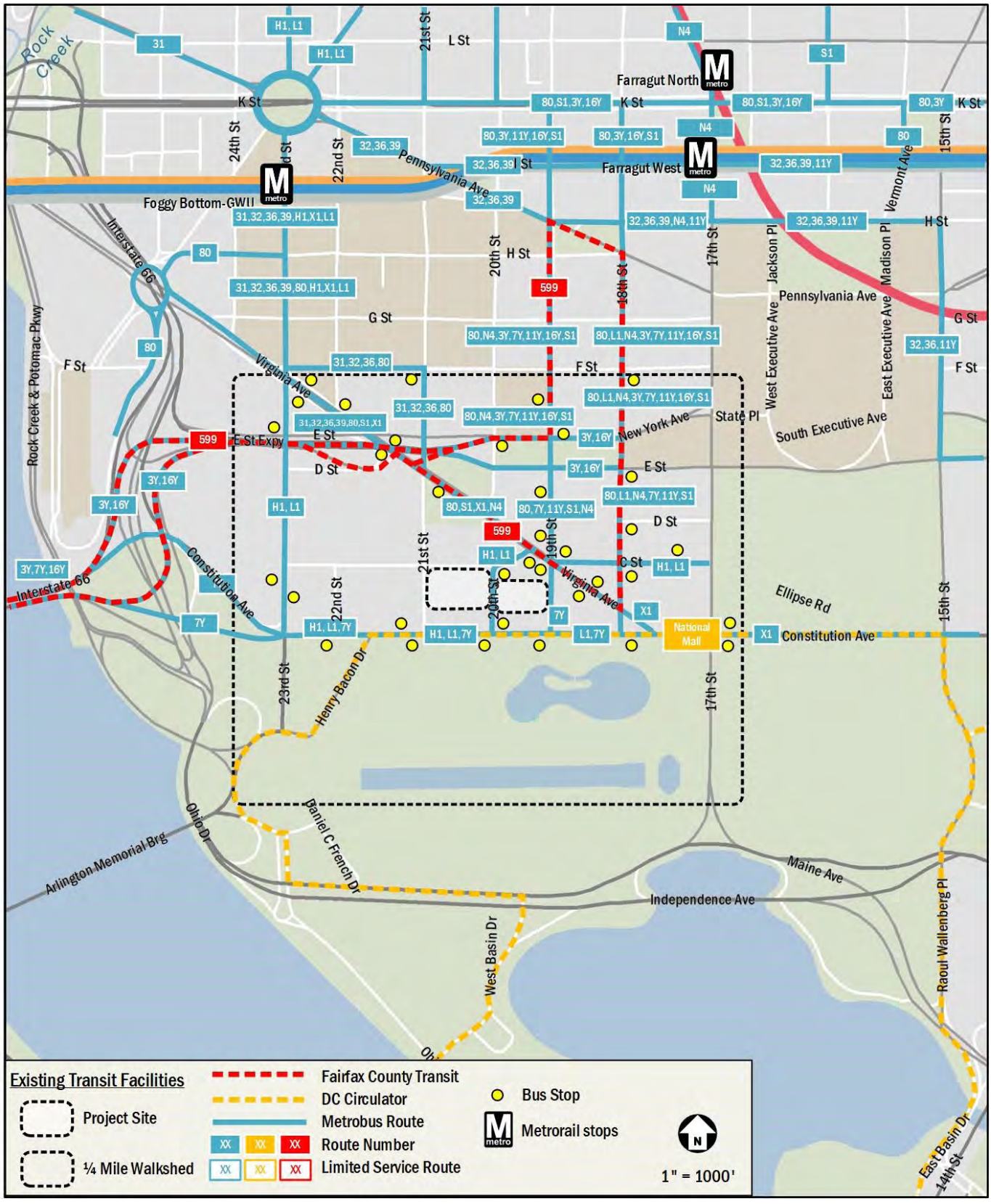


Figure 3.23: Existing Transit Facilities

to 9:30 p.m., and every 12 to 20 minutes during the weekday off-peak periods and on weekends. A transfer to the Red Line can be made at Metro Center, which provides access to Union Station, where transfers can be made to MARC, VRE, DC Streetcar, and Amtrak services.

The nearest buses servicing the site are along Constitution Avenue and 20th Street, which is located adjacent to each building. Three routes are available here (7Y, H1, and L1). Additional buses servicing the site area are available along Virginia Avenue, 19th Street and 18th Street. The bus lines available within a quarter-mile walk provide supplemental service to nearby Metro Stations and connectivity to the other areas of the District, Maryland, and Virginia.

FRB SHUTTLE SERVICE

The Board currently operates a shuttle between its different offices across Washington, DC. including the Farragut West Metrorail Station. There are three routes which the Board provides for employees and guests:

- Blue Shuttle: Connecting the ISQ Building (at 1850 K Street) with the NYA Building (at 1709 New York Avenue).
- Green Shuttle: Connecting the Eccles Building with the NYA Building.
- Yellow Shuttle (Connecting the Eccles Building with the ISQ Building.

Headways for all three routes operate every 10-15 minutes from approximately 6:15 a.m. to 7:40 p.m., providing employees with a convenient option. Ridership figures from FRB indicate that between 20 and 50 employees use the shuttle to the Eccles Building hourly. A map of the FRB Shuttles is presented in Figure 3.24.

PEDESTRIAN FACILITIES

The site is accessible to transit options such as the bus stops along Constitution Avenue and Virginia Avenue. There are existing sidewalks on one or both sides of the roadways within the study area. Crosswalks are present at all nearby intersections and there is significant pedestrian activity at each existing intersection, particularly along Constitution Avenue.

BICYCLE FACILITIES

The site has east-west connectivity to existing on- and off-street bicycle facilities. Just south of the site across Constitution Avenues lies the National Mall, where east-west bicycle trails are present. Users of the trail can connect to the Rock Creek Trail and C & O Canal Trail to the west and connect to the Metropolitan Branch Trail to the east. The Rock Creek and C & O Canal Trails provide north-south connectivity to communities west of the site and the Metropolitan Branch trail provides north-south connectivity to communities east of the site. Additional connectivity is achieved through signed routes on Virginia Avenue. Currently, short-term bicycle racks are installed adjacent to the Eccles Building.

In addition to personal bicycles, the Capital Bikeshare program provides additional cycling options for residents, employees, and patrons of the planned development. The Bikeshare program has placed over 500 Bikeshare stations across Washington, DC, Arlington, and Alexandria, VA, Montgomery County, MD, and most recently Fairfax County, VA, with 4,300 bicycles provided. There are two (2) existing Capital Bikeshare along site frontage. The stations are located at 21st Street near Constitution Avenue (west frontage of Eccles Building with 15 available bicycle docks)

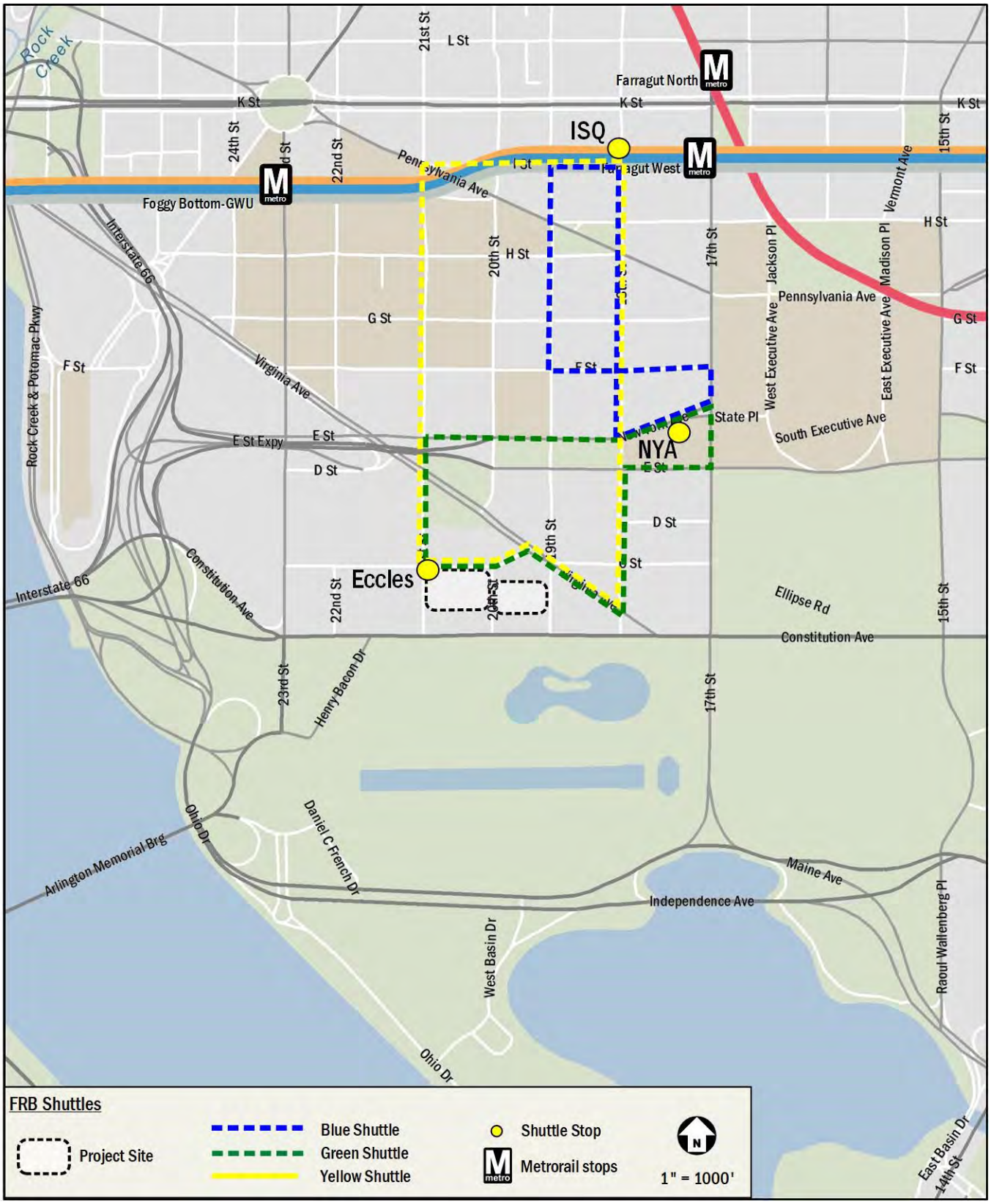


Figure 3.24: Map of FRB Shuttle Routes

and 19th Street near Constitution Avenue (east frontage of FRB-East Building with 35 available bicycle docks). Figure 3.25 illustrates the existing bicycle facilities in the study area.

3.3.18 TRANSPORTATION DEMAND MANAGEMENT (TDM) MEASURES

Transportation Demand Management (TDM) is the application of policies and strategies used to reduce the demand of single-occupancy, private vehicles during peak period travel times or on shifting single-occupancy vehicular demand to off-peak periods. The Board currently implements these principles with the following strategies:

- The Board operates a robust shuttle bus program, which connects the Eccles Building to the Farragut West Metro station. The shuttle service operates during regular business hours.
- The Board offers employees a monthly transit subsidy of $270.
- The Board offers employees an alternative work schedule (AWS), where employees may either work four 10-hour days or nine nine-hour days, resulting in one less day traveled to work on a weekday. Approximately 1,064 employees (32%) across the Board's existing locations in Washington, DC, use an AWS.
- The Board provides teleworking capabilities to employees. Across the FRB locations, 1,260 employees (37%) telework at least one day a week.
- The Board provides designated carpool spaces for employees. There are 52 organized carpools across the FRB locations.
- The Board provides vanpool services, linking employees with routes that travel near their home destination. There are 10 vanpools across the FRB locations.

The existing strategies implemented by the Board have proven to be successful in achieving significant non-driving mode share percentages for a majority of the FRB population. 20% of FRB employees employed at the Eccles, NYA, ISQ and 1801 K Street locations indicated driving to work alone. This percentage is considerably lower than that of employees in the immediate surroundings of the Eccles and FRB-East buildings.

3.3.19 EXISTING TRAFFIC CONDITIONS AND ANALYSIS

The study area of the analysis is a set of intersections where detailed capacity analyses were performed. The set of intersections decided upon were conducted in general accordance with the parameters typically used during the scoping process with DDOT. These are intersections most likely to have potential impacts or require changes to traffic operations to accommodate the proposed project. Although it is possible that impacts could occur outside of the study area, those impacts are not significant enough to be considered a detrimental impact nor worthy of mitigation measures.

Based on the projected future trip generation and the location of the site access points, the following intersections were chosen and agreed upon by DDOT for analysis:

1. C Street & 21st Street, NW
2. C Street & 20th Street, NW
3. C Street & Virginia Avenue, NW
4. C Street & Virginia Avenue & 19th Street, NW

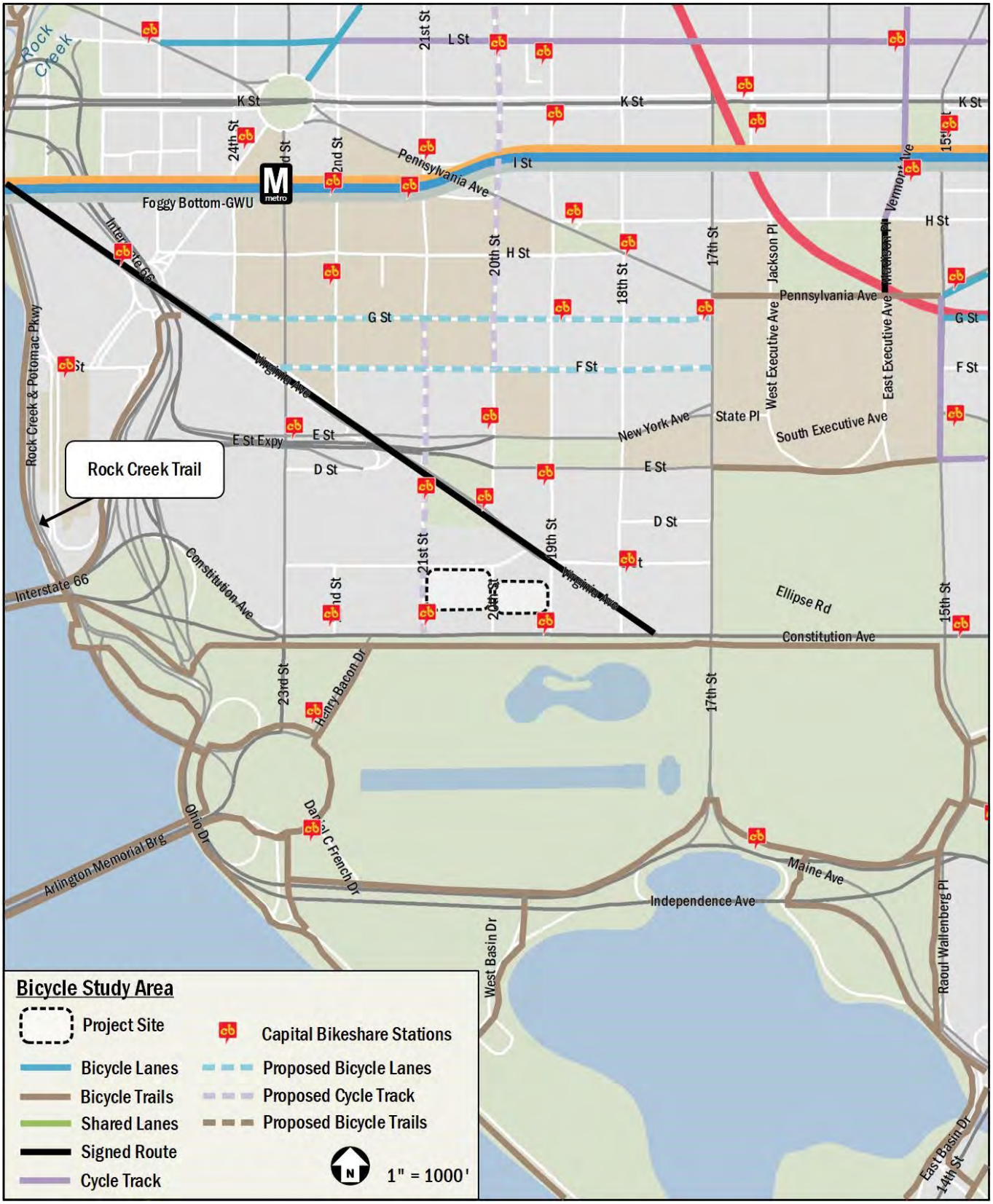


Figure 3.25: Existing and Proposed Bicycle Facilities

5. Constitution Avenue & 21st Street, NW
6. Constitution Avenue & 20th Street, NW
7. Constitution Avenue & 19th Street, NW
8. Eccles Building Western Driveway & 21st Street, NW
9. Eccles Building Eastern Driveway & 20th Street, NW
10. FRB-East Building Western Driveway & 20th Street, NW
11. FRB-East Building Eastern Driveway & 19th Street, NW

Figure 3.26 shows a map of the study area intersections.

The geometry and operations assumed in the existing conditions scenario are those present when the main data collection occurred. Gorove/Slade made observations and confirmed the existing lane configurations and traffic controls at the intersections within the study area. Existing signal timings and offsets were obtained from DDOT and confirmed during field reconnaissance. The existing traffic volumes are comprised of turning movement count data, which was collected Thursday, November 7, 2019 between the hours of 6:30 and 9:30 a.m. and 4:00 and 7:00 p.m. For all intersections, the morning and afternoon system peak hours were used.

Intersection capacity analyses were performed at the intersections contained within the study area during the morning and afternoon peak hours. Synchro version 9.1 was used to analyze the study intersections based on the Highway Capacity Manual (HCM) 2000 methodology.

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each approach. A LOS grade is a letter grade based on the average delay (in seconds) experienced by motorists traveling through an intersection. LOS results range from “A” being the best to “F” being the worst. LOS D is typically used as the acceptable LOS threshold in the District; although LOS E or F is sometimes accepted in urbanized areas if vehicular improvements would be a detriment to safety or non-auto modes of transportation.

The LOS capacity analyses were based on:

- The peak hour traffic volumes;
- The lane use and traffic controls; and
- The Highway Capacity Manual (HCM) methodologies (using Synchro software).

The average delay of each approach and LOS is shown for the signalized and all-way stop-controlled intersections in addition to the overall average delay and intersection LOS grade. The HCM does not give guidelines for calculating the average delay for a two-way stop-controlled intersection, as the approaches without stop signs would technically have no delay.

Existing intersection LOS were calculated at the study area intersections based on the existing peak hour vehicular volumes, roadway lane configurations, and signal timing plans. Existing LOS is presented in Table 3.2. Under Existing Conditions, all but one study intersection operate at acceptable conditions in the morning and afternoon peak hour:

- Constitution Avenue & 21st Street, NW
  - » Southbound approach: PM

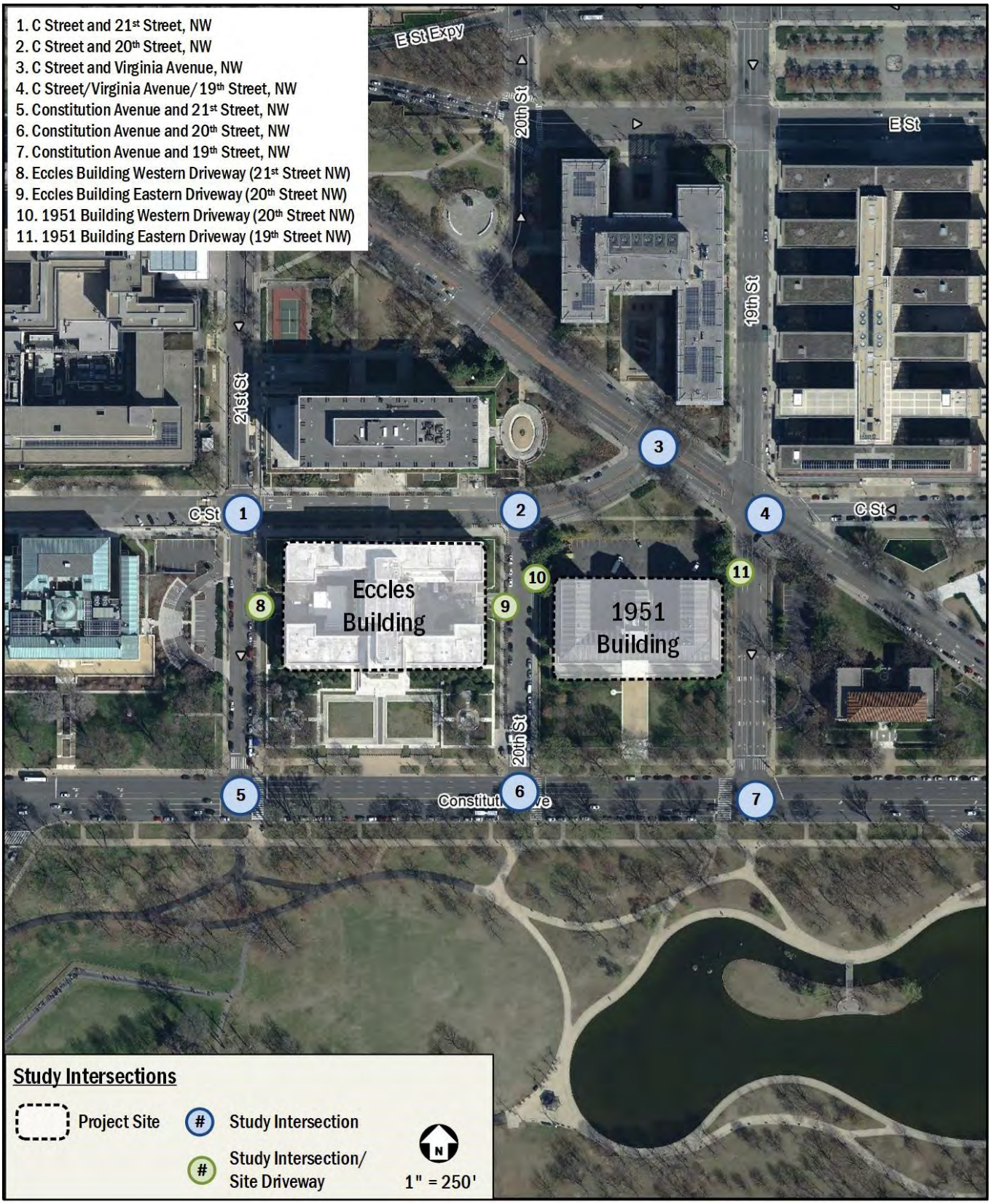


Figure 3.26: Study Area Intersections

In addition to the capacity analyses presented above, a queuing analysis was performed at the study intersections. The queuing analysis was performed using Synchro software. The 50th and 95th percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile queue is the maximum back of queue on a median cycle. The 95th percentile queue is the maximum back of queue that is exceeded 5% of the time. For unsignalized intersections, only the 95th percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM 2000 calculations. HCM 2000 does not calculate queuing for all-way stops. Table 3.3 shows the queuing results for the study area intersections. Three (3) of the study intersections have one or more lane groups that exceed the given storage length during at least one peak hour. These intersections are as follows:

- C Street, Virginia Avenue & 19th Street
  - » Southeastbound Right on Virginia Avenue: PM
- Constitution Avenue & 21st Street
  - » Eastbound Thru: a.m.
  - » Westbound Thru: p.m.
  - » Southbound Right: p.m.
- Constitution Avenue & 20th Street
  - » Westbound Thru: p.m.

Constitution Avenue is a heavily traveled commuter route, used by vehicles traveling on I-66 to/from Virginia. Peak period directions are eastbound in the a.m. peak hour and westbound in the p.m. peak hour. The queuing results indicate excessive queues along westbound Constitution Avenue in the afternoon at 20th and 19th Streets.

INTERSECTION	APPROACH	EXISTING CONDITIONS (2019)			
		AM PEAK HOUR		*PM PEAK HOUR*	
		DELAY	LOS	DELAY	LOS
C Street & 21st Street NW	Overall	9.3	A	10.3	B
	Eastbound	27.0	C	31.4	C
	Westbound	40.1	D	45.0	D
	Northbound	2.4	A	4.3	A
	Southbound	8.4	A	7.4	A
C Street & 20th Street NW	Westbound	4.4	A	7.1	A
	Northbound	9.9	A	11.3	B
C Street & Virginia Avenue NW	Overall	13.2	B	30.8	C
	Eastbound	35.0	D	39.0	D
	Southeastbound	30.4	C	42.8	D
	Northwestbound	2.9	A	12.0	B
C Street, Virginia Avenue & 19th Street NW	Overall	24.3	C	30.8	C
	Westbound	49.2	D	47.9	D
	Southbound	30.5	C	36.5	D
	Southeastbound	6.0	A	21.7	C
	Northwestbound	25.7	C	25.0	C
Constitution Avenue & 21st Street NW	Overall	14.7	B	74.3	E
	Eastbound	14.7	B	10.9	B
	Westbound	10.7	B	32.3	C
	Southbound	34.7	C	277.7	F
Constitution Avenue & 20th Street NW	Overall	5.9	A	16.1	B
	Eastbound	2.6	A	4.1	A
	Westbound	16.0	B	19.2	B
	Southbound	31.9	C	38.6	D
Constitution Avenue & 19th Street NW	Overall	6.2	A	14.6	B
	Eastbound	1.3	A	11.0	B
	Westbound	7.2	A	21.2	C
	Southbound	27.9	C	11.8	B
21st Street NW & Eccles Building Western Driveway	Westbound	0.0	A	0.0	A
20th Street NW & Eccles Building Eastern Driveway	Eastbound	8.8	A	10.5	B
	Northbound	0.2	A	0.0	A
20th Street NW & FRB-East Building Western Driveway	Westbound	*For Future Use*			
	Southbound	0.0	A	0.0	A
19th Street NW & FRB-East Building Eastern Driveway	Eastbound	HCM cannot analyze intersection configuration due to the number of southbound approach lanes.			

Table 3.2: LOS Results, Existing Conditions

INTERSECTION	LANE GROUP	STORAGE LENGTH (FT)	EXISTING CONDITIONS (2019)			
			AM PEAK HOUR		*PM PEAK HOUR*	
			50TH %	95TH %	50TH%	LOS
C Street & 21st Street NW	Eastbound T	500	2	10	12	36
	Westbound L	410	7	m20	31	m61
	Westbound T	410	6	m17	2	m3
	Northbound L/T	385	3	m4	0	m0
	Northbound R	385	1	m3	0	m0
	Southbound L	60	8	20	23	42
	Southbound T	550	43	71	86	112
	Southbound R	550	0	7	0	0
C Street & 20th Street NW	Westbound LT	180	--	1	--	13
	Northbound L/LR	370	--	4	--	3
	Northbound R	370	--	--	--	7
C Street & Virginia Avenue NW	Eastbound L	180	62	107	75	127
	Eastbound R	180	2	16	0	27
	Southeastbound T	320	70	92	234	265
	Northwestbound T	85	17	20	72	83
C Street, Virginia Avenue & 19th Street NW	Westbound R	350	55	85	43	75
	Southbound T	550	64	82	259	305
	Southeastbound T	85	6	10	9	14
	Southeastbound R	85	8	65	253	m#451
	Northwestbound T	400	184	224	95	134
Constitution Avenue & 21st Street NW	Eastbound T	285	322	366	77	95
	Westbound T	410	84	101	~531	#833
	Southbound L/LR	385	70	139	33	68
	Southbound R	385	--	--	~609	#836
Constitution Avenue & 20th Street NW	Eastbound T	410	19	19	22	26
	Westbound T	300	76	91	522	#612
	Southbound L	375	5	m15	25	m49
	Southbound R	375	1	m13	71	m137
Constitution Avenue & 19th Street NW	Eastbound T	300	7	7	48	57
	Westbound T	410	53	67	187	222
	Southbound L	365	123	160	160	m237
	Southbound R	365	8	25	47	m100
21st Street NW & Eccles Building Western Driveway	Westbound LR	75	--	0	--	0
	Northbound T	255	--	0	--	0
	Southbound T	100	--	0	--	0
20th Street NW & Eccles Building Eastern Driveway	Eastbound LR	125	--	0	--	0
	Northbound T	250	--	0	--	0
	Southbound T	100	--	0	--	0
20th Street NW & FRB-East Building Western Driveway	Westbound	50	*For Future Use*			
	Northbound	295	--	0	--	0
	Southbound	40	--	0	--	0
19th Street NW & FRB-East Building Eastern Driveway	Eastbound R	50	HCM cannot analyze intersection configuration due to the number of southbound approach lanes.			
	Southbound T	40				

m = Volume for 95th percentile queue is metered by upstream signal
# = 95th percentile volume exceeds capacity, queue may be longer
~ = Volume exceeds capacity, queue is theoretically infinite

Table 3.3: Queuing Results (in Feet), Existing Conditions

4 ENVIRONMENTAL CONSEQUENCES

4. ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter evaluates the environmental consequences that would result from the implementation of each of the alternatives.

CEQ regulations (40 CFR 1500-1508) define impacts and effects that must be addressed and considered by Federal agencies in satisfying the requirements of the NEPA process. This includes direct, indirect and cumulative impacts. The terms "effect" and "impact" are used synonymously in the CEQ regulations (40 CFR 1508.8) and in this document.

- Direct impacts are caused by the action and occur at the same time and place (40 CFR 1508.8).
- Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8).
- Cumulative impacts are impacts on the environment that result from the incremental impact of the action when added to other past, present, or reasonably forseeable future actions regardless of what agency or person undertakes the other actions (40 CFR 1508.7). Because some of these actions are in the early planning stages, the evaluation of cumulative impacts is based on a general description of the projects, provided in Table 1.1.

Impacts are described according to intensity levels:

- No impact: The application of the alternative would not change the condition of the topic addressed.
- Negligible impact: Impact(s) to the topic addressed would be at the lowest level of detection, or barely perceptible and not measurable.
- Minor impact: The proposed alterations would result in a small measurable impact to the topic addressed.
- Moderate impact: The proposed alterations would measurably alter the topic addressed but would not substantially diminish the integrity or condition of the topic addressed.
- Major impact: The proposed alterations would create a substantial, measurable impact to the topic addressed.

The duration of impacts is also addressed in the evaluation:

- Short-term impacts are those that would occur during construction and establishment of the proposed action.
- Long-term impacts are those that would occur after the establishment of the proposed action and continue into the foreseeable future.

Impacts may be negative or beneficial. All impacts identified are negative, unless they are specifically indicated as beneficial.

CEQ defines mitigation in 40 CFR 1508.20 to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts. Potential impacts have been avoided to the extent practicable. Remaining unavoidable impacts have been minimized to the extent practicable and rectified when practicable. Remaining impacts are compensated for by replacing or providing substitute resources or environments.

4.2 CULTURAL RESOURCES

4.2.1 CRITERIA OF ADVERSE EFFECT

This impact analysis is based on the criteria of adverse effect as defined in the National Historic Preservation Act (NHPA) regulations (36 CFR 800.5). Section 106 of the NHPA requires federal agencies to consider the effects of their actions ("undertakings") on historic properties. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register of Historic Places (NRHP) in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative [36 CFR 800.5(a)(1)].

Adverse effects may include physical destruction or damage; alteration inconsistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties; relocation of property; change in the character of the property's use or setting; introduction of incompatible visual, atmospheric, or audible elements; neglect and deterioration; and transfer, lease, or sale out of federal control without adequate preservation restrictions.

For the proposed project, two main categories of potential adverse effects on historic properties were identified:

- Direct physical effects that remove, damage, or alter a historic property within the Limits of Disturbance (LOD).
- Direct visual effects that change the character of a historic property's setting or alter significant views.

These definitions are based on a March 2019 opinion issued by the United States Court of Appeals for the District of Columbia Circuit that clarified the meaning of the term "directly" in Section 110(f) of the National Historic Preservation Act.1

For purposes of consultation under Section 106 of the NHPA, actions identified to have an adverse effect are those that result in a loss of historic integrity. To address adverse effects under Section 106, measures to minimize or mitigate negative impacts will be included in a Section 106 agreement document. An adverse effect to historic resources does not necessarily result in a major impact under National Environmental Policy Act (NEPA), which occurs when an action would threaten the viability of the resource to achieve the purpose for which it was created.

1 Advisory Council on Historic Preservation, "Court Rules on Definitions; Informs Agencies on Determining Effects," accessed 19 May 2020 at https://www.achp.gov/news/court-rules-definitions-informs-agencies-determining-effects.

In conformance with Section 106 of the NHPA, meetings and consultation sessions have been held with the DC SHPO to address historic resources. A full list of Section 106 consultation activities is provided in Chapter 5 of this EA. Every effort has been taken in the design process to minimize impacts to historic resources resulting from the implementation of the action alternative.

4.2.2 ALTERNATIVE 1: NO ACTION

The No-Action Alternative would result in no impacts to historic resources. Under the No-Action Alternative, the Board would continue its existing use of the Eccles Building and its current management and maintenance practices. The FRB-East Building would remain vacant and only necessary maintenance would occur. This alternative would not result in any changes to the overall integrity or the character-defining features of the historic properties within the APE. For purposes of Section 106 of the NHPA, there would be no adverse effect on historic properties. This conclusion is based upon the assumption that the Board would continue to maintain the FRB-East Building to avoid "demolition by neglect" and that the property would not be transferred out of federal ownership.

4.2.3 ALTERNATIVE 2

DIRECT PHYSICAL EFFECTS

Under Alternative 2, there would be long-term moderate impacts to the Eccles Building and the FRB-East Building as character-defining features of the buildings and landscapes would be altered or removed which would reduce the integrity of the properties. For purposes of Section 106 of the NHPA, there would be an adverse effect on the Eccles Building and the FRB-East Building.

Alternative 2 would alter the form and massing of the Eccles Building through the construction of the infill additions and the skylights, which would impact the historic property. Impacts would occur on the interior of the building from the modification to the Constitution Avenue lobby from the addition of an opening to accommodate a new half-stop elevator or ramp, modifications to the original corridor layouts to accommodate new office layouts, removal of one restroom in the Governors Wing, retrofitting one restroom in the Governor's office with a new accessible private toilet room, and the addition of two new elevators in the central wing. Modifications to the Eccles Building landscape under Alternative 2, including changes to the topography and spatial organization from the enclosure of the courtyards,the removal of character defining circulation features, the addition of landscaped bioretention areas, the removal of character-defining vegetation, and modifications to the site walls, would also impact the historic property.

Impacts to the FRB-East Building include the alteration of the overall form and massing as a result of the construction of the five-story addition and the demolition of the center wing and the partial demolition of the northwest and northeast corners of the east and west wings of the historic building. Impacts would also result from the removal, rebuilding, and modification of the building terraces to accommodate the parking garage, entrance and exit garage ramps, egress pathway, and ventilation. On the interior of the building, partial removal of the historic corridors would cause impacts due to the loss of character-defining features. Impacts to the landscape include changes to the spatial organization due to the removal and replacement of the entire terrace and the addition of water features on the south lawn; changes to the topography and spatial

organization from the new building entrance, and the removal of character-defining vegetation.

With the exception of the Eccles and FRB-East buildings, there would not be any direct long term or short term impacts to other historic properties in the APE from the implementation of Alternative 2. There would be no physical alterations to any of these properties. For purposes of Section 106 of the NHPA, there would be no adverse effect on these resources.

DIRECT VISUAL EFFECTS

Alternative 2 would cause moderate long-term visual impacts to the Northwest Rectangle Historic District. The project would impact the overall setting of and views toward the Eccles and FRB-East buildings from the Northwest Rectangle Historic District. The infill additions and skylights of the Eccles Building, the addition to the FRB-East Building, and the addition of new perimeter security features would diminish the integrity of feeling of the Northwest Rectangle Historic District and change of the character of the district's contributing physical features within its setting (see Figure 4.28 through Figure 4.55). For purposes of Section 106 of the NHPA, there would be an adverse effect on the Northwest Rectangle Historic District.

The proposed undertaking would have negligible visual impacts on the overall setting or significant views of the other historic resources within the APE.

The visual impacts from the project would be minimized. The new construction would be minimally visible from Constitution Avenue and the National Mall and would not substantially change the appearance and feeling of marble monumental buildings, fronted by spacious gardens, lining the National Mall. The buildings would continue to frame views from the Lincoln Memorial and the new additions to the building would not obstruct these views.

Views northwest and southeast from Virginia Avenue and east and west along C Street would not be obstructed as the new five-story addition to the FRB-East Building would respect the alignment of other buildings on C Street and the streetscape.

Although the project would introduce new, visible construction to the Northwest Rectangle Historic District, particularly with the five-story addition on the FRB-East Building, the new additions would be respectful to the scale and materials of the existing buildings and would reflect their civic nature. The height of the five-story addition on the FRB-East Building, although taller that the existing building, would be in keeping with the buildings constructed along C Street NW in the 1960s and 1970s as well as subsequent additions to existing buildings, including the annex to the American Pharmacists Association building, completed in 2009.

At the Eccles Building, new security bollards and guard booths would replace existing. At both properties, new bollards would be more minimal in profile and size than the existing and have a bronze finish that is compatible with the historic finishes of the Eccles Building. Perimeter security would be consistent with security features of other federal buildings within the vicinity of the project area.

Although Alternative 2 would require the removal of 35 street trees, this would not negatively impact historic properties in the APE. The street trees that line Constitution Avenue would be preserved,

and additional street trees would be added to the perimeter streets to continue the pattern of green, tree-lined streets.

Minor short-term impacts would occur during construction due to the visual impact of construction equipment and materials staging. Under Section 106, these impacts would not constitute an adverse effect to the Eccles or FRB-East properties or other historic properties in the APE.

ARCHAEOLOGICAL RESOURCES

While the Phase IA Archaeological Assessment study determined there is potential for the presence of intact archaeological resources within the archaeological APE, a Phase IB archaeological investigation is necessary to determine the presence of archaeological sites and/or National Register eligibility of sites. Implementation of the Phase IB archaeological investigation and any necessary additional investigations will be outlined in a Section 106 agreement document (see 4.10.5 Mitigation Measures). If NRHP-eligible archaeological resources are identified as a result of the Phase IB investigation, the Section 106 consultation process will continue to assess anticipated effects and efforts to avoid, minimize, or mitigate such effects that could result from the implementation of Alternative 2. The Board will record the terms and conditions in a Section 106 agreement document that will resolve adverse effects to any NRHP-eligible archaeological resources impacted from the implementation of Alternative 2. Typical Section 106 mitigation for unavoidable adverse effects to archaeological resources can include, but not be limited to, efforts including recovery of archaeological data through excavation, reporting, and public interpretation of archaeological results. However, specific mitigation would be determined through the consultation process. Identified mitigation must be reasonable, feasible, and commensurate with the impact to the resource(s).

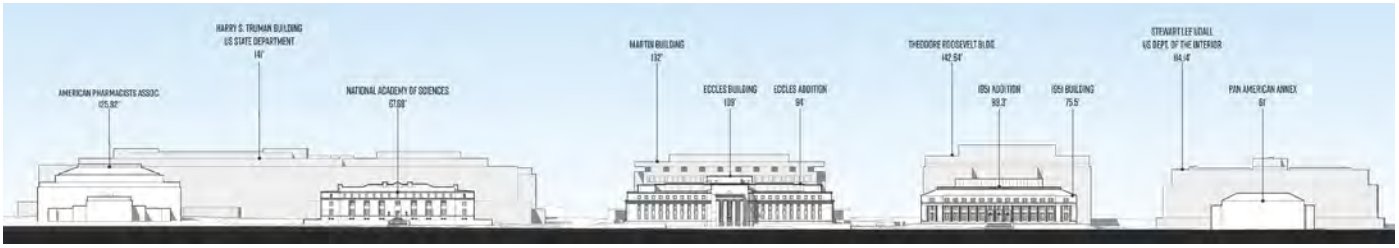
4.2.4 CUMULATIVE IMPACTS

Considered with the ongoing and planned projects identified in Chapter 1, implementation of Alternative 2 could generate short- and long-term moderate impacts to historic resources. The proposed project would have moderate impacts to the Eccles and FRB-East buildings. Alternative 2 would add to the overall long-term cumulative impacts to historic resources from new construction within the Northwest Rectangle Historic District, including the proposed Organization of American States building.

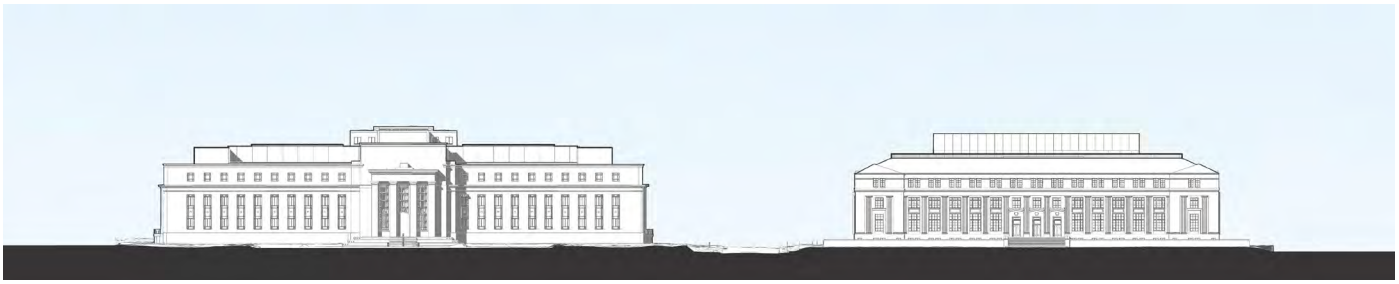
If construction of the proposed Eccles and FRB-East project occurs concurrently with the implementation of other construction projects along the National Mall and in the Northwest Rectangle, the combined effects could temporarily change the overall appearance and character of the Mall during the construction activities.

4.2.5 MITIGATION MEASURES

In an effort to mitigate impacts to historic properties, and as part of the Section 106 process, the Board, NCPC, and the DC SHPO will develop a Section 106 agreement document. The document will outline measures that seek to avoid, minimize, or mitigate the impacts of the proposed rehabilitation and modernization on the Eccles Building and the FRB-East Building. The Section 106 agreement will document the mitigation measures and stipulate that consultation will continue through the design process.

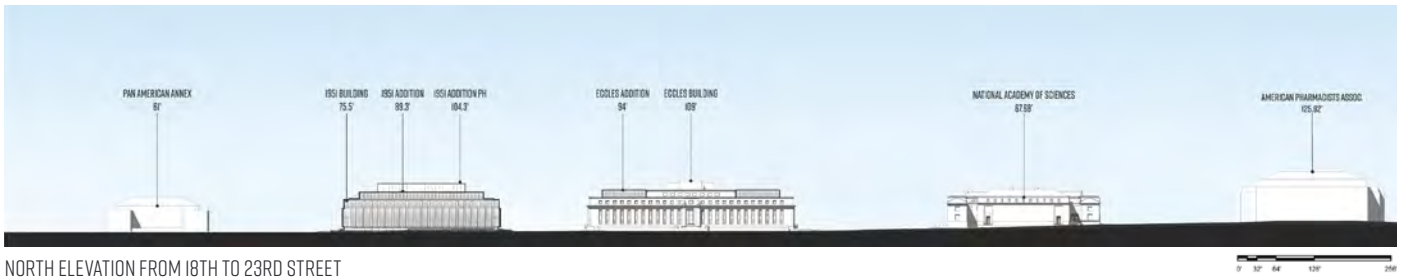


SOUTH ELEVATION FROM 18TH TO 23RD STREET

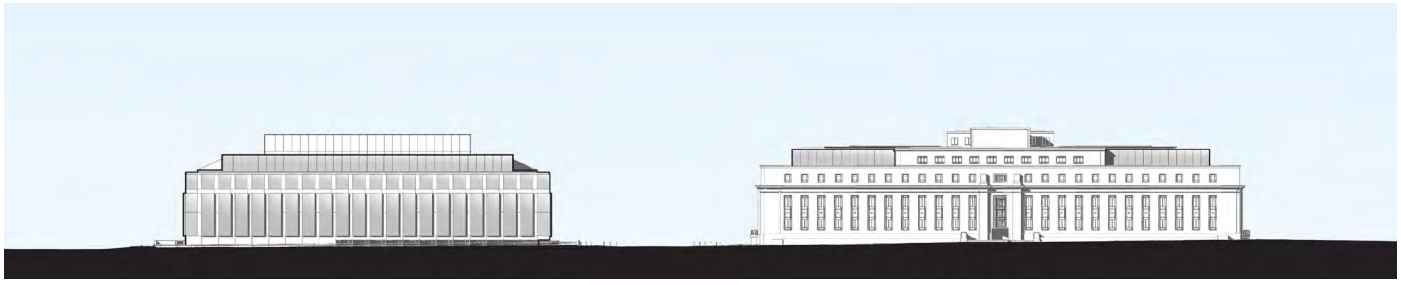


SOUTH ELEVATION FROM 21ST TO 19TH STREET

Figure 4.27: South elevations and building heights on Constitution Avenue.



NORTH ELEVATION FROM 18TH TO 23RD STREET



NORTH ELEVATION FROM 21ST TO 19TH STREET

Figure 4.28: North elevations and building heights on C Street.

Figure 4.29: Key plan.

Figure 4.30: Existing view looking northeast along Constitution avenue from 23rd Street toward project area.

Figure 4.31: Simulation looking northwest along Constitution avenue from 17th Street toward project area.

Figure 4.32: Key plan.

Figure 4.33: Existing view looking northwest along Constitution Avenue from 17th Street toward project area.

Figure 4.34: Simulation looking northwest along Constitution Avenue from 17th Street toward project area.

Figure 4.35: Key plan.

Figure 4.36: Existing view looking southwest along Virginia Avenue from 19th Street toward project area.

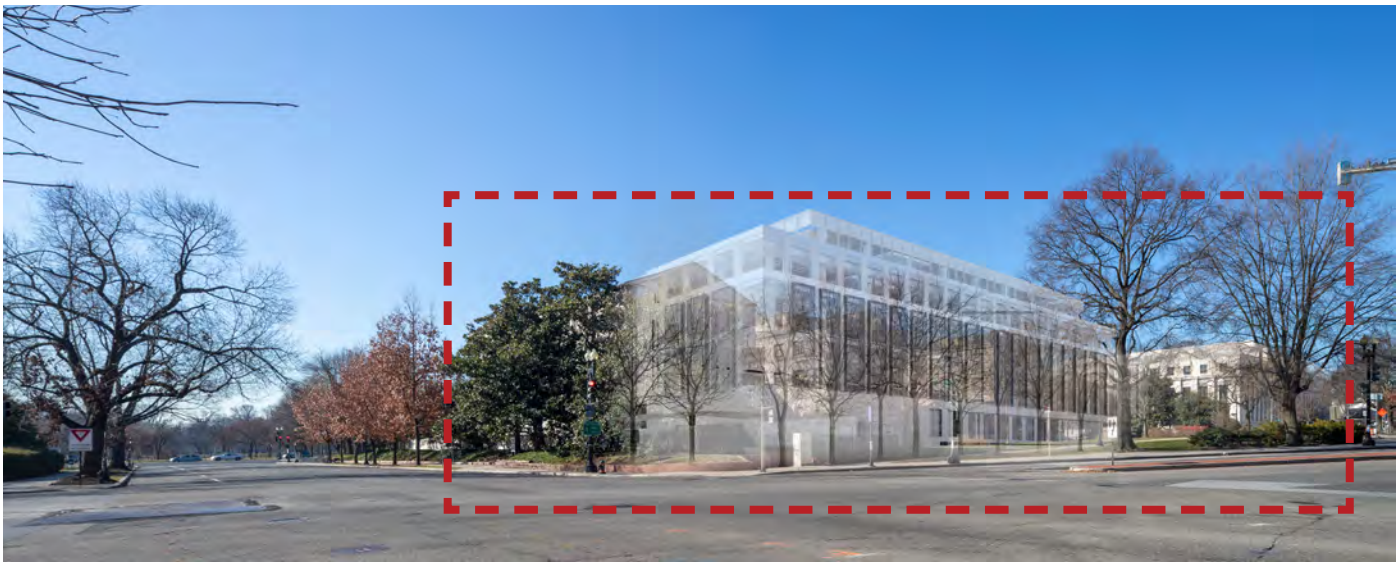


Figure 4.37: Simulation looking southwest along Virginia Avenue from 19th Street toward project area.

Figure 4.38: Key plan.

Figure 4.39: Existing view looking northeast toward Project Area from Vietnam Veterans Memorial.

Figure 4.40: Simulation looking northeast toward Project Area from Vietnam Veterans Memorial.

Figure 4.41: Key plan.

Figure 4.42: Existing view looking northeast toward Project area from Constitution Gardens.

Figure 4.43: Simulation looking northeast toward Project area from Constitution Gardens.

Figure 4.44: Key plan.

Figure 4.45: Existing view looking northwest toward Project Area from Constitution Avenue and 21st Street.

Figure 4.46: Simulation looking northwest toward Project Area from Constitution Avenue and 21st Street.

Figure 4.47: Key plan.

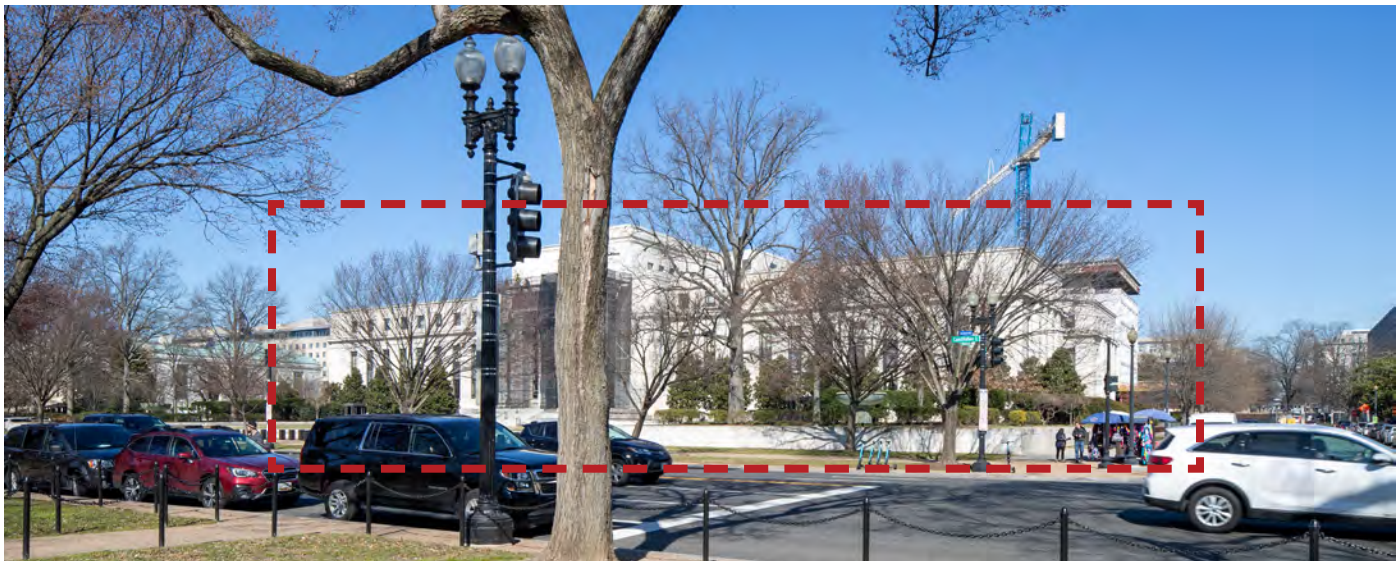


Figure 4.48: Existing view looking west from the top of the Washington monument toward the project area.

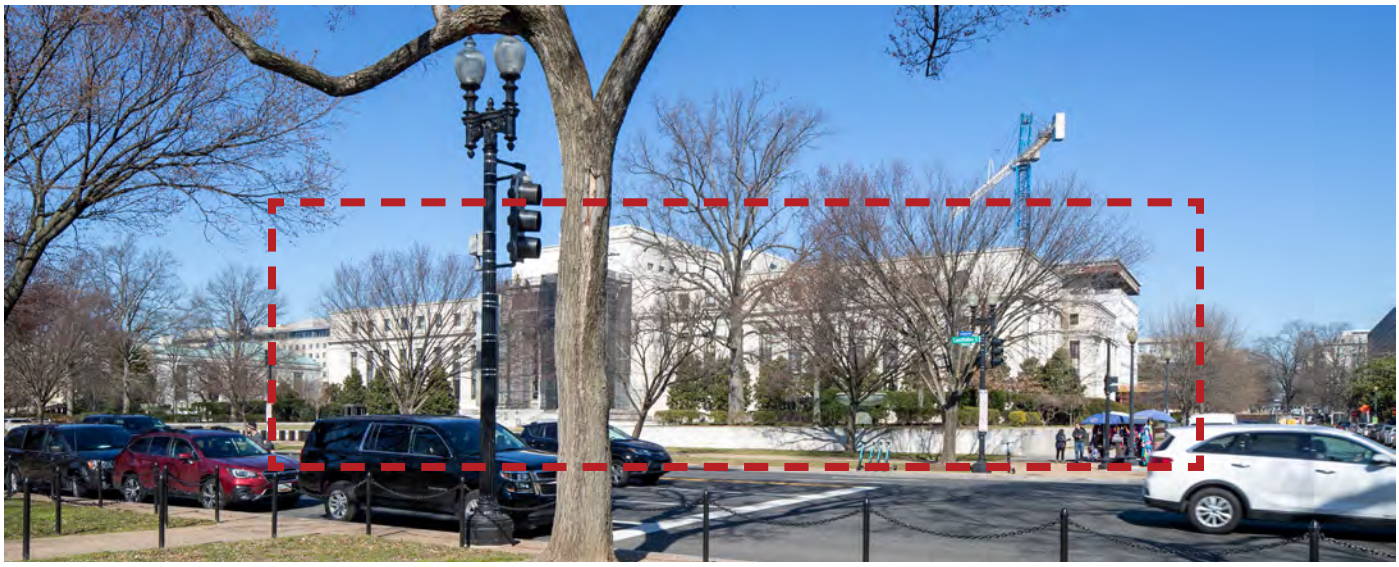


Figure 4.49: Simulation looking west from the top of the Washington monument toward the project area.

Figure 4.50: Key plan.

Figure 4.51: Existing view looking northeast from the top of the Lincoln memorial toward the project area.

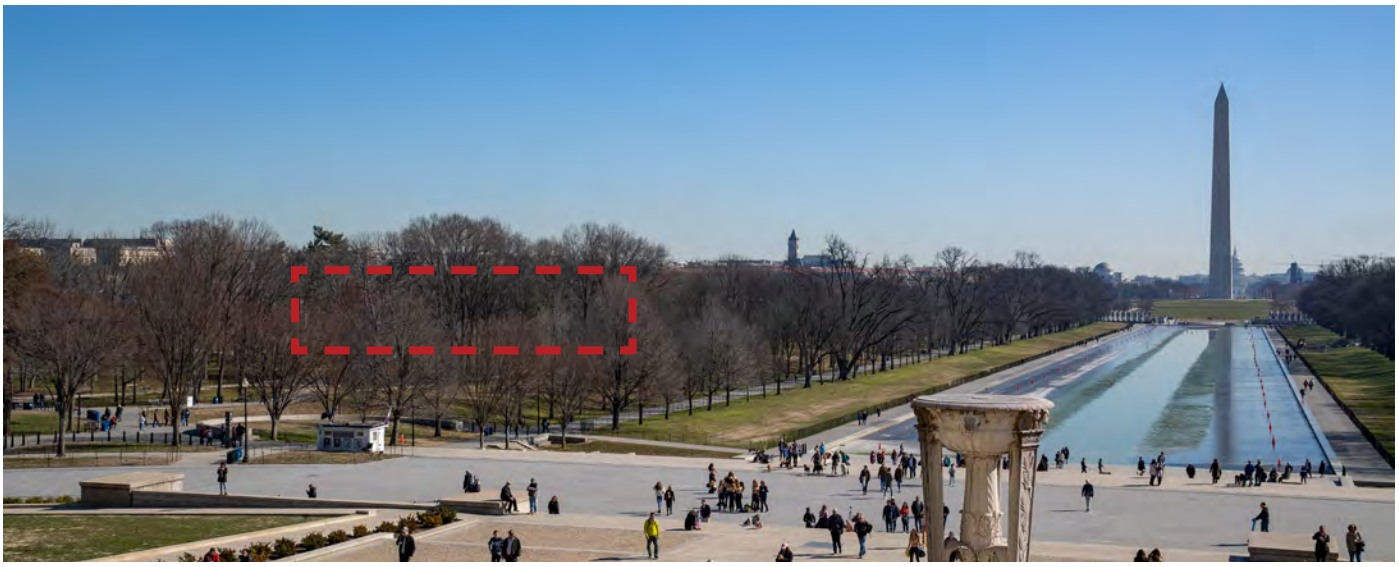


Figure 4.52: Simulation looking northeast from the top of the Lincoln memorial toward the project area.

Figure 4.53: Key plan.

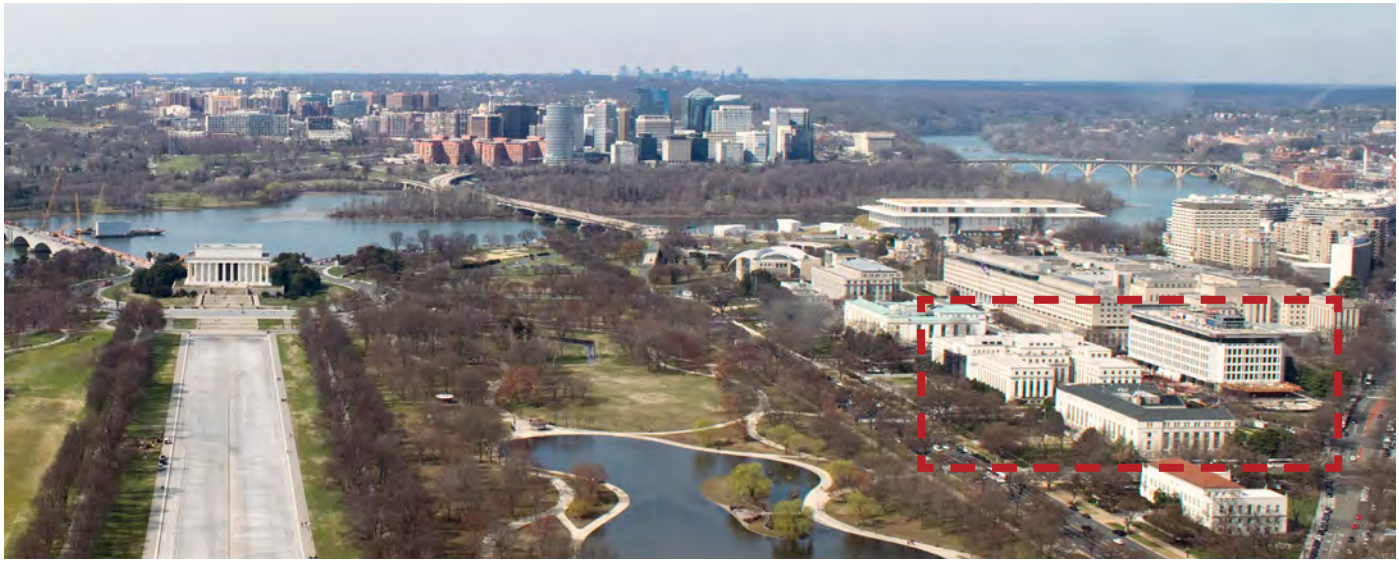


Figure 4.54: Existing view looking west from the top of the Washington monument toward the project area.

Figure 4.55: Simulation looking west from the top of the Washington monument toward the project area.

4.3 PLANNING POLICIES

4.3.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, the renovations and expansions to the Eccles and FRB-East buildings would not be implemented to correct deficiencies or make improvements, resulting in minor long-term impacts to planning policies. It would fail to reflect the 2016 update of the Comprehensive Plan for the National Capital, Federal Elements, which supports the efficient and effective operation of federal buildings while providing a safe environment for employees, and the Monumental Core Framework Plan, which directs the connections between the Northwest Rectangle and the National Mall and the establishment of the area as an accessible, walkable cultural destination and high-quality workplace.

4.3.2 ALTERNATIVE 2

Implementation of Alternative 2 would result in minor long-term beneficial impacts to planning policies. Alternative 2 would be consistent with the 2016 update of the Comprehensive Plan for the National Capital, Federal Elements, and the Monumental Core Framework Plan. Implementation of Alternative 2 would adhere to the comprehensive plan's guiding principles by promoting high quality design and development, balancing accessibility and security, preserving historic properties, preparing for the impacts of climate change, and promoting non-automobile transportation alternatives, including transit, walking, and bicycling.

In addition, the renovation and expansion of the buildings would support Comprehensive Plan policies to enhance the connections between the Northwest Rectangle and the National Mall and the establishment of the area as an accessible, walkable cultural destination and high-quality workplace.

4.3.3 CUMULATIVE IMPACTS

Considered with the past, present, and future projects identified in Chapter 1, implementation of Alternative 2 would not generate cumulative impacts to planning policies.

4.4 PUBLIC HEALTH AND SAFETY

4.4.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, there would be no impacts to public health and safety as the building renovations and expansions would not be implemented at the Eccles Building or FRB-East Building.

4.4.2 ALTERNATIVE 2

Under Alternative 2, there would be a long-term minor beneficial impact to public health and safety. The proposed project is not expected to put an undue hardship on the local police, fire or emergency medical services. The proposed perimeter security and other securities measures under Alternative 2 would enhance security for employees and visitors to the Eccles and FRB-East buildings.

4.4.3 CUMULATIVE IMPACTS

Considered with past, present, and future projects, implementation of Alternative 2 would not generate cumulative impacts to public health and safety.

4.5 ECONOMIC RESOURCES

4.5.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, building renovations and expansions would not be

implemented at the Eccles Building or FRB-East Building. No new employment opportunities would be created. Therefore, there would be no impacts to economic resources as a result of the No Action Alternative.

4.5.2 ALTERNATIVE 2

There would be negligible long-term impacts to economic resources under Alternative 2. The District's percentage of long-term employment is not expected to change in a positive or negative direction as a result of the project.

The implementation of Alternative 2 would cause short-term negligible to minor beneficial impacts due to the needs of construction workers and associated factors related to construction, such as the purchasing of materials or leasing of equipment. Those working on the construction of the proposed project could also contribute to the city's economy by frequenting local food or retail stores in the vicinity of the project's location.

4.5.3 CUMULATIVE IMPACTS

Past, present and future development in the District has created additional jobs, which has resulted in beneficial cumulative impacts on local economy, employment, and income. Alternative 2 would not add to these long-term beneficial cumulative impacts.

4.6 SUSTAINABILITY

4.6.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, building renovations and expansions would not be implemented at the Eccles Building or FRB-East Building. Therefore, there would be no impacts to sustainability.

4.6.2 ALTERNATIVE 2

Implementation of Alternative 2 could result in long-term moderate beneficial impacts to sustainability. As a LEED Gold project, the Eccles and FRB-East buildings would have reduced resource consumption compared to typical office buildings of their size. Renovations and additions would meet current storm water, accessibility, and building code requirements, which would improve the resulting conditions compared to existing. Additionally, the reuse of the existing buildings is an inherently sustainable approach because it avoids additional demolition, or the environmental and carbon impacts associated with the need for additional new building materials.

4.6.3 CUMULATIVE IMPACTS

Considered with the ongoing and planned projects identified in Chapter 1, implementation of Alternative 2 combined with implementation of the National Mall Plan, the Potomac River Tunnel Project, and the 23rd Street Levee Project, could have a long-term moderate beneficial impact sustainability.

4.7 CLIMATE CHANGE AND CARBON FOOTPRINT

4.7.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, there would be no impacts to climate change and carbon footprint as building renovations and expansions would not be implemented at the Eccles Building or FRB-East Building.

4.7.2 ALTERNATIVE 2

Implementation of Alternative 2 would have a long-term moderate beneficial impact on climate change and carbon footprint. The project has an

anticipated energy use intensity of approximately 35 energy per square foot per year (kBtu/sf/yr), which is about 50% better than the median office energy use intensity as calculated by the EPA Energy Star Target Finder Tool. Even more notably, the existing Eccles Building has an existing EUI in the mid-130s and the renovation would reduce the existing EUI by nearly 75%. Some of the strategies that contribute to this energy reduction include: efficient HVAC systems that utilize chilled beams, four pipe fan coil units, dedicated outside air systems (DOAS) with energy recovery, high efficiency boilers and chillers, and LED lighting with daylight dimming and occupancy controls. This energy consumption is further offset by onsite renewable energy in the form of a rooftop photovoltaic array system which is estimated to produce over 5% of the total average electricity use of the building.

Energy not supplied by renewable sources requires combustion of fossil fuels which creates carbon dioxide, a greenhouse gas, which then accumulates in the atmosphere. The basis of design is projected to reduce the greenhouse gas emissions by approximately 45% over the minimum LEED baseline.

In addition to beneficial operational greenhouse gas impacts, the reuse of the existing buildings contributes substantially to avoided embodied carbon. Embodied carbon is associated with Scope 3 carbon and relates to the extraction, production, and transportation of building materials. Calculations based on the build carbon neutral tool estimate 17,860 metric tons avoided C02 equivalent by reusing this existing building material.

Implementation of Alternative 2 would employ the following strategies to reduce the greenhouse gas impacts:

- Reduce building energy demand
- Prioritize electric or renewable energy over fossil fuels
- Maximize reuse of existing building materials
- Use materials that have a smaller GHG footprint
- Reduce water consumption
- Reduce waste

Alternative 2 would also enhance the resilience of the surrounding area and reduce impact on the stormwater infrastructure by designing to accommodate the 100 year, 1% annual chance of flood event.

4.7.3 CUMULATIVE IMPACTS

Considered with the ongoing and planned projects identified in Chapter 1, implementation of Alternatives 2 combined with implementation of the National Mall Plan, the Potomac River Tunnel Project, and the 23rd Street Levee Project, could have a long-term moderate beneficial impact on climate change and carbon footprint.

4.8 UTILITIES

4.8.1 ALTERNATIVE 1: NO ACTION

The No-Action Alternative would not address deficient building systems that currently exist. No utilities would be upgraded and/or replaced. Therefore, the No-Action Alternative would result in minor short and long term impacts to utilities.

4.8.2 ALTERNATIVE 2

Alternative 2 would result in long-term minor beneficial impacts to utilities. Alternative 2 would involve the modernization and/or replacement of utilities, including water, gas, electrical, telecommunications, steam, irrigation, and storm-sewer lines. Upgrades/ modifications would be made to ensure compliance with current DC Water standards.

Under Alternative 2, the Eccles Building and FRB-East Building would seek LEED for Building Design and Construction v4 Gold certification and significantly exceed minimum energy performance requirements. Building HVAC systems would include chilled beams, four pipe fan coil units, dedicated outside air systems (DOAS) with energy recovery, high efficiency boilers and chillers. The efficient systems combined with LED lighting with daylight dimming and occupancy controls and rooftop photovoltaic arrays for onsite energy generation would significantly reduce the building energy consumption. Therefore, Alternative 2 would result in a nearly 75% decrease in the energy use per square foot, and less total energy consumption compared to the existing buildings, even including the additional square footage of the renovations.

Water conservation measures reduce potable water demand and discharge to the sewer. Measures include low flow water fixtures, vegetated rooftop terraces, a high efficiency irrigation system, energy recovery to reduce cooling tower loads, and a large cistern for rainwater and condensate harvesting to be used for irrigation and cooling tower makeup water. According to initial calculations performed through the EPA WaterSense Water Budget Tool, the water requirement for the designed landscape is a 46% reduction in water use from the calculated baseline. Based on the LEED Water Use Calculator, the indoor water use for plumbing fixtures is anticipated to be reduced by 37% by making improvements to the flow and flush fixture efficiency.

The existing storm-sewer pipes are in poor condition and would be upgraded and modified to ensure compliance with current DC Water, DDOT, and DOEE standards including installation of check valves for backwater prevention, and new storm sewer infrastructure (pipes, manholes, clean-outs, overflow devices).

The project would require new connections to utilities, and permanently relocating other utilities. Connections would be moved or permanently removed during construction although temporary water or electric shut offs may be necessary.

4.8.3 CUMULATIVE IMPACTS

Past, present, and future development in the area would place additional demands on the existing utilities. While the utility companies plan for regional growth, each future project would have to prepare studies to determine if their supply is adequate. The renovation and expansion of the Eccles Building and FRB-East Building would not contribute to these cumulative impacts because the proposed project would include measures to increase energy efficiency while decreasing the total energy and water consumption.

4.9 HAZARDOUS MATERIALS AND WASTES

4.9.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, the Eccles Building and the FRB-East Building would not be renovated and expanded. Hazardous materials

remediation would not be performed and the hazardous materials would remain in the buildings and soil, resulting in a long-term minor impact.

4.9.2 ALTERNATIVE 2

Alternative 2 would have a minor short-term negative impact and a minor long-term beneficial impact to hazardous materials and wastes.

Hazardous materials remediation would be performed as part of the overall rehabilitation and modernization of the buildings.

In the short-term, construction and demolition activities would result in the temporary disturbance of hazardous materials. These activities may cause hazardous materials to become airborne and result in increased health risks to construction workers. Remediation practices would be used to avoid and minimize the exposure of air toxics. If unknown subsurface hazardous wastes or materials are exposed or affected during construction, they would be handled in accordance with applicable local and federal regulations.

In the long term, remediation of hazardous materials in the building and landscape would result in a healthier environment for occupants.

4.9.3 CUMULATIVE IMPACTS

When considered in combination with ongoing and planned projects identified in Chapter 1, implementation of Alternative 2 would not contribute to cumulative impacts for hazardous materials and wastes.

4.9.4 MITIGATION MEASURES

The full extent of asbestos, lead, and PCB containing material would be abated by the Board with a disposal process that would be compliant with applicable regulations.

4.10 SOLID WASTE MANAGEMENT

4.10.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, the Eccles and FRB-East buildings would not be renovated and expanded and current waste management practices would continue. Therefore, there would be no impacts to solid waste.

4.10.2 ALTERNATIVE 2

Implementation of Alternative 2 would result in minor short-term negative impacts and moderate long-term beneficial impacts to generation of non-hazardous solid waste.

In the short-term, minor impacts would occur related to generation of non-hazardous solid waste in the form of existing building materials that would be removed as part of the implementation of Alternative 2. A construction and demolition management plan would be created consistent with the requirements of a LEED-certified building.

An estimated 1,044,720 cubic feet (38,704 cubic yards) of rock removal would occur as a result of the project. The rock would either be removed by mechanical means (excavators, hammers, rippers) or by controlled blasting with explosives. Using either method, the rock would not be readily reusable on this site for the proposed construction, but could be processed and reused.

Roughly one-fourth to one-half of the rock could be potentially be reused on-site. The remainder would be excess. Excess rock that is not reused would be disposed of. It is likely to be crushed, or left unprocessed/uncrushed, and reused at a different project in region. Much of the bedrock that is excavated will be suitable for reuse after crushing to make it a standard material of use to the local construction industry. Even if not

processed, the excavated rock can be used as fill in non-engineered applications. A small percentage of the rock would be weathered (meaning it disintegrates easily), but could be used as soil-like fill.

In the long-term, once the buildings are occupied, the on-going solid waste management practices would be similar to existing practices with a contracted waste hauling and recycling company. Consistent with LEED-certified requirements the buildings would offer recycling for the following materials: mixed paper, corrugated cardboard, glass, plastics, and metals. In addition, hard-to-recycle materials such as batteries, mercury-containing lamps, and electronic waste would be considered for storage and collection.

4.10.3 CUMULATIVE IMPACTS

When considered in combination with the ongoing and planned projects identified in Chapter 1, implementation of Alternative 2 would generate minor short-term cumulative impacts for solid waste due to construction waste.

4.10.4 MITIGATION MEASURES

As part of the requirements to meet a minimum LEED Gold certification, contractors would be required to reduce construction and demolition waste disposed of in landfills and incineration facilities by recovering, reusing and recycling materials.

4.11 AIR QUALITY

4.11.1 ALTERNATIVE 1: NO ACTION

There would be no impacts to air quality under the No Action Alternative since building renovations and expansions would not be implemented at the Eccles Building or FRB-East Building.

4.11.2 ALTERNATIVE 2

Implementation of Alternative 2 would result in minor short-term negative impacts, minor long-term beneficial impacts, and negligible long-term negative impacts to interior and exterior air quality.

In the short-term, there would be an increase in:

- Emissions from construction equipment and from trucks hauling construction materials to the site and removing waste materials from the site;
- Emissions from vehicles driven to and from the site by construction workers
- Fugitive dust from construction activities; and
- Temporary disturbance of hazardous materials which may become airborne and result in increased health risks to construction workers.

Emissions produced during construction would vary daily depending on the type of activity.

In the long-term, hazardous building materials including lead, asbestos, and PCBs would be removed from the buildings to the standards set by DC and federal regulations to safeguard the health of building occupants. In addition, WELL v2 certification requires the restriction of hazardous ingredient components in newly installed building materials, specifically through the restriction of asbestos, mercury-containing lamps, and lead in plumbing products and paint.

The Board would seek to achieve a minimum of LEED®-Gold rating for the building operations. To achieve the LEED Gold rating, modern and efficient heating and cooling equipment would be installed as part of the renovation of the Eccles

and FRB-East buildings. These new systems would be more efficient and have lower emissions than the current systems. Following the completion of the project, the new building systems would generate emission below de minimis thresholds in conformity with the CAA.

A long-term minor increase in traffic from Alternative 2 is expected; therefore, there would be negligible long-term impacts to ozone from vehicular emissions.

4.11.3 CUMULATIVE IMPACTS

Considered with the past, present, and future projects identified in Chapter 1, Alternative 2 would not contribute to cumulative impacts. At the completion of the proposed project, the new building systems would generate emissions below de minimis thresholds.

4.11.4 MITIGATION MEASURES

The project contractors would adhere to appropriate best management practices during construction to reduce, minimize, or eliminate construction vehicle dust emissions. Similar to 4.9 Hazardous Wastes and Materials, the full extent of asbestos, lead, and PCB-containing material would be abated with a disposal process that is compliant with applicable regulations. Remediation practices would be used to avoid and minimize the exposure of air toxics.

4.12 NOISE LEVELS

4.12.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, building renovations and expansions would not be implemented at the Eccles Building or FRB-East Building. Therefore there would be no impacts to noise levels.

4.12.2 ALTERNATIVE 2

Implementation of Alternative 2 would result in minor short-term impacts and minor long-term beneficial impacts to noise levels.

In the short-term, persons within the immediate construction area would be subjected to construction-related noise. Construction vehicles going to and from the project area would also increase vehicular traffic and noise. Visitors to the National Mall and memorials, which are considered to be sensitive noise receptors, may be affected by demolition and construction activities such as removal and hauling of materials and construction activities. All construction would occur during normal business hours as required by the DC Noise Ordinance.

The proposed project is required to meet the DC Noise Ordinance requirements as stated in Chapter 3. All new mechanical equipment installed as part of this project would meet these requirements. In addition, removal of the GSA steam service to the FRB-East Building and replacement of the GSA tunnel ventilation fan would lower noise levels in the project area.

4.12.3 CUMULATIVE IMPACTS

Implementation of Alternative 2, when considered with the ongoing planned projects identified in Chapter 1, could generate minor short-term cumulative impacts to noise levels during construction. There would be no long-term cumulative impacts to noise levels.

4.12.4 MITIGATION MEASURES

Short-term construction-related noise would be minimized by controlling noise at its source through implementation of appropriate best management practices, as necessary, to meet

the District noise standards. Construction noise would be monitored to keep noise within regulated standards.

4.13 STORMWATER MANAGEMENT

4.13.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, the renovation and expansion of the Eccles and FRB-East buildings would not occur and no changes would be made to improve stormwater management. Impervious surfaces on the sites would not increase or decrease and the existing stormwater runoff volume would remain unchanged. Stormwater would continue to be discharged into existing drainage systems. Therefore, there would be no impact.

4.13.2 ALTERNATIVE 2

Implementation of Alternative 2 would result in minor long-term beneficial impacts to stormwater management. In addition, negligible short-term impacts could occur.

Though the project area is not located within a FEMA mapped floodplain area (100-year, 1% annual chance of flood) it is understood that the frequency and intensity of storm events are expected to increase. Under Alternative 2, the stormwater management program would be designed to accommodate the 100-year, 1% annual chance of flood event.

Phases 1 and 2 of this project would trigger requirements of a Major Substantial Improvement (MSI) activity, a Major Land Disturbing (MLD) activity, and a Maximum Extent Practicable (MEP) compliance process for improvements within the public right-of-way (PROW). The project would be considered a major regulated project by the District Department of Energy and the Environment (DOEE).

Per DOEE regulations, the Stormwater Retention Volume (SWRv) must be retained on-site or through a combination of on-site and off-site retention practices.

Alternative 2 would involve measures to reduce stormwater runoff and improve stormwater quality, including rainwater harvesting, vegetated roofs, bioretention areas, permeable pavement, and tree preservation/planting. Implementation of the stormwater management plan would include a new rainwater harvesting tank to collect runoff from the building roofs, for use in the building cooling towers and irrigation.

Because Alternative 2 would decrease the total rate and volume of stormwater runoff compared to existing conditions, a long-term minor beneficial impact would result. Alternative 2 would be in compliance with the current DOEE Stormwater Management (SWM) retention and detention requirements pursuant to Chapter 5 of Title 21 of the District of Columbia Municipal Regulations (DCMR) and the 2020 Stormwater Management Guidebook.

Additional requirements per the DC Water Green Infrastructure Utility Protection Guidelines and the District Department of Transportation (DDOT) Green Infrastructure Standards would need to be met due to the work proposed within the PROW. These requirements provide guidance on appropriate distances between SWM practices and infrastructure.

There could be short-term impacts from construction due to increased sediment flows. However, this would be minimized by implementing

erosion and sediment control practices. This would create a negligible, short-term impact.

Impervious surfaces are increased by approximately seven percent, due to the building additions; however, there would be a net reduction in stormwater runoff.

4.13.3 CUMULATIVE IMPACTS

Past, present, and future development in the area would impact stormwater management depending on the area of disturbance. For future projects that meet the land disturbance threshold, adequate stormwater management in accordance with federal and local policies would be provided. The rehabilitation and modernization of the Eccles Building and FRB-East Building would beneficially contribute to the cumulative impacts by improving the quality of stormwater runoff and reducing the quantity of stormwater runoff.

4.13.4 MITIGATION MEASURES

Construction impacts would be avoided and minimized as much as possible by providing and implementing an erosion and sediment control plan.

4.14 GROUNDWATER, GEOLOGY AND SOILS

4.14.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, the existing buildings would remain in their current condition and no new construction would occur. No changes would occur to the existing groundwater, geology or soils. Therefore, there would be no impacts to groundwater, geology or soils.

4.14.2 ALTERNATIVE 2

Implementation of Alternative 2 would have minor short-term and negligible long-term impacts to groundwater, geology and soils.

During construction, excavation and removal of soil and rock and pumping of groundwater would occur to accommodate building underground structures. Excavation and pumping of groundwater would occur within excavations that are temporarily supported with slurry and secant pile walls. These wall types are relatively impermeable and would extend well below the bottom of excavations, serving to “cut-off” groundwater to maintain groundwater levels near existing levels outside of the excavations during construction. The walls would be left in place permanently. Surplus excavated material removed from excavations would be approximately 1,044,720 cubic feet (38,704 cubic yards) of rock removal. Performance criteria would be established for the excavation of soil and rock and pumping of groundwater. The criteria would be established considering the need to protect existing buildings, utilities etc.

Below-grade walls and lowest floors of the new underground buildings and parking garage would either be waterproofed to keep water from entering the buildings and/or subdrainage systems would be installed to manage the minor and incidental groundwater seepage into the buildings and serve as redundancy to waterproofing. This design would maintain existing groundwater levels outside of the buildings and parking structure, which is required to protect existing buildings to remain and in the surrounding area.

4.14.3 CUMULATIVE IMPACTS

Implementation of Alternative 2, when considered with the ongoing planned projects identified

in Chapter 1, could generate minor short-term cumulative impacts to soils and geology during construction due to excavation and construction of new underground structures associated with the Potomac River Tunnel and possibly the Organization of American States project.

4.14.4 MITIGATION MEASURES

The temporary excavation support system walls would be relatively impermeable to groundwater. The walls would extend to a relatively low permeability strata at depth such as bedrock. Groundwater monitoring would be performed to assess construction performance against criteria established by the project team.

4.15 VEGETATION

4.15.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, the renovation and expansion of the Eccles and FRB-East buildings would not occur and no changes would be made to impact or improve vegetation. Therefore, there would be no impacts to vegetation.

4.15.2 ALTERNATIVE 2

Implementation of Alternative 2 would have moderate short-term negative impacts and minor long term beneficial impacts to vegetation.

Use of plants selected to thrive in the local site conditions and increase species diversity while retaining the character of the significant historic landscape and use of native plants would improve long-term health and resilience of plants across the property.

The short-term stresses caused by construction activities would be minimized by tree protection measures described in Section 2: Description of Alternatives.

Removal of existing vegetation during construction would be necessary to construct the underground parking garage and implement perimeter security upgrades, resulting in negative impacts to vegetation. Replacement of vegetation, soil, drainage systems, and adding irrigation would improve overall vegetation health across the site in the long term.

The high level pruning proposed to increase visibility and improve safety may have a negative impact on the health of the affected plants.

The design includes a tree preservation strategy that would seek to protect as many healthy existing trees as possible.

4.15.3 CUMULATIVE IMPACTS

Considered with the ongoing and planned projects identified in Chapter 1, implementation of Alternative 2 could generate short-term and long-term moderate impacts to vegetation. Alternative 2 would add to the overall long-term, cumulative impacts to vegetation.

If construction of the proposed Eccles and FRB-East project occurs concurrently with the implementation of other construction projects along the National Mall and in the Northwest Rectangle, the combined effects could temporarily change the overall canopy cover in the area during and for several years following construction.

4.15.4 MITIGATION MEASURES

Replacement of vegetation with plants selected to thrive in the local environment and increase species diversity across the property as well as improvements to soil, drainage, and irrigation systems would improve overall vegetation health across the property.

4.16 TRANSPORTATION

4.16.1 ALTERNATIVE I: NO ACTION

The No-Action (or Background) Alternative would result in no long-term or short-term impacts to transportation.

Under the No-Action scenario, geometry and volume assumptions for the year 2022 were analyzed. Geometry assumptions for the No-Action Alternative were based on existing conditions with the addition of any potential background improvement. Following national and DDOT methodologies, a background improvement must meet the following criteria to be incorporated into the analysis:

- Be funded; and
- Have a construction completion date prior or close to the proposed development.

Based on these criteria, there is one background improvement included in the 2022 No-Action Conditions:

- As part of the MoveDC plan, a north-south cycle track is planned to connect Dupont Circle with the National Mall. The preferred alternative is to install a cycle track running down 20th Street from Connecticut Avenue to F Street. This will run concurrent with a cycle track on 21st Street from G Street to Constitution Avenue, near the site. The travel lanes will be reduced at the C Street and Constitution Avenue intersections in order to accommodate the cycle track. These two cycle tracks will be connected by a pair of one-way protected bike lanes on F Street and G Street. The cycle track is projected to be complete by 2021, creating additional multimodal capacity and connectivity to the Site area. These future improvements will allow for better north-south connectivity.

The traffic projections for the 2022 No-Action Conditions consist of the existing volumes with two additions:

- Traffic generated by developments within the vicinity of the site and expected to be completed prior, or close to 2022 (known as background developments); and
- Inherent growth on the roadway (representing regional traffic growth).
- Following national and DDOT methodologies, a background development should meet the following criteria to be incorporated into the analysis:
- Be located in the study area, defined as having an origin or destination point within the cluster of study area intersections;
- Have entitlements; and
- Have a construction completion date prior or close to that of the project.

Based on these criteria, the Martin Building Redevelopment was included in the 2022 No-Action scenario.

An existing study was available for the Martin Building Redevelopment, with trip generation and distribution assumptions derived from the study and altered where necessary based on updated travel patterns. Mode split and trip generation assumptions for the Martin Building is shown in Table 4.4.

While the background development represents local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's (MWCOG) currently adopted regional transportation model, comparing the difference between the year 2019 and 2025 model scenarios. The growth rates observed in this model served as a basis for analysis assumptions and are shown in Table 4.5.

The traffic volumes generated by the inherent growth along the network and background developments were added to the existing traffic volumes in order to establish the 2022 No-Action traffic volumes.

No-Action intersection LOS and queueing summaries were calculated at the study intersections based on the lane configurations and traffic volumes for the No-Action scenario. As seen in Table 4.6, all study intersections but one (1) continue to operate at acceptable conditions:

- Constitution Avenue & 21st Street, NW
  - » Southbound approach: PM

Table 4.8 shows the queuing results for No-Action Conditions. As with existing conditions, three of the study intersections have one or more lane groups that exceed the given storage length during at least one peak hour. These intersections are as follows:

- C Street, Virginia Avenue & 19th Street
  - » Southeastbound Right on Virginia Avenue: PM
- Constitution Avenue & 21st Street
  - » Eastbound Thru: AM
  - » Westbound Thru: PM
  - » Southbound Right: PM
- Constitution Avenue & 20th Street
  - » Westbound Thru: PM

The addition of annual growth on the study area roadways and trips generated from the Martin Building redevelopment do not change the behavior of operations along the study area roadways. Delays and queues in the No-Action conditions are consistent with those observed in existing conditions.

4.16.2 ALTERNATIVE 2

The implementation of Alternative 2 would result in long-term minor impacts to transportation.

The configurations and traffic controls for the 2022 Total Future Conditions are based on those for the 2022 No-Action Conditions with the following changes as part of Alternative 2:

- The western and eastern driveways at the Eccles Building would be removed.
- The access points at the FRB-East Building would be reversed, with entry now from 19th Street and exit from 20th Street.

The 2022 Total Future traffic volumes consist of the 2022 No-Action volumes with the addition of the traffic volumes generated by the proposed project (site-generated trips for Alternative 2).

Table 4.4: Summary of Background Development Trip Generation

BACKGROUND DEVELOPMENT	TRIP GENERATION SOURCE	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Martin Building	Transportation Study by Wells & Associates	54 veh/hr	39 veh/hr	93 veh/hr	39 veh/hr	54 veh/hr	93 veh/hr
Total Background Site Trips		68 veh/hr	198 veh/hr	266 veh/hr	248 veh/hr	166 veh/hr	414 veh/hr

Table 4.5: Applied Annual and Total Growth Rates

ROAD AND DIRECTION OF TRAVEL	PROPOSED ANNUAL GROWTH RATE		TOTAL GROWTH BETWEEN 2019 AND 2022	
	AM PEAK HR	PM PEAK HR	AM PEAK HR	PM PEAK HR
Constitution Avenue – Eastbound	0.20%	0.10%	0.60%	0.30%
Constitution Avenue – Westbound	0.10%	0.10%	0.30%	0.30%
20th Street – Northbound/Southbound	0.10%	0.10%	0.30%	0.30%
19th Street – Southbound	1.00%	0.10%	3.03%	0.30%
C Street – Eastbound/Westbound	0.10%	0.10%	0.30%	0.30%
Virginia Avenue – Eastbound	2.00%	2.00%	6.12%	6.12%
Virginia Avenue – Westbound	0.10%	0.10%	0.30%	0.30%
21st Street – Northbound	0.10%	0.10%	0.30%	0.30%
21st Street – Southbound	0.25%	0.10%	0.75%	0.30%

Table 4.6: LOS Results, No-Action Conditions

INTERSECTION	APPROACH	EXISTING CONDITIONS (2019)			
		AM PEAK HOUR		*PM PEAK HOUR*	
		DELAY	LOS	DELAY	LOS
C Street & 21st Street NW	Overall	11.7	B	14.4	B
	Eastbound	27.0	C	31.4	C
	Westbound	39.2	D	46.5	D
	Northbound	2.4	A	5.8	A
	Southbound	8.7	A	10.8	B
C Street & 20th Street NW	Westbound	3.0	A	6.6	A
	Northbound	10.3	B	12.1	B
C Street & Virginia Avenue NW	Overall	13.7	B	32.6	C
	Eastbound	35.0	C	39.1	D
	Southeastbound	30.6	C	45.3	D
	Northwestbound	3.0	A	12.1	B
C Street, Virginia Avenue & 19th Street NW	Overall	24.2	C	30.6	C
	Westbound	49.2	D	47.9	D
	Southbound	30.6	C	36.6	D
	Southeastbound	5.5	A	20.9	C
	Northwestbound	25.8	C	25.0	C
Constitution Avenue & 21st Street NW	Overall	15.7	B	78.7	E
	Eastbound	15.0	B	10.9	B
	Westbound	10.9	B	33.4	C
	Southbound	44.1	D	290.2	F
Constitution Avenue & 20th Street NW	Overall	6.2	A	16.3	B
	Eastbound	2.9	A	4.4	A
	Westbound	16.3	B	19.6	B
	Southbound	29.2	C	36.8	D
Constitution Avenue & 19th Street NW	Overall	6.3	A	14.6	B
	Eastbound	1.3	A	11.0	B
	Westbound	7.2	A	21.2	C
	Southbound	27.8	C	11.8	B
21st Street NW & Eccles Building Western Driveway	Westbound	0.0	A	0.0	A
20th Street NW & Eccles Building Eastern Driveway	Eastbound	8.8	A	10.5	B
	Northbound	0.2	A	0.0	A
20th Street NW & FRB-East Building Western Driveway	Westbound	*For Future Use*			
	Southbound	0.0	A	0.0	A
19th Street NW & FRB-East Building Eastern Driveway	Eastbound	HCM cannot analyze intersection configuration due to the number of southbound approach lanes.			

INTERSECTION	LANE GROUP	STORAGE LENGTH (FT)	EXISTING CONDITIONS (2019)			
			AM PEAK HOUR		*PM PEAK HOUR*	
			50TH %	95TH %	50TH%	LOS
C Street & 21st Street NW	Eastbound T	500	2	10	12	36
	Westbound L	410	--	--	--	--
	Westbound T	410	32	70	51	m90
	Northbound L/T	385	4	m7	0	m0
	Northbound R	385	--	--	--	--
	Southbound L	60	10	23	29	51
	Southbound T	550	46	77	216	307
	Southbound R	550	--	--	--	--
C Street & 20th Street NW	Westbound LT	180	--	1	--	14
	Northbound L/LR	370	--	6	--	5
	Northbound R	370	--	--	--	7
C Street & Virginia Avenue NW	Eastbound L	180	65	112	83	137
	Eastbound R	180	3	17	0	28
	Southeastbound T	320	76	98	254	287
	Northwestbound T	85	17	20	73	85
C Street, Virginia Avenue & 19th Street NW	Westbound R	350	55	85	43	75
	Southbound T	550	66	84	260	306
	Southeastbound T	85	5	8	10	m15
	Southeastbound R	85	12	64	254	m#396
	Northwestbound T	400	185	225	95	134
Constitution Avenue & 21st Street NW	Eastbound T	285	329	374	77	96
	Westbound T	410	85	103	~539	m#835
	Southbound L/LR	385	95	175	39	m73
	Southbound R	385	--	--	~637	#862
Constitution Avenue & 20th Street NW	Eastbound T	410	21	23	24	29
	Westbound T	300	77	92	527	#622
	Southbound L	375	7	m21	26	m49
	Southbound R	375	3	m17	71	m133
Constitution Avenue & 19th Street NW	Eastbound T	300	7	7	48	57
	Westbound T	410	54	68	189	223
	Southbound L	365	127	164	161	m239
	Southbound R	365	4	14	47	m100
21st Street NW & Eccles Building Western Driveway	Westbound LR	75	--	0	--	0
	Northbound T	255	--	0	--	0
	Southbound T	100	--	0	--	0
20th Street NW & Eccles Building Eastern Driveway	Eastbound LR	125	--	0	--	0
	Northbound T	250	--	0	--	0
	Southbound T	100	--	0	--	0
20th Street NW & FRB-East Building Western Driveway	Westbound	50	*For Future Use*			
	Northbound	295	--	0	--	0
	Southbound	40	--	0	--	0
19th Street NW & FRB-East Building Eastern Driveway	Eastbound R	50	HCM cannot analyze intersection configuration due to the number of southbound approach lanes.			
	Southbound T	40				

m = Volume for 95th percentile queue is metered by upstream signal
# = 95th percentile volume exceeds capacity, queue may be longer
~ = Volume exceeds capacity, queue is theoretically infinite

Table 4.7: Queuing Results (in Feet), No Action Conditions

Thus, the 2022 Total Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and site-generated trips of the proposed project.

Trip generation assumptions for Alternative 2 utilized the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 10th Edition. This methodology was supplemented to account for the urban nature of the site (the Trip Generation Manual provides data for non-urban, low transit use sites) and to generate trips for multiple modes.

Trip generation was calculated based on ITE Land Use 710, General Office for the buildings. Mode splits were derived using survey data provided by the Board employees who currently work at the Eccles, NYA, ISQ, and 1801 K Street offices: Of the 3,373 employees who responded, approximately 20% drive alone, 5% carpool or vanpool, 57% use transit, and 18% indicated "other" The "other" results represent employees that telework or work an alternative week schedule. Additional survey data indicated 37% telework at least once a week and 32% work an alternative week schedule (AWS). These percentages were supplemented with zip code data providing an estimate of employees who walk or bike. This survey data is summarized in Figure 4.56. Per the survey conducted by the Board, 49% of employees live in ZIP codes lying entirely outside the Beltway.

The mode split assumptions (a percentage breakdown of site arrivals and departures by mode) are shown in Table 4.8. The auto mode split was decreased to reflect the parking supply of 318 spaces proposed for the site. The project is subject to National Capitol Planning Commission (NCPC) requirements, which specifies a maximum ratio of one parking space for every five employees, or 0.20 spaces per employee. As Table 4.9 shows, when accounting for the proposed supply of 370 spaces at the renovated Martin Building and spaces required for official vehicles, the proposed supply is within the NCPC maximum of 0.20.

A summary of the multimodal trip generation for the development program of 1,750 seats is provided in Table 4.10. The Alternative 2 is expected to generate 199 morning peak hour (170 inbound and 29 outbound) trips and 197 afternoon peak hour (31 inbound and 166 outbound) trips.

Trip distribution for the site-generated trips was determined based on:

- Board employee zip code data, CTPP TAZ data;
- Existing and future travel patterns in the study area; and
- The location of the parking access.

The trip distribution was significantly influenced by the Census Transportation Planning Product's (CTPP) Transportation Analysis Zones (TAZ) flow data for drivers commuting to the site's TAZ and adjusted based on traffic volumes and patterns. The flow information showed significant commuting patterns from Virginia and within the District borders. The origin of outbound and destination of inbound vehicular trips were the below-grade parking garage for the Eccles and FRB-East buildings, accessible from 20th Street and 19th Street, respectively. The inbound and outbound trip distribution for the project is shown on Figure 4.57 and Figure 4.58.

The traffic volumes for the 2022 Total Future Conditions were calculated by adding the development-generated traffic volumes for the project to the 2022 Background traffic volumes. Thus, the future condition with the proposed development scenario includes traffic generated by existing volumes, background developments through the year 2022, inherent growth on the network, and the proposed project.

Total future intersection LOS and queueing summaries were calculated at the study intersections based on the total future lane configurations and traffic volumes. As seen in Table 4.11, all study intersections but one continue to operate at acceptable conditions:

- Constitution Avenue & 21st Street, NW
  - » Southbound approach: PM

Changes in delay between the Background and Total Future Conditions are minimal, with delays at the southbound approach of Constitution Avenue & 21st Street, NW increasing by less than one (1) second.

Table 4.12 shows the queueing results for Total Future Conditions. Similar to No-Action Conditions, three (3) of the study intersections have one or more lane groups that exceed the given storage length during at least one peak hour. These intersections are as follows:

- C Street, Virginia Avenue & 19th Street
  - » Southeastbound Right on Virginia Avenue: PM
- Constitution Avenue & 21st Street
  - » Eastbound Thru: AM
  - » Westbound Thru: PM
  - » Southbound Right: PM
- Constitution Avenue & 20th Street
  - » Westbound Thru: PM

4.16.3 CUMULATIVE IMPACTS

Existing, planned, and future development in the area would place additional demand on the transportation network within the District. The renovation and expansion of the Eccles and FRB-East buildings would contribute to these long-term impacts by providing additional office space. Based on the traffic analysis conducted for the Alternative 2 design option, the project is classified to be a minor impact, as a small measurable amount of traffic would be added to the surround roadway network, but mitigation measures are not recommended. To curtail these impacts, Transportation Demand Management (TDM) measures have been proposed, as described below.

4.16.4 MITIGATION MEASURES

Based on DDOT standards, the project is considered to have an impact at an intersection within the study area if any of the following conditions are met:

- The capacity analyses show a LOS E or F at an intersection or along an approach where one does not exist in the Existing Conditions or Background Conditions;
- There is an increase in delay at any approach or overall intersection operating under LOS E or F of greater than 5 percent when compared to the Background Conditions; or
- There is an increase in the 95th percentile queues by more than 150 feet at an intersection or along an approach in the Total Future Conditions with the proposed development where one does not exist in the Background Conditions.

LAND USE	MODE					
	AUTO	CARPOOL	TRANSIT	BIKE	WALK	TELEWORK
Office	18%	5%	62%	2%	7%	6%

Table 4.8: Mode Split Assumptions

BUILDING	PROPOSED ANNUAL	
Eccles	0*	788
FRB-East	318	962
Martin	370	1,085
Total	688	2,835
Official Vehicles	-116	--
Net Employee Spaces	572	--
Employee Parking Ratio (Spaces per Employee)	= 572/2,835 0.20	Meets NCPC Requirement

**Parking Shared with FRB-East Building*

Table 4.9: Proposed Parking Supply

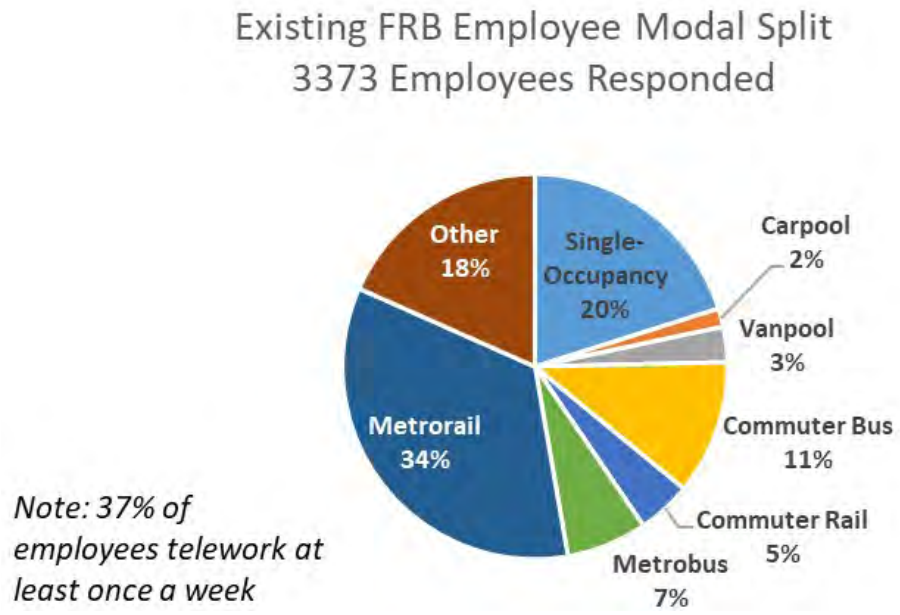


Figure 4.56: Survey Results of FRB Employee Modal Split.

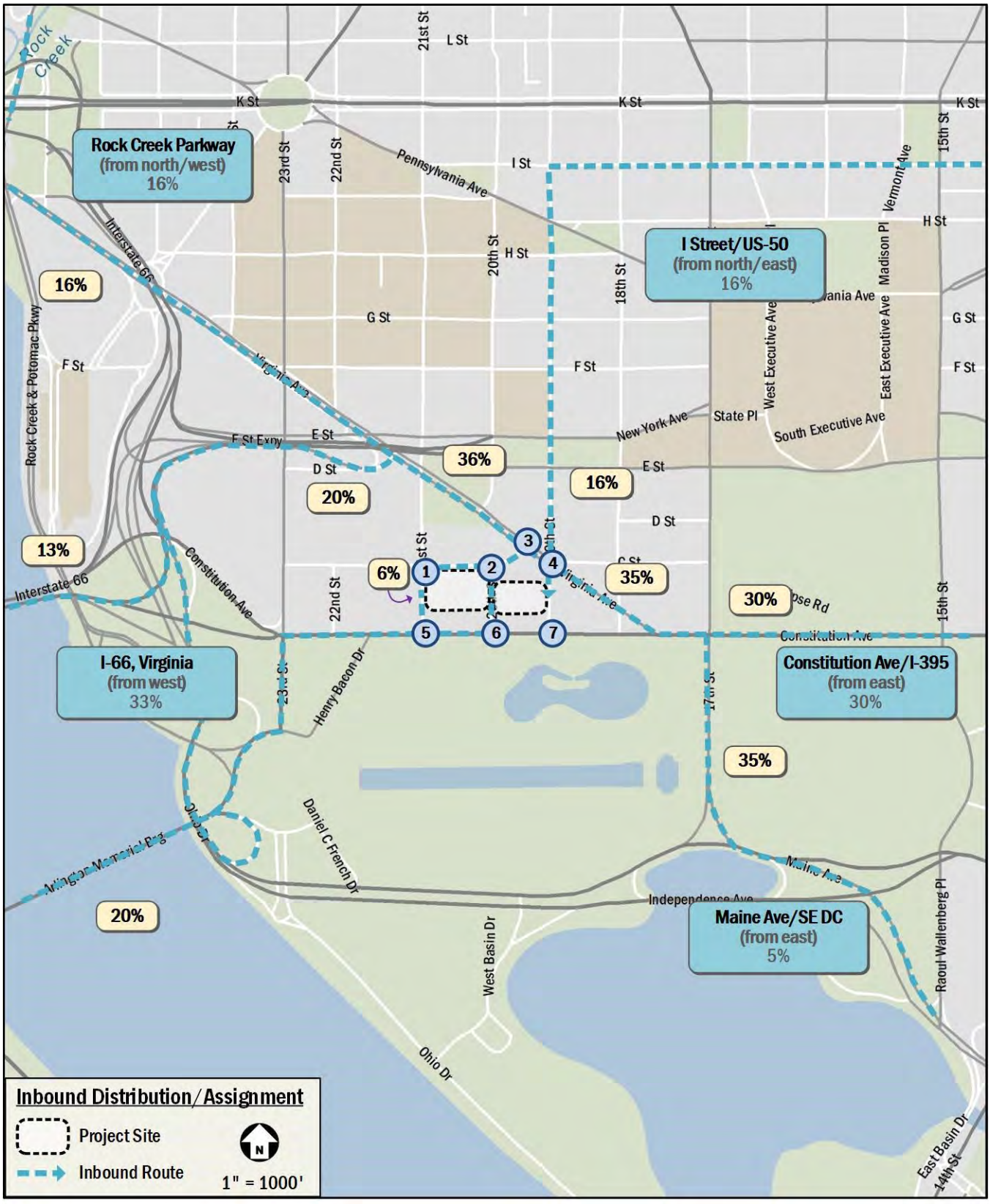


Figure 4.57: Inbound Trip Distribution and Routing.

Figure 4.58: Outbound Trip Distribution and Routing.

Table 4.10: Trip Generation Summary for Alternative 2 (1,750 Seats)

MODE	AM PEAK HOUR			PM PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Federal Reserve Eccles and FRB-East Buildings--Trip Generation Alternative 2						
Eccles Building (362,480 SF; 776 seats)						
Auto (veh/hr)	83	14	97	15	81	96
Transit (ppl/hr)	264	44	308	49	256	305
Bike (ppl/hr)	9	1	10	2	8	10
Walk (ppl/hr)	30	5	35	6	28	34
Telework (ppl/hr)	26	4	30	5	25	30
FRB-East Building (379,850 SF; 962 seats)						
Auto (veh/hr)	87	15	102	16	85	101
Transit (ppl/hr)	277	45	322	51	269	320
Bike (ppl/hr)	9	1	10	2	8	10
Walk (ppl/hr)	31	5	36	6	30	36
Telework (ppl/hr)	27	4	31	5	26	31
Combined Trip Generation (742,330 SF; 1,750 Seats)						
Auto (veh/hr)	170	29	199	31	166	197
Transit (ppl/hr)	541	89	630	100	525	625
Bike (ppl/hr)	18	2	20	4	16	20
Walk (ppl/hr)	61	10	71	12	58	70
Telework (ppl/hr)	53	8	61	10	51	61

Table 4.11: LOS Results, Total Future Conditions

INTERSECTION	APPROACH	EXISTING CONDITIONS (2019)			
		AM PEAK HOUR		*PM PEAK HOUR*	
		DELAY	LOS	DELAY	LOS
C Street & 21st Street NW	Overall	11.2	B	14.3	B
	Eastbound	27.0	C	31.4	C
	Westbound	36.7	D	46.2	D
	Northbound	2.8	A	5.8	A
	Southbound	8.7	A	10.8	B
C Street & 20th Street NW	Westbound	5.1	A	6.6	A
	Northbound	10.4	B	11.8	B
C Street & Virginia Avenue NW	Overall	14.9	B	33.3	C
	Eastbound	34.0	C	42.9	D
	Southeastbound	31.3	C	45.8	D
	Northwestbound	2.8	A	11.8	B
C Street, Virginia Avenue & 19th Street NW	Overall	31.9	C	31.4	C
	Westbound	49.2	D	47.9	D
	Southbound	30.9	C	36.6	D
	Southeastbound	7.9	A	23.0	C
	Northwestbound	45.2	D	26.7	C
Constitution Avenue & 21st Street NW	Overall	16.1	B	82.6	F
	Eastbound	15.6	B	10.9	B
	Westbound	11.2	B	41.1	D
	Southbound	44.5	D	290.5	F
Constitution Avenue & 20th Street NW	Overall	6.4	A	16.6	B
	Eastbound	3.1	A	4.5	A
	Westbound	16.2	B	19.6	B
	Southbound	26.6	C	31.9	C
Constitution Avenue & 19th Street NW	Overall	7.0	A	15.1	B
	Eastbound	1.6	A	13.0	B
	Westbound	7.2	A	21.2	C
	Southbound	31.7	C	12.0	B
21st Street NW & Eccles Building Western Driveway	Westbound	Driveway Removed in Scenario			
20th Street NW & Eccles Building Eastern Driveway	Eastbound Northbound	Driveway Removed in Scenario			
20th Street NW & FRB-East Building Western Driveway	Westbound	9.2	*A*	11.2	B
	Southbound	0.0	A	0.0	A
19th Street NW & FRB-East Building Eastern Driveway	Eastbound	HCM cannot analyze intersection configuration due to the number of southbound approach lanes.			

Table 4.12: Queuing Results (in Feet), Total Future Conditions

INTERSECTION	LANE GROUP	STORAGE LENGTH (FT)	EXISTING CONDITIONS (2019) AM PEAK HOUR 50TH %	AM PEAK HOUR 95TH %	PM PEAK HOUR 50TH%	PM PEAK HOUR LOS
C Street & 21st Street NW	Eastbound T	500	2	10	12	36
	Westbound L	410	--	--	--	--
	Westbound T	410	32	71	51	m90
	Northbound L/T	385	5	m7	0	m0
	Northbound R	385	--	--	--	--
	Southbound L	60	10	23	29	51
	Southbound T	550	46	77	216	307
	Southbound R	550	--	--	--	--
C Street & 20th Street NW	Westbound LT	180	--	1	--	14
	Northbound L/LR	370	--	9	--	5
	Northbound R	370	--	--	--	13
C Street & Virginia Avenue NW	Eastbound L	180	70	120	109	171
	Eastbound R	180	6	22	0	29
	Southeastbound T	320	91	115	259	292
	Northwestbound T	85	17	m20	73	85
C Street, Virginia Avenue & 19th Street NW	Westbound R	350	55	85	43	75
	Southbound T	550	72	90	261	307
	Southeastbound T	85	9	14	11	m15
	Southeastbound R	85	43	85	~264	m#403
	Northwestbound T	400	254	#341	105	150
Constitution Avenue & 21st Street NW	Eastbound T	285	334	381	78	96
	Westbound T	410	85	104	~739	#869
	Southbound L/LR	385	97	176	40	m72
	Southbound R	385	--	--	~638	#803
Constitution Avenue & 20th Street NW	Eastbound T	410	24	23	24	29
	Westbound T	300	76	91	527	#622
	Southbound L	375	15	m39	88	m145
	Southbound R	375	2	m20	77	m157
Constitution Avenue & 19th Street NW	Eastbound T	300	13	13	71	82
	Westbound T	410	54	68	189	223
	Southbound L	365	129	m165	164	m240
	Southbound R	365	5	m15	49	m102
21st Street NW & Eccles Building Western Driveway	Westbound LR	75				
	Northbound T	255		Driveway Removed in Scenario		
	Southbound T	100				
20th Street NW & Eccles Building Eastern Driveway	Eastbound LR	125				
	Northbound T	250		Driveway Removed in Scenario		
	Southbound T	100				
20th Street NW & FRB-East Building Western Driveway	Westbound	50	--	*3*	--	250
	Northbound	295	--	0	--	0
	Southbound	40	--	0	--	0
19th Street NW & FRB-East Building Eastern Driveway	Eastbound R	50	HCM cannot analyze intersection configuration due to the number of southbound approach lanes.			
	Southbound T	40				

m = Volume for 95th percentile queue is metered by upstream signal
# = 95th percentile volume exceeds capacity, queue may be longer
~ = Volume exceeds capacity, queue is theoretically infinite

Following these guidelines, there are impacts to one (1) intersection as a result of the project.

- Constitution Avenue & 21st Street

Mitigation measures were considered at this intersection. During the afternoon peak hour, the southbound approach on 21st Street already operates at LOS F during Existing and Background Conditions and continues to operate at LOS F under Total Future Conditions. During the afternoon peak hour, the overall intersection slightly degrades in delay, going from LOS E in Background Conditions to LOS F in Total Future Conditions. This is due to the southbound approach being at capacity in Existing and Background conditions. There are no site-generated trips routed through this approach roadway during the afternoon peak hour.

Although mitigation measures were considered at the intersection in the form of signal timing adjustments, any additional green time to the southbound phase would take away green time from westbound Constitution Avenue and create a strain on commuter traffic. Westbound Constitution Avenue is a heavily trafficked arterial with nearly 2,000 trips. The delay observed under the Total Future conditions for the southbound approach increases by less than five (5) percent when compared to Background Conditions. As such, no mitigations are recommended at this location.

PROPOSED TDM GOALS

In addition to the existing TDM Strategies implemented by the Board (See 3.3.16), additional TDM Strategies have been formulated based on DDOT expectations for developments of this type and size. As such, the Board proposes the following TDM strategies:

- The Board will continue offering all of the existing TDM programs.
- The Board will provide long-term bicycle parking spaces in the proposed garage to serve 7% of all building occupants.
- The Board will provide short-term bicycle parking spaces on exterior racks to serve 3% of all peak visitors. Two rack locations are proposed—one at the corner of 21st Street and C Street and one at the corner of 19th Street and Virginia Avenue.
- The Board will make use of MWCOG's Commuter Connections Program, which includes the Ridematching and the Guaranteed Ride Home programs, among other services.
- The Board will coordinate with DDOT's goDCgo program, which is an initiative of the District Department of Transportation (DDOT) that encourages the use of sustainable transportation and provides complimentary transit resources and consulting services to DC organizations and commuters.

Table 4.13: Summary of Environmental Consequences

IMPACTED RESOURCE	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2
Cultural Resources	**No Impacts**	**Moderate long-term direct physical** impacts would occur to the Eccles Building and the FRB-East Building as character-defining features of the buildings and landscapes would be altered or removed, which would reduce the integrity of the historic properties. For purposes of Section 106 of the NHPA, there would be an adverse effect on the Eccles Building and the FRB-East Building. **No direct** impacts to other historic properties in the APE. **Moderate long-term direct visual** impacts would occur to the Northwest Rectangle Historic District. The project would impact the overall setting of and views toward the Eccles and FRB-East buildings from the district. The project would diminish the integrity of feeling of the Northwest Rectangle Historic District and change of the character of the district's contributing physical features within its setting. **Negligible long-term direct visual impacts** on the setting or significant views of other historic resources within the APE. **Short- and long-term moderate cumulative** impacts to historic resources would occur. Alternative 2 would add to the overall cumulative impacts to historic resources and the Northwest Rectangle Historic District. The combined effects of construction activities could temporarily change the overall appearance and character of the National Mall.
Planning Policies	**Minor long-term** impacts would result from the failure to reflect the 2016 update of the Comprehensive Plan for the National Capital, Federal Elements, and the Monumental Core Framework Plan.	**Minor long-term beneficial** impacts would occur as the project would be consistent with the 2016 update of the Comprehensive Plan and the Monumental Core Framework Plan.

IMPACTED RESOURCE	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2
Public Health and Safety	**No Impacts**	**Long-term minor beneficial** impacts as a result of upgrades to perimeter security.
Economic Resources	**No Impacts**	**Short-term minor beneficial** impacts due to an increase in employment and other factors as a result of the construction project and the hiring of construction workers.
Sustainability	**No Impacts**	**Long-term moderate beneficial** impacts due to application of strategies to improve sustainability that would reduce resource consumption and meet current stormwater, accessibility, and building code requirements which would improve conditions over existing. **Cumulative long-term moderate beneficial** impacts are anticipated with implementation of the project, National Mall Plan, the Potomac River Tunnel Project, and the 23rd Street Levee Project.
Climate Change and Carbon Footprint	**No Impacts**	**Long-term moderate beneficial** impact due to a reduction of the existing EUI by nearly 75%, and the offset of energy consumption through a rooftop photovoltaic array system which is estimated to produce over 5% of the total average electricity use of the building. The basis of design is projected to reduce the Greenhouse Gas Emissions by approximately 45% over the minimum LEED baseline. Alternative 2 would also enhance the resilience of the surrounding area and reduce impact on the stormwater infrastructure by designing to accommodate the 100 year, 1% annual chance of flood event. **Cumulative long-term moderate beneficial** impacts could occur to climate change and carbon footprint with implementation of the project, National Mall Plan, the Potomac River Tunnel Project, and the 23rd Street Levee Project.

IMPACTED RESOURCE	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2
Utilities	**Minor short and long term** impacts would occur since deficient building systems would not be addressed and no utilities would be upgraded and/or replaced.	**Minor long-term beneficial** impacts as a result of the project achieving LEED for Building Design and Construction v4 Gold that would exceed minimum energy performance requirements, result in nearly a 75% decrease in the energy use per square foot, and reduce indoor water use reduction by 37% .
Hazardous Materials and Wastes	**No Impacts**	**Minor short-term negative** impact and a **minor long-term beneficial** impact to hazardous materials and wastes. Hazardous materials remediation would be performed as part of the overall rehabilitation and modernization of the buildings. In the short-term, construction and demolition activities would result in the temporary disturbance of hazardous materials
Solid Waste Management	**No Impacts**	**Minor short-term negative** impacts and **moderate long-term beneficial** impacts would occur due to the generation of non-hazardous solid waste. All solid waste would meet LEED-certified requirements.
Air Quality		**Negligible short-term negative** impacts due to fugitive air dust and emissions during construction. Possible **long-term minor beneficial** impacts due to application of strategies to improve energy consumption, CO2 emissions, and energy use intensity.
Noise Levels	**No Impacts**	**Minor, short-term impacts** due to construction activities. Minor long-term beneficial impacts since the proposed project would meet DC Noise Ordinance requirement. The removal of the GSA steam service to the FRB-East Building and replacement of the GSA tunnel ventilation fan would lower noise levels in the project area. **Minor short-term** c**umulative** impacts due to noise from construction activities.

IMPACTED RESOURCE	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2
Stormwater Management	**No Impacts**	**Long-term, minor beneficial** impact as project would be in compliance with the current DOEE Stormwater Management (SWM) retention and detention requirements pursuant to Chapter 5 of Title 21 of the District of Columbia Municipal Regulations (DCMR) and the 2020 Stormwater Management Guidebook.
Groundwater, Geology, and Soils	**No Impacts**	**Minor short-term** and **negligible long-term** impacts to groundwater, geology and soils would occur. During construction, excavation and removal of soil and rock and pumping of groundwater would occur to accommodate building underground structures. The design would maintain existing groundwater levels outside of the buildings and parking structure, which is required to protect existing buildings to remain and in the surrounding area. Alternative 2 could generate **minor short-term** cumulative impacts to soils and geology during construction due to excavation and construction of new underground structures associated with the Potomac River Tunnel and possibly the Organization of American States project.
Vegetation	**No Impacts**	**Moderate short-term negative** impacts and **minor long term beneficial** impacts to vegetation. The short-term stresses would caused by construction activities. Removal of existing vegetation during construction. Alternative 2 would add to the overall l**ong-term cumulative** impacts to vegetation. If construction of the proposed Eccles and FRB-East project occurs concurrently with the implementation of other construction projects along the National Mall and in the Northwest Rectangle, the combined effects could result in **short-term cumulative** impacts to vegetation.
Transportation	**No Impacts**	Minor long-term impacts would occur as a small measurable amount of traffic would be added to the surround roadway network.

5 CONSULTATION AND COORDINATION

5. CONSULTATION AND COORDINATION

5.1 SECTION 106 COORDINATION

The Eccles Building is listed in the DC Inventory of Historic Sites and is eligible for listing in the National Register of Historic Places. The FRB-East Building is listed in the DC Inventory of Historic Sites and the National Register of Historic Places. Both buildings contribute to the National Register-eligible Northwest Rectangle Historic District. The Board's proposed renovation and expansion of the Eccles and FRB-East buildings is a federal undertaking; therefore the Board is complying with Section 106 of the National Historic Preservation Act and considering the project's effects on historic properties.

The Board initiated Section 106 consultation with the DC Historic Preservation Office (DC SHPO) on August 15, 2019. A combined public scoping meeting and Section 106 consulting parties meeting was held on September 17, 2019 to introduce the project. An additional combined public and consulting parties meeting was held on 16 October 2019 to review the undertaking and the proposed area of potential effects (APE), introduce the project alternatives, and discuss potential effects from the proposed undertaking. A third consulting parties meeting was held on March 17, 2020 to provide an update on the project and the design components of the preferred alternatives and to present the potential adverse effects from the implementation of the proposed undertaking. A fourth consulting parties meeting occurred on June 24, 2020 to provide an update on the project, present the findings of the assessment of effects, and discuss potential mitigation strategies.

The Board is currently preparing the documentation to notify the Advisory Council on Historic Preservation of its determination that the Eccles Building and FRB-East Building Renovation and Expansion project will cause an adverse effect. As a result, the Board, NCPC, and DC SHPO will develop a Section 106 agreement document to resolve the adverse effect. At this time, the Board anticipates it will host an additional consulting parties meeting in fall 2020.

5.2 AGENCY COORDINATION

Throughout the development of conceptual and schematic designs, informational submissions and briefings were provided to CFA, DC SHPO, and NCPC.

The project was presented and discussed during an NCPC concept design review meeting on December, 5 2019. In this meeting, NCPC approved the concept proposal for the renovation and expansion of the Eccles and FRB-East buildings. NCPC preliminary review is anticipated in fall 2020.

The project was presented in an informational capacity to the CFA on November, 21 2019. CFA gave concept approval of the project's general massing and site improvements on January 16, 2020. Additionally, CFA provided concept approval of the overall site/landscape and the Eccles Building on May 21, 2020. CFA gave concept approval of the FRB-East Building on July 16, 2020. CFA final review is anticipated in spring 2021.

5.3 DEPARTMENT OF TRANSPORTATION

On April 8, 2020, the Board met with representatives from the DDOT and NCPC to initiate DDOT's Comprehensive Transportation Review (CTR) Process and discuss the need for a traffic impact study and CTR. Additional meetings were held with representatives from DDOT to review the proposed parking, elements of the project in public space under DDOT's review, and air rights. DDOT approved the CTR Scoping form on July 31, 2020.

The project was presented at the July 23, 2020 DDOT Public Space Committee (PSC) hearing. The preferred parking ramp options and five other options that were studied were presented. While not ideal, the preferred option minimally impacts the historic building and landscape and promotes pedestrian movement at grade between the Eccles and FRB East buildings. The PSC asked the design team to reduce the width of the exit ramp and add landscaping between the sidewalk and the ramp within the public space. The revised option will be presented at the September 2020 PSC hearing.

5.4 DC WATER

On 18 May 2020, the design team discussed the actions and coordination needed for the design and construction of the potential sewer heat exchange system with DC Water. On 30 May 2020, the design team and the Board met with DC Water for a Conceptual Plan Review (CPR) meeting to introduce the project and discuss the placement and connections for proposed water and sewer lines and appurtenances as well as life safety issues. A follow-up meeting was held on 15 June 2020 with DC Water and the design team to further discuss water line and life safety issues.

5.5 DC DEPARTMENT OF ENERGY AND ENVIRONMENT

The Board and the design team attended a meeting with the DC Department of Energy and Environment (DOEE) on 18 May 2020, to introduce the project, discuss the stormwater management program and permit submission phasing.

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BIBLIOGRAPHY

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APPENDIX A
PUBLIC SCOPING

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
WASHINGTON, DC 20551

MANAGEMENT DIVISION

3 September 2019

Dear Interested Party:

The Board of Governors of the Federal Reserve System (Board) proposes to renovate and expand the Marriner Eccles Federal Reserve Board Building (Eccles Building) at 2051 Constitution Avenue NW and the Federal Reserve Board – East Building (FRB-East Building) at 1951 Constitution Avenue NW (historically known as the United States Public Health Service Building and more recently the Department of the Interior - South Building).

The purpose of the proposed action is to renovate and expand the Eccles Building and the Federal Reserve-East Building to address a critical backlog of upgrades, to respond to changes in building codes and regulatory requirements, to accommodate information technology requirements, building security provisions, advancements in environmental awareness and energy efficiency, as well as to address increased utility demands and associated requirements imposed by an increased building population and integration of technology not anticipated at the time of the buildings' original design. The proposed programming changes and building additions are needed to increase spatial efficiency and provide a secure environment for the buildings' occupants, while accommodating the growing needs of the Board and its visitors.

The Board will serve as the lead and responsible federal agency and work in cooperation with the National Capital Planning Commission (NCPC) to comply with the National Environmental Policy Act (NEPA). The Board will be preparing an Environmental Assessment (EA) to analyze the environmental impacts of a range of alternatives for this project, in accordance with NEPA requirements. Concurrently, the Board will lead consultation under Section 106 of the National Historic Preservation Act.

With this notice, the Board is announcing the start of the public scoping period for the preparation of the Environmental Assessment (EA). The preparation of the EA will enable the Board to evaluate and analyze the environmental impacts of the project and alternatives under consideration. At the same time, the Board will be conducting consultation under Section 106 of the National Historic Preservation Act to take into account the effects of the project on historic properties.

The Board invites you to attend a joint NEPA/Section 106 meeting that will take place on **September 17, 2019 at the Commission Hearing Room at NCPC's offices, 401 9th Street, NW, Suite 500, Washington, DC from 2:00 pm to 4:00 pm Eastern Daylight Time (EDT).** The meeting will be an "open house" format. A brief presentation about the project will begin at 3:00 pm and will include a discussion of the purpose and need of the project, and issues to be analyzed in the EA.

The Board will accept comments concerning the scope of issues to address in the EA through October, 4, 2019. Comments received during the scoping period will be used to refine alternatives and inform EA analysis. The Board will be accepting comments at the public scoping meeting or comments can be submitted in writing via mail or email to:

Mr. Jeffery P. Foltz
Sr. Construction Program Manager
Federal Reserve Board
20th & C ST, NW
Washington, DC 20551

FRB-Renovation@frb.gov

Please note that any comments may be made public as part of the record.

We look forward to seeing you on September 17, 2019. Your participation is greatly appreciated. If you have any questions or need additional information please contact Ms. Patti Kuhn Babin, Quinn Evans Architects at (202) 591-2533, or at FRB-Renovation@frb.gov.

To request accessibility services, please contact Mr. Lee Webb of the National Capital Planning Commission at Lee.Webb@ncpc.gov or at (202) 482-7240, one week in advance of the program.

National Capital Planning Commission 401 9th Street, NW North Lobby, Suite 500 Washington, DC 20004 Tel: 202.482.7200 Fax: 202.482.7272 www.ncpc.gov

IN REPLY REFER TO:
NCPC FILE No. 8113

October 4, 2019

Mr. Jeffery P. Foltz
Federal Reserve Board
20th & C St, NW
Washington, DC 20551

Re: Comments on Scoping for Federal Reserve Board Project, Eccles Building and FRB-East Building, Constitution Avenue, NW

Dear Mr. Foltz:

Thank you for the opportunity to provide scoping comments on the preparation of an Environmental Assessment (EA) by the Federal Reserve Board (FRB) for the proposed project to renovate and expand the Eccles Building and the FRB-East Building, and for working with the National Capital Planning Commission (NCPC) staff early in the process. In accordance with the National Capital Planning Act (NCPA), 40 U.S.C. §8722(b)(1) and (d), NCPC has review and approval authority over Federal projects in the District. Therefore, NCPC seeks cooperating agency status for this project.

NCPC staff understands that FRB is undertaking the project to renovate and expand the Eccles Building and the FRB-East Building to address a critical backlog of upgrades, respond to changes in building codes, increase efficiency, and provide a secure environment for the buildings' occupants, while accommodating the growing needs of the Board and its visitors. FRB has indicated that the EA will analyze the potential environmental impacts of alternatives (including a no-action alternative) for the following topics: cultural resources (historic buildings, archeology, cultural landscapes), visual resources, transportation, safety and security, public services and utilities, planning policies, sustainability, air quality, vegetation, stormwater, climate change and carbon footprint, economic impact, and construction impacts related to noise levels, hazardous materials, solid waste.

NCPC staff is supportive of the purpose of the project. We find the project supports the goals and objectives of the *Comprehensive Plan for the National Capital* related to historic preservation, federal workplace, and urban design. We further offer the following comments on the scope of the EA:

Cultural Resources

This project is located in one of Washington, D.C.'s most historic settings on Constitution Avenue across from the National Mall. The FRB-East Building at 1951 Constitution Avenue, NW is listed individually in the National Register of Historic Places and the Eccles Building appears to be eligible for listing in the National Register. In addition, the front lawns of these buildings are components of a cultural landscape and historic district evaluated by the District of Columbia State Historic Preservation Officer (DC SHPO). Therefore, any additions/changes to the buildings or alterations to the sites, will require a high level of scrutiny so as not to diminish or adversely impact the historic character of the buildings, setting and historic context. The Section 106 process must consider ways in which the project scope, namely the additions to the two buildings, can seek to avoid adverse effects to historic resources, through the consultation process. Staff requests that FRB include an analysis of impacts to views to and from the National Mall for each alternative under evaluation.

As you're aware, the small triangular park at the intersections of 19th Street, C Street, and Virginia Avenue, NW, is under the purview of the National Park Service (NPS) so any potential impacts to this location should be avoided. It should not be used for any perimeter security measures. FRB should coordinate with the NPS on the proposed project and its scope and also consider how it relates to proposed improvements to the NPS land north of the Eccles Building.

Transportation Systems

The project is located in the heart of downtown Washington, D.C., with access to multiple forms of public transportation, with Farragut West as the closet Metro Station. Under NCPC's current transportation element, the parking ratio for buildings in this part of Washington is 1:5. As part of the NEPA scoping for the project, staff requests FRB to include a Transportation Management Plan (TMP) that analyzes how FRB employees will get to work, where they begin their commute, and the typical works hours for most employees. In addition, the TMP should include information on how FRB plans to provide transportation alternatives for their employees, such as bike share opportunities, bike storage, shower facilities, and/or a shuttle system from Metro stations. As such, NCPC staff requests that the EA analyze these topics.

Natural Resources and Sustainability

The EA should also analyze impacts to vegetation and tree canopy; stormwater runoff and management, including both federal and local requirements; impervious surfaces; energy use; and impacts from construction, including noise and air quality.

NCPC Plans and Policies

Federal actions in the region should conform to the *Comprehensive Plan for the National Capital*. Therefore, we request that the EA include an evaluation of each alternative's consistency with the policies and objectives of the Plan, particularly the Urban Design, Historic Preservation, Environment, Federal Workplace, Transportation, and Park and Open Space Elements.

Alternatives

NCPC supports the development of multiple design alternatives to achieve the purpose and need. In general, examination of multiple alternatives is a useful tool to address issues and achieve a successful design solution.

Coordination

To ensure a full and proper analysis of the proposed project, NCPC staff requests that NPS coordinate the preparation of the EA with the following agencies and organizations: the U.S. Commission of Fine Arts, the District of Columbia State Historic Preservation Office (DC SHPO), the Advisory Council on Historic Preservation (ACHP), and other interested consulting parties, including the National Trust for Historic Preservation, the DC Preservation League, and the Committee of 100 for the Federal City.

NCPC staff is very supportive of the consolidation of the Federal Reserve staff into these three federally owned buildings; however, we are concerned regarding the possible impacts to historic properties and their settings. Given the large scope of the project, we note that if a finding of no significant impact cannot be reached, additional analysis will be required through the preparation of an Environmental Impact Statement. NCPC staff appreciates the opportunity to participate in the scoping stage and we look forward to continued involvement in the process and the project. If you have any questions regarding our comments, please contact Lee Webb at 202.482.7240 or lee.webb@ncpc.gov.

Sincerely,

Diane Sullivan 10/04/19

Diane Sullivan
Urban Design and Plan Review Division

APPENDIX B AGENCY COORDINATION

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM
WASHINGTON, DC 20551

MANAGEMENT DIVISION

August 15, 2019

Mr. David Maloney, SHPO
Historic Preservation Office
1100 4th Street, SW, Suite E650
Washington, DC 20024

Re: Initiation of Section 106 Board of Governors, Federal Reserve System, Renovation of the Marriner Eccles Federal Reserve Board Building and Federal Reserve Board - East Building

Dear Mr. Maloney:

The Board of Governors of the Federal Reserve System (Board) is proposing to renovate and expand the Marriner Eccles Federal Reserve Board Building (Eccles Building) and the Federal Reserve-East Building (FRB-East Building), historically known as the United States Public Health Service Building and more recently the Department of the Interior - South Building. The Board is writing to initiate consultation with the District of Columbia State Historic Preservation Officer (DC SHPO) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR § 800). The proposed project is an undertaking and is subject to review and approval of NCPC under the National Capital Planning Act.

Project Purpose

The purpose of the proposed action is to renovate and expand the Eccles Building and the FRB-East Building to address a critical backlog of upgrades, to respond to changes in building codes and regulatory requirements, to accommodate information technology requirements, building security provisions, advancements in environmental awareness and energy efficiency, as well as to address increased utility demands and associated requirements imposed by an increased building population and integration of technology not anticipated at the time of the buildings' original design. The proposed programming changes and building additions are needed to increase spatial efficiency and provide a secure environment for the buildings' occupants, while accommodating the growing needs of the Board and its visitors.

Project Description and Background

The Board is planning a complete renovation and new construction expansion of the Eccles Building, located at 20th Street NW and Constitution Avenue, NW. The Eccles Building was constructed between 1935 and 1937. The current goals for the renovation of the Eccles building include:

- Respect the character-defining features while modernizing the building
- Provide a modern, efficient workspace with amenities
- Make the building more energy efficient
- Increase the capacity of the building, with a targeted capacity of 750 people
- Provide quality office space on the lower (concourse) levels of the building

The Board also intends to execute a complete renovation and addition to the existing FRB-East Building. The building is located at 19th Street NW and Constitution Avenue NW and was constructed between 1931 and 1933. The current goals for the renovation of the Federal Reserve-East Building include:

- Respect the character-defining features while modernizing the building
- Provide a modern, efficient workspace with amenities
- Make the building more energy efficient
- Provide an addition that contains 5-6 stories above-grade and back of house services for a combined total targeted capacity of approximately 1000 people
- Provide underground parking
- Provide a tunnel for utility and pedestrian use that connects to the Eccles building and accommodates the backup mechanical systems capable of supporting the Eccles building

Section 106 and Historic Properties

To prepare for the Section 106 consultation process, the Board has prepared the attached draft list of consulting parties and a draft map of the proposed Area of Potential Effects (APE). These items are intended as a basis of discussion and are subject to modification through the consultation process. The proposed APE for this project includes the area from which the project site is visible and is generally bound by E Street NW on the north, 18th Street NW on the east, the Reflecting Pool on the south, and 23rd Street NW on the west.

Built in 1937, the Eccles Building was designed by architect Paul Philippe Cret. It was listed in the DC Inventory of Historic Places in 1964. The FRB-East Building, historically known as the United States Public Health Service Building and more recently the Department of the Interior - South Building, was built in 1931-1933 and designed by architect Jules Henri de Sibour. It was listed in the DC Inventory of Historic Sites and the National Register of Historic Places in 2007.

A preliminary list of historic resources within the draft APE includes portions of the Plan of the City of Washington (L'Enfant Plan, L'Enfant-McMillan Plan), Northwest Rectangle Historic District (determined eligible), National Mall Historic District, East & West Potomac Parks Historic District, and the Constitution Gardens Cultural Landscape. It also includes the following historic resources individually listed in or determined eligible for the National Register and/or the District of Columbia Inventory of Historic Sites: Department of State (determined eligible); National Academy of Sciences; American Pharmaceutical Association; US Department of Interior (New Interior Building); Lincoln Memorial; and the Vietnam Veterans Memorial. We intend to conduct an archaeological assessment to identify potential archaeological resources within the project site.

At this conceptual design stage, the Board is not prepared to make a formal determination of the effects of the project on historic resources, but looks forward with consultation with the DC SHPO, the Advisory Council on Historic Preservation, and other consulting parties on this and other steps in the process.

Section 106 and NEPA Coordination

The Board will serve as the lead and responsible federal agency and work in cooperation with the National Capital Planning Commission (NCPC) to comply with the National Environmental Policy Act (NEPA). The Board and NCPC will be preparing an Environmental Assessment (EA) to analyze the environmental impacts of a range of alternatives for this project, in accordance with NEPA. Concurrently, the Board will lead consultation under Section 106 of the National Historic Preservation Act. The Board plans to coordinate the Section 106 and NEPA processes per the implementing regulations (36 CFR § 800.8) of the NHPA.

A joint NEPA/Section 106 meeting will take place on September 17, 2019, from 2:00 pm to 4:00 pm Eastern Daylight Time (EDT) at the Commission Hearing Room at NCPC's offices, 401 9th Street, NW, Suite 500. The purpose of this public meeting will be to introduce the project and invite public comment on the range of issues to be addressed in the EA.

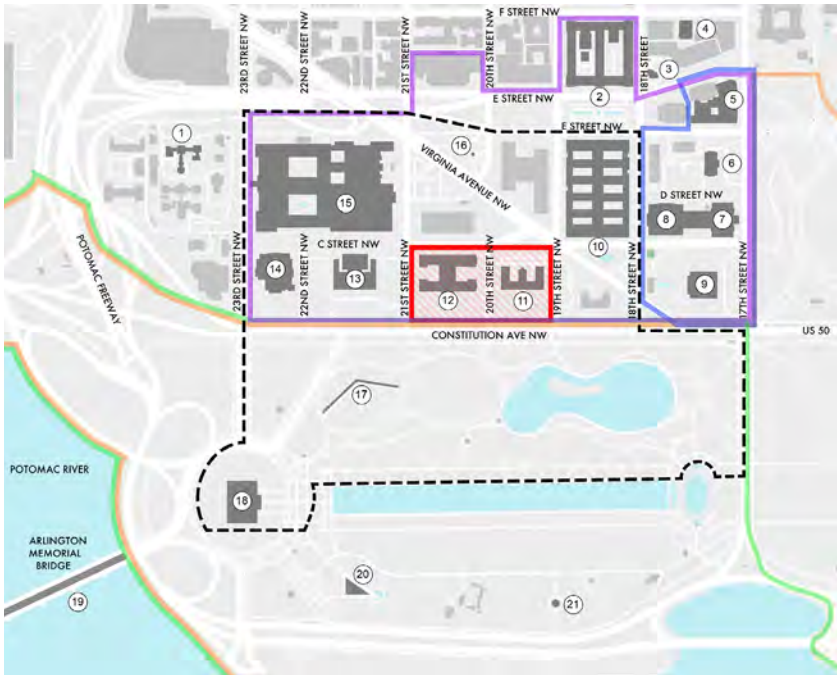
We look forward to beginning the Section 106 consultation process for this project. If you have any questions, please contact Ms. Patti Kuhn Babin at (202) 591-2533, or at FRB-Renovation@frb.gov.

Sincerely,

Stephen Pearson
Assistant Director, Facilities and Program Direction
Stephen.Pearson@frb.gov
(202) 452-3032

Enclosures: Draft Area of Potential Effects Map
List of Potential Consulting Parties

cc: Lee Webb, National Capital Planning Commission
Anne Brockett, Historic Preservation Office
Thomas Luebke, US Commission of Fine Arts



KEY

- APE Boundary
- Project Site
- National Register of Historic Places (NR) and/or DC Inventory of Historic Sites (DC)
- East and West Potomac Parks Historic District
- National Mall Historic District
- Seventeenth Street Historic District
- Northwest Rectangle Historic District

INDIVIDUAL LANDMARKS

1. **Old Naval Observatory (DC)** 23rd & E Streets NW
2. **US General Services Administration (NR)** 1800 F St NW
3. **The Octagon House (NR & DC)** 1741 New York Ave NW
4. **US Civil Service Commission (NR & DC)** 1724 F St NW
5. **Corcoran Gallery of Art (NR & DC)** 500 17th St NW
6. **American National Red Cross (NR & DC)** 430 17th St NW
7. **Memorial Continental Hall (NR & DC)** 1776 D St NW
8. **Constitution Hall (NR & DC)** 1776 D St NW
9. **Pan American Union (NR & DC)** 200 17th St NW
10. **Department of the Interior (NR & DC)**1849 C St NW
11. **US Public Health Service Building (DC)** 1925 Constitution Ave NW
12. **Marriner S. Eccles Building (DC)** 2051 Constitution Ave NW
13. **Natl Academy of Sciences (NR & DC)** 2101 Constitution Ave NW
14. **American Pharmacists Assn (NR & DC)** 2215 Constitution Ave NW
15. **Harry S. Truman Federal Building (NR Eligible)** 2201 C St NW
16. **Gen. Jose de San Martin Memorial (NR & DC)** 511 20th St NW
17. **Vietnam Veterans Memorial (NR)** 5 Henry Bacon Dr NW
18. **Lincoln Memorial (NR & DC)** 2 Lincoln Memorial Cir NW
19. **Arlington Memorial Bridge (NR & DC)** 2912 Independence Ave SW
20. **Korean War Veterans Memorial (NR)** 900 Ohio Dr SW
21. **DC War Memorial (NR)** Independence Ave btwn. 17th & 23rd St

Federal Reserve Board
Eccles and Federal Reserve Board – East
List of Consulting Parties
Current to: August 2019

National Capital Planning Commission
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Advisory Council on Historic Preservation
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DC Preservation League
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The Committee of 100 on the Federal City
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Washington, DC 20001
info@Committeeof100.net

National Mall Coalition
Dr. Judy Scott Feldman
Chair
P.O. Box 4709
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jfeldman@nationalmallcoalition.org

District of Columbia Office of Planning

SHPO comments on Federal Reserve Board's proposed expansion of Eccles and FRB East buildings
Submitted October 29, 2019

Thank you to the Federal Reserve Board and Fortus team for the quality of presentations and graphics reviewed at the second Consulting Parties meeting on October 16, 2019. The SHPO appreciates the extent to which the team has sought public input and engagement of potential Consulting Parties.

Because the scope of the project is quite large, the SHPO has not had an opportunity to fully express in writing our thoughts and we appreciate the occasion now to assemble our comments, ask questions, and make suggestions as the project design continues to evolve.

General Comments
The SHPO understands that FRB wishes to bring together its employees in a concentrated facility rather than housing them in leased space(s). However, FRB's needs appear to be too great to accommodate at the historic Eccles and FRB East buildings in a manner that offers a meaningful preservation outcome. Proposing to construct above, behind, below, *and* around the historic building footprints points to the difficulty of trying to fit too much program into buildings not suited to this level of intervention.

All three options presented thus far fall short of the 1750 seats that FRB needs, which would seem to indicate that some employees would continue to work off-site. If this is the case, SHPO strongly encourages FRB to consider increasing the number of off-site employees to reduce the irreversible impacts to two of the city's important historic resources. Such action could avoid and/or minimize adverse effects, pursuant to 36 CFR 800, Protection of Historic Properties.

The SHPO reiterates that the Eccles Building, which is National Register-eligible and appears to be National Historic Landmark-eligible, is one of the District's most significant federal buildings. It was recognized for its importance by selection in the city's first round of landmark designations in 1964, at the very inception of our preservation program. While the FRB East building is also important and was listed in the National Register of Historic Places and the District of Columbia Inventory, Eccles is the more eminent building and the project should aspire to avoid adverse effects here.

In future submissions, please include a map that shows all land ownership – DDOT, NPS, FRB, as well as underground utilities, such as the GSA steam tunnel.

More details are needed on parking options, garage entrances/exits, loading dock(s), landscaping, and perimeter security before SHPO can comment. The landscape and security information must also be shared with CPs since it was not part of the last meeting.

Eccles
The SHPO requests to see an option that pushes the new construction proposed along 20th and 21st Streets into the courtyards, allowing the building's historic elevations, massing and form to remain legible by exposing more of the pavilion-like façade returns into the courtyards. While effects to elements such as the fountains, lanterns, and garden wall would need to be taken into account, such action could result in a less visually aggressive design that minimizes the overall adverse effects, pursuant to 36 CFR 800, Protection of Historic Properties.

Where the new construction adjoins the wings at all, it should be lower in height. Such action could minimize adverse effects, pursuant to 36 CFR 800, Protection of Historic Properties.

SHPO strongly recommends that a solution be sought that avoids placing any addition atop the front, Mall-facing bar of the Eccles Building.

FRB East
SHPO continues to request that FRB pursue an option that optimizes construction behind this building to avoid or minimize adverse effects of new construction at Eccles. It would not be out of context on the north side, given the adjacent 6-story Martin Building, 9-story OPM headquarters, and 7-story Department of the Interior building

At the FRB East building, options should include building into the courtyard from all directions or widening the center bar in the courtyard to provide more interior space. While effects to historic elements such as the auditorium would need to be taken into account, such action could result in a less visually aggressive design that minimizes the overall adverse effects, pursuant to 36 CFR 800, Protection of Historic Properties.

SHPO continues to support building as far north as possible with or without a projection above grade, so as to preserve more of the character the historic building, rather than placing emphasis on a vista of less importance and a streetscape with less significance than Constitution Avenue.

As the plans develop, any addition to the rear should be set in, offset by a hyphen, or otherwise clearly distinguished from the side walls of FRB East.

Section 106 and DC Review Process
SHPO agrees with proposed APE boundary. Please revise map to label all resources within the APE, including the OAS Annex, which is considered NR eligible, the Roosevelt Building (OPM), which has been determined NR eligible by GSA, the relevant L'Enfant Plan Streets, which are NHL eligible, and the Virginia Avenue parks surrounding Martin Building, for which a Determination of Eligibility has been requested under a separate NPS-FRB undertaking.

For your reference, the Department of State is preparing an updated Northwest Rectangle National Register nomination, which is intended to give much more landscape info than the current nomination form. The information should be of use in formulating a plan for the front landscaping, particularly at FRB East.

Because the project is likely to have adverse effects, SHPO points out that using the front doors and making the front lawns accessible to the public could be considered mitigation.

The project may require review by the DC Historic Preservation Review Board as both buildings are highly significant listings in the DC Inventory of Historic Sites, and the aggressive anticipated project scope is likely to cause major adverse effects to the landmarks and surrounding historic areas.

SHPO requests a copy of all comments received.

Archaeology Comments
While a Phase I archaeological assessment is to be completed and will help inform on archaeological potential of both Squares 88E and 128, we have a few additional notes regarding archaeological potential and resources.

1. Running south down 20th Street from Virginia Avenue was a former stream as depicted on the 1861 Boschke. Also depicted is a possible foot bridge at the intersection of 20th and C Streets, crossing this same stream. https://www.loc.gov/resource/g3850.cw0678500/?r=0.43,0.496,0.094,0.053,0
Based on the DC Water and Sewer Authority map, it does not look as if this stream was ultimately piped like most that were depressed and channelized in the late 19th century. However, it may behoove the project team to confirm with DC Water if major below grade infrastructure (for example below grade parking in Option B) is proposed.

2. Regardless of whether this stream was piped, the presence of this water source as well as the proximity to former Tiber Creek/Potomac would have made this area an ideal location for habitation and/or use by prehistoric populations. Ultimately, the elevation change analysis (cut and fill) and the geoarchaeological investigations for this project will identify any remaining archaeological potential.

3. The 1857 Boschke map also depicts a stream running down 20th St as well as a series of hash marks delineating the stream. In addition, there is a dark, amorphous shape depicted across Squares 88E and 128 also and partially delineated by hash marks.
https://www.loc.gov/resource/g3850.ct006188/?r=0.171,0.472,0.066,0.037,0
However, the 1857 Boschke does not have a legend and it remains unclear what all these depictions could indicate. Previous interpretations have included marshland, a pond, and a clay or borrow pit for bricking making purposes- in reference to the dark, amorphous shapes. Indeed, a current project has identified brick kiln deposits within an area with similar depictions on the 1857 Boschke.

4. Please note that the former Washington City Canal ran along Constitution Ave (formerly B St), abutting Squares 88E and 128 to the south. Previous geoarchaeological investigations conducted along Constitution Ave for Constitutional Gardens revealed architectural remains within the upper 12 to 17 feet below grade surface as well as floodplain and/or canal sediments below approx. 12 to 21 feet below grade surface.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127
http://www.fws.gov/chesapeakebay/
http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html

In Reply Refer To: July 16, 2020
Consultation Code: 05E2CB00-2020-SLI-0726
Event Code: 05E2CB00-2020-E-04174
Project Name: Marriner S. Eccles Building and Federal Reserve Board-East Building Renovation and Expansion

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- [illegible]

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Project Summary

Consultation Code: 05E2CB00-2020-SLI-0726

Event Code: 05E2CB00-2020-E-04174

Project Name: Marriner S. Eccles Building and Federal Reserve Board-East Building Renovation and Expansion

Project Type: DEVELOPMENT

Project Description: The Board of Governors of the Federal Reserve System (Board) proposes to renovate and expand the Marriner S. Eccles Building (Eccles Building) at 2051 Constitution Avenue NW and to renovate and construct an addition on the Federal Reserve Board-East Building (FRB-East Building) at 1951 Constitution Avenue NW.

The total project area is 10 acres. The existing size of the Eccles Building: Gross Building Area: 276,000 square feet; Gross Site Area: 4.16 acres (181,071 square feet). The Existing Size of the FRB-East Building: Gross Building Area: 126,500 square feet; Gross Site Area: 3.18 acres (138,512 square feet).

The purpose of the proposed project is to renovate and expand the Eccles Building and the Federal Reserve-East Building to address a critical backlog of upgrades; to respond to changes in building codes and regulatory requirements; to accommodate information technology requirements, building security provisions, advancements in environmental awareness and energy efficiency; to address increased utility demands and associated requirements imposed by an increased building population; and to address the integration of technology not anticipated at the time of the buildings' original design. The proposed programming changes and building additions are needed to increase spatial efficiency, reduce leased space and consolidate staff, and provide a secure environment for the buildings' occupants, while accommodating the growing needs of the Board and its visitors.

The project is scheduled to be constructed beginning mid-year 2021 with an estimated 3 year period of construction.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.8927906233379N77.0450780214734W

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

United States Department of the Interior

U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

Online Certification Letter

Today's date: July 16, 2020

Project: Marriner S. Eccles Building and Federal Reserve Board-East Building Renovation and Expansion

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA).This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8573. For information in Delaware you should contact the Delaware Division of Fish and Wildlife, Wildlife Species Conservation and Research Program at (302) 735-8658. For information in the District of Columbia, you should contact the National Park Service at (202) 339-8309.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche
Field Supervisor

APPENDIX C
TRAFFIC IMPACT STUDY

COMPREHENSIVE TRANSPORTATION REVIEW

FEDERAL RESERVE BOARD ECCLES AND 1951 BUILDINGS

WASHINGTON, DC

August 21, 2020

GOROVE SLADE
Transportation Planners and Engineers

Prepared by:

GOROVE SLADE
Transportation Planners and Engineers

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EXECUTIVE SUMMARY

The following report is a Traffic Impact Study (TIS) for the renovation and expansion project of the Federal Reserve Board "Eccles" and "1951" Buildings. This report reviews the transportation aspects of the project's renovation and expansion in compliance with the National Environmental Policy Act (NEPA) guidelines.

The purpose of this study is to evaluate whether the project will generate a detrimental impact on the surrounding transportation network. This report concludes that **the project will not have a detrimental impact** on the surrounding transportation network assuming that all planned site design elements are implemented.

Proposed Project

The Marriner S. Eccles Building is located at 2051 Constitution Avenue and the 1951 Building is located at 1951 Constitution Avenue. Both buildings are located in the Northwest quadrant of the Washington, DC and are separated by 20th Street. The two (2) buildings are bordered by 21st Street to the west, 19th Street to the east, C Street to the north, and Constitution Avenue to the south.

The proposed modifications to the two buildings include the following:

- The expansion of the Eccles Building will result in an additional 120,000 square feet of space and an additional 146 employee seats, totaling 776 employee seats within the building.
- The renovations of the vacant 1951 Building will result in up to 270,000 square feet in additional space, adding up to 962 employee seats.
- Combined, the two (2) buildings will house up to 1,750 seats for employees, guests, and visitors.

The renovation and expansion plans evaluated three (3) concept design options. This study evaluated the preferred alternative which is also the most conservative as it assumes the greatest number of seats accommodated between the two (2) buildings, generating the greatest impact to the surrounding roadway network. The renovation and expansion of the two (2) buildings will allow the Federal Reserve Board (FRB) to consolidate their locations within Washington, D.C. to a central area.

Existing vehicle access to the Eccles building is along 20th Street, leading to an inner courtyard and provides access to the underground parking garage, with 29 spaces. Loading facilities are located in the east courtyard, accessible from 20th Street only. The proposed plan will remove parking from the Eccles building and convert it to office space. All parking and loading operations will take place from the 1951 Building.

Existing vehicle access to the 1951 building is from 20th Street and vehicles exit onto 19th Street. Currently, 60 spaces exist on a surface parking lot in the rear of the building.

The renovation and expansion plans will reverse access, with entry from 19th Street and exit from 20th Street. The surface spaces will be removed with at up to 318 spaces underneath the south lawn of the 1951 Building to serve both buildings. Loading facilities for both buildings will be provided in the 1951 Building, adjacent to the garage entrance on 19th Street. In addition, the loading facilities in the 1951 building will also serve the Martin building.

The project is subject to National Capital Planning Commission (NCPC) requirements, which specifies a maximum of one (1) parking space for every 5.0 employees, or a 0.20 space to employee ratio. Taking into account the 370 parking spaces proposed at the adjacent Martin Building, the proposed 318-space parking supply to serve the Eccles and 1951 Buildings, and spaces required for official vehicles, the proposed parking supply complies with NCPC requirements.

Multi-Modal Impacts and Recommendations

Transit

The Site is served by regional and local transit services via Metrobus, Regional Buses, and Metrorail. The Site is located approximately 0.7 miles from the Foggy Bottom-GWU and Farragut West Metrorail stations. Several bus lines stop within a block of the buildings, including lines along Constitution Avenue and Virginia Avenue. An employee shuttle provides service to and from the Farragut North and Farragut West Metrorail stations, in addition to other federal buildings.

Although the development will be generating new transit trips, existing facilities have enough capacity to accommodate the new trips.

Pedestrian

The Site is surrounded by a well-connected pedestrian network with excellent pedestrian access and circulation facilities. Most

roadways within a quarter-mile radius provide sidewalks and curb ramps, particularly along the primary walking routes, such as Constitution Avenue (towards the National Mall) and 19th Street (towards Farragut West station). Sidewalks that do not meet DDOT standards are due to a lack of minimum buffer width rather than substandard quality. Significant pedestrian activity was observed during the data collection efforts.

Bicycle

Bicycle infrastructure in the vicinity of the Site is plentiful. The Site is adjacent to bicycle trails that run along the National Mall and Constitution Avenue. These trails provide east-west connectivity to Union Station and the Rock Creek Trail. In addition to bicycle facilities, there are multiple Capital Bikeshare stations in the vicinity of the Site.

On-site bicycle facilities are proposed to remain as part of the renovation and expansion plans. FRB works in close collaboration with the employees' bicycle group. Bicycle facilities will continue to be provided within the 1951 Building garage and will meet the projected demands of the employees.

Vehicular

The Site is accessible from several principal and minor arterials such as Constitution Avenue, Virginia Avenue, and the E Street Expressway, as well as an existing network of collector and local roadways.

In order to determine the potential impacts of the proposed development on the transportation network, this report projects future conditions with and without the renovations/additions and performs analyses of intersection delays and queues. These capacity analysis results were compared to the acceptable levels of delay set by the local transportation jurisdiction (District Department of Transportation) standards, as well as existing queues, to determine if the proposed development will negatively impact the study area.

The vehicular capacity analysis concluded that one (1) study intersection meets the threshold for potential mitigation during the afternoon peak hour. However, given the urban nature of the area and the negligible impact from site-routed trips, this report is recommending no mitigations be considered at this intersection. Constitution Avenue is a heavily traveled commuter route; therefore, signal timing changes would disrupt commuter traffic and not recommended.

Summary and Recommendations

This report concludes that **the proposed development will not have a detrimental impact on the surrounding transportation network assuming that the proposed site design elements and proposed mitigation measures are implemented.**

The development has several positive elements contained within its design that minimize potential transportation impacts, including:

- The Site's close proximity to Metrobus and walking distance to Metrorail.
- Nearby pedestrian sidewalks that meet or exceed DDOT and ADA requirements.
- A robust Transportation Demand Management (TDM) plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.

INTRODUCTION

This report is a Transportation Impact Study (TIS) for the renovation and expansion project of the Federal Reserve Board "Eccles" and "1951" Buildings. This report reviews the transportation elements of the project's renovation and expansion plan. The subject properties (collectively referred to as the "Site"), shown in Figure 1 and Figure 2, are located adjacent to the National Mall in Northwest, Washington, DC. The Eccles Building is located at 2051 Constitution Avenue and the 1951 Building is located at 1951 Constitution Avenue. The scope of this effort is to determine the potential impacts of this project as it relates to satisfying National Environmental Policy Act (NEPA) guidelines.

PURPOSE OF STUDY

The purpose of this report is to:

1. Review existing conditions in the vicinity of the Site area. This includes the vehicular, pedestrian, and bicycle transportation network.
2. Review the transportation elements of the development site plans and demonstrate that the Site conforms to the local transportation agency's (DDOT) general policies of promoting non-automobile modes of travel and sustainability.
3. Provide information to the reviewing agencies on how the development of the Site will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the Site on all major modes of travel and where these trips will be distributed on the network.
4. Determine if development of the Site will lead to adverse impacts on the local transportation network.

PROJECT SUMMARY

The project will include renovations and expansions to the existing Eccles and 1951 Buildings. The Site is located near the Foggy Bottom neighborhood of Northwest, Washington, DC and is bordered by 21st Street to the west, 19th Street to the east, C Street to the north, and Constitution Avenue to the south.

The renovation and expansion of the two (2) buildings are as follows:

- A 120,000 square foot expansion of the Eccles Building.
- The renovation and expansion of the 1951 Building will result in up to 270,000 square feet in additional space.
- Together, the two (buildings) will house up to 1,750 seats for employees, visitors, and guests when reopened.

The renovation and expansion of these buildings will allow the Federal Reserve Board (FRB) to consolidate its operations in the Washington, DC area to a central location. The FRB currently has additional office space on K Street and on New York Avenue. It is expected that the two (2) locations on K Street will move into the Eccles and 1951 Building.

Under existing conditions for the Eccles Building, 29 spaces are provided within the building, with access from 20th Street and exit onto 21st Street. At the 1951 Building, approximately 60 spaces are located in the surface parking lot located in the rear of the building, with entry from 20th Street and exit to 19th Street.

Vehicle access to the Eccles and 1951 Buildings will be modified as part of the renovation and expansion plans. The existing underground parking area at the Eccles Building will be removed, along with driveways along 21st and 20th Streets. All parking will be accommodated in an underground garage built beneath the south lawn of the 1951 Building and extending into 20th Street. The area currently occupied by the surface lot will be replaced by the building's expansion. Access to the 1951 garage will be reversed, with entry from 19th Street and exit onto 20th Street. Depending on the intensity of the development program ultimately selected, up to 318 spaces will be added. Loading facilities will be consolidated to the 1951 Building, with access from 19th Street. A service/utility tunnel will be used to transfer deliveries to the Eccles Building and Martin Building. The Martin building currently loads from the street so the proposed 1951 centralized loading facility will also improve the pedestrian environment.

Pedestrian access to the Site will be provided by entrances along, 20th Street, and Constitution Avenue for the Eccles Building and along 20th Street for the 1951 Building. An underground pedestrian tunnel connecting the Eccles Building with the 1951 Building will be built. The Eccles Building will also be served by a pedestrian tunnel which connects to the Martin Building directly to the north.

CONTENTS OF STUDY

This report contains nine (9) sections as follows:

Study Area Overview
This section reviews the area near and adjacent to the project and includes an overview of the Site location.

Project Design
This section reviews the transportation components of the project, including the site plan and access. This chapter also contains the proposed Transportation Demand Management (TDM) plan for the Site.

Trip Generation
This section outlines the travel demand of the proposed project, using transportation survey data received from employees. It summarizes the trip generation of the project.

Traffic Operations
This section provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This section highlights the vehicular impacts of the project, including presenting mitigation measures for minimizing impacts as needed.

Transit
This section summarizes the existing and future transit service adjacent to the Site, reviews how the project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.

Pedestrian Facilities
This section summarizes existing and future pedestrian access to the Site, reviews walking routes to and from the project site, outlines impacts, and presents recommendations as needed.

Bicycle Facilities
This section summarizes existing and future bicycle access to the Site, reviews the quality of cycling routes to and from the project site, outlines impacts, and presents recommendations as needed.

Safety Analysis
This chapter summarizes the potential safety impacts of the project. This includes a qualitative review of existing and proposed safety features surrounding the Site, including the proposed mid-block crosswalk.

Summary and Conclusions
This section presents a summary of the recommended mitigation measures by mode and presents overall findings and conclusions.

Figure 1: Site Location

Figure 2: Site Aerial

STUDY AREA OVERVIEW

This section reviews the study area and includes an overview of the Site location, including a summary of the major transportation characteristics of the area and of future regional projects.

The following conclusions are reached within this chapter:

- The Site is surrounded by an extensive regional and local transportation system that will connect the residents of the proposed development to the rest of the District and surrounding areas.
- The Site is served by public transportation with access to Metrorail, Regional Buses, local Metrobuses, and a dedicated shuttle operated by the FRB.
- There is good bicycle infrastructure in the vicinity of the Site, including bicycle trails running the length of the National Mall, located one (1) block to the south. The National Mall trails provide direct access to the Rock Creek Trail to the west and the Metropolitan Branch Trail to the east.
- The existing pedestrian infrastructure surrounding the Site provides a good walking environment with sidewalks present across both buildings. There are sidewalks along the majority of the primary routes to pedestrian destinations, including nearby Metrorail Stations.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

As shown in Figure 3, the Site has ample access to regional, vehicular, and transit-based transportation options that connect the Site to destinations within the District, Virginia, and Maryland.

The Site is accessible from several principal and minor arterials such as Constitution Avenue (US-50), Virginia Avenue, and the E Street Expressway. These roadways create connectivity to regional roadways such as Interstate as I-66 and the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

The Site is located 0.7 miles from both the Foggy Bottom-GWU and Farragut West Metrorail stations (served by the Blue, Orange, and Silver Lines). The Blue Line connects the City of Alexandria with Largo, Maryland while providing access to the District core. The Orange Line provides service from Vienna in Fairfax County, VA to New Carrollton in Prince George's County, MD. The Silver Line provides service from Reston in Fairfax County, VA to Largo, Maryland. Of particular importance, the second phase of the Silver Line will extend the Silver Line's western terminus from Reston to Ashburn in Loudoun County, VA, providing access to the District Core from Loudoun County. A transfer to the Red Line at Metro Center provides a connection to Union Station—a transfer point for MARC, VRE, and Amtrak services—in addition to all Metrorail lines, allowing for access to much of the DC Metropolitan area.

Overall, the Site has access to several regional roadways and transit options, making it convenient to travel between the Site and destinations in the District, Virginia, and Maryland.

Overview of Local Access

There are a variety of local transportation options near the Site that serve vehicular, transit, walking, and cycling trips. The Site is directly served by a local vehicular network that includes several principal and minor arterials such as Virginia Avenue, 21st Street, and 19th Street. In addition, these roads connect with regional thoroughfares, such as Connecticut Avenue and the E Street Expressway (Interstate 66).

The Metrobus system provides local transit service in the vicinity of the Site, including connections to several neighborhoods within the District and additional Metrorail stations. Several bus lines (local and regions) stop near the site, connecting employees with Arlington County in Virginia and suburban Maryland. A detailed review of transit stops within a quarter mile walk of the Site is provided in a later section of this report.

There are several existing bicycle facilities near the Site that connect to areas within the District. Directly adjacent to the Site and running parallel to Constitution Avenue is a bicycle trail that runs the length of the National Mall. Two (2) Capital Bikeshare stations are also along the site frontage. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later section of the report.

Anticipated pedestrian routes, such as those to public transportation stops, retail zones, schools, and local parks, provide quality pedestrian facilities. A detailed review of existing pedestrian access and infrastructure is provided in a later section of this report.

Overall, the Site is surrounded by a good local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Carsharing

Two (2) carsharing companies provide service in the District: Zipcar and Free2Move. All of these services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar has designated spaces for their vehicles. There is one (1) Zipcar location with three (3) vehicles available near the Site, located at the corner of 20th Street and G Street.

Carsharing is also provided by Free2Move, which provides point-to-point carsharing. Free2Move vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in any zone throughout the defined "Home Area." Members do not have to pay the meters or pay stations. Free2Move does not have permanent designated spaces for their vehicles; however, availability is tracked through their website and mobile phone application, which provides an additional option for car-sharing patrons.

FUTURE PROJECTS

There are a few District initiatives and approved developments located in the vicinity of the Site. These planned and proposed projects are summarized below.

Local Initiatives

SustainableDC: Sustainable DC Plan (2011)

SustainableDC is a planning effort initiated by the Department of Energy & Environment and the Office of Planning that provides the District with a framework of leading Washington DC to become the most sustainable city in the nation. The 2012 report proposes a 20-year timeframe to answer challenges in areas of: (1) Jobs & the economy; (2) Health & Wellness; (3) Equity & Diversity; (4) Climate & Environment; (5) Built Environment; (5) Energy; (6) Food; (7) Nature; (8) Transportation; (9) Waste; and (10) Water. With respect to transportation, the sustainability goals targeted in 20 years from the report's publication include:

- Improving connectivity and accessibility through efficient, integrated, and affordable transit systems
- Expanding provision of safe, secure infrastructure for cyclists and pedestrians
- Reducing traffic congestion to improve mobility
- Improving air quality along major transportation routes

A combination of increasing public transit and decreasing vehicular mode shares has been suggested to meet the transportation targets. The transportation demand management (TDM) measures proposed in this TIS will assist in increasing public transit and decreasing single-occupancy vehicles.

MoveDC: Multimodal Long-Range Transportation Plan (2014)

MoveDC is a long-range plan that provides a vision for the future of DC's transportation system. As the District grows, so must the transportation system, specifically in a way that expands transportation choices while improving the reliability of all transportation modes.

The MoveDC report outlines recommendations by mode with the goal of having them completed by 2040. The plan hopes to achieve a transportation system for the District that includes:

- 70 miles of high-capacity transit (streetcar or bus)
- 200 miles of on-street bicycle facilities or trails
- Sidewalks on at least one side of every street
- New street connections
- Road management/pricing in key corridors and the Central Employment Area
- A new downtown Metrorail loop
- Expanded commuter rail
- Water taxis

In direct relation to the study area, the MoveDC plan outlines the completion of cycle tracks along Virginia Avenue and 21st Street to provide additional north-south connectivity.

The cycle track along 21st Street is being realized as a protected bicycle facility along 20th and 21st Streets, running from Dupont Circle to Constitution Avenue. The cycle track is projected to be complete by 2021, creating additional multimodal capacity and connectivity to the Site area.

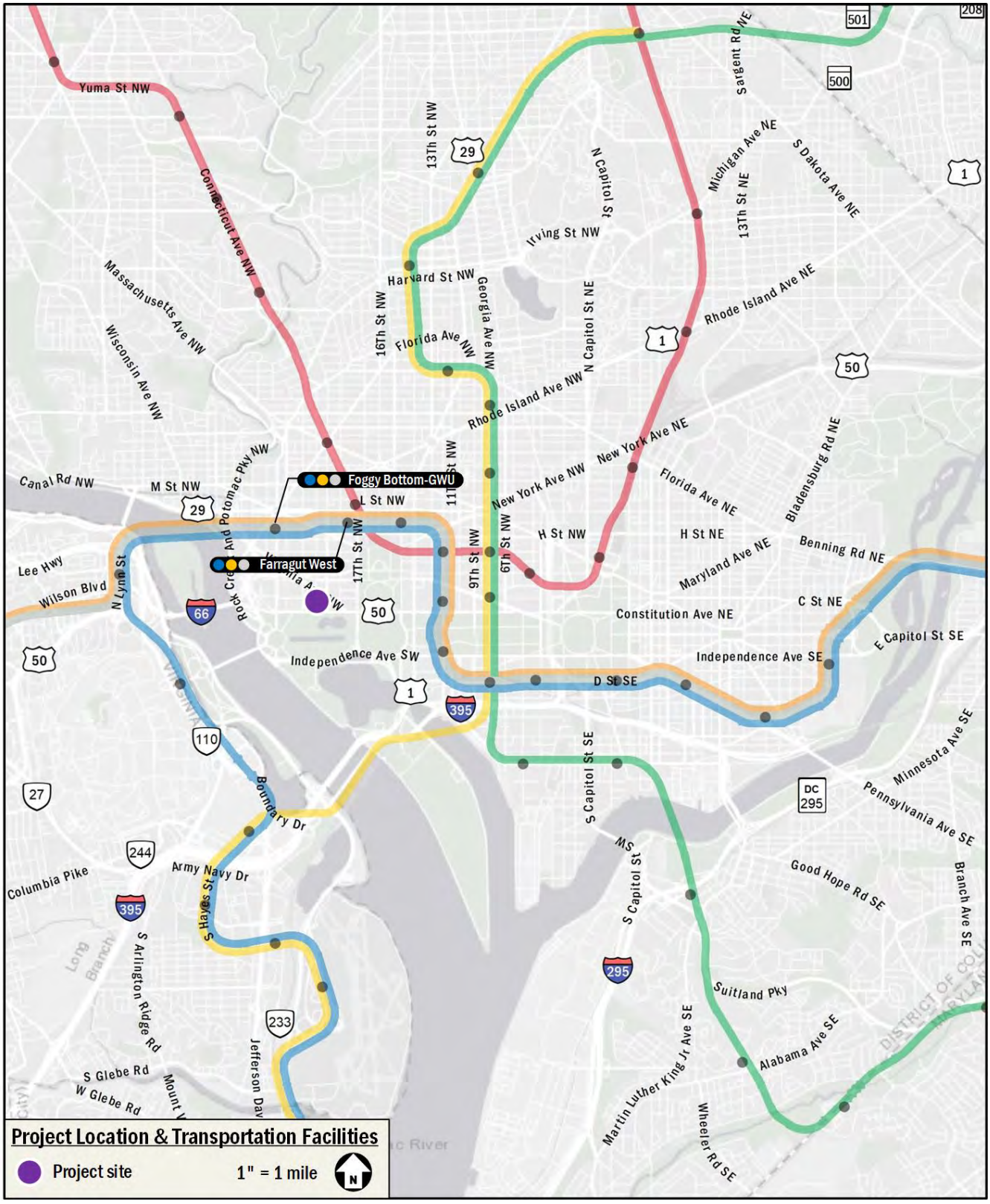

Figure 3: Major Regional Transportation Facilities

PROJECT DESIGN

This section reviews the transportation components of the development, including the proposed site plan and access points. It includes descriptions of the proposed development's vehicular access, loading, parking, bicycle and pedestrian facilities, and Transportation Demand Management (TDM) plan.

The Site is comprised of the existing Eccles and 1951 Buildings. The Eccles Building is bounded by 21st Street to the west and 20th Street to the east. The 1951 Building is bounded by 20th Street to the west and 19th Street to the east. Both buildings are bounded by Constitution Avenue to the south and C Street to the north.

The renovation and expansion plans evaluated three (3) concept design options. This study evaluated the preferred alternative which is also the most conservative as it assumes the greatest number of seats accommodated between the two (2) buildings, generating the greatest impact to the surrounding roadway network. The proposed plan includes adding additional office space to both buildings, resulting in a total of 1,750 seats between the two (2) buildings.

The existing 29 parking spaces at the Eccles Building will be removed, with the space to be repurposed into office space. The expansion of the 1951 Building will result in an increase of up to 318 total spaces, which will serve both buildings.

Figure 4 shows an overview of the development program and site plan elements.

SITE ACCESS AND CIRCULATION

Pedestrian Access

Existing pedestrian access to the Eccles Building is provided by entrances accessible from C Street to the north and 20th Street to the east. A visitor screening facility is currently located at the 20th Street entrance.

As part of the renovation and expansion for the Eccles Building, primary employee access will take place from 20th Street, Primary visitor access to the Eccles Building will take place from the Martin Building directly to the north. A pedestrian tunnel system will connect the three (3) buildings beyond the security area. In addition, the C Street entrance is planned to close. An emergency exit will provide egress to 21st Street.

Existing pedestrian access to the 1951 Building is provided by two (2) entrances accessible from C Street to the north. Following the expansion and renovation, the existing entrances along C Street will close, with the opening of a main employee/visitor entrance along 20th Street.

An underground pedestrian tunnel is planned to connect the Eccles and 1951 Buildings as part of the renovation and expansion, joining the existing tunnel connecting the Eccles and Martin Buildings.

Bicycle Access

Bicycle access to the Site is primarily expected to occur via bicycle trails running along the National Mall and the planned cycle track along 21st Street. Bicycles will utilize the garage entrance ramp on 19th Street and exit out onto 20th Street. Figure 5 shows a circulation plan with pedestrian and bicycle routes. More information on nearby bicycle facilities is provided in the *Bicycle Facilities* section.

Vehicular Access

Existing vehicular access to the Site is provided by driveways that currently serve the two (2) buildings. Prior to the renovation of the Martin Building, vehicles accessing the Eccles Building used a gated driveway on 20th Street, providing access to the inner courtyard and garage entrance. These vehicles exited out onto 21st Street. Under existing conditions, food deliveries are made to a temporary cafeteria in the west courtyard, with entry and exit made from 21st Street.

Vehicles accessing the 1951 Building surface lot enter from 20th Street and exit onto 19th Street.

The renovation and expansion plans include the removal of parking at the Eccles Building and the subsequent removal of curb cuts. Parking for both buildings will be provided underground and will be accessible from the 1951 Building. Secure entry to the parking garage will be from 19th Street via an expansion of the existing curb cut located south of the existing driveway. Vehicles will exit out onto 20th Street from a new ramp south of the existing curb cut. Loading for both buildings will be serviced by a loading dock accessible from 19th Street, adjacent to the parking entrance. A circulation plan with vehicular and loading routes is shown on Figure 6. All curb cuts and the pedestrian tunnel under 20th Street will seek public

space approval. The parking garage and pedestrian tunnel will meet all DCMR regulations.

Existing on-street parking designations will remain the same, with no on-street parking facilities proposed. Figure 7 shows existing curbside management in the vicinity of the Site. Perimeter security at the Site will match the DDOT streetscape as much as possible.

LOADING AND TRASH

Loading

Loading facilities will be consolidated to the 1951 Building, with access from 19th Street. A service/utility tunnel will be used to transfer deliveries to the Eccles Building and Martin Building. The Martin building currently loads from the street so the proposed 1951 centralized loading facility will also improve the Martin loading operations as well as the pedestrian environment currently impacted by the loading operations done on-street.

The proposed loading facilities will accommodate delivery demand without detrimental impacts. Figure 4 shows the locations of the loading area at the 1951 Building with underground service tunnels allowing deliveries to be sent to the Eccles and Martin buildings.

A total of two (2) 30-foot loading berths will be provided.

Truck routing to and from the Site will be mainly on designated primary truck routes, such as Constitution Avenue and Virginia Avenue. The loading facilities provided by the development will be sufficient to accommodate the expected loading demand.

Trash

Trash for the development will be accommodated within the loading area of the 1951 building. No trash will be stored in public space.

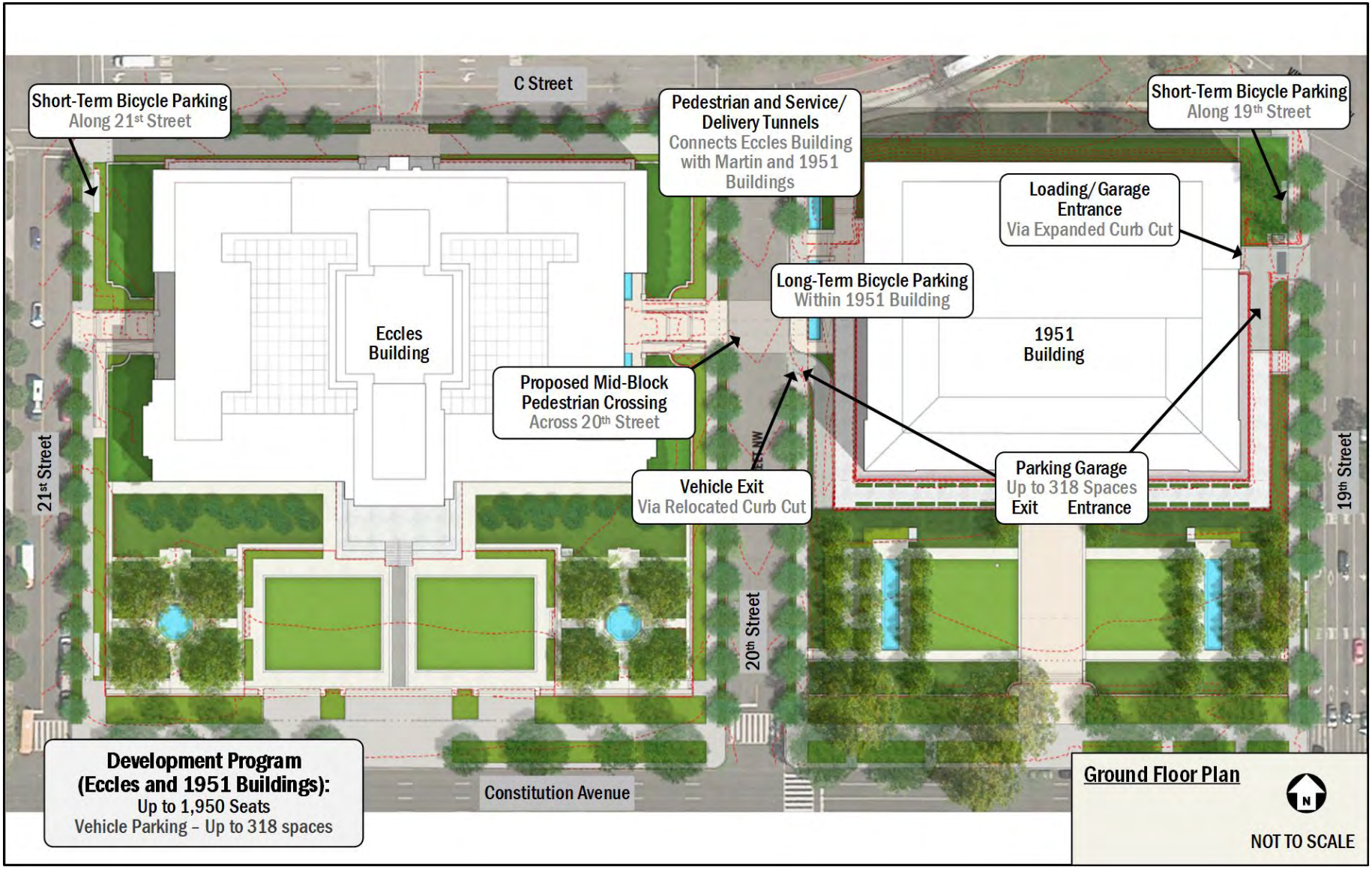

Figure 4: Site Plan

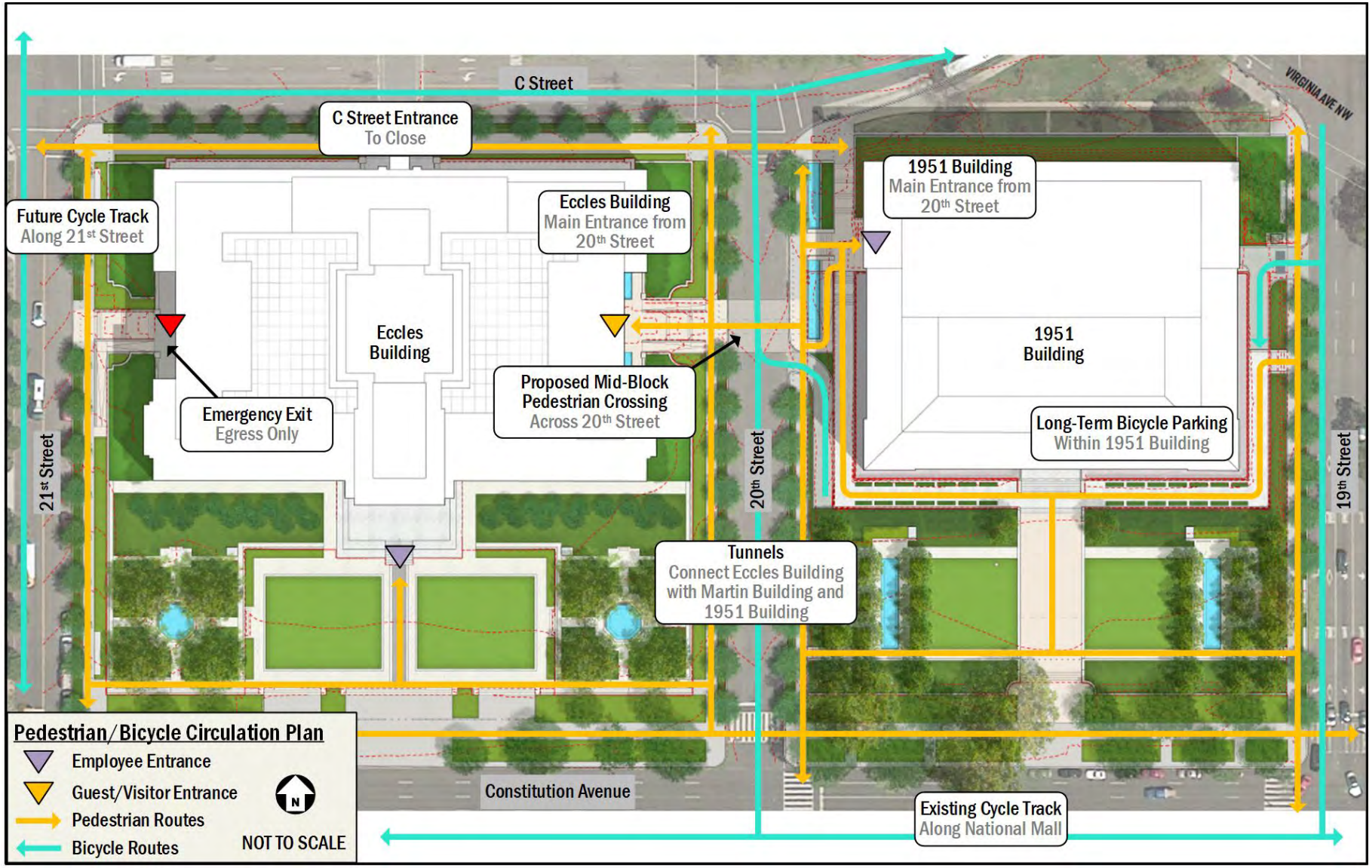

Figure 5: Pedestrian and Bicycle Circulation

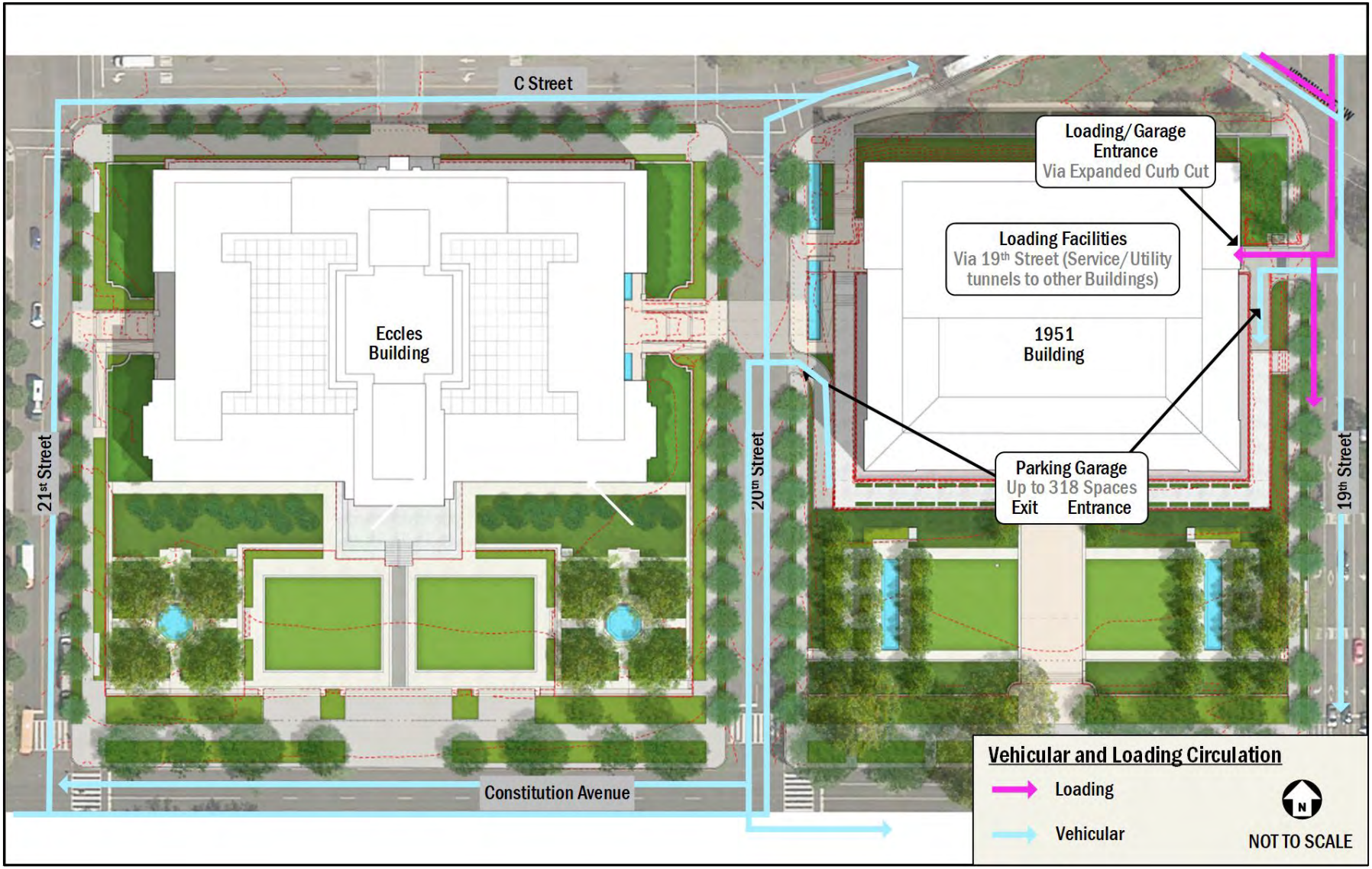

Figure 6: Vehicular and Loading Circulation

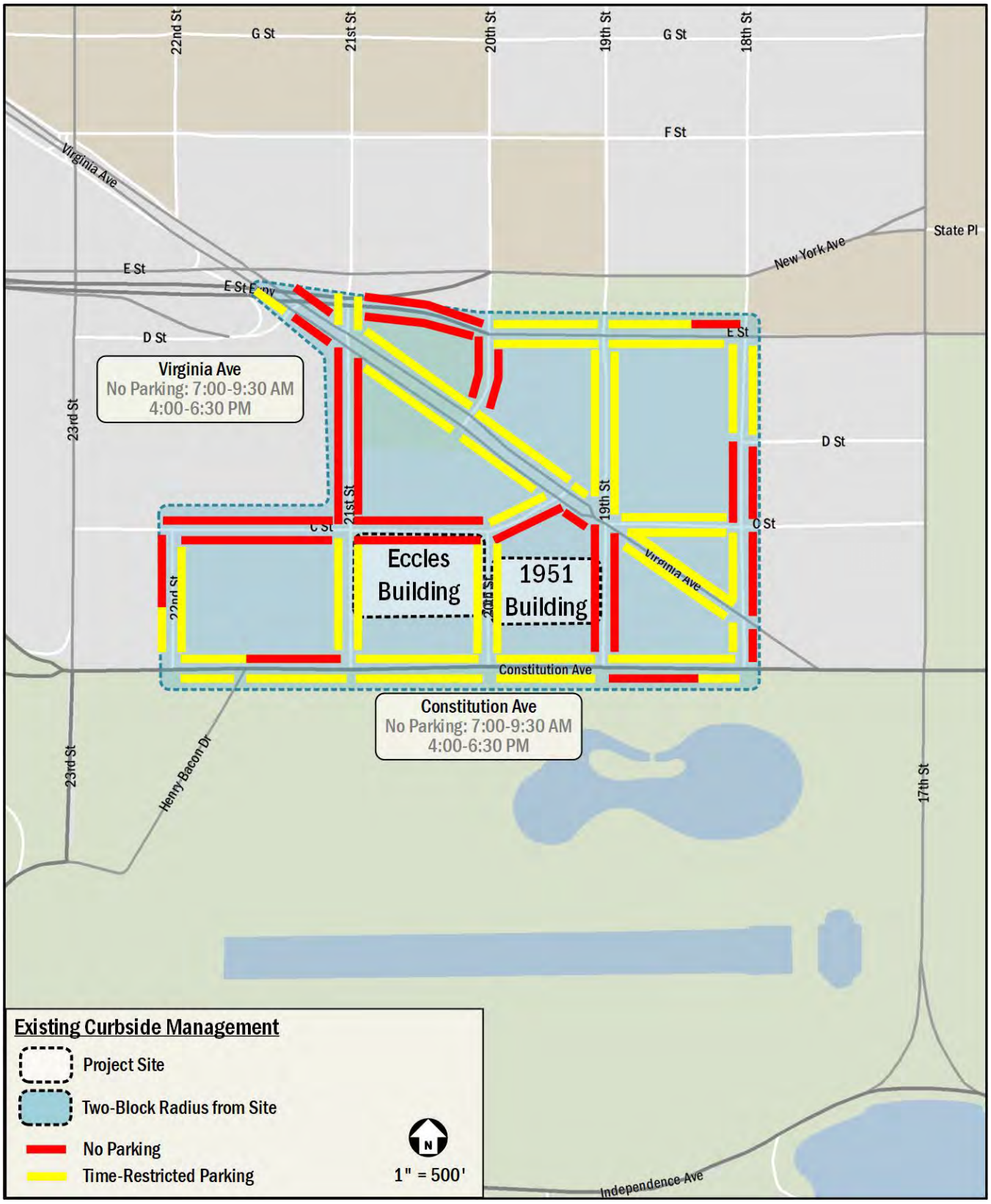

Figure 7: Existing Curbside Management

On-Site Parking

The parking provided for the two (2) buildings will be provided in an underground garage with up to 318 spaces.

Existing On-Site Parking

Prior to the renovation and expansion of the buildings, existing parking comprised the following:

- **Eccles Building:** 29 Governor's parking spaces are provided beneath the building, with access from 20th Street and exit onto 21st Street.
- **1951 Building:** Approximately 60 spaces are located in the surface parking lot located in the rear of the building, with entry from 20th Street and exit to 19th Street.

Proposed On-Site Parking

As part of the renovation and expansion of the two (2) buildings, the proposed parking plan consists of the following:

- **Eccles Building:** The 29 Governor's parking spaces will be removed, with the parking area to be repurposed as office space.
- **1951 Building:** The vacant surface parking lot will be replaced with an underground garage. The garage will be built underneath the south lawn of the 1951 Building and will extend into 20th Street. The area currently occupied by the surface lot will be replaced by the building's expansion. Depending on the intensity of the development program ultimately selected, up to 318 spaces will be added.

In addition to the on-site parking facilities, the Martin Building will have approximately 370 vehicle spaces available following its reopening, with access from 21st Street.

Parking Demand

In determining the proposed number of parking spaces at the Site, parking demand was determined based on the FRB's internal data of employees who drive to DC-based locations. The project is subject to National Capital Planning Commission (NCPC) requirements, which specifies a maximum of one (1) parking space for every five (5) employees, or a 0.20 space to employee ratio. Table 1 presents a parking demand breakdown of the proposed Eccles, 1951, and Martin Buildings. Together, the three (3) buildings will house 2,835 employee seats (including the 1,750 between the Eccles and 1951 Buildings).

Taking into account the 370 parking spaces proposed at the adjacent Martin Building, the proposed 318-space parking supply to serve the Eccles and 1951 Buildings, and spaces required for official vehicles, the proposed parking supply complies with NCPC requirements.

Table 1: Proposed Parking Supply

Building	Proposed Parking Spaces	Employee Seats
Eccles	0*	788
1951	318	962
Martin	370	1,085
Total	**688**	**2,835**
Official Vehicles	-116	--
Net Employee Spaces	**572**	**--**
Employee Parking Ratio (Spaces per Employee)	**= 572/2,835 0.20**	**Meets NCPC Requirement**

**Parking Shared with 1951 Building*

Queueing Analysis

Per DDOT CTR requirements, a queueing analysis was conducted at the proposed parking garage access points on 19th Street and 20th Street.

As discussed previously, the proposed garage will have one-way circulation, with entry access from 19th Street southbound and exit onto 20th Street. The entry and exit access points will connect with the full underground garage, which will serve only the uses of FRB. Access control gates into the parking garage will be located adjacent to the parking ramp that descends into the first below-grade level of the garage. As a result, very little inbound queueing is anticipated at the street level along 19th Street.

Assumptions

The following assumptions were used to perform the queueing analysis:

- All office employees and visitors can access the garage using the entrance access point on southbound 19th Street.
- Upon entering the parking garage, office employees will enter the parking area with a transponder at the parking ramp.

- According to the Parking Structures (3rd Edition) handbook, the transponder (Automatic Vehicle ID) will have a service time of 4.5 seconds per vehicle.
- All office employees and visitors are able to exit the parking garage via the ramp leading to 20th Street.
- Vehicles exiting the garage have a service time of 4.5 seconds per vehicle, consistent with vehicle recognition rates according to the Parking Structures (3rd Edition) handbook.
- The number of vehicle arrivals at the entrance and exit gates are consistent with the peak hour trip generation projected for the project.

Analysis

The values from Table 2 were used as inputs into a stochastic queueing model using M/M/c queue behaviors. M/M/c queues assume that the arrival rate and service time within the system both follow a random distribution, *M*, and that the system includes one (1) or more processing points, *c*, serving a single, pooled queue. Taken together, these assumptions closely model real-world garage behaviors since entering vehicles will not arrive at a constant rate due to external factors, which the model incorporates as a Poisson random process, and each transaction at the processing point will take a slightly different amount of time, which the model assumes follow an exponential random distribution.

The resulting queuing system characteristics are summarized in Table 3, including the average number of vehicles in the system, the average wait time in the system, and the 90th percentile system queue, which is intended to show worst-case queuing conditions experienced no more than 10% of the time within the peak hour. Note that all of these parameters represent system queues and system delay and therefore include those vehicles currently being served as well as the time a driver spends interacting with the processing point. Generally, the queues at the entrance and exit driveways will not exceed one (1) vehicle and delays will not exceed six (6) seconds. Additional queuing characteristics can be found in the detailed queuing analysis worksheets for each scenario, which are provided in the Technical Attachments.

As seen in the queueing tables, the proposed garage access scheme with one (1) entry lane and one (1) exit lane results in queueing that will not exceed one (1) vehicle. Based on the location of the proposed entrance and exit of the parking garage, there is queueing storage to accommodate more than one (1) vehicle and spillback to the public roadway is not expected.

Table 2: Garage Access Input Traffic Stream Parameters

Eccles/1951 Garage Queuing Results				
Time Period	Direction	Arrivals, λ (veh/hr)	Service, μ	
			sec/veh	veh/hour
	Enter (19th Street)			
	Exit (20th Street)	29	4.5	
	Enter (19th Street)			
	Exit (20th Street)	166	4.5	800

Table 3: Summary of Garage Queuing Results

Eccles/1951 Garage Queuing Results						
Time Period	Direction	Average Vehicle in System	90th Percentile (veh)		Wait Time (sec)	
			Queue	System	Queue	System
AM	Enter (19th Street)	0	1	1	1.214	5.714
	Exit (20th Street)	0	--	--	0.169	4.669
PM	Enter (19th Street)	0	--	--	0.181	4.681
	Exit (20th Street)	0	1	1	1.178	5.678

Pedestrian Facilities

As part of the proposed development, pedestrian facilities along all site frontage will be improved such that they meet or exceed current DDOT and ADA requirements and provide an improved pedestrian environment, if necessary. A mid-block crossing along 20th Street is proposed, creating an easier pedestrian connection between the Eccles and 1951 Buildings. An underground pedestrian tunnel will also be built between the two buildings, providing passage within the secure area. It is important to note that the existing buildings are currently well served with pedestrian facilities in the area.

Bicycle Facilities

The FRB maintains a close collaboration with the employees' bicycle group. This collaboration within the design process of the project has resulted in proposed bicycle facilities which will serve the needs of the employees.

As part of the proposed development, on-site bicycle facilities will be provided within the underground garage. Up to 154 long-term spaces within a secure room are proposed. Additional amenities, including a maintenance station and charging ports for e-bikes are also proposed. To supplement the proposed bicycle parking, 125 long-term spaces are available at the Martin Building, located immediately north of the Eccles Building.

Short-term bicycle parking in the form of racks will be located along 21st Street for the Eccles Building and 19th Street for the 1951 Building. Shower and locker facilities will be provided in the renovated buildings in an onsite fitness center.

The proposed facilities will meet the project's goal of providing long-term storage to at least 7% of all regular building occupancy and providing short-term storage to at least 3% of all peak visitors.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

TDM is the application of policies and strategies used to reduce travel demand or to redistribute demand to other times or spaces. TDM typically focuses on reducing the demand of single-occupancy, private vehicles during peak period travel times or on shifting single-occupancy vehicular demand to off-peak periods.

The Federal Reserve Board (FRB) has a robust TDM plan in place which are currently offered at its Washington, D.C. locations and will continue to implement, in addition to meeting the employee parking ratio of 1 space for every 5.0 employees as recommended in NCPC's Comprehensive Plan:

- The FRB will continue to operate a robust shuttle bus program, which connects the Eccles Building to nearby Metrorail stations. These shuttles will continue to operate during regular business hours.
- The FRB will continue to offer on-site bicycle facilities to employees, with long-term facilities located within the underground garage and short-term bicycle facilities 21st Street and 19th Street.
- The FRB will continue to offer employees a monthly transit subsidy. In 2020, this amount is $270.
- The FRB will continue to offer employees an alternative work schedule (AWS), where employees may either work four (4) 10-hour days or work nine (9) 9-hour days, resulting in one (1) less day traveled to work on a weekday. Approximately 1064 employees across the FRB's five (5) existing locations in DC use an AWS.
- The FRB will continue to provide teleworking capabilities to employees. Across the FRB locations, 1260 employees telework at least one (1) day a week.
- The FRB will continue to provide designated carpool spaces for employees. Across the FRB locations, there are 52 organized carpools.
- The FRB will continue to provide vanpool services, linking employees with routes that travel near their home destination. Across the FRB locations, there are 10 vanpools.

TRIP GENERATION

This section outlines the transportation demand of the proposed project. It summarizes the projected trip generation of the development by mode, which forms the basis for the chapters that follow. These assumptions were conducted in general accordance with the typical parameters set by DDOT for preparing Transportation Impact Studies.

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. This methodology was supplemented to account for the urban nature of the Site (the *Trip Generation Manual* provides data for non-urban, low transit use sites) and to generate trips for multiple modes.

Trip generation was calculated based on ITE Land Use 710, General Office for the buildings. Mode splits were derived using survey data provided by FRB employees who currently work at the Eccles, NYA, ISQ, and 1801 K Street offices: Of the 3,373 employees who responded, approximately 20% drive alone, 5% carpool or vanpool, 57% use transit, and 18% indicated "other" The "other" results represent employees that telework or work an alternative week schedule. Additional survey data indicated 37% telework at least once a week and 32% work an alternative week schedule (AWS). These percentages were supplemented with zip code data providing an estimate of employees who walk or bike. This survey data is summarized in Figure 8.

The mode split assumptions are shown in Table 4. A summary of the multimodal trip generation for the development program is provided in Table 5.

The development is expected to generate 199 morning peak hour (170 inbound and 29 outbound) trips and 197 afternoon peak hour (31 inbound and 166 outbound) trips.

Table 4: Mode Split Assumptions

Land Use	Mode					
	Auto	Carpool	Transit	Bike	Walk	Telework
Office	18%	5%	62%	2%	7%	6%

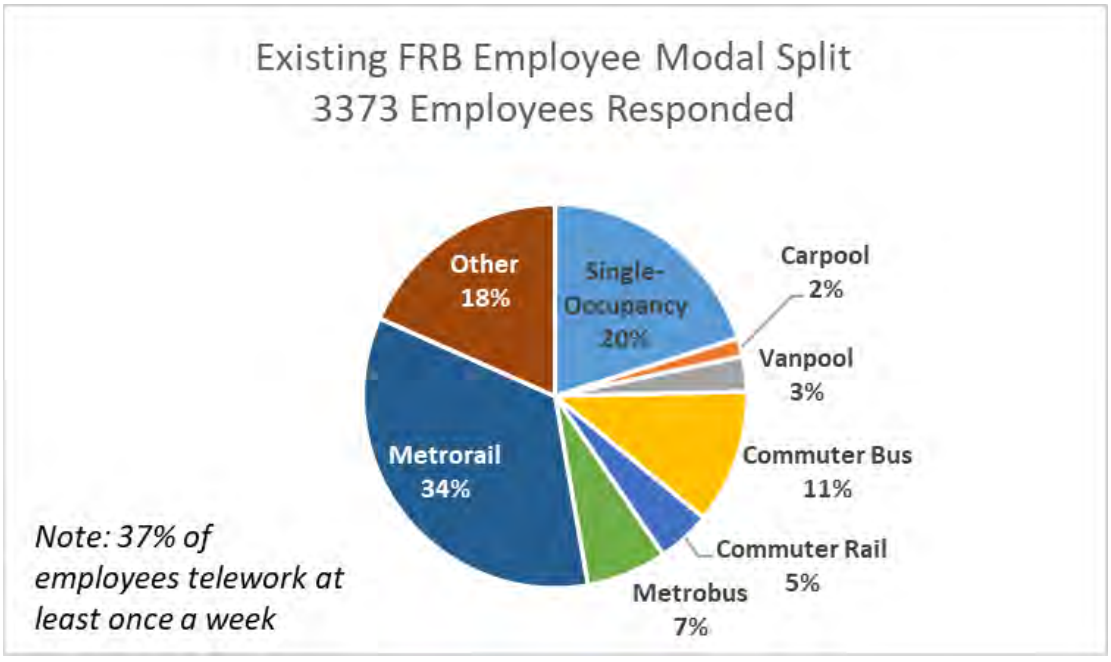

Figure 8: Survey Results of FRB Employee Modal Split

Table 5: Trip Generation Summary for Eccles and 1951 Buildings

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Federal Reserve Eccles and 1951 Buildings--Trip Generation						
Eccles Building (362,480 SF; 776 seats)						
Auto (veh/hr)	83	14	97	15	81	96
Transit (ppl/hr)	264	44	308	49	256	305
Bike (ppl/hr)	9	1	10	2	8	10
Walk (ppl/hr)	30	5	35	6	28	34
Telework (ppl/hr)	26	4	30	5	25	30
1951 Building (379,850 SF; 962 seats)						
Auto (veh/hr)	87	15	102	16	85	101
Transit (ppl/hr)	277	45	322	51	269	320
Bike (ppl/hr)	9	1	10	2	8	10
Walk (ppl/hr)	31	5	36	6	30	36
Telework (ppl/hr)	27	4	31	5	26	31
Combined Trip Generation (742,330 SF; 1750 Seats)						
Auto (veh/hr)	170	29	199	31	166	197
Transit (ppl/hr)	541	89	630	100	525	625
Bike (ppl/hr)	18	2	20	4	16	20
Walk (ppl/hr)	61	10	71	12	58	70
Telework (ppl/hr)	53	8	61	10	51	61

TRAFFIC OPERATIONS

This section provides a summary of an analysis of the existing and future roadway capacity surrounding the Site. Included is an analysis of potential vehicular impacts of the Project and a discussion of potential mitigation measures.

The purpose of the capacity analysis is to:

- Determine the existing capacity of the study area roadways;
- Determine the overall impact of the proposed Project on the study area roadways; and
- Discuss potential improvements and mitigation measures to accommodate the additional vehicular trips.

This analysis was accomplished by determining the traffic volumes and roadway capacity for Existing Conditions, Background Conditions, and Total Future Conditions.

The capacity analysis focuses on the weekday morning peak hour and afternoon peak hour, as determined by the existing traffic volumes in the study area.

This chapter concludes that:

- Under Existing Conditions, the majority of intersections in the study area operate at acceptable conditions.
- Future areas of concern for roadway capacity, are primarily along the minor approaches intersecting commuter routes such as Constitution Avenue.
- One (1) study intersection met the threshold for requiring mitigation measures as a result of the development:
  - 21st Street & Constitution Avenue (PM)
- Mitigation measures were considered at this intersection in the form of signal timing adjustments. However, no mitigations are recommended at this location as no site traffic is expected at the approach meeting the threshold for mitigation. Additionally, Constitution Avenue is a major commuter route and any signal timing adjustments to provide mitigation for the southbound approach would negatively affect Constitution Avenue.

STUDY AREA, SCOPE, & METHODOLOGY

This section outlines the vehicular trips generated in the study area along the vehicular access routes and defines the analysis assumptions.

The scope of the analysis contained within this report was conducted in general accordance with the typical parameters set by DDOT. The general methodology of the analysis follows national and DDOT guidelines on the preparation of transportation impact evaluations of site development.

Capacity Analysis Scenarios

The vehicular capacity analyses are performed to determine whether the proposed development will lead to adverse impacts on traffic operations. (A review of impacts to each of the other modes is outlined later in this report.) This is accomplished by comparing future scenarios: (1) without the proposed Project (referred to as the Background condition) and (2) with the Project approved and constructed (referred to as the Total Future condition).

Specifically, the roadway capacity analysis examined the following scenarios:

1. Existing Conditions (Existing Conditions);
2. 2022 Future Conditions without the Project (2022 Background Conditions); and
3. 2022 Future Conditions with the Project (2022 Total Future Conditions).

Study Area

The study area of the analysis is a set of intersections where detailed capacity analyses were performed for the scenarios listed above. The set of intersections decided upon were conducted in general accordance with the parameters typically used during the scoping process with DDOT. These are intersections most likely to have potential impacts or require changes to traffic operations to accommodate the proposed Project. Although it is possible that impacts will occur outside of the study area, those impacts are not significant enough to be considered a detrimental impact nor worthy of mitigation measures.

Based on the projected future trip generation and the location of the Site access points, the following intersections were chosen and agreed upon by DDOT for analysis:

1. C Street & 21st Street, NW
2. C Street & 20th Street, NW
3. C Street & Virginia Avenue, NW
4. C Street & Virginia Avenue & 19th Street, NW
5. Constitution Avenue & 21st Street, NW
6. Constitution Avenue & 20th Street, NW
7. Constitution Avenue & 19th Street, NW
8. Eccles Building Western Driveway & 21st Street, NW
9. Eccles Building Eastern Driveway & 20th Street, NW
10. 1951 Building Western Driveway & 20th Street, NW
11. 1951 Building Eastern Driveway & 19th Street, NW

Figure 9 shows a map of the study area intersections.

Geometry and Operations Assumptions

The following section reviews the roadway geometry and operations assumptions made and the methodologies used in the roadway capacity analyses.

Existing Geometry and Operations Assumptions

The geometry and operations assumed in the Existing Conditions scenario are those present when the main data collection occurred. Gorove/Slade made observations and confirmed the existing lane configurations and traffic controls at the intersections within the study area. Existing signal timings and offsets were obtained from DDOT and confirmed during field reconnaissance.

The lane configurations and traffic controls for the Existing Conditions are shown on Figure 16.

2022 Background Geometry and Operations Assumptions

Following national and DDOT methodologies, a background improvement must meet the following criteria to be incorporated into the analysis:

- Be funded; and
- Have a construction completion date prior or close to the proposed development.

Based on these criteria, there is one (1) Background Improvement included in the 2022 Background Conditions:

- As part of the planned cycle track running along 21st Street from G Street to Constitution Avenue, the travel lanes will be reduced at the C Street and Constitution Avenue intersections in order to accommodate the cycle track.

An additional improvement (Virginia Avenue Bike Lane project) was considered for implementation. However, the project is not confirmed to be completed by 2022 and was not included as a background project.

The lane configurations and traffic controls for the 2022 Background Conditions are shown on Figure 17.

2022 Total Future Geometry and Operations Assumptions

The configurations and traffic controls for the 2022 Total Future Conditions are based on those for the 2022 Background Conditions with the following changes:

- The western and eastern driveways at the Eccles Building will be removed.
- The access points at the 1951 Building will be reversed, with entry now from 19th Street and exit from 20th Street.

The lane configurations and traffic controls for the 2022 Total Future Conditions are shown on Figure 18.

Traffic Volume Assumptions

The following section reviews the traffic volume assumptions and methodologies used in the roadway capacity analyses.

Existing Traffic Volumes

The existing traffic volumes are comprised of turning movement count data, which was collected Thursday, November 7, 2019 between the hours of 6:30 and 9:30 AM and 4:00 and 7:00 PM. The results of the traffic counts are included in the Technical Attachments. The existing peak hour traffic volumes are shown Figure 10. For all intersections, the morning and afternoon system peak hours were used.

2022 Background Traffic Volumes without the project (2022 Background)

The traffic projections for the 2022 Background Conditions consist of the existing volumes with two additions:

- Traffic generated by developments within the vicinity of the Site and expected to be completed prior, or close to 2022 (known as background developments); and
- Inherent growth on the roadway (representing regional traffic growth).

Following national and DDOT methodologies, a background development should meet the following criteria to be incorporated into the analysis:

- Be located in the study area, defined as having an origin or destination point within the cluster of study area intersections;
- Have entitlements; and
- Have a construction completion date prior or close to that of the Project.

Based on these criteria, the Martin Building Redevelopment was included in the 2022 Background scenario.

An existing study was available for the background development, with trip generation and distribution assumptions derived from the study and altered where necessary based on updated travel patterns. Mode split and trip generation assumptions for the Martin Building is shown in Table 6. The volumes composed from the Martin Building are shown in Figure 11.

While the background development represents local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's (MWCOG) currently adopted regional transportation model, comparing the difference between the year 2019 and 2025 model scenarios. The growth rates observed in this model served as a basis for analysis assumptions and are shown in Table 7. The volumes composed of background growth are shown in Figure 12.

The traffic volumes generated by the inherent growth along the network and background developments were added to the existing traffic volumes in order to establish the 2022 Background traffic volumes. The traffic volumes for the 2022 Background Conditions are shown on Figure 13.

2022 Total Future Traffic Volumes with the project (2022 Total Future)

The 2022 Total Future traffic volumes consist of the 2022 Background volumes with the addition of the traffic volumes generated by the proposed Project (site-generated trips). Thus, the 2022 Total Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and site-generated trips of the proposed Project.

Trip distribution for the site-generated trips was determined based on: (1) FRB employee zip code data, (2) CTPP TAZ data, (2) existing and future travel patterns in the study area, and (3) the location of the parking access.

The trip distribution was significantly influenced by the CTPP TAZ flow data for drivers commuting to the Site's TAZ and adjusted based on traffic volumes and patterns. The flow information showed significant commuting patterns from Virginia and within the District borders. The origin of outbound and destination of inbound vehicular trips were the below-grade parking garage for the Eccles and 1951 Buildings, accessible from 20th Street and 19th Street, respectively.

The inbound and outbound trip distribution for the Project is shown on Figure 14 and Figure 15, respectively.

The traffic volumes for the 2022 Total Future Conditions were calculated by adding the development-generated traffic volumes for the Project to the 2022 Background traffic volumes. Thus, the future condition with the proposed development scenario includes traffic generated by existing volumes, background developments through the year 2022, inherent growth on the network, and the proposed Project. The Project-generated traffic volumes are shown on Figure 19. The 2022 Total Future traffic volumes are shown on Figure 20.

Peak Hour Factors

The TRB *Highway Capacity Manual* (HCM) and the AASHTO *Policy on Geometric Design of Highways and Intersections* recommend evaluating traffic conditions during the worst 15 minutes of either a design hour or a typical weekday rush hour. Peak Hour Factor (PHF) is used to convert the hourly volume into the volume rate representing the busiest 15 minutes of the hour. The existing guidelines provide typical values of PHF and advise using the PHF calculated from vehicle counts at analyzed or similar locations. The HCM recommends a PHF of 0.88 for rural areas and 0.92 for urban areas and presumes that capacity constraints in congested areas reduce the short-term traffic fluctuation. The HCM postulates 0.95 as the typical PHF for congested roadways.

For the Existing Conditions analysis, PHF were calculated from the turning movement data that was collected in the field, using a minimum PHF of 0.85. The PHF values used in Existing Conditions were assumed in the Background Conditions and Total Future Conditions analyses.

VEHICULAR ANALYSIS RESULTS

Intersection Capacity Analysis

Intersection capacity analyses were performed for the scenarios outlined previously at the intersections contained within the study area during the morning and afternoon peak hours. Synchro version 9.1 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each approach. A LOS grade is a letter grade based on the average delay (in seconds) experienced by motorists traveling through an intersection. LOS results range from "A" being the best to "F" being the worst. LOS D is typically used as the acceptable LOS threshold in the District; although LOS E or F is sometimes accepted in urbanized areas if vehicular improvements would be a detriment to safety or non-auto modes of transportation.

The LOS capacity analyses were based on: (1) the peak hour traffic volumes; (2) the lane use and traffic controls; and (3) the Highway Capacity Manual (HCM) methodologies (using *Synchro* software). The average delay of each approach and LOS is shown for the signalized and all-way stop-controlled intersections in addition to the overall average delay and intersection LOS grade. The HCM does not give guidelines for calculating the average delay for a two-way stop-controlled intersection, as the approaches without stop signs would technically have no delay. Detailed LOS descriptions and the analysis worksheets are contained in the Technical Attachments.

Table 8 and Table 9 show the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the study scenarios during the morning and afternoon peak hours, respectively.

The study intersections generally operate at acceptable conditions during the morning and afternoon peak hours for all study scenarios. However, one (1) intersection has at least one approach that operates at unacceptable conditions during at least one study scenario and during at least one of the peak hours:

- Constitution Avenue & 21st Street, NW
  - Southbound approach: PM (Existing, Background, Total Future)

Queuing Analysis

In addition to the capacity analyses presented above, a queuing analysis was performed at the study intersections. The queuing analysis was performed using Synchro software. The 50th and 95th percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile queue is the maximum back of queue on a median cycle. The 95th percentile queue is the maximum back of queue that is exceeded 5% of the time. For unsignalized intersections, only the 95th percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM 2000 calculations. HCM 2000 does not calculate queuing for all-way stops.

Table 10 and Table 11 show the queuing results for the study area intersections. Three (3) of the study intersections have one or more lane groups that exceed the given storage length during at least one peak hour in all of the study scenarios. These intersections are as follows:

- C Street, Virginia Avenue & 19th Street
  - Southeastbound Right on Virginia Avenue: PM (Existing, Background, Total Future)
- Constitution Avenue & 21st Street
  - Eastbound Thru: AM (Existing, Background, Total Future)
  - Westbound Thru: PM (Existing, Background, Total Future)
  - Southbound Right: PM (Existing, Background, Total Future)
- Constitution Avenue & 20th Street
  - Westbound Thru: PM (Existing, Background, Total Future)

MITIGATIONS AND IMPROVEMENTS

Based on the local transportation agency (DDOT) standards, the Project is considered to have an impact at an intersection within the study area if any of the following conditions are met:

- The capacity analyses show a LOS E or F at an intersection or along an approach where one does not exist in the Existing Conditions or Background Conditions;
- There is an increase in delay at any approach or overall intersection operating under LOS E or F of greater than 5 percent when compared to the Background Conditions; or

- There is an increase in the 95th percentile queues by more than 150 feet at an intersection or along an approach in the Total Future Conditions with the proposed development where one does not exist in the Background Conditions.

Following these guidelines, there are impacts to one (1) intersection as a result of the Project. Mitigation measures were considered at this intersection. The following conclusion was reached:

- *Constitution Avenue & 21st Street*
  During the afternoon peak hour, the southbound approach on 21st Street already operates at LOS F during Existing and Background Conditions and continues to operate at LOS F under Total Future Conditions. During the afternoon peak hour, the overall intersection slightly degrades in delay, going from LOS E in Background Conditions to LOS F in Total Future Conditions. This is due to the southbound approach being at capacity in background and existing conditions. There are no site trips routed through this approach roadway during the afternoon peak hour.

  Although mitigation measures were considered at the intersection in the form of signal timing adjustments, any additional green time to the southbound phase will take away green time from westbound Constitution Avenue and create a strain on commuter traffic. Westbound Constitution Avenue is a heavily trafficked arterial with nearly 2,000 trips. The delay observed under the Total Future Conditions for the southbound approach increases by less than 5 percent when compared to the Background Conditions. As such, no mitigations are recommended at this location.

Table 6: Summary of Background Development Trip Generation

Background Development	Trip Generation Source	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Martin Building	Transportation Study by Wells & Associates	54 veh/hr	39 veh/hr	93 veh/hr	39 veh/hr	54 veh/hr	93 veh/hr

Table 7: Applied Annual and Total Growth Rates

Road and Direction of Travel	Proposed Annual Growth Rate		Total Growth between 2019 and 2022	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Constitution Avenue – Eastbound	0.20%	0.10%	0.60%	0.30%
Constitution Avenue – Westbound	0.10%	0.10%	0.30%	0.30%
20th Street – Northbound/Southbound	0.10%	0.10%	0.30%	0.30%
19th Street – Southbound	1.00%	0.10%	3.03%	0.30%
C Street – Eastbound/Westbound	0.10%	0.10%	0.30%	0.30%
Virginia Avenue – Eastbound	2.00%	2.00%	6.12%	6.12%
Virginia Avenue – Westbound	0.10%	0.10%	0.30%	0.30%
21st Street – Northbound	0.10%	0.10%	0.30%	0.30%
21st Street – Southbound	0.25%	0.10%	0.75%	0.30%

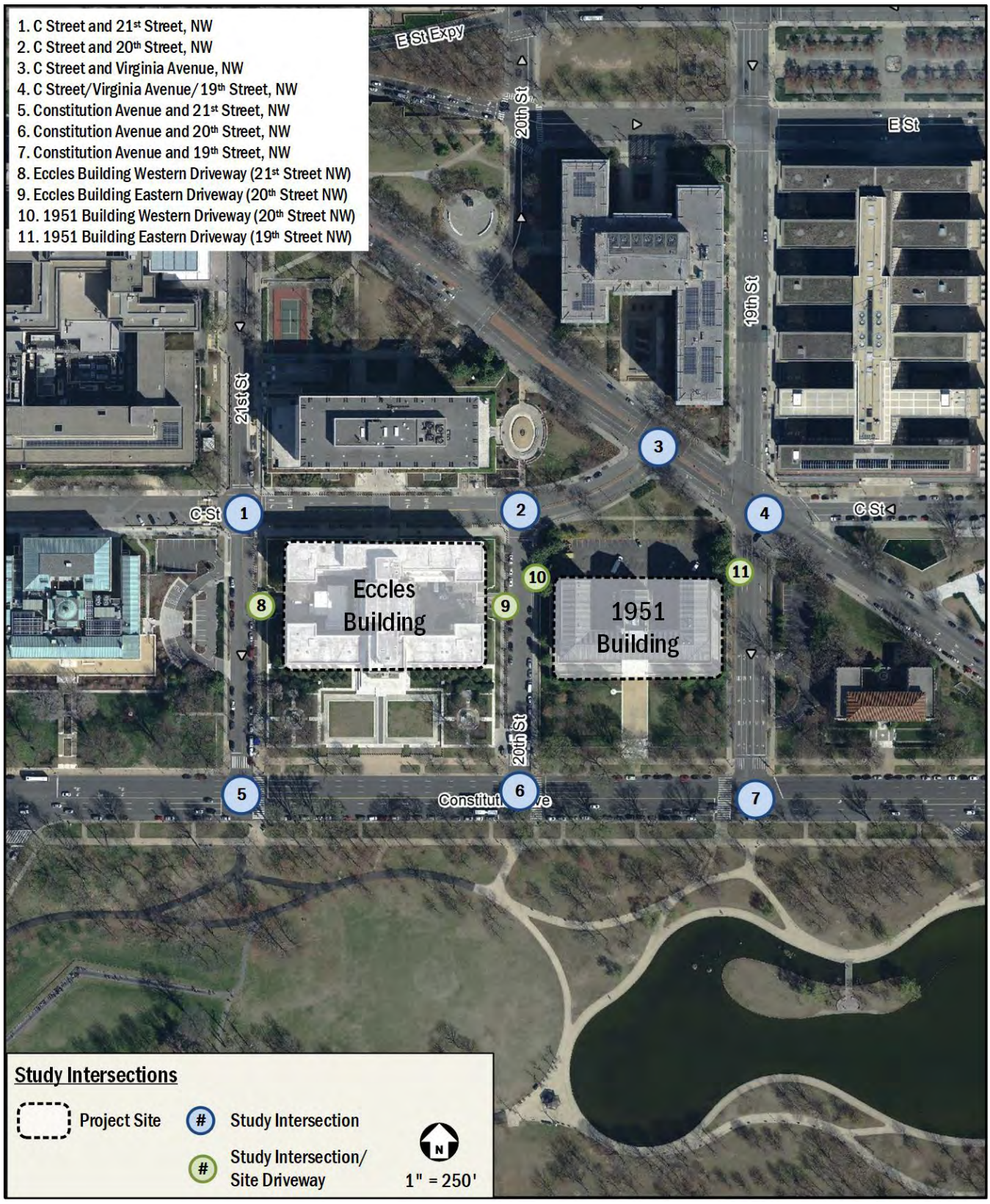

Figure 9: Study Area Intersections

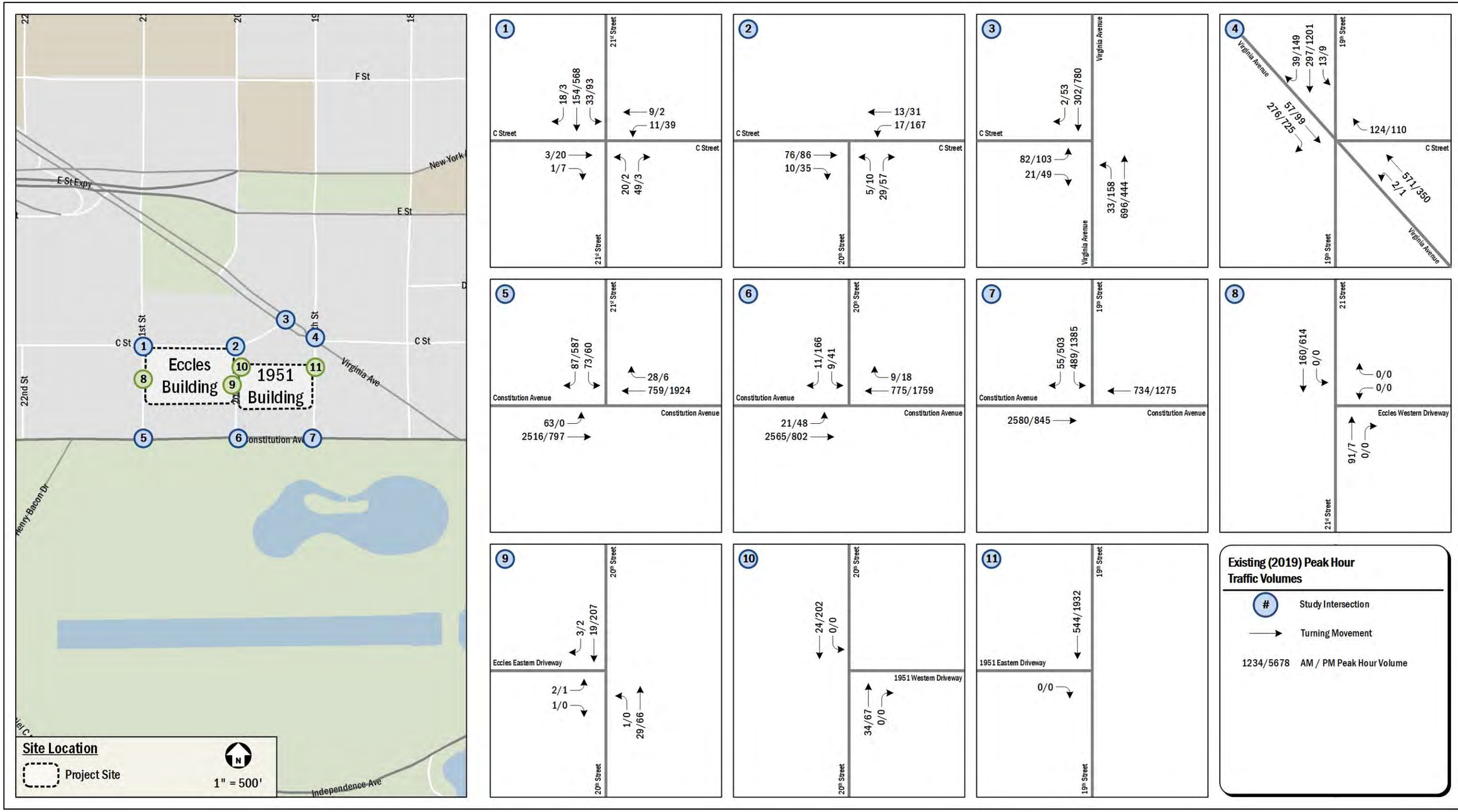

Figure 10: Existing Peak Hour Traffic Volumes

Figure 11: Background Projects Peak Hour Traffic Volumes (2022)

Figure 12: Background Growth Peak Hour Traffic Volumes (2022)

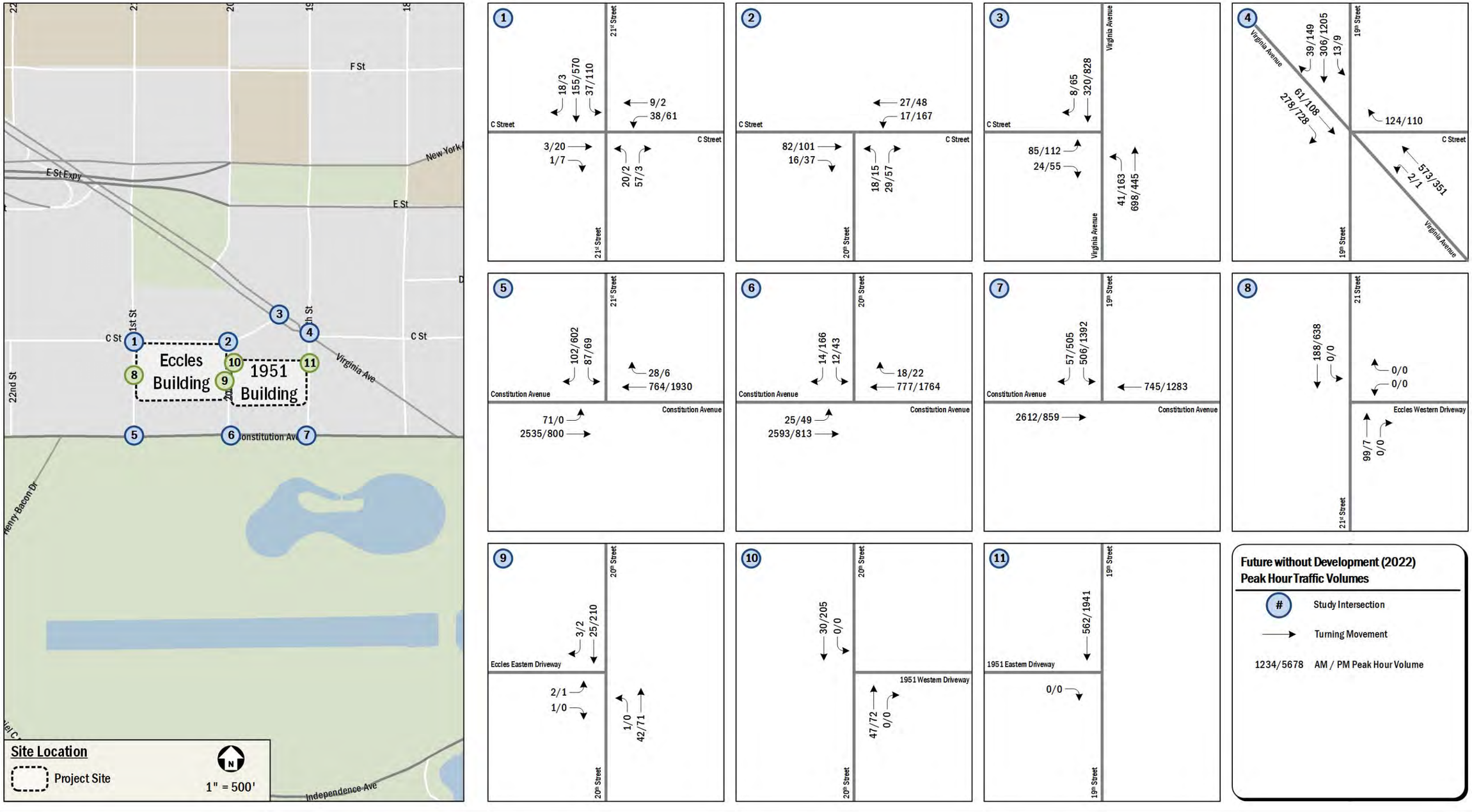

Figure 13: Future without Development (2022) Peak Hour Traffic Volumes

Figure 14: Inbound Trip Distribution and Routing

Figure 15: Outbound Trip Distribution and Routing

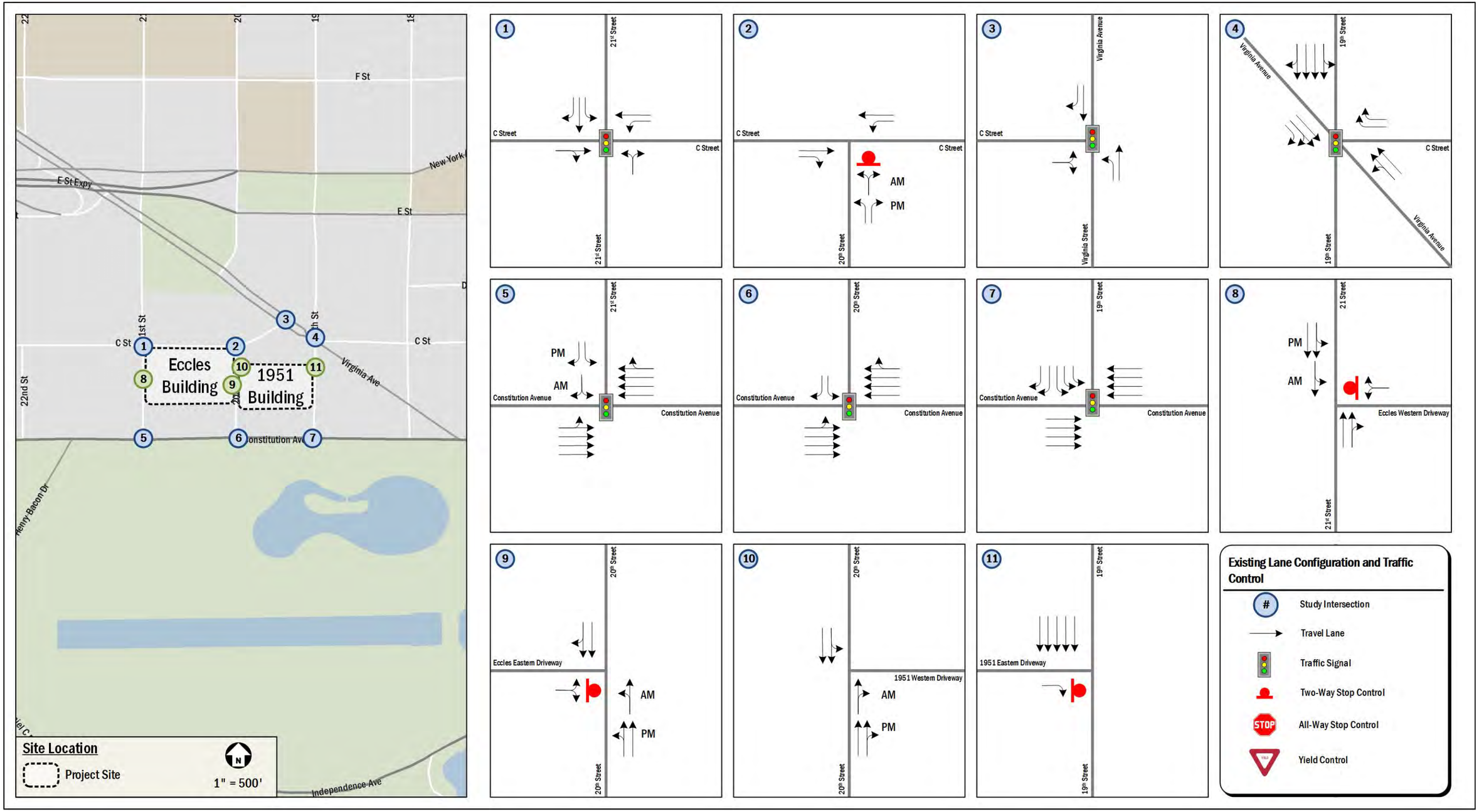

Figure 16: Existing Lane Configuration and Traffic Control

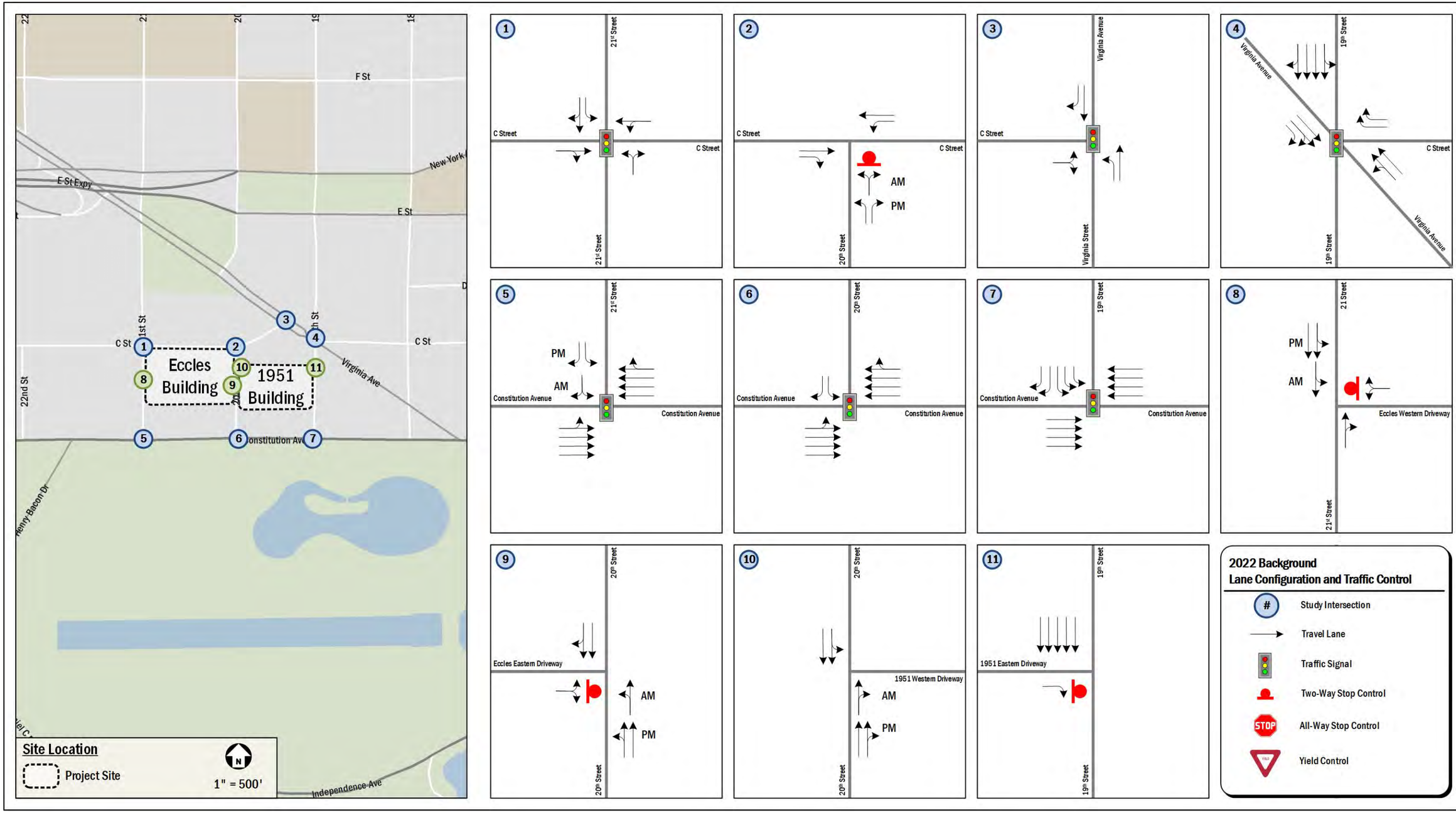

Figure 17: 2022 Background Lane Configuration and Traffic Control

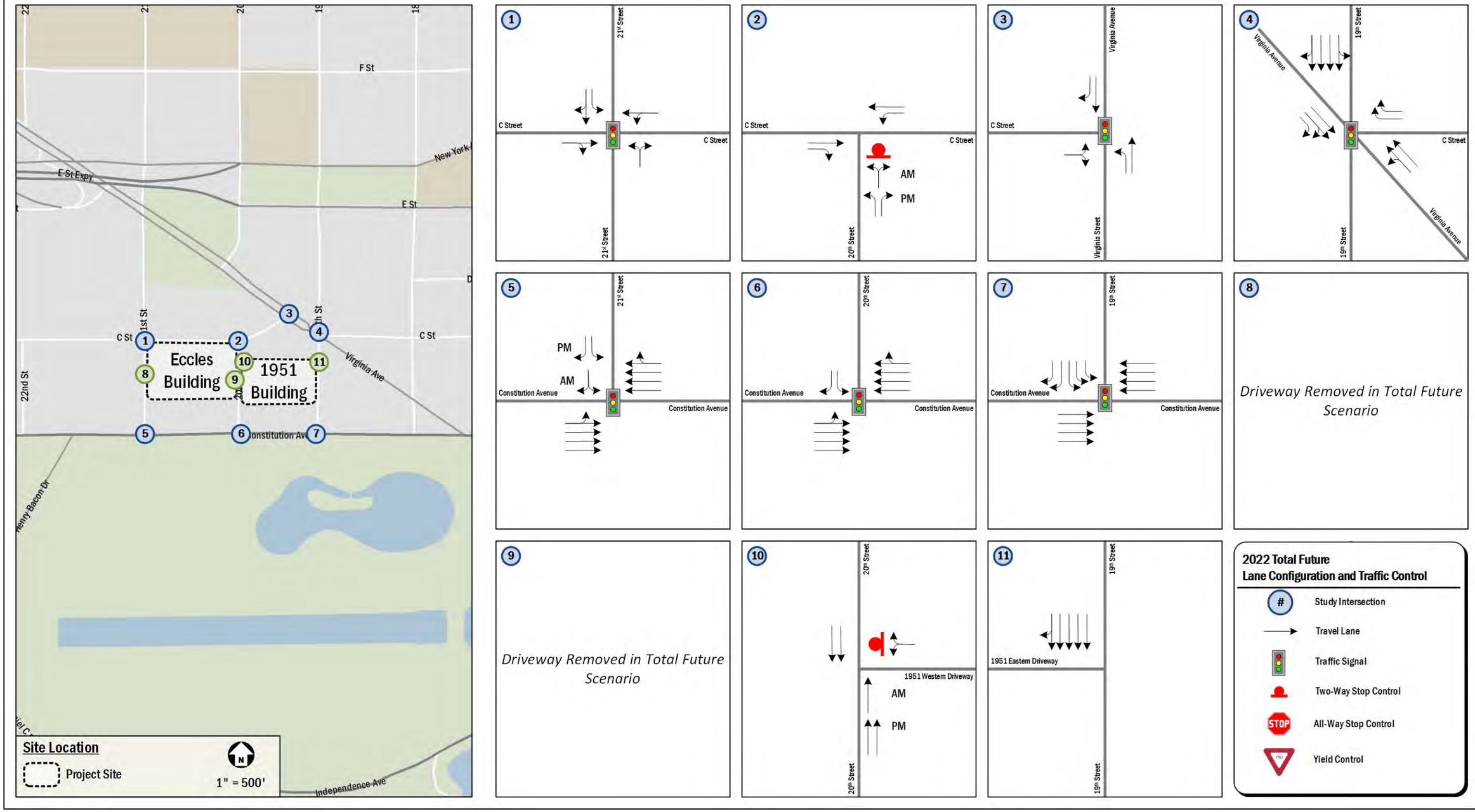

Figure 18: 2022 Total Future Lane Configuration and Traffic Control

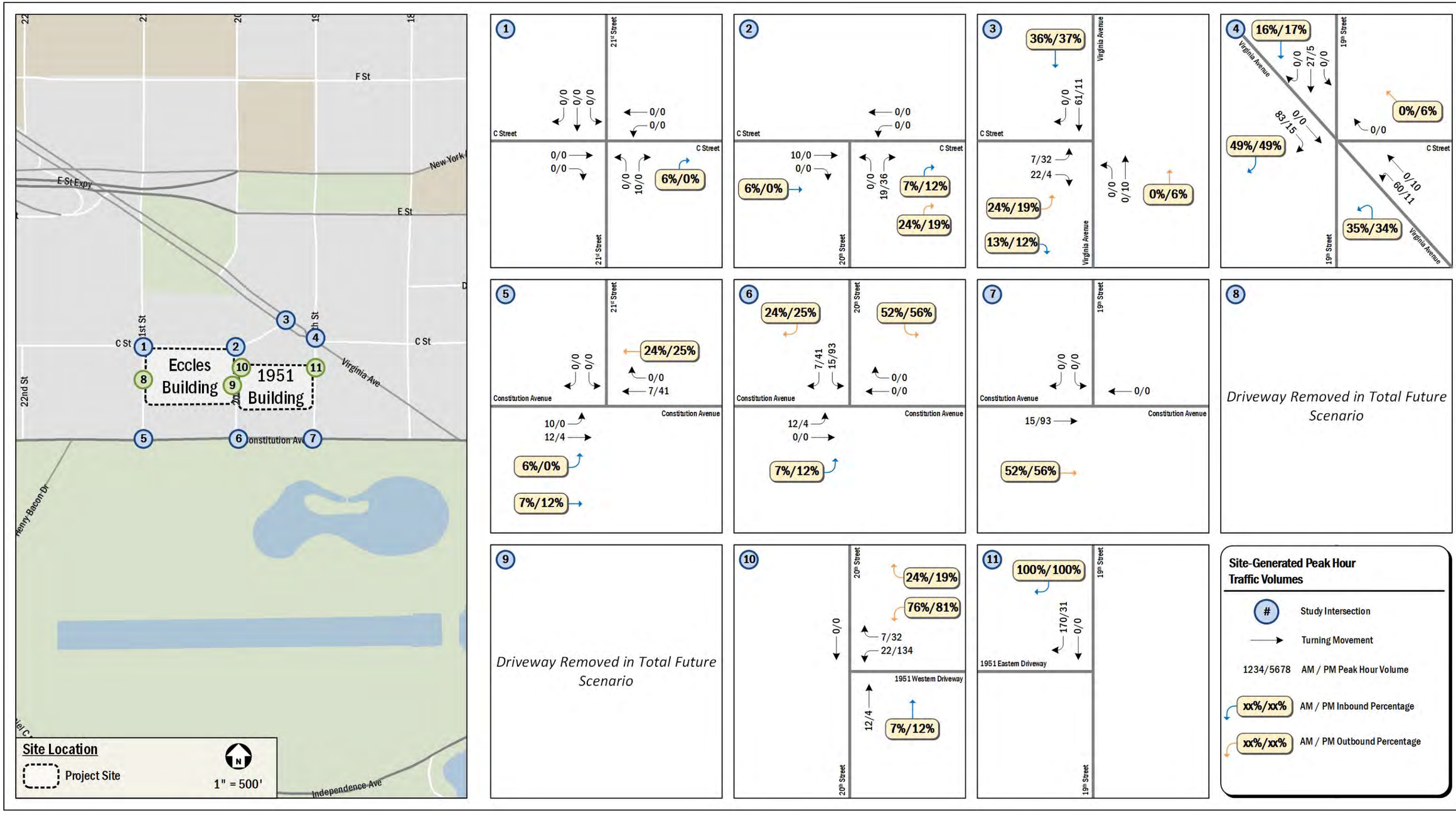

Figure 19: Site-Generated Peak Hour Traffic Volumes

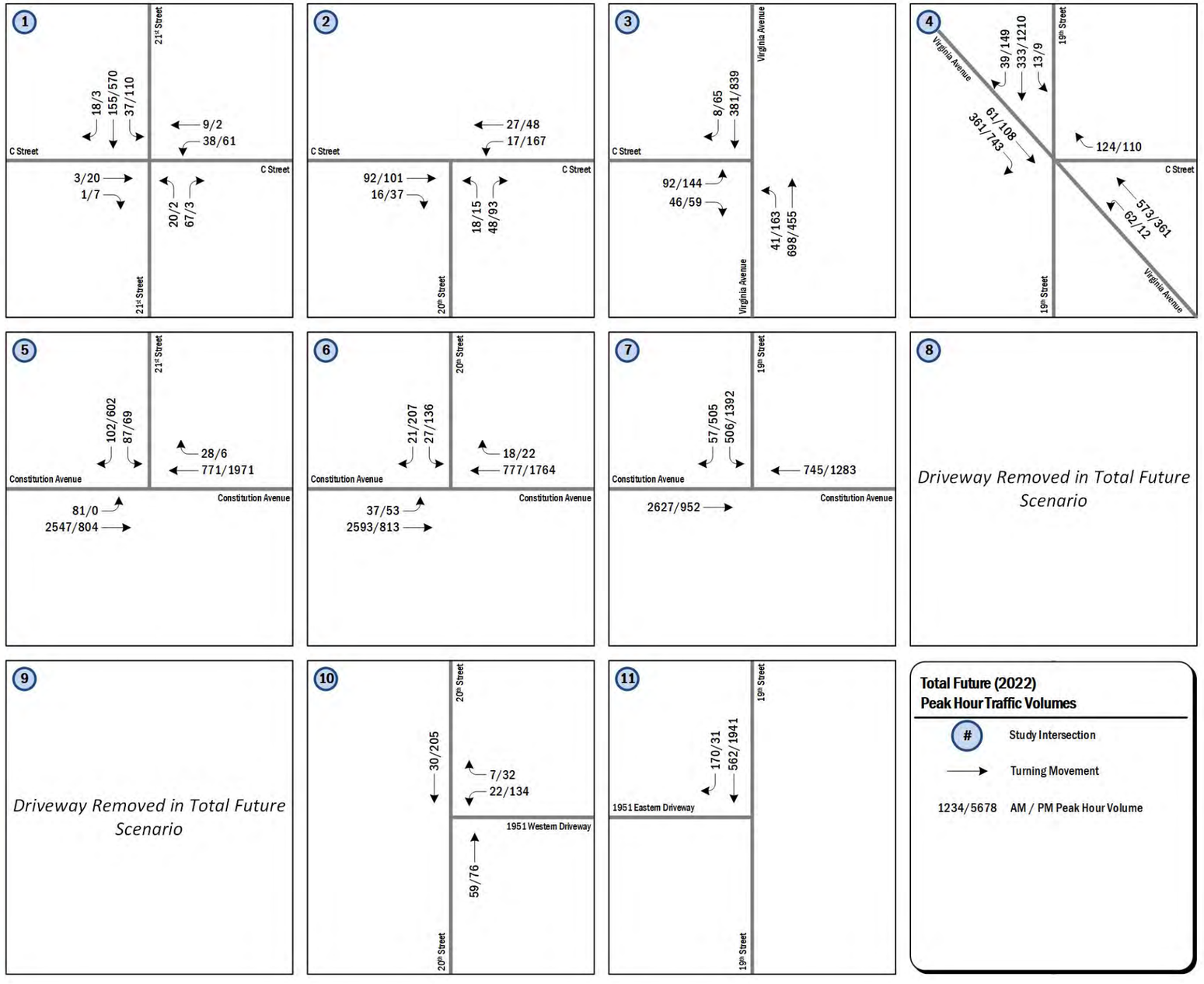

Figure 20: Total Future Peak Hour Traffic Volumes (2022)

Table 8: LOS Results, AM Peak Hour

Intersection	Approach	Existing Conditions (2019)		Background Conditions (2022)		Total Future Conditions (2022)	
		AM Peak Hour		*AM Peak Hour*		*AM Peak Hour*	
		Delay	LOS	Delay	LOS	Delay	LOS
C Street & 21st Street NW	**Overall**	**9.3**	**A**	**11.7**	**B**	**11.2**	**B**
	Eastbound	27.0	C	27.0	C	27.0	C
	Westbound	40.1	D	39.2	D	36.7	D
	Northbound	2.4	A	2.4	A	2.8	A
	Southbound	8.4	A	8.7	A	8.7	A
C Street & 20th Street NW	Westbound	4.4	A	3.0	A	5.1	A
	Northbound	9.9	A	10.3	B	10.4	B
C Street & Virginia Avenue NW	**Overall**	**13.2**	**B**	**13.7**	**B**	**14.9**	**B**
	Eastbound	35.0	D	35.0	C	34.0	C
	Southeastbound	30.4	C	30.6	C	31.3	C
	Northwestbound	2.9	A	3.0	A	2.8	A
C Street, Virginia Avenue & 19th Street NW	**Overall**	**24.3**	**C**	**24.2**	**C**	**31.9**	**C**
	Westbound	49.2	D	49.2	D	49.2	D
	Southbound	30.5	C	30.6	C	30.9	C
	Southeastbound	6.0	A	5.5	A	7.9	A
	Northwestbound	25.7	C	25.8	C	45.2	D
Constitution Avenue & 21st Street NW	**Overall**	**14.7**	**B**	**15.7**	**B**	**16.1**	**B**
	Eastbound	14.7	B	15.0	B	15.6	B
	Westbound	10.7	B	10.9	B	11.2	B
	Southbound	34.7	C	44.1	D	44.5	D
Constitution Avenue & 20th Street NW	**Overall**	**5.9**	**A**	**6.2**	**A**	**6.4**	**A**
	Eastbound	2.6	A	2.9	A	3.1	A
	Westbound	16.0	B	16.3	B	16.2	B
	Southbound	31.9	C	29.2	C	26.6	C
Constitution Avenue & 19th Street NW	**Overall**	**6.2**	**A**	**6.3**	**A**	**7.0**	**A**
	Eastbound	1.3	A	1.3	A	1.6	A
	Westbound	7.2	A	7.2	A	7.2	A
	Southbound	27.9	C	27.8	C	31.7	C
21st Street NW & Eccles Building Western Driveway	Westbound	0.0	A	0.0	A	*Driveway Removed in Scenario*	
20th Street NW & Eccles Building Eastern Driveway	Eastbound	8.8	A	8.8	A	*Driveway Removed in Scenario*	
	Northbound	0.2	A	0.2	A		
20th Street NW & 1951 Building Western Driveway	Westbound	*For Future Use*				9.2	A
	Southbound	0.0	A	0.0	A	0.0	A
19th Street NW & 1951 Building Eastern Driveway	Eastbound	*HCM cannot analyze intersection configuration due to the number of southbound approach lanes.*					

Table 9: LOS Results, PM Peak Hour

Intersection	Approach	Existing Conditions (2019)		Background Conditions (2022)		Total Future Conditions (2022)	
		PM Peak Hour		*PM Peak Hour*		*PM Peak Hour*	
		Delay	LOS	Delay	LOS	Delay	LOS
C Street & 21st Street NW	**Overall**	**10.3**	**B**	**14.4**	**B**	**14.3**	**B**
	Eastbound	31.4	C	31.4	C	31.4	C
	Westbound	45.0	D	46.5	D	46.2	D
	Northbound	4.3	A	5.8	A	5.8	A
	Southbound	7.4	A	10.8	B	10.8	B
C Street & 20th Street NW	Westbound	7.1	A	6.6	A	6.6	A
	Northbound	11.3	B	12.1	B	11.8	B
C Street & Virginia Avenue NW	**Overall**	**30.8**	**C**	**32.6**	**C**	**33.3**	**C**
	Eastbound	39.0	D	39.1	D	42.9	D
	Southeastbound	42.8	D	45.3	D	45.8	D
	Northwestbound	12.0	B	12.1	B	11.8	B
C Street, Virginia Avenue & 19th Street NW	**Overall**	**30.8**	**C**	**30.6**	**C**	**31.4**	**C**
	Westbound	47.9	D	47.9	D	47.9	D
	Southbound	36.5	D	36.6	D	36.6	D
	Southeastbound	21.7	C	20.9	C	23.0	C
	Northwestbound	25.0	C	25.0	C	26.7	C
Constitution Avenue & 21st Street NW	**Overall**	**74.3**	**E**	**78.7**	**E**	**82.6**	**F**
	Eastbound	10.9	B	10.9	B	10.9	B
	Westbound	32.3	C	33.4	C	41.1	D
	Southbound	277.7	F	290.2	F	290.5	F
Constitution Avenue & 20th Street NW	**Overall**	**16.1**	**B**	**16.3**	**B**	**16.6**	**B**
	Eastbound	4.1	A	4.4	A	4.5	A
	Westbound	19.2	B	19.6	B	19.6	B
	Southbound	38.6	D	36.8	D	31.9	C
Constitution Avenue & 19th Street NW	**Overall**	**14.6**	**B**	**14.6**	**B**	**15.1**	**B**
	Eastbound	11.0	B	11.0	B	13.0	B
	Westbound	21.2	C	21.2	C	21.2	C
	Southbound	11.8	B	11.8	B	12.0	B
21st Street NW & Eccles Building Western Driveway	Westbound	0.0	A	0.0	A	*Driveway Removed in Scenario*	
20th Street NW & Eccles Building Eastern Driveway	Eastbound	10.5	B	10.5	B	*Driveway Removed in Scenario*	
	Northbound	0.0	A	0.0	A		
20th Street NW & 1951 Building Western Driveway	Westbound	*For Future Use*				11.2	B
	Southbound	0.0	A	0.0	A	0.0	A
19th Street NW & 1951 Building Eastern Driveway	Eastbound	*HCM cannot analyze intersection configuration due to the number of southbound approach lanes.*					

Table 10: Queueing Results (in feet), AM Peak Hour

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2019)		Background Conditions (2022)		Total Future Conditions (2022)	
			AM Peak Hour		*AM Peak Hour*		*AM Peak Hour*	
			50th %	95th %	50th %	95th %	50th %	95th %
C Street & 21st Street NW	Eastbound T	500	2	10	2	10	2	10
	Westbound L	410	7	m20	--	--	--	--
	Westbound T	410	6	m17	32	70	32	71
	Northbound L/T	385	3	m4	4	m7	5	m7
	Northbound R	385	1	m3	--	--	--	--
	Southbound L	60	8	20	10	23	10	23
	Southbound T	550	43	71	46	77	46	77
	Southbound R	550	0	7	--	--	--	--
C Street & 20th Street NW	Westbound LT	180	--	1	--	1	--	1
	Northbound L/LR	370	--	4	--	6	--	9
	Northbound R	370	--	--	--	--	--	--
C Street & Virginia Avenue NW	Eastbound L	180	62	107	65	112	70	120
	Eastbound R	180	2	16	3	17	6	22
	Southeastbound T	320	70	92	76	98	91	115
	Northwestbound T	85	17	20	17	20	17	m20
C Street, Virginia Avenue & 19th Street NW	Westbound R	350	55	85	55	85	55	85
	Southbound T	550	64	82	66	84	72	90
	Southeastbound T	85	6	10	5	8	9	14
	Southeastbound R	85	8	65	12	64	43	85
	Northwestbound T	400	184	224	185	225	261	#352
Constitution Avenue & 21st Street NW	Eastbound T	285	322	366	329	374	334	381
	Westbound T	410	84	101	85	103	85	104
	Southbound L/LR	385	70	139	95	175	97	176
	Southbound R	385	--	--	--	--	--	--
Constitution Avenue & 20th Street NW	Eastbound T	410	19	19	21	23	24	23
	Westbound T	300	76	91	77	92	76	91
	Southbound L	375	5	m15	7	m21	15	m39
	Southbound R	375	1	m13	3	m17	2	m20
Constitution Avenue & 19th Street NW	Eastbound T	300	7	7	7	7	13	13
	Westbound T	410	53	67	54	68	54	68
	Southbound L	365	123	160	127	164	129	m165
	Southbound R	365	8	25	4	14	5	m15
21st Street NW & Eccles Building Western Driveway	Westbound LR	75	--	0	--	0	*Driveway Removed in Scenario*	
	Northbound T	255	--	0	--	0		
	Southbound T	100	--	0	--	0		
20th Street NW & Eccles Building Eastern Driveway	Eastbound LR	125	--	0	--	0	*Driveway Removed in Scenario*	
	Northbound T	250	--	0	--	0		
	Southbound T	100	--	0	--	0		
20th Street NW & 1951 Building Exit Driveway	Westbound	50	*For Future Use*				--	3
	Northbound	295	--	0	--	0	--	0
	Southbound	40	--	0	--	0	--	0
19th Street NW & 1951 Building Entrance Driveway	Eastbound R	50	*HCM cannot analyze intersection due to the number of southbound approach lanes*					
	Southbound T	40						

m = Volume for 95th percentile queue is metered by upstream signal

 # = 95th percentile volume exceeds capacity, queue may be longer

~ = Volume exceeds capacity, queue is theoretically infinite

Table 11: Queueing Results (in feet), PM Peak Hour

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2019)		Background Conditions (2022)		Total Future Conditions (2022)	
			PM Peak Hour		*PM Peak Hour*		*PM Peak Hour*	
			50th %	95th %	50th %	95th %	50th %	95th %
C Street & 21st Street NW	Eastbound T	500	12	36	12	36	12	36
	Westbound L	410	31	m61	--	--	--	--
	Westbound T	410	2	m3	51	m90	51	m90
	Northbound L/T	385	0	m0	0	m0	0	m0
	Northbound R	385	0	m0	--	--	--	--
	Southbound L	60	23	42	29	51	29	51
	Southbound T	550	86	112	216	307	216	307
	Southbound R	550	0	0	--	--	--	--
C Street & 20th Street NW	Westbound LT	180	--	13	--	14	--	14
	Northbound L/LR	370	--	3	--	5	--	5
	Northbound R	370	--	7	--	7	--	13
C Street & Virginia Avenue NW	Eastbound L	180	75	127	83	137	109	171
	Eastbound R	180	0	27	0	28	0	29
	Southeastbound T	320	234	265	254	287	259	292
	Northwestbound T	85	72	83	73	85	73	85
C Street, Virginia Avenue & 19th Street NW	Westbound R	350	43	75	43	75	43	75
	Southbound T	550	259	305	260	306	261	307
	Southeastbound T	85	9	14	10	m15	11	m15
	Southeastbound R	85	253	m#451	254	m#396	~264	m#403
	Northwestbound T	400	95	134	95	134	105	150
Constitution Avenue & 21st Street NW	Eastbound T	285	77	95	77	96	78	96
	Westbound T	410	~531	#833	~539	m#835	~739	m869
	Southbound L/LR	385	33	68	39	m73	40	m72
	Southbound R	385	~609	#836	~637	#862	~638	#803
Constitution Avenue & 20th Street NW	Eastbound T	410	22	26	24	29	24	29
	Westbound T	300	522	#612	527	#622	527	#622
	Southbound L	375	25	m49	26	m49	88	145
	Southbound R	375	71	m137	71	m133	77	m157
Constitution Avenue & 19th Street NW	Eastbound T	300	48	57	48	57	71	82
	Westbound T	410	187	222	189	223	189	223
	Southbound L	365	160	m237	161	m239	164	m240
	Southbound R	365	47	m100	47	m100	49	m102
21st Street NW & Eccles Building Western Driveway	Westbound LR	75	--	0	--	0	*Driveway*	
	Northbound T	255	--	0	--	0	*Removed in*	
	Southbound T	100	--	0	--	0	*Scenario*	
20th Street NW & Eccles Building Eastern Driveway	Eastbound LR	125	--	0	--	0	*Driveway*	
	Northbound T	250	--	0	--	0	*Removed in*	
	Southbound T	100	--	0	--	0	*Scenario*	
20th Street NW & 1951 Building Exit Driveway	Westbound	50	*For Future Use*				--	25
	Northbound	295	--	0	--	0	--	0
	Southbound	40	--	0	--	0	--	0
19th Street NW & 1951 Building Entrance Driveway	Eastbound R	50	*HCM cannot analyze intersection due to the number of*					
	Southbound T	40	*southbound approach lanes*					

m = Volume for 95th percentile queue is metered by upstream signal

 # = 95th percentile volume exceeds capacity, queue may be longer

~ = Volume exceeds capacity, queue is theoretically infinite

TRANSIT

This section discusses the existing and proposed transit facilities in the vicinity of the Site, accessibility to transit, and evaluates the overall transit impacts of the project.

The following conclusions are reached within this chapter:

- The Site has good access to transit.
- The Site is located 0.7 miles (a 15-minute walk) from the Farragut West and Foggy Bottom-GWU Metrorail stations.
- The Site is adjacent to several local and regional bus lines.
- The Site offers shuttle bus service to employees to nearby Federal Reserve Board (FRB) offices and Metrorail stations.
- The Site is expected to generate a manageable number of transit trips and the existing service is capable of handling these new trips.

EXISTING TRANSIT SERVICE

The Site is well served by Metrobus, DC Circulation, Regional Buses, and is within walking distance of Metrorail. Combined, these transit services provide local, city wide, and regional transit connections and link the Site with major cultural, residential, and commercial destinations throughout the region. Figure 21 identifies the major transit routes, stations, and stops in the study area.

The Site is located approximately 0.7 miles (an approximately 15-minute walk) from the Farragut West and Foggy Bottom-GWU Metrorail stations (served by the Blue, Orange, and Silver Lines). The Blue Line connects the City of Alexandria with Largo, Maryland while providing access to the District core. The Orange Line provides service from Vienna in Fairfax County, VA to New Carrollton in Prince George's County, MD. The Silver Line provides service from Reston in Fairfax County, VA to Largo, Maryland. Blue, Orange, and Silver Line trains run every eight minutes during the weekday morning and afternoon peak hours between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM, approximately every 12 minutes during the weekday midday hours from 9:30 AM to 3:00 PM, approximately every 12 minutes during the weekday evening hours from 7:00 PM to 9:30 PM, and every 12 to 20 minutes during the weekday off-peak periods and on weekends. A transfer to the Red Line can be made at Metro Center, which provides access to Union Station, where transfers can be made to MARC, VRE, DC Streetcar, and Amtrak services.

The nearest buses servicing the Site are along Constitution Avenue and 20th Street, which is located adjacent to each building. Three (3) routes are available here (7Y, H1, and L1). Additional buses servicing the Site area are available along Virginia Avenue, 19th Street and 18th Street. The bus lines available within a quarter-mile walk provide supplemental service to nearby Metro Stations and connectivity to the other areas of the District, Maryland, and Virginia.

PLANNED TRANSIT SERVICE

MoveDC

The MoveDC report outlines recommendations by mode with the goal of having them complete by 2040. The plan hopes to achieve a transportation system for the District that includes:

- 70 miles of high-capacity transit (streetcar or bus)
- 200 miles of on-street bicycle facilities or trails
- Sidewalks on at least one side of every street
- New street connections
- Road management/pricing in key corridors and the Central Employment Area
- A new downtown Metrorail loop
- Expanded commuter rail
- Water taxis

As part of the 2-year outline plan, the MoveDC report outlines the need for a high frequency local & regional bus corridor along Constitution Avenue. This recommendation has been realized as the National Mall route on the DC Circulator route, creating additional multi-modal capacity and connectivity to the Site.

WMATA and DDOT Transit Studies

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008).* The study analyzed the capacity of Metrorail stations for their vertical transportation, the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at fare card gates. For both analyses, vertical transportation and fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, the Farragut West and Foggy-Bottom

GWU stations can currently accommodate future growth for vertical transportation but require further study for processing riders at fare gates.

WMATA has also studied capacity along Metrobus routes. DC's *Transit Future System Plan* (2010) lists the bus routes with the highest load factor (a ratio of passenger volume to bus capacity). A load factor is considered unacceptable if it is over 1.2 during peak periods or over 1.0 during off-peak or weekend periods. According to this study, the X1, 32, and 36 Metrobus routes that travel near the Site operate at a load factor that is above capacity (1.2) during peak hours.

Per conversations with DDOT during the scoping process, bus route changes are expected within the next three (3) years that will coincide with the construction of the K Street Transitway and future WMATA system improvements. Any potential route changes will maintain or improve the existing level of service and coverage.

Shuttle Service

Under existing conditions, the Federal Reserve Board (FRB) operates a shuttle between its different offices across Washington, DC., including the Farragut West Metrorail Station. There are three (3) routes which the FRB provides for employees and guests:

- Blue Shuttle: Connecting the ISQ Building (at 1850 K Street) with the NYA Building (at 1709 New York Avenue).
- Green Shuttle: Connecting the Eccles Building with the NYA Building.
- Yellow Shuttle (Connecting the Eccles Building with the ISQ Building.

Headways for all three (3) routes operate every 10-15 minutes from approximately 6:15 AM to 7:40 PM, providing employees with a convenient option.

Under the proposed development plan, existing FRB employees will be relocated to the Eccles and 1951 Buildings. It is recommended to keep running the shuttle service to the Farragut West Metrorail station. Ridership figures from FRB indicate that between 20 and 50 employees use the shuttle to the Eccles Building hourly. A map of the FRB Shuttles is presented in Figure 22.

SITE IMPACTS

Transit Trip Generation

The renovation and expansion of the Eccles and 1951 Buildings is projected to generate 630 transit trips (541 inbound, 89 outbound) during the morning peak hour and 625 transit trips (100 inbound, 525 outbound) during the afternoon peak hour.

US Census data was used to determine the distribution of those taking Metrorail and those taking Metrobus. The Site lies in TAZ 10034 and data shows that approximately 71 percent of transit riders used rail and the remainder use bus. The usage of public transit is complemented by the FRB shuttles which are planned to remain following the consolidation of buildings.

The development is expected to generate a significant number of transit trips. It should be noted these transit trips are already on the transit network as the employees are being relocated from other nearby facilities and are not new transit trips to the network.

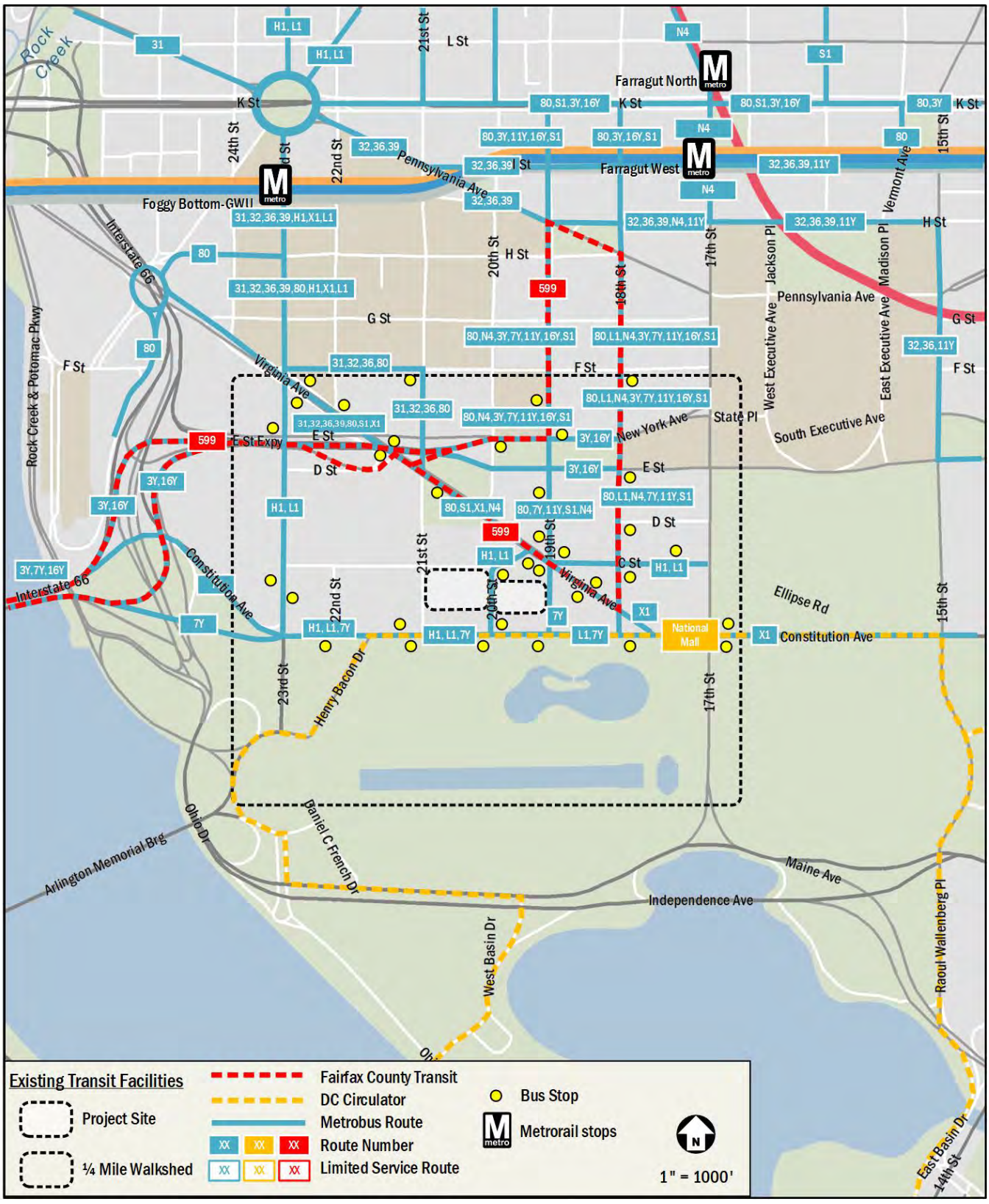

Figure 21: Existing Transit Facilities

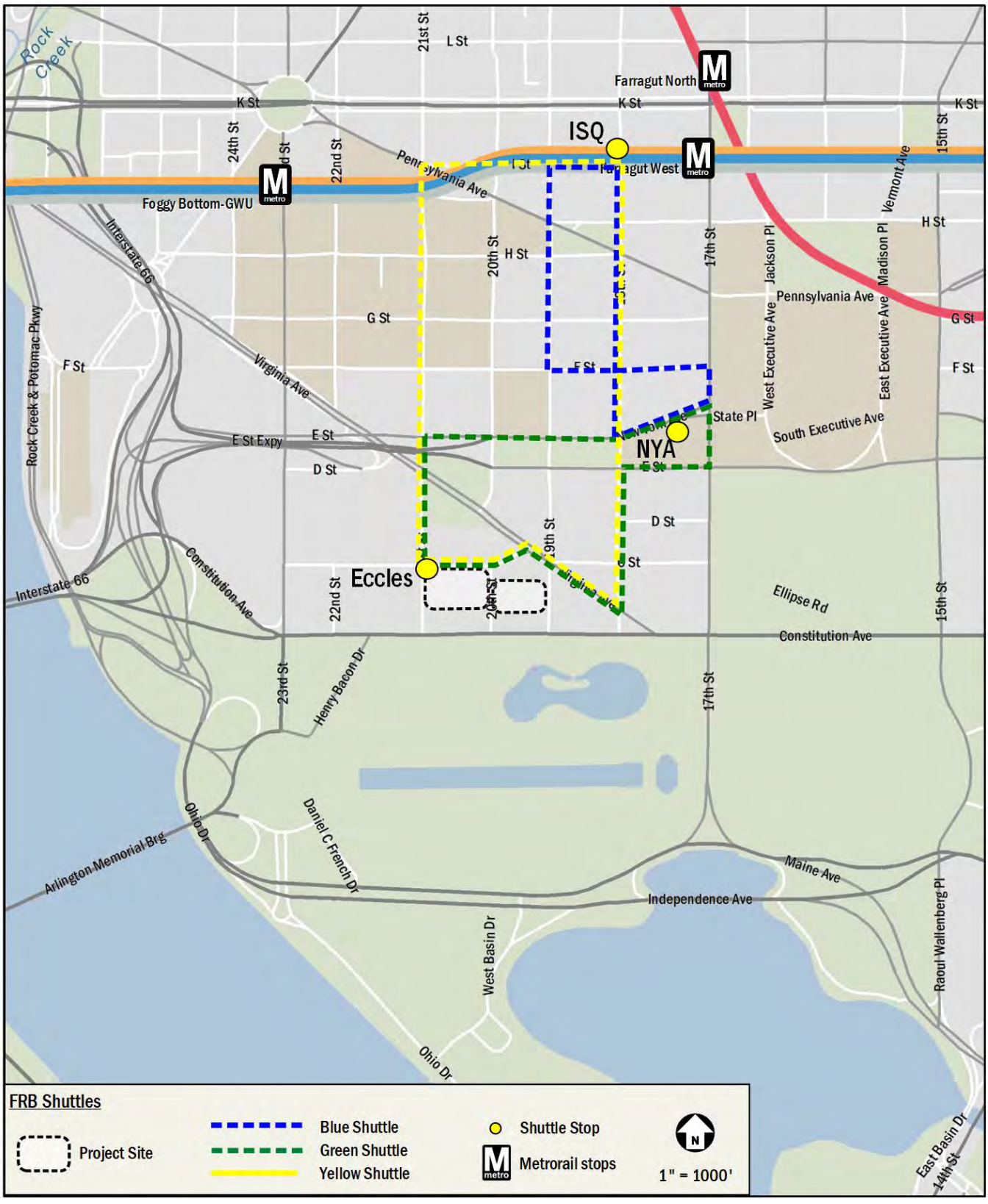

Figure 22: FRB Shuttle Service

PEDESTRIAN FACILITIES

This section summarizes the existing and future pedestrian access to the Site and reviews walking routes to and from the Site.

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the Site provides a good walking environment. There are sidewalks along one or both sides of the roadways within the study area.
- Although there are sidewalks which do not meet DDOT standards, this is due to narrow or missing buffer lengths rather than the quality of the sidewalk.
- The Site is expected to generate a manageable number of pedestrian trips; however, the pedestrian trips generated by walking to and from the nearby transit facilities will be more substantial.
- The construction of a mid-block crossing on 20th Street will help facilitate pedestrian movements between the Eccles and 1951 Buildings.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the Site were evaluated as well as at the study intersections. The Site is accessible to transit options such as the bus stops along Constitution Avenue and Virginia Avenue. There are existing sidewalks on one or both sides of the roadways within the study area. Within the direct vicinity of the Site, roadways are classified as Commercial. In general, while most sidewalks are present within the quarter-mile walkshed, sidewalks do not meet minimum sidewalk or buffer widths. These few shortcomings do not overall affect the quality or attractiveness of the walking environment within the study area.

No study area roadways along primary walking routes present a challenge for pedestrians by limiting connectivity. Sidewalks are not present in the vicinity of the E Street Expressway approach roadways northwest of the Site. These streets are not considered primary walking routes, however, and pedestrians may reach nearby destinations with sidewalks including along the National Mall.

Figure 23 shows a detailed inventory of the existing pedestrian infrastructure surrounding the Site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's Design and Engineering Manual (2019) in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 12.

Within the area shown, roadways are classified as principal and minor arterials with collectors and local streets. Sidewalks surrounding the Site generally comply with DDOT standards, with deficiencies due to narrow or missing buffer widths.

ADA standards require that curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks are not desired. As shown in Figure 23, under existing conditions, curb ramps are generally present along nearby streets. Crosswalks are present at all study intersections and there is significant pedestrian activity at each existing intersection, particularly along Constitution Avenue, as seen in Figure 24.

SITE IMPACTS

Pedestrian Trip Generation

The renovation and expansion of the Eccles and 1951 Buildings is expected to generate 71 walking trips (61 inbound, 10 outbound) during the morning peak hour and 70 walking trips (12 inbound, 58 outbound) during the afternoon peak hour. The origins and destinations of these trips are likely to be:

- The location of employees' residence;
- Retail locations outside of the Site; and
- Neighborhood destinations such as schools, libraries, and parks in the vicinity of the Site.

Additional pedestrian trips are expected from the nearby transit facilities (Metrorail and Metrobus). The pedestrian

Table 12: Sidewalk Requirements

Street Type	Minimum Sidewalk Width	Minimum Buffer Width
Residential (Low to Moderate Density)	6 ft	4 ft (6 ft preferred for tree space)
Residential (High Density)	6 ft	4 ft (6 ft preferred for tree space)
Commercial	10 ft	4 ft
Downtown	16 ft	6 ft

network will have the capacity to absorb the relocated pedestrian trips to the consolidated campus.

As part of the renovation and expansion plans, a mid-block crossing is proposed on 20th Street between the Eccles and 1951 Buildings. This crossing will provide additional circulation between the buildings in addition to the underground tunnel.

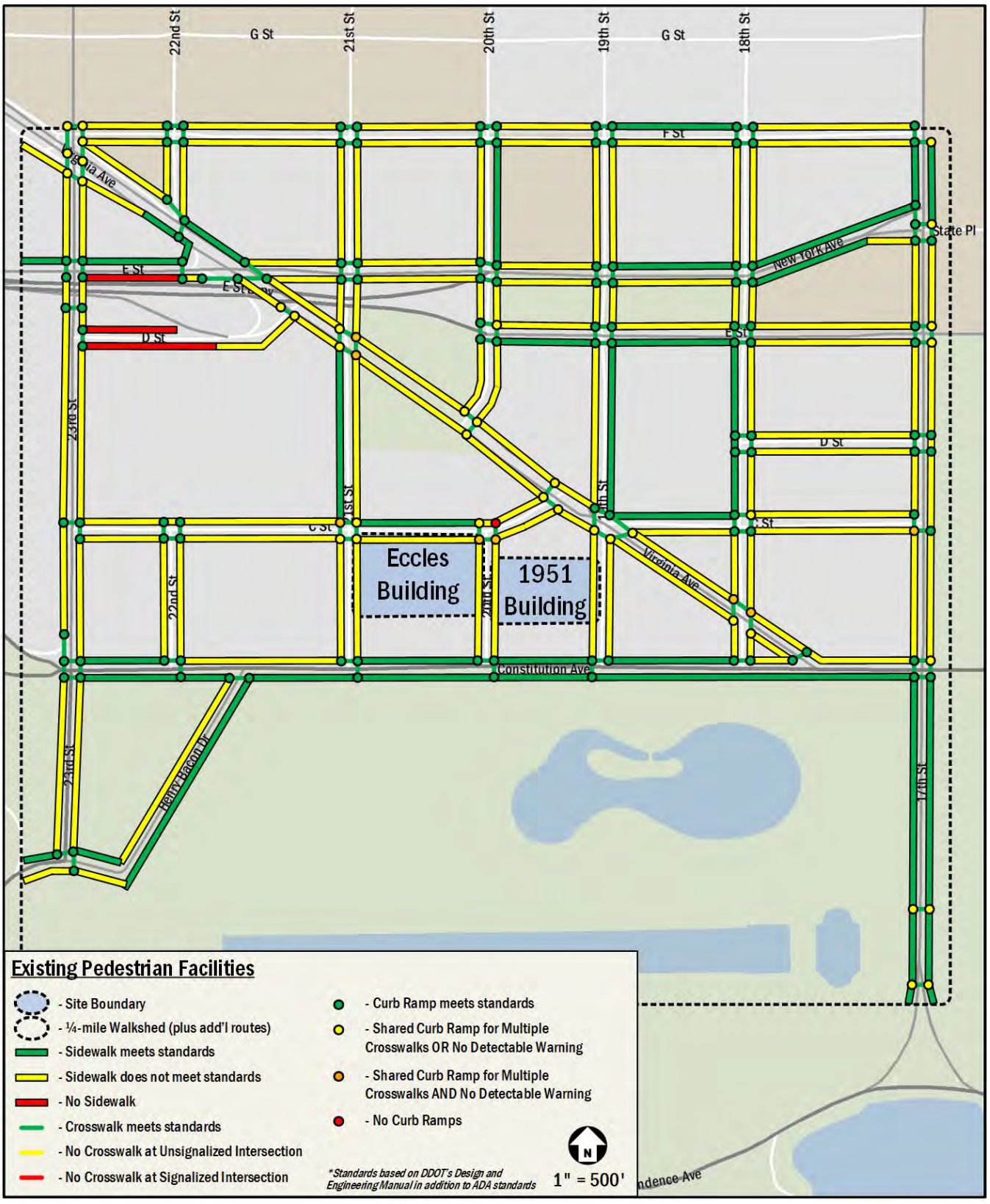

Figure 23: Existing Pedestrian Facilities

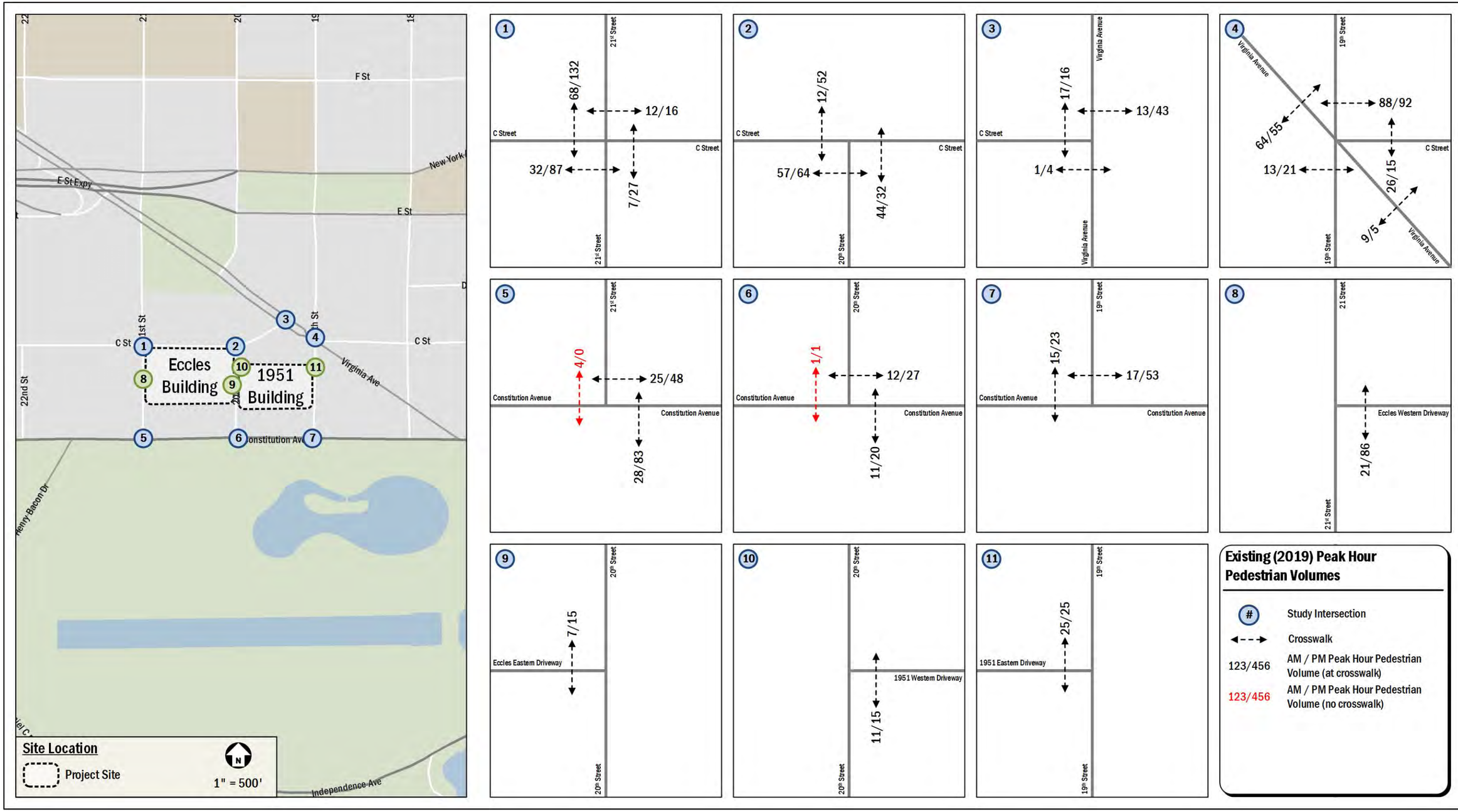

Figure 24: Existing Peak Hour Pedestrian Volumes

BICYCLE FACILITIES

This section summarizes existing and future bicycle access, reviews the quality of cycling routes to and from the Site, and presents recommendations.

The following conclusions are reached within this chapter:

- The Site has direct access to nearby bicycle facilities including trails along the National Mall.
- The project is expected to generate a manageable number of bicycle trips; therefore, all site-generated bike trips can be accommodated on existing infrastructure.
- Future plans in the vicinity of the Site include cycle tracks along 21st Street, providing north-south connectivity.
- The development will include secure long-term bicycle parking within the 1951 Building garage and adjacent Martin Building
- The development will include short-term bicycle racks along the frontage of each building.

EXISTING BICYCLE FACILITIES

The Site has east-west connectivity to existing on- and off-street bicycle facilities. Just south of the site across Constitution Avenues lies the National Mall, where east-west bicycle trails are present. Users of the trail can connect to the Rock Creek Trail and C & O Canal Trail to the west and connect to the Metropolitan Branch Trail to the east. The Rock Creek and C & O Canal Trails provide north-south connectivity to communities west of the site and the Metropolitan Branch trail provides north-south connectivity to communities east of the site. Additional connectivity is achieved through signed routes on Virginia Avenue.

Currently, short-term bicycle racks are installed adjacent to the Eccles Building.

In addition to personal bicycles, the Capital Bikeshare program provides additional cycling options for residents, employees, and patrons of the planned development. The Bikeshare program has placed over 500 Bikeshare stations across Washington, DC, Arlington, and Alexandria, VA, Montgomery County, MD, and most recently Fairfax County, VA, with 4,300 bicycles provided. There are two (2) existing Capital Bikeshare along Site frontage. The stations are located at 21st Street near Constitution Avenue (west frontage of Eccles Building with 15 available bicycle docks) and 19th Street near Constitution Avenue (east frontage of 1951 Building with 35 available bicycle docks).

Figure 25 illustrates the existing bicycle facilities in the study area.

PLANNED BICYCLE FACILITIES

As part of the MoveDC plan, a north-south cycle track is planned to connect Dupont Circle with the National Mall. The preferred alternative is to install a cycle track running down 20th Street from Connecticut Avenue to F Street. This will run concurrent with a cycle track on 21st Street from G Street to Constitution Avenue, near the site. These two cycle tracks will be connected by a pair of one-way protected bike lanes on F Street and G Street.

The cycle track is projected to be complete by 2021, creating additional multimodal capacity and connectivity to the Site area. These future improvements will allow for better north-south connectivity.

On-Site Bicycle Elements

Long-term spaces bicycle parking spaces will be provided within the 1951 Building garage. Up to 154 long-term spaces within a secure room are proposed for the 1951 Building. Additional amenities, including a maintenance station and charging ports for e-bikes are also proposed. Employees will have direct access to the fitness center and shower facilities.

125 long-term spaces are also available at the recently renovated Martin Building, located immediately north of the Eccles Building. A pedestrian tunnel will connect the two buildings beyond the security checkpoint, providing bicycle commuters an additional option.

The short-term spaces will be placed curbside along the 21st Street and 19th Street frontages of the Eccles and 1951 Buildings, respectively and will be of the inverted U-rack variety.

SITE IMPACTS

Bicycle Trip Generation

The renovation and expansion of the Eccles and 1951 Buildings is expected to generate 20 bicycle trips (18 inbound, 2 outbound) during the morning peak hour and 20 bicycle trips (4

inbound, 16 outbound) during the afternoon peak hour. As the bicycle trip generation indicates, bicycling to/from the Site will be of minimal impact, and the existing and planned bicycle facilities can absorb this impact.

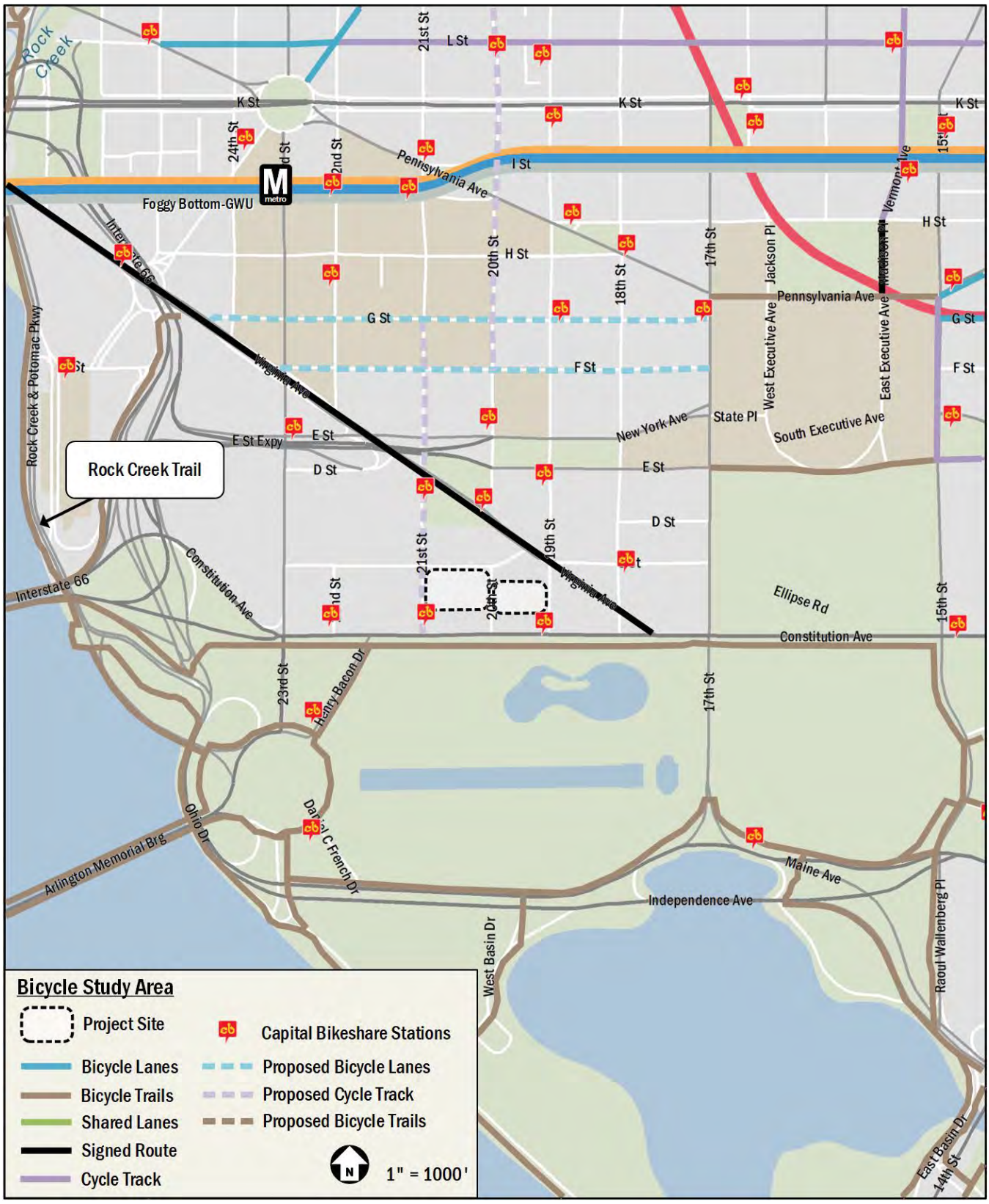

Figure 25: Existing and Proposed Bicycle Facilities

SAFETY ANALYSIS

This qualitatively reviews any vehicle, pedestrian, or bicycle conflicts at the study area intersections or street links within the study area. This review includes identifying any intersections within the study area that have been identified by DDOT as high crash locations.

SUMMARY OF SAFETY ANALYSIS

A safety analysis was performed to determine if there are any study area intersections that pose any obvious conflicts with vehicles, pedestrians, or bicyclists. Data to determine this included DDOT's most recent *Traffic Safety Statistics Report (2015-2017)* and *Vision Zero Action Plan*. Based on observations and familiarity with the area, no study area intersections were included in the report; therefore, not identified to be studied further in this report.

POTENTIAL IMPACTS—MID-BLOCK CROSSWALK

This section reviews the impacts of the proposed mid-block crosswalk across 20th Street that will connect the Eccles and 1951 Buildings. The mid-block crossing may pose potential conflicts to vehicles, pedestrians, or bicyclists; however, mitigation measures are being evaluated to reduce potential conflicts.

20th Street & 1951 Western Driveway

Under Total Future Conditions, the location of the garage exit will be located just south of the proposed crosswalk. Although a majority of site-generated traffic leaves via southbound 20th Street and does not interfere with the crosswalk, existing traffic along southbound 20th Street will need to yield for pedestrians or bicyclists who use the crosswalk. The number of vehicles which travel across the proposed crosswalk are more prevalent in the afternoon peak hour, with approximately 205 vehicles driving in the southbound direction and 76 vehicles driving in the northbound direction.

In the design and operation of the mid-block crosswalk, the guard booth was located adjacent to the parking garage ramp and mid-block crosswalk to control the interaction of pedestrian, vehicular, and bicycle traffic. The guard will only allow vehicles out of the garage when the area is free of pedestrians and bicycles.

As the capacity analyses show, the study area intersections along 20th Street between C Street and Constitution Avenue perform at acceptable conditions for all study scenarios, including Total Future Conditions. Capacity is available along 20th Street to accommodate the mid-block crosswalk.

It is anticipated that the majority of employees, visitors, and guests of the FRB will use the underground tunnel to cross between buildings, as the tunnel is within the secure area. The proposed crosswalk will allow a secondary option.

SUMMARY AND CONCLUSIONS

The purpose of this study is to evaluate whether the project will generate a detrimental impact on the surrounding transportation network. This report concludes that **the project will not have a detrimental impact** on the surrounding transportation network assuming that all planned site design elements are implemented.

Proposed Project

The Marriner S. Eccles Building is located at 2051 Constitution Avenue and the 1951 Building is located at 1951 Constitution Avenue. Both buildings are located in the Northwest quadrant of the Washington, DC and are separated by 20th Street. The two (2) buildings are bordered by 21st Street to the west, 19th Street to the east, C Street to the north, and Constitution Avenue to the south.

The proposed modifications to the two buildings include the following:

- The expansion of the Eccles Building will result in an additional 120,000 square feet of space and an additional 146 employee seats, totaling 776 employee seats within the building.
- The renovations of the vacant 1951 Building will result in up to 270,000 square feet in additional space, adding up to 962 employee seats.
- Combined, the two (2) buildings will house up to 1,750 seats for employees, guests, and visitors.

The renovation and expansion plans evaluated three (3) concept design options. This study evaluated the preferred alternative which is also the most conservative as it assumes the greatest number of seats accommodated between the two (2) buildings, generating the greatest impact to the surrounding roadway network. The renovation and expansion of the two (2) buildings will allow the Federal Reserve Board (FRB) to consolidate their locations within Washington, D.C. to a central area.

Existing vehicle access to the Eccles building is along 20th Street, leading to an inner courtyard and provides access to the parking garage, with 29 spaces. Loading facilities are located in the east courtyard, accessible from 20th Street only. The proposed plan will remove parking from the Eccles building and convert it to office space. All parking and loading operations will take place from the 1951 Building.

Existing vehicle access to the 1951 building is from 20th Street and vehicles exit onto 19th Street. Currently, 60 spaces exist on a surface parking lot in the rear of the building.

The renovation and expansion plans will reverse access, with entry from 19th Street and exit from 20th Street. The surface spaces will be removed with up to 318 spaces underneath the south lawn of the 1951 Building to serve both buildings. Loading facilities for both buildings will be provided in the 1951 Building, adjacent to the garage entrance on 19th Street.

Multi-Modal Impacts and Recommendations

Transit

The Site is served by regional and local transit services via Metrobus, Regional Buses, and Metrorail. The Site is located approximately 0.7 miles from the Foggy Bottom-GWU and Farragut West Metrorail stations. Several bus lines stop within a block of the buildings, including lines along Constitution Avenue and Virginia Avenue. An employee shuttle provides service to and from the Farragut North and Farragut West Metrorail stations, in addition to other federal buildings.

Although the development will be generating new transit trips, existing facilities have enough capacity to accommodate the new trips.

Pedestrian

The Site is surrounded by a well-connected pedestrian network with excellent pedestrian access and circulation facilities. Most roadways within a quarter-mile radius provide sidewalks and curb ramps, particularly along the primary walking routes, such as Constitution Avenue (towards the National Mall) and 19th Street (towards Farragut West station). Sidewalks that do not meet DDOT standards are due to a lack of minimum buffer width than substandard quality. Significant pedestrian activity was observed during the data collection efforts.

Bicycle

Bicycle infrastructure in the vicinity of the Site is plentiful. The Site is adjacent to bicycle trails that run along the National Mall and Constitution Avenue. These trails provide east-west connectivity to Union Station and the Rock Creek Trail. In addition to bicycle facilities, there are multiple Capital Bikeshare stations in the vicinity of the Site.

On-site bicycle facilities are proposed to remain as part of the renovation and expansion plans. FRB works in close collaboration with the employees' bicycle group. Bicycle facilities will continue to be provided within the 1951 Building garage and will meet the projected demands of the employees.

Vehicular

The Site is accessible from several principal and minor arterials such as Constitution Avenue, Virginia Avenue, and the E Street Expressway, as well as an existing network of collector and local roadways.

In order to determine the potential impacts of the proposed development on the transportation network, this report projects future conditions with and without the renovations/additions and performs analyses of intersection delays and queues. These capacity analysis results were compared to the acceptable levels of delay set by the local transportation jurisdiction (District Department of Transportation) standards, as well as existing queues, to determine if the proposed development will negatively impact the study area.

The vehicular capacity analysis concluded that one (1) study intersection meets the threshold for potential mitigation during the afternoon peak hour. However, given the urban nature of the area and the negligible impact from site-routed trips, this report is recommending no mitigations be considered at this intersection. Constitution Avenue is a heavily traveled commuter route; therefore, signal timing changes would disrupt commuter traffic and not recommended.

Summary and Recommendations

This report concludes that **the proposed development will not have a detrimental impact on the surrounding transportation network assuming that the proposed site design elements and proposed mitigation measures are implemented.**

The development has several positive elements contained within its design that minimize potential transportation impacts, including:

- The Site's close proximity to Metrobus and walking distance to Metrorail
- Nearby pedestrian sidewalks that meet or exceed DDOT and ADA requirements.
- A robust Transportation Demand Management (TDM) plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.