CC2DCA

Connecting People to Places



National Capital Planning Commission
Preliminary Submission
December 2026

ARLINGTON
VIRGINIA

Table of Contents

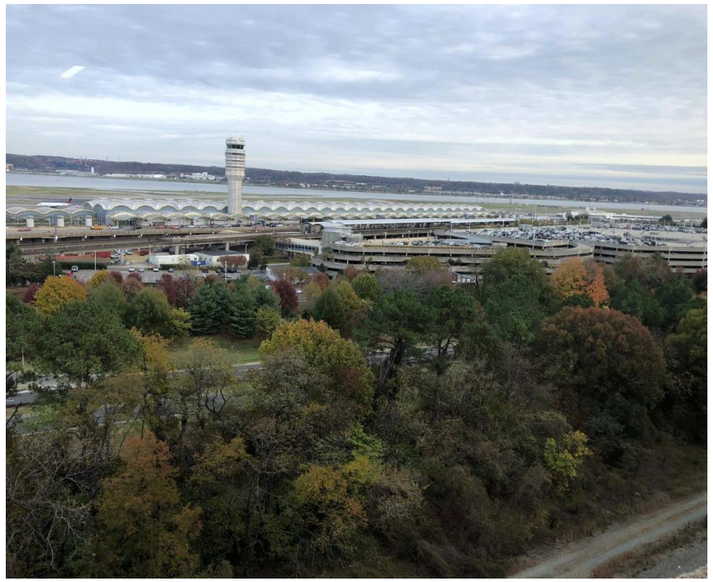
I. Introduction

- Project Background
- Project Area
- Site Plan
- Historic Resources
- Environmental Assessment
- Environmental Review Renderings
- Vegetation Impacts
- Design Alternatives
- Agency and Government Coordination
- Public Outreach

II. Proposed Design

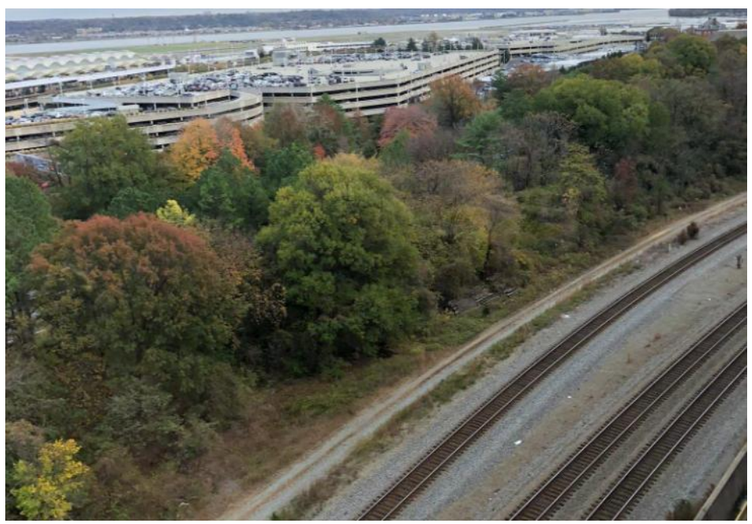
- Overview
- Design Principles
- Bridge Alignment
- Bridge Profile
- Mount Vernon Trail Link
- Structure Type
- Architectural Design
- Canopy Design
- User View
- Viewshed Impacts
- Canopy Material

III. Additional Studies









Introduction | Project Background

The CC2DCA Project is led by Arlington County, a world-class community and tourist destination located just five miles from the heart of the nation's capital. Arlington County is the geographically smallest self-governing county in the U.S., occupying slightly less than 26 square miles. The County has 3,745 permanent employees. Once completed, Arlington County will own and maintain the bridge structure.

In 2010, Arlington County adopted the Crystal City Multimodal Transportation Study. The study made transportation improvement recommendations for the Crystal City area including the construction of a pedestrian and bicycle connection to the airport, setting the basis for the Crystal City to Ronald Reagan Washington National Airport (DCA) Project (CC2DCA). Ultimately, the Project will provide a safe and convenient option to connect people walking, biking, and/or using micromobility devices between the airport, the Mount Vernon Trail (MVT), and Crystal City.

In 2024, Arlington County, the Federal Highway Administration (FHWA), and the Virginia Department of Transportation (VDOT) completed the National Environmental Policy Act of 1969 (NEPA) process. National Park Service (NPS) was a cooperating agency. The Environmental Assessment (EA) states that the Purpose and Need for the Project is to enhance connectivity for non-vehicular travel between Crystal City and DCA to address the following needs:

- **Support Active Transportation Travel Choice**
- **Facilitate Intermodal Connectivity**
- **Advance Goals of Local and Regional Plans**

Additionally, the Purpose and Need stipulates that any selected build alternative would be designed and implemented in a context sensitive manner, especially with consideration to the George Washington Memorial Parkway (GW Parkway).

Arlington County is currently progressing the Preliminary Design Phase with completion of the 30% design anticipated in late 2026. Construction is projected to begin in Fiscal Year 2031 with an anticipated duration of two years. The Project's completed and planned phases include:

- **Preliminary Planning (2017-2019)**
- **Environmental Review (2021-2024)**
- **Preliminary Design (2024-2026)**
- **Final Design and Construction (2027 and beyond)**

The CC2DCA Project is included in Arlington County's adopted FY 2027-2036 Capital Improvement Plan (CIP). The Project has a total funding level of $66.2 million and is currently supported through a combination of federal, state, local, and regional funding from the Northern Virginia Transportation Authority (NVTA).

Additional information on the CC2DCA Project can be found on the Arlington County website at www.CC2DCA.us.

Introduction | Project Area

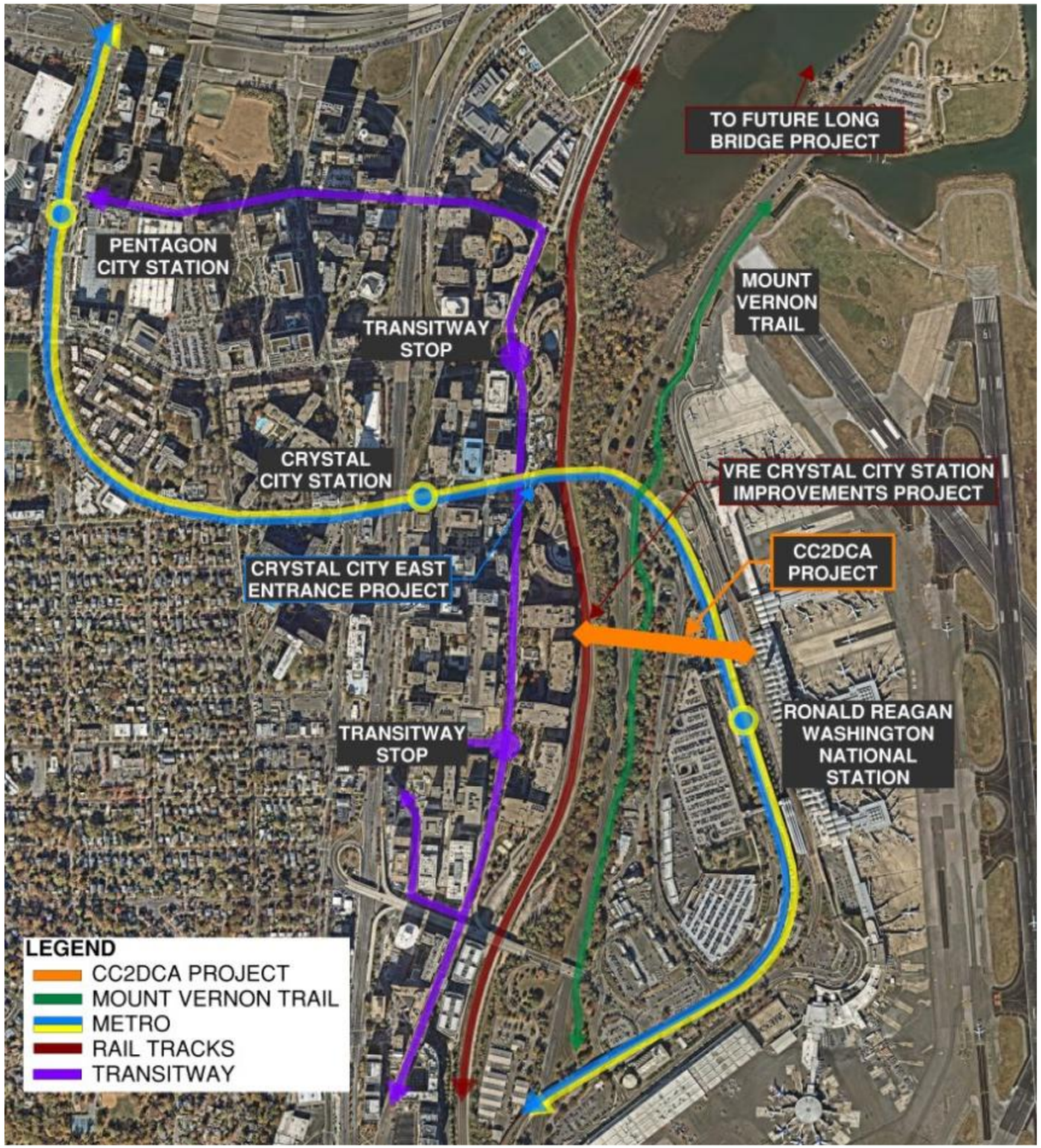
The CC2DCA structure will be open to residents, visitors, and business travelers of all ages and abilities. In addition to a direct connection to a national air travel hub, the Project will also create and enhance multimodal connections between DCA, the relocated Virginia Railway Express (VRE) commuter rail station, and the multi-use Mount Vernon Trail. There are several ongoing adjacent transportation projects in the Crystal City area and several existing transportation connections as listed below.

Adjacent Projects

- VRE Crystal City Station Improvements Project
- NPS MVT Widening
- Virginia Passenger Rail Authority (VPRA) Alexandria Fourth Track Project
- Washington Metropolitan Area Transit Authority (WMATA) Crystal City Metrorail Station East Entrance
- DCA Roadway Network Improvements and Associated Development
- VPRA Long Bridge Project

Transportation Connections

- Ronald Reagan Washington National Airport (DCA)
- Crystal City street network
- WMATA Metrorail Yellow & Blue Lines
- Mount Vernon Trail
- VRE Manassas and Fredericksburg Lines



Connecting People to Places

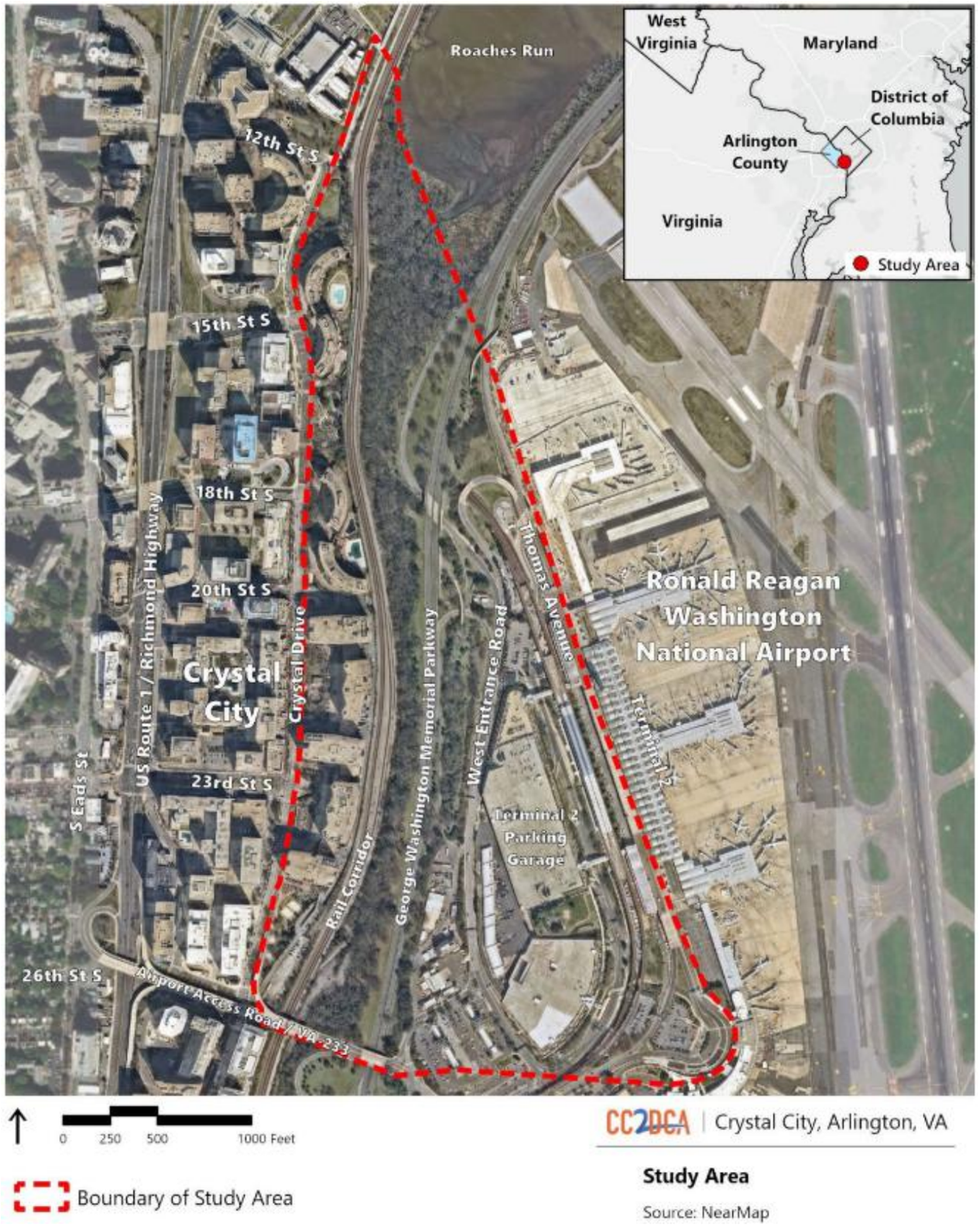
Introduction | Project Area

The study area for CC2DCA is located in Arlington County, Virginia. It is bounded by 6th Street South and Roaches Run to the north, DCA to the east, the Airport Access Road/Route 233 bridge to the south, and Crystal Drive to the west.

The CC2DCA Project area can be divided into four sub-areas with distinct characteristics.

- **Crystal City –** A linear neighborhood of Arlington County consisting of multi-story buildings containing a mix of office, commercial, and residential uses.
- **Railroad Corridor –** The railroad corridor consists of three tracks (planned to be four) and is shared and jointly controlled by VPRA and CSXT.
- **GW Parkway –** The GW Parkway is a unit of NPS and is a scenic parkway extending along the Potomac River from south of Great Falls to Mount Vernon.
- **DCA Airport –** DCA is located to the east of the GW Parkway. Airport facilities included in the study area are managed and maintained by Metropolitan Washington Airports Authority (MWAA) and consist of access roadways (including West Entrance Road, National Avenue, and Thomas Avenue), parking garages, and other landside support facilities.

Arlington County has initiated coordination with five property owners (VPRA, CSXT, NPS, MWAA, and JBG Smith) to develop any agreements or easements required for the Project during construction and post construction.



Introduction | Site Plan



The CC2DCA Project site plan shows the existing conditions of the area surrounding the proposed bridge alignment, shown in orange.

The site plan includes existing roadways, parking lot surfaces, the airport parking garage, the Mount Vernon Trail, existing utilities, existing trees and shrubs, the airport building boundaries, property line boundaries, and other existing site features.

Introduction | Historic Resources

The historic resources impacted by the project are listed below along with their designation:

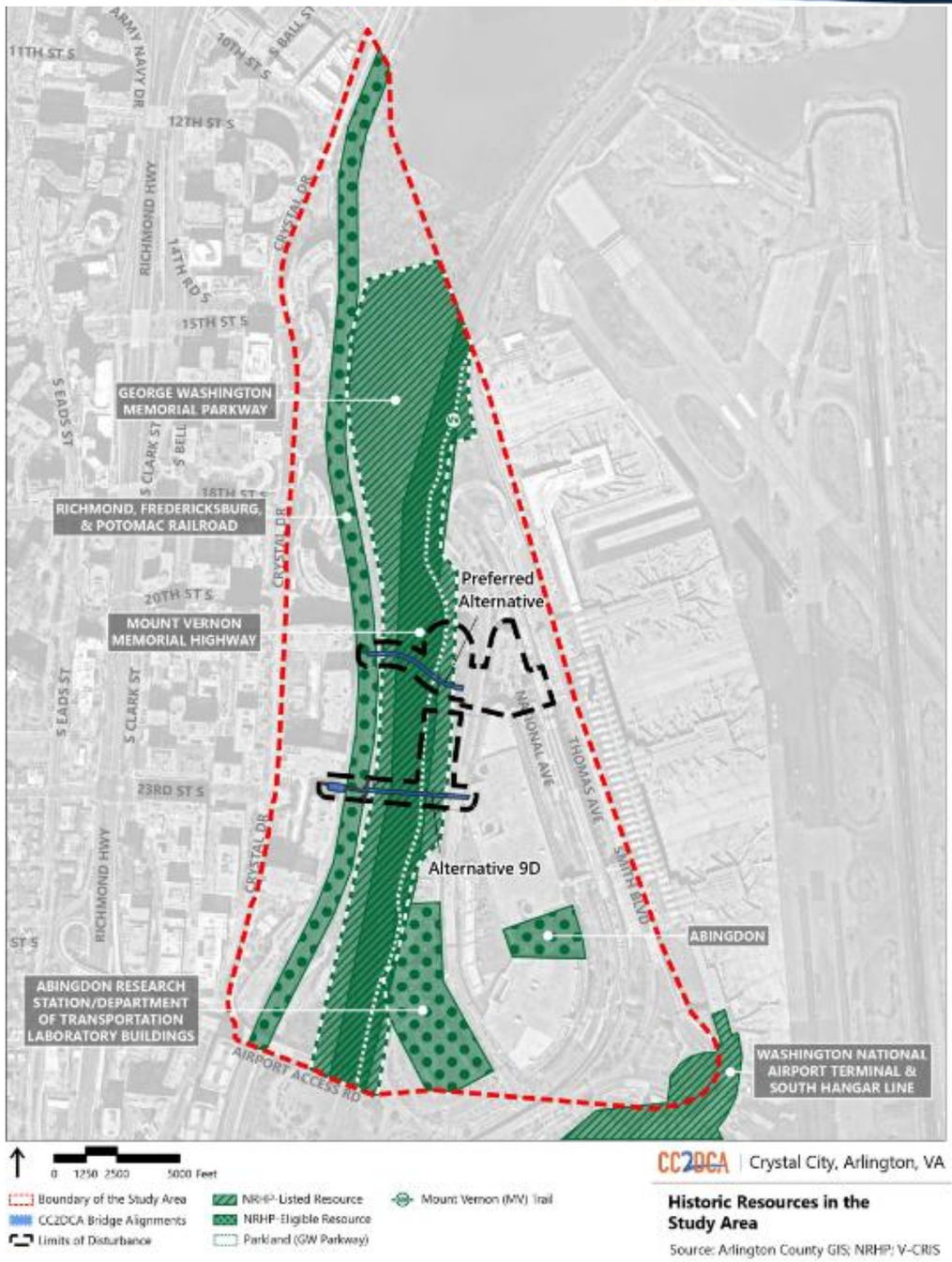
- **GW Parkway** – listed in the National Register of Historic Places (NRHP)
- **Mount Vernon Memorial Highway**– listed in the NRHP
- **Mount Vernon Trail** – determined eligible for listing in the NRHP

The historic resources listed above are extensive transportation or recreational linear properties. Therefore, they are subject to continued pressure from transportation projects planned to support the continued development of the Washington, DC region and the I-95 corridor. Implementation of mitigation strategies shall be coordinated with DHR and Section 106 Consulting Parties to reduce potential cumulative impacts on historic resources.

Impacts to the GW Parkway and MVMH would result from the physical alteration of contributing features. The introduction of contemporary infrastructure into the landscape and removal of vegetation that may be part of historic planting plans would result in the diminishment of setting and feeling for the GW Parkway and the MVMH. The new bridge would also result in the further erosion of the “Urban Valley” historic viewshed and would diminish the integrity of design and feeling in this section of the GW Parkway and MVMH. In addition, the construction of the intersection with the Mount Vernon Trail and removal of vegetation would impact the trail as an historic resource by diminishing its integrity of design, setting, and feeling.

Measures to minimize and mitigate the adverse effects are specified in the Project’s Section 106 Programmatic Agreement. These measures include design reviews to ensure that the design and aesthetic elements of the Project within NPS-administered properties are appropriate for the context, and development and implementation of vegetation protection and restoration plans to reestablish, to the extent practicable, a landscape consistent with historic GW Parkway planting plans in the vicinity of the Project.

Staging and access for construction of the CC2DCA bridge would not permanently affect the GW Parkway, MVMH, or Mount Vernon Trail, as staging would be limited to the periods of construction. These effects would be avoided or minimized in intensity and duration through the use of appropriate construction management techniques. If construction activities are required deeper than 82.7 in (210 cm) below ground surface, further archaeological review would be needed.



Introduction | Environmental Assessment

Natural Resources

There are no natural streams, lakes, ponds, or navigable waters within the study area. Approximately 2.9 acres of identified wetland lie within the study area, along the southern extent of Roaches Run, as well as 5.8 acres of Resource Protection Area (RPA). No impacts are anticipated to waters of the US, including wetlands as a result of the proposed bridge location and footprint.

It is estimated the Project may require the removal of approximately 1.9 acres of forested area within the GW Parkway to make room for a bridge crossing, MVT connection, and construction limits. These forested areas could be available as roosting habitat for listed bats, although no bats are known to use the study area. Tree removal under this alternative could impact roosting bats if conducted during the summer roosting season. Overall, indirect effects to threatened and endangered species would be minor, given that no habitat for threatened and endangered species nor any known occurrences of these species have been documented within the Project LOD.

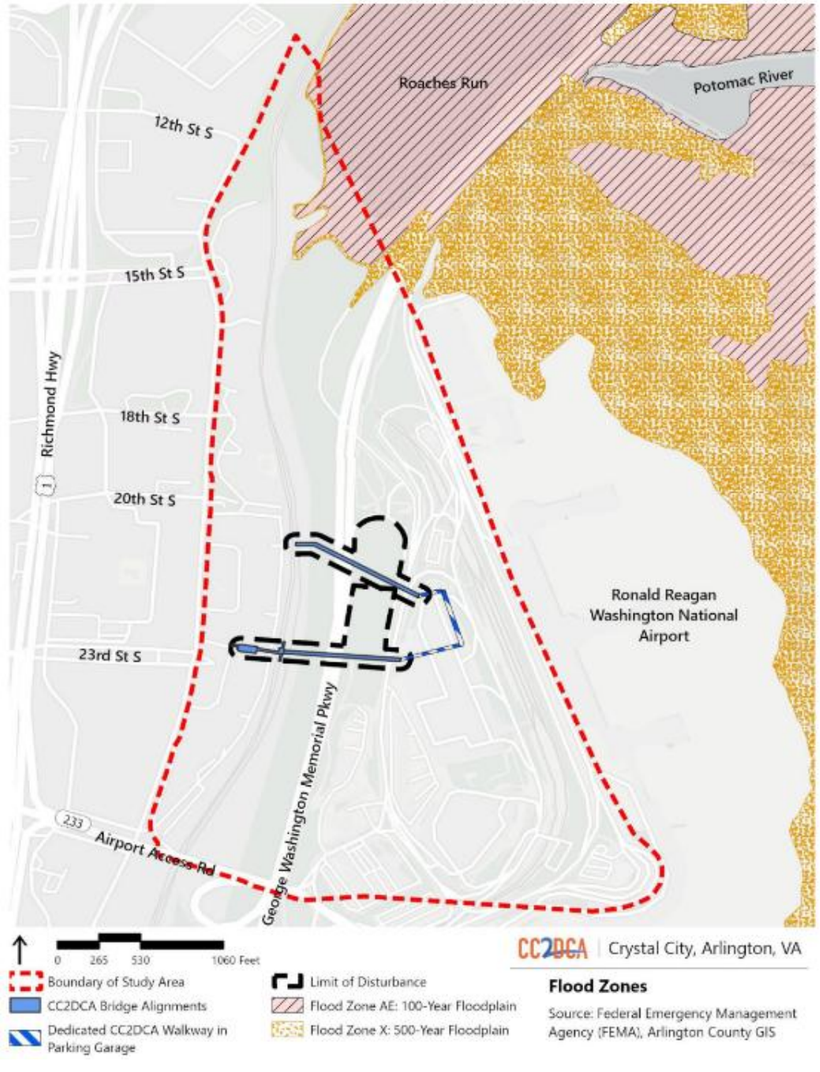
Flooding

Floodplains in the study area are associated with Roaches Run and the Potomac River; however, the majority of the study area is not in the 100-year or 500-year floodplain, see figure to the right. The limits of disturbance are landward of Virginia's Chesapeake Bay Preservation Area and the 100-year floodplain. Therefore, no impacts would occur to these surface water resources.

Stormwater Management

Construction of the bridge may potentially result in short- and long-term degradation of water resources. Short-term adverse effects include increased downstream sedimentation from land disturbing activities. Long-term adverse effects include increased runoff due to the construction of new impervious surface. Control measures would include implementing stormwater best management practices (BMPs) and adhering to strict erosion and sediment control measures.

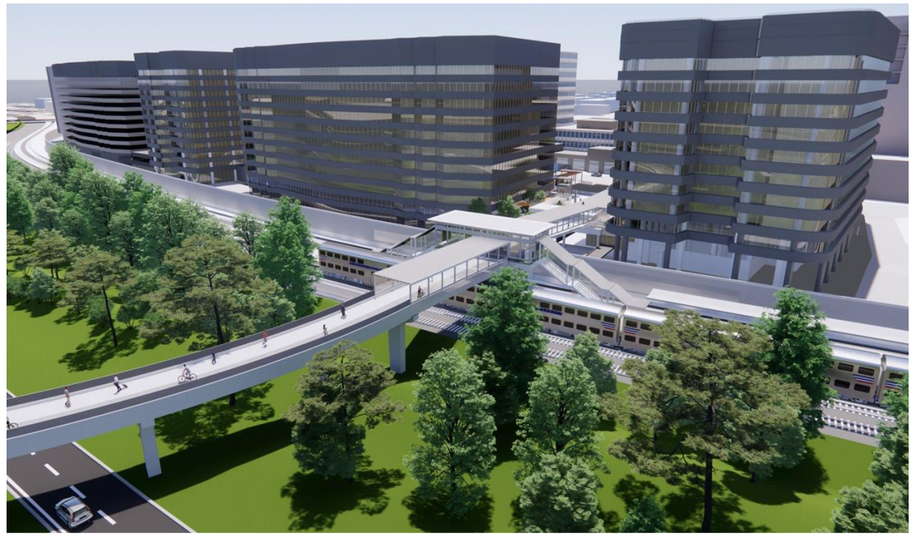
Construction activities that may result in erosion and sediment discharge are regulated by the Virginia Erosion and Sediment Control Act. All regulated land-disturbing activities associated with the Project shall be covered by a project specific erosion and sediment control plan, developed in accordance with erosion and sediment control and stormwater regulations, as well as VDOT standards and specifications.



Introduction | Environmental Review Renderings

The conceptual visuals below were developed during the Project's Environmental Review phase to show the preferred alignment west of the MVT connection. The alignment between the MVT and DCA was determined during preliminary design and was finalized in 2025. During the Preliminary Design phase, the Project team worked alongside interested parties and key property owners to advance the engineering design and develop the concept included in this submission.





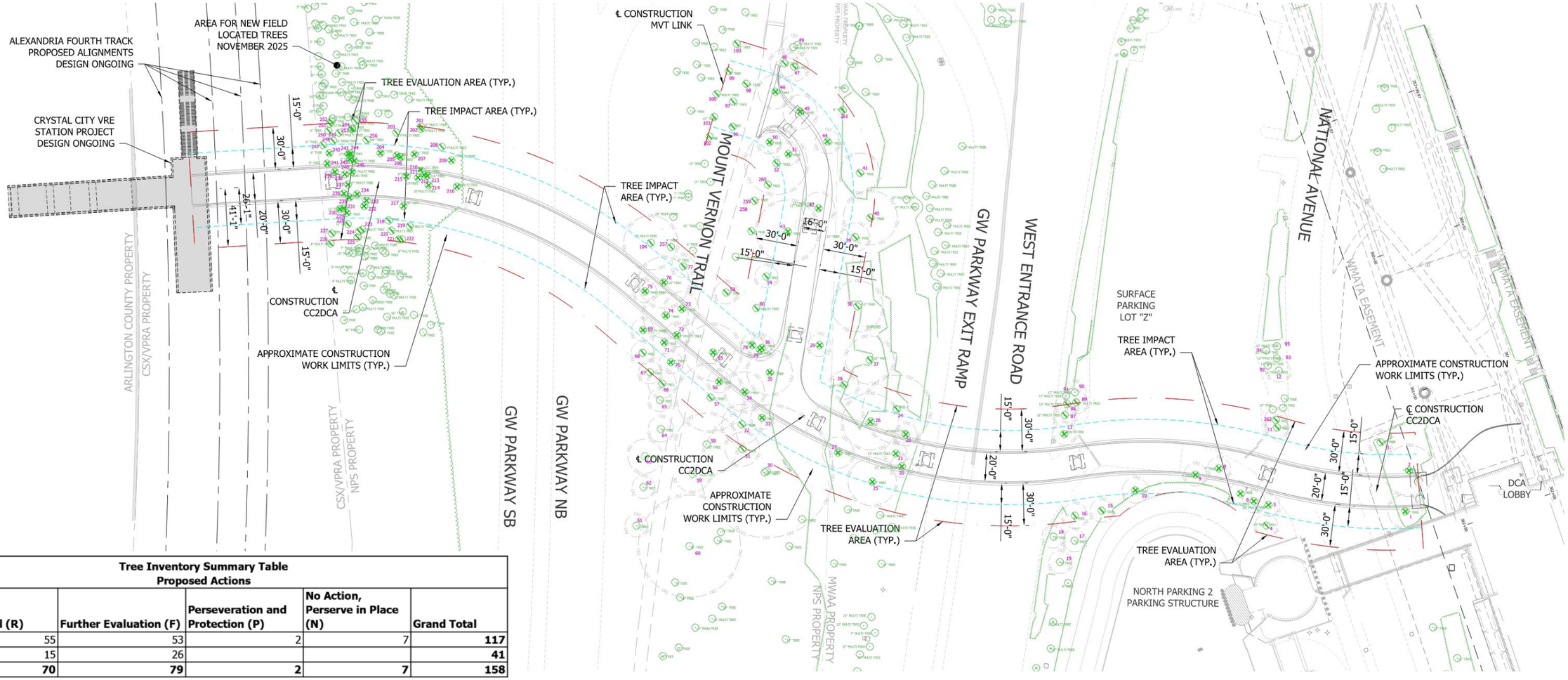




CC2DCA

Introduction | Vegetation Impacts

Although the existing trees in the project area have been surveyed and identified, an additional tree survey will be conducted by an arborist in the next design phase to confirm tree conditions. A preliminary tree inventory summary table is shown below and will be updated in the next design phase as additional tree impacts may be required based on further evaluation of staging and access for construction. Existing trees impacted as a result of the project and located on NPS property are subject to removal and mitigation requirements laid out in the CC2DCA Programmatic Agreement. Existing trees impacted by the project on MWAA property may be subject to jurisdictional requirements for removal and mitigation. There are limited planting areas in the project area due to the linear corridor and existing features; therefore, the CC2DCA Project will coordinate with NPS and MWAA to replace affected trees outside of the LOD where necessary to meet replanting requirements.



Tree Inventory Summary Table
Proposed Actions

Property	Removal (R)	Further Evaluation (F)	Perseveration and Protection (P)	No Action, Perserve in Place (N)	Grand Total
NPS	55	53	2	7	**117**
MWAA	15	26			**41**
Total	**70**	**79**	**2**	**7**	**158**

Introduction | Design Alternatives

Design Alternatives Considered and Dismissed

Arlington County conducted a thorough alternatives development and screening process to identify the best alternatives for evaluation during the Environmental Review phase.

The CC2DCA Team first identified **14** potential corridors that met a list of parameters including a landing in a publicly accessible location and landings with multimodal connectivity and feasibility of coordinating construction of the facility.

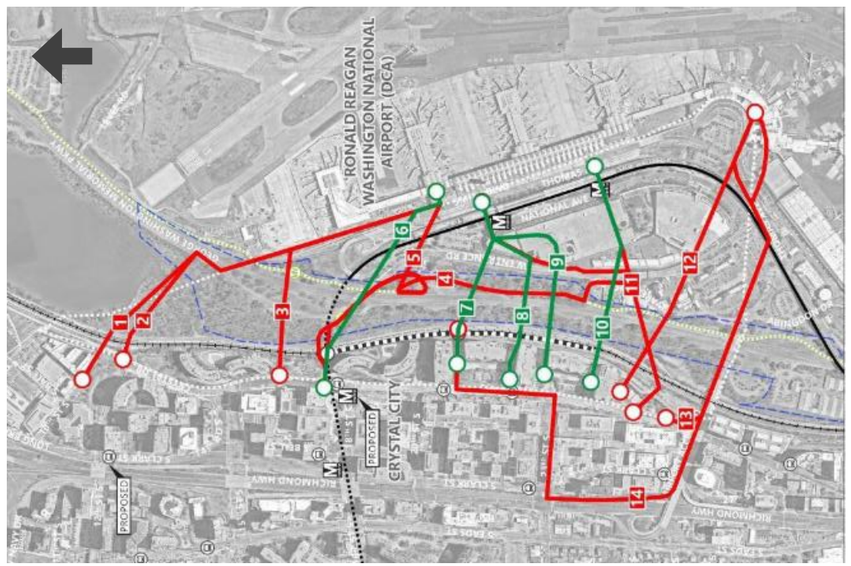
The 14 potential corridors were further refined as only **five** of the alternatives met the Purpose and Need of the Project and remained under consideration.

The **five** potential corridors were evaluated for both bridge and tunnel concepts. One corridor was removed from consideration due to challenges from existing and planned infrastructure.

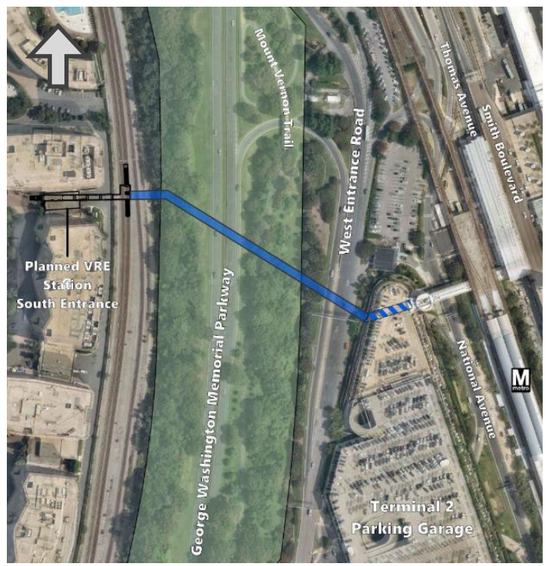
The remaining **four** corridors were evaluated for compatibility with the Americans with Disabilities Act (ADA) standards and guidance and **three** corridors were retained. The remaining alternatives were made available for agency and public review and comments.

Both agency and public comments and additional feasibility analysis eliminated the tunnel alternatives due to unusual technical and construction challenges. **Two** bridge alternatives were carried forward into the conceptual design and impact analysis phases of the study.

After considering the Purpose and Need, anticipated impacts, and cost, VDOT and Arlington County identified a recommended preferred alternative. The preferred corridor was advanced to preliminary engineering.



Fourteen potential corridors



Recommended Preferred Corridor

Introduction | Agency and Government Coordination

NEPA Phase Coordination

The Project has involved extensive coordination with local, state, regional, and Federal agencies due to its unique setting and overlapping jurisdictions. During the NEPA Process, Arlington County and VDOT held 37 coordination meetings with various stakeholders and participating agencies who had an interest in the Project and helped to identify potential environmental and socioeconomic impacts and provide input on particular project issues. There were 3 concurring and cooperating agencies (NPS, USACE, and EPA) and 23 participating agencies.

The participating agencies were the Advisory Council on Historic Preservation, City of Alexandria, Federal Aviation Administration, Federal Railroad Administration, Metropolitan Washington Airports Authority, National Capital Planning Commission, Northern Virginia Transportation Authority, Northern Virginia Transportation Commission, United States Department of Defense, United States Department of Homeland Security, United States Department of the Interior, United States Department of Transportation, United States Fish and Wildlife Service, Virginia Department of Aviation, Virginia Department of Conservation and Recreation, Virginia Department of Environmental Quality, Virginia Department of Historic Resources, Virginia Department of Rail and Public Transportation, Virginia Department of Wildlife Resources, Virginia Economic Development Partnership, Virginia Passenger Rail Authority, Virginia Railway Express, and Washington Metropolitan Area Transit Authority.

Section 106 Consultation: 2023 Programmatic Agreement

The CC2DCA Section 106 Programmatic Agreement (PA) was executed on December 16, 2023, and describes Project minimization and mitigation commitments to resolve adverse effects to the GW Parkway, Mount Vernon Memorial Highway (MVMH), and MVT. Arlington County coordinated with the Signatories and Consulting Parties during the Environmental Assessment phase and met twice during the Preliminary Engineering period to discuss the design progress and provide feedback on the alignment, visual appearance, aesthetic treatment, landscape design, signage, and lighting.

Permits and Approvals

The Project will require permits and approvals from several of the agencies that were included in the NEPA and Section 106 processes. Arlington County anticipates obtaining permits from WMATA, NPS, MWAA, FAA, and CSXT during the Final Design phase.

CC2DCA Section 106 Signatories

- Arlington County
- National Park Service (NPS)
- Virginia Department Of Transportation (VDOT)
- Federal Highway Administration (FHWA)
- Virginia Department of Historic Resources (DHR)

CC2DCA Section 106 Consulting Parties

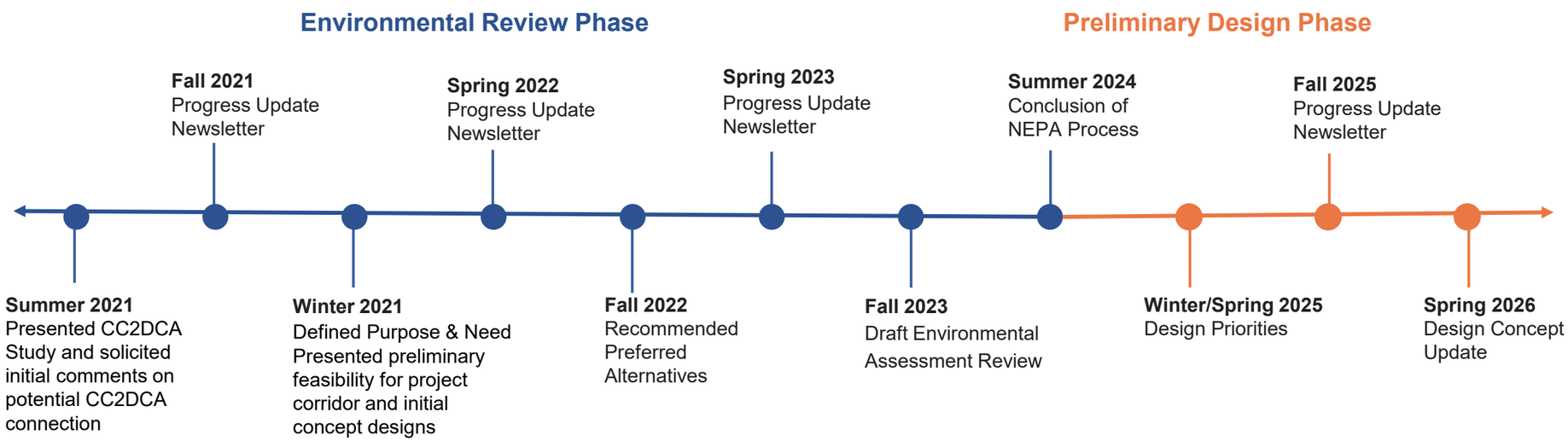
- National Capital Planning Commission (NCPC)
- Federal Aviation Administration (FAA)
- Metropolitan Washington Airports Authority (MWAA)
- Crystal City Civic Association (CCCA)
- Railroads
  - CSX Transportation (CSXT)
  - Amtrak
  - Virginia Passenger Rail Authority (VPRA)
  - Virginia Railway Express (VRE)
- Tribes
  - Delaware Nation
  - Catawba Indian Nation
  - Pamunkey Indian Tribe

Introduction | Public Outreach

Public Engagement Timeline

Public involvement plays a pivotal role in the design of CC2DCA, consistent with the County's Six Step Public Engagement Guide for Capital Projects which can be found on the Project Website (www.CC2DCA.us).

The Project public outreach included virtual meetings, in-person open houses, and newsletters to share the Project's design development and gather public input at various stages of the design. Public feedback helped to further refine the unique multimodal Project.



Public Feedback

Throughout the various engagement opportunities during the Preliminary Engineering phase, the Project Team received nearly 700 comments from a diverse public group that included residents, business owners, agencies, and organizations within or near the Project area.

In the most recent public outreach period, the great majority of comments received emphasized a strong preference for a canopy covering across the full length of the bridge. Many responses indicated that they would not use the bridge during times of inclement weather including high heat, rain, or snow, if it remained uncovered. As a result of public support, the Project incorporated a potential canopy concept in the preliminary design.

The public also requested a design that prioritizes pedestrian use and that encourages bicyclists and scooters to slow down to ensure safety and comfort for travelers, seniors, and families. These requests and other feedback will be used to guide the CC2DCA design in the upcoming Final Design phase.



January 29, 2025 CC2DCA Public Open House
Aurora Hills Community Center – Arlington, VA

Proposed Design | Overview

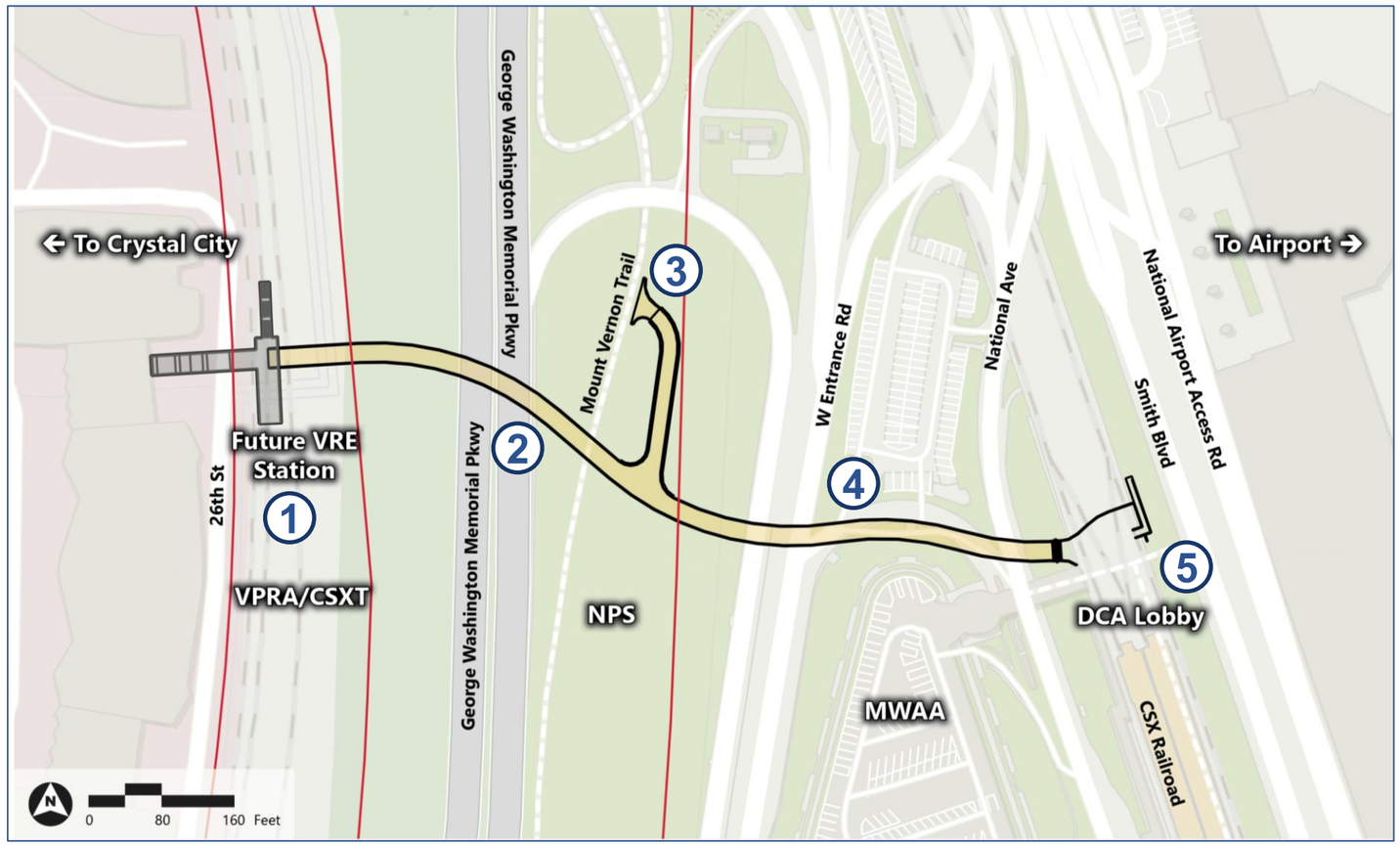
1 VPRA/CSXT Property & Future VRE Crystal City Station
The western end of the bridge will connect to the VRE Crystal City Station, which is an ongoing project with construction anticipated to begin in mid-2027 and last two years. This connection will provide CC2DCA users with access to Crystal City and to VRE and future Amtrak services.

2 NPS Property & GW Parkway Crossing
Approximately half of the bridge length spans across NPS property, including spanning over the GW Parkway.

3 Mount Vernon Trail Link & Widening Project
A connection to the MVT will be provided around the halfway point of the bridge. A separate ongoing project aims to widen the MVT path with construction starting in 2027. CC2DCA and FHWA Eastern Federal Lands are coordinating construction schedules and access/staging needs due to proximity of the projects.

4 DCA Property & MWAA Recirculation Ramp Project
Approximately half of the bridge crosses above airport property. MWAA is currently designing the DCA Roadway Network Improvements Project which will add a recirculation ramp in the CC2DCA Project area. CC2DCA will cross over MWAA's future three lane ramp; therefore, both project teams have been coordinating closely in the Preliminary Engineering phase to maintain required vertical and horizontal clearances.

5 DCA Lobby Connection
The bridge connects to a landing outside of the DCA airport lobby. The Project is coordinating with MWAA to potentially relocate the entryway to the airport and to determine preferred amenities to include the Project's proposed landing plaza such as bicycle racks and lockers.



Proposed Design | Design Principles

The proposed structural and architectural design was developed using five main design principles for guidance. CC2DCA stakeholders requested the proposed bridge be seen as a **distinct destination**, meaning that the design should be memorable with an interesting architectural design. The design should prioritize **user experience** by providing a safe and comfortable option to either walk or bike between Crystal City, the airport, and the MVT. The bridge is intended to be a functional method of transportation for users. The Project design must consider the **contextual sensitivity** of its surrounding environment. Per Stipulation IV.B.1 of the PA, Arlington County shall design and aesthetically treat elements of the Project introduced to NPS-administered properties to be appropriate for the context of the area with a light touch. The proposed bridge alignment crosses three property lines; therefore, the design must unify preferences from the three property owners (CSXT/VPRA, NPS, and MWAA) to develop a consistent aesthetic through **design clarity**. Lastly, the design must consider **budget and constructability** while meeting other design goals.



DISTINCT DESTINATION

Welcoming
Memorable



USER EXPERIENCE

Comfortable
Functional
Safe



CONTEXTUAL SENSITIVITY

Light Touch
Integrated into Landscape



DESIGN CLARITY

Unified Experience
Integrated System Resolving
Structure, Architecture, & Program
Compatibility Across Ownership

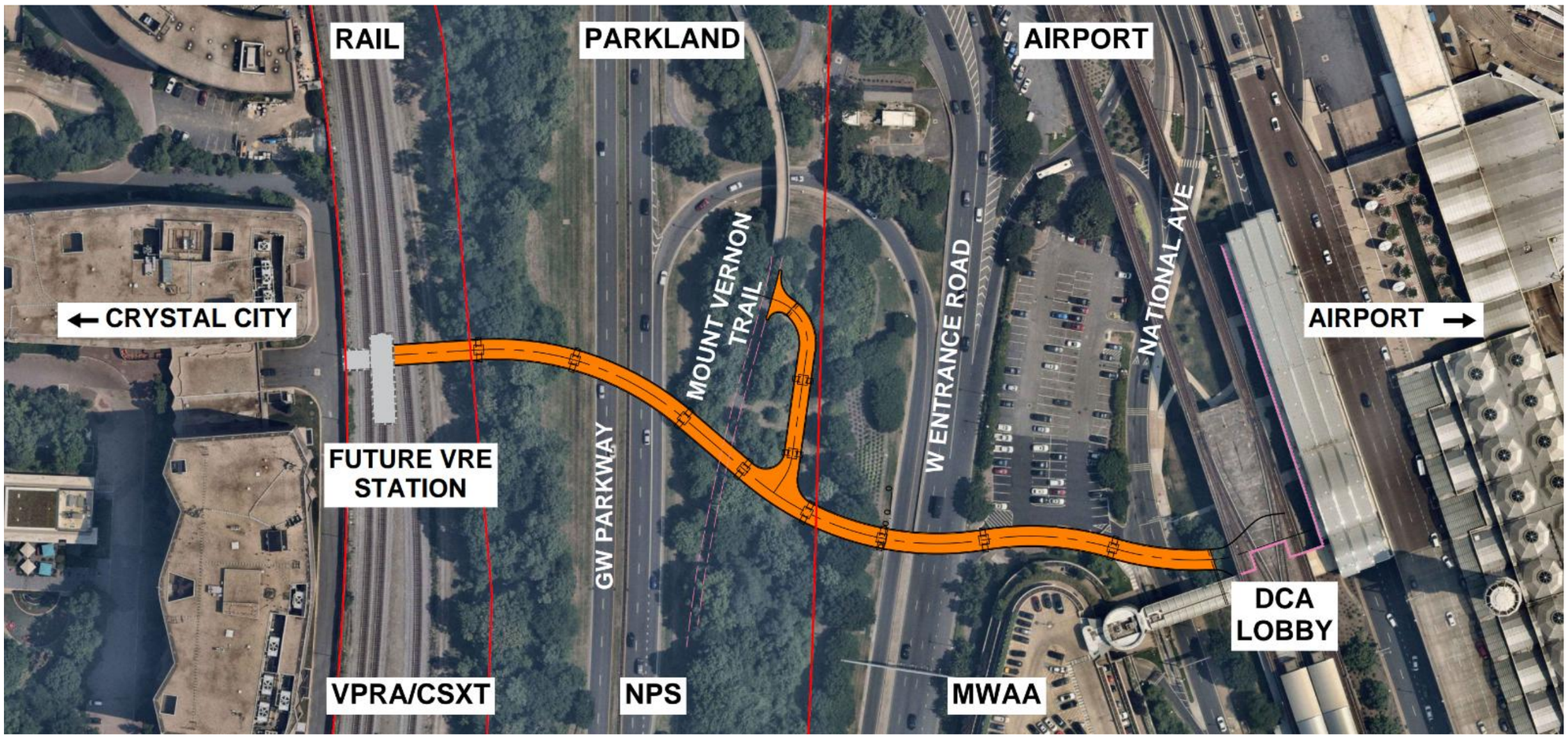


BUDGET & CONSTRUCTABILITY

Intelligent Budget Allocation
Efficient Construction Approach

Proposed Design | Bridge Alignment

The proposed CC2DCA bridge is approximately 958 feet long with nine spans between the future VRE headhouse connection and the DCA lobby landing. The bridge alignment was designed to be curvilinear to improve aesthetics and provide as direct a connection as possible to increase user convenience and comfort while reducing impacts to land, existing facilities, and vegetation as much as practicable. The design of the alignment focuses on providing symmetry of the curves to facilitate constructability. The minimum acceptable radius of curvature for curved horizontal alignments with regard to bicycle use is governed by the desired maximum design speed and an assumed maximum lean angle of 20 degrees. In general, the faster the design speed, the larger the minimum radius.



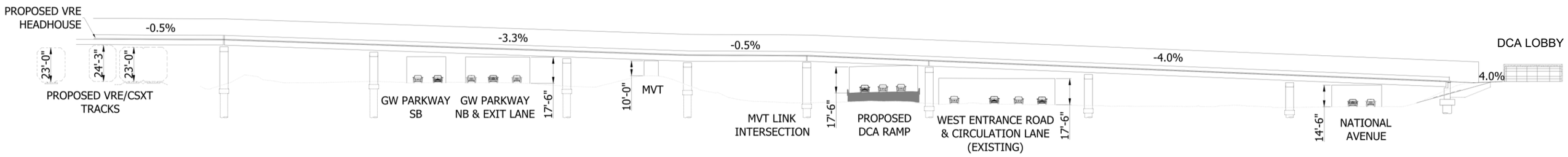
Proposed Design | Bridge Profile

Arlington County's goal is to minimize the bridge slope as much as possible in consideration for all users including those with luggage going to or from the airport. The maximum allowable slope, per Americans with Disabilities Act (ADA) standards, is 5.00% and the proposed maximum bridge slope for the Project is 4.00%.

Profile constraints

The bridge profile must accommodate several vertical constraints due to various roadway crossings, the railroad tracks crossing, and its proximity to the airport. The minimum vertical clearance for roadway crossings per VDOT standards is 17 feet and 6 inches; this applies to the crossings over GW Parkway, West Entrance Road, and the future MWAA ramp that will be completed as part of the DCA Roadway Network Improvements Project. Additionally, the minimum vertical clearance required for the MVT crossing is 10 feet. Although the proposed vertical clearance at the National Avenue crossing is three feet under the VDOT standard, it maintains an existing adjacent clearance of 14 feet and 6 inches. Lastly, the minimum required vertical clearance above the railroad tracks per CSXT Overhead Bridge Criteria (OBC) Section II is 23 feet with an additional 1 foot 3 inches provided for future electrification above track 4, which will be used for passenger trains.

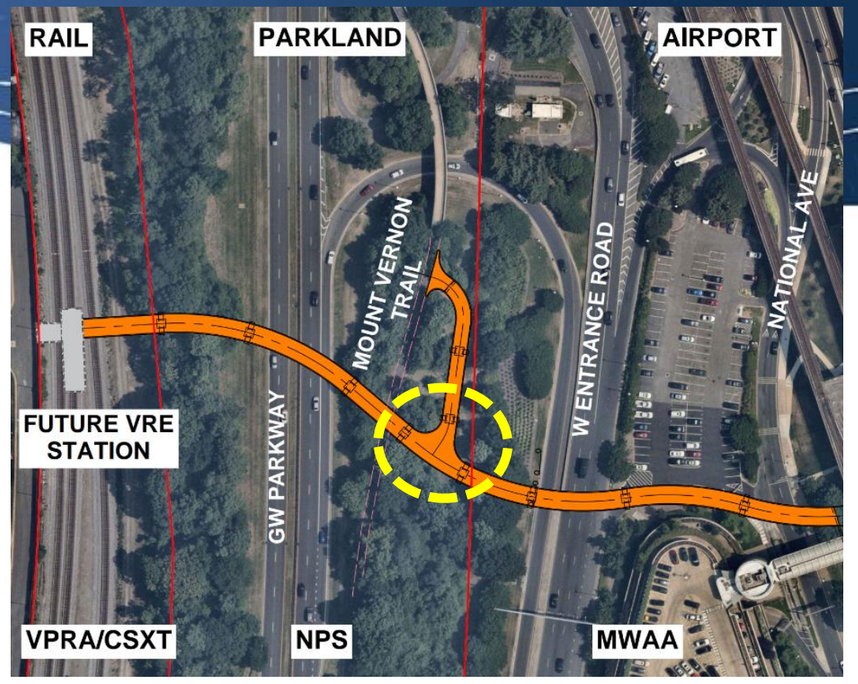
The tie-in elevations at each end of the Project add additional profile constraints. The elevation at the DCA lobby was determined based on survey completed during the preliminary design phase of the Project, and the elevation at the future VRE headhouse connection was coordinated with the VRE Crystal City Station Project team.



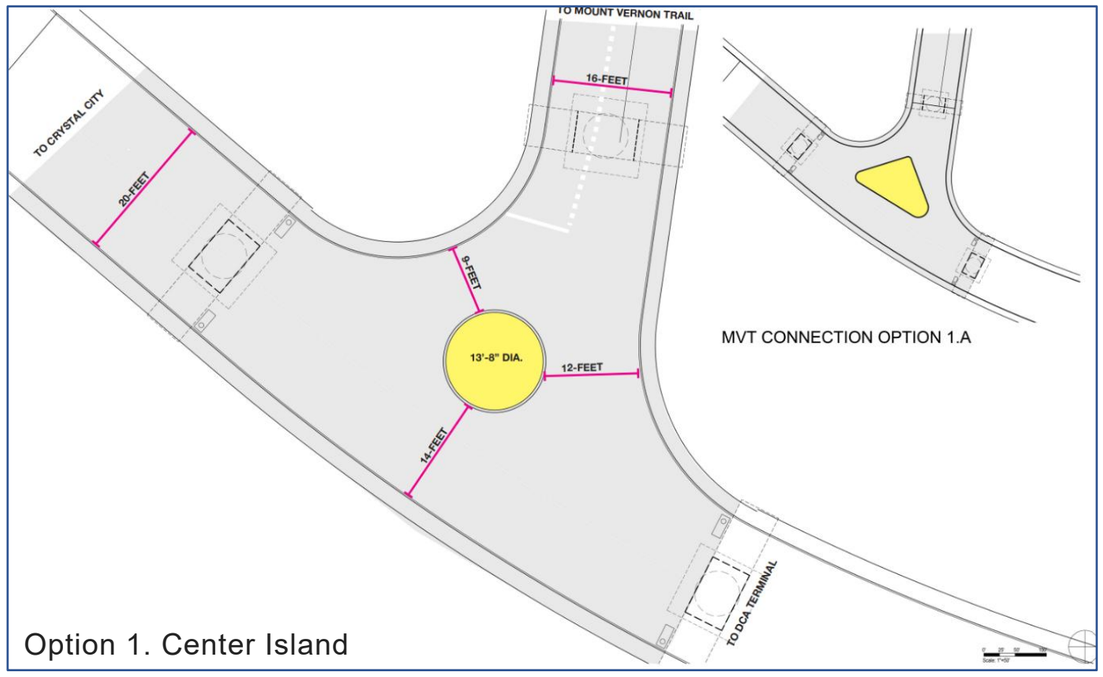
Proposed Design | Mount Vernon Trail Link

The proposed MVT link is two spans totaling approximately 222 feet in length with a proposed slope of 3.39%. The connection will be perpendicular to the trail, and users entering or exiting the CC2DCA bridge will have to stop and yield to anyone on the trail for bicyclist and pedestrian safety. Further coordination with NPS for signage and/or pavement markings to provide additional safety measures will take place during the Project's final design phase.

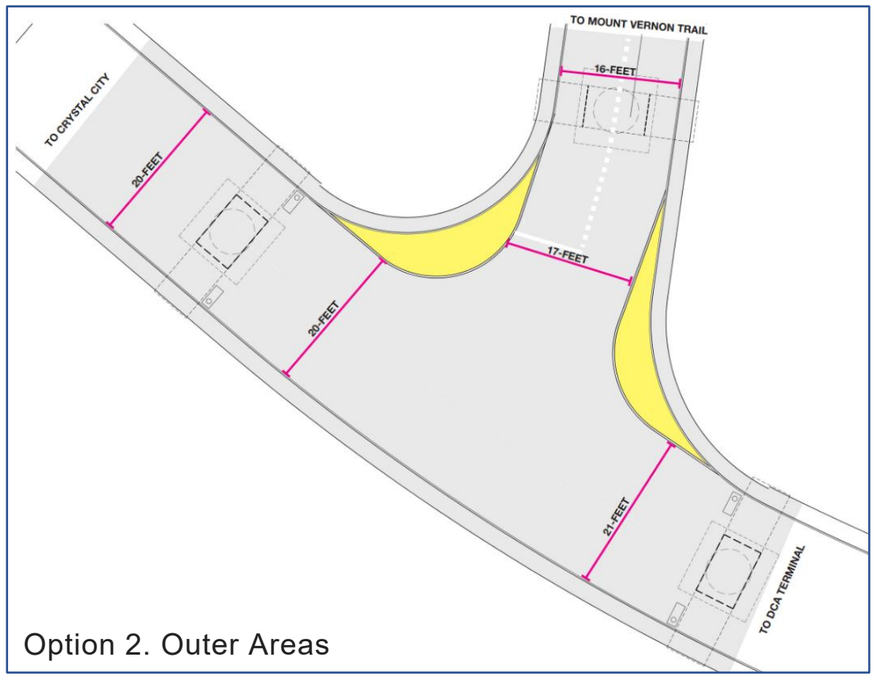
The Project is evaluating the option to add areas at the top of the widened MVT connection outside of the main flow of traffic along the CC2DCA bridge; this is located approximately halfway across the structure (see map to right). These areas, shown in yellow in the figures below, could be used as rest points with benches, provide additional traffic flow guidance, include vegetation planters, or serve as pull-out spots for bridge users.



Key Map



Option 1. Center Island



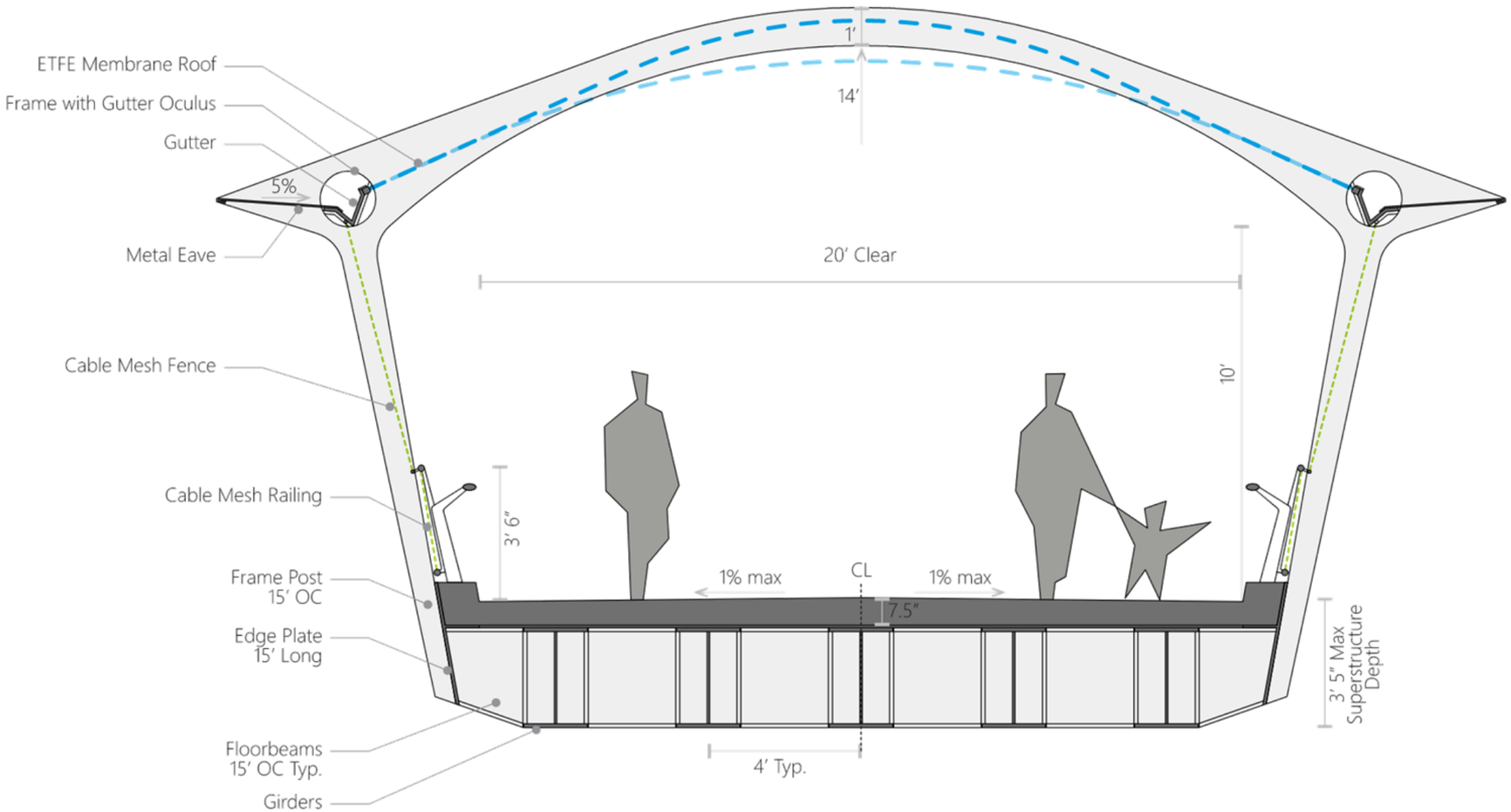
Option 2. Outer Areas

Proposed Areas at Top of the MVT Connection

Proposed Design | Structure Type

All spans along the CC2DCA bridge and the MVT connection consist of conventional steel plate girders and diaphragms supporting a reinforced concrete deck. Connection plates will extend from the exterior girders to connect the canopy framework. Architectural fascia plates will connect between canopy framing to create a continuous look along the CC2DCA spans. Girder continuity shall be detailed to minimize the number of joints in the bridge while ensuring constructability. All bridge joints shall follow ADA compliance and VDOT guidelines for pedestrian structures to minimize openings in the traveled way.

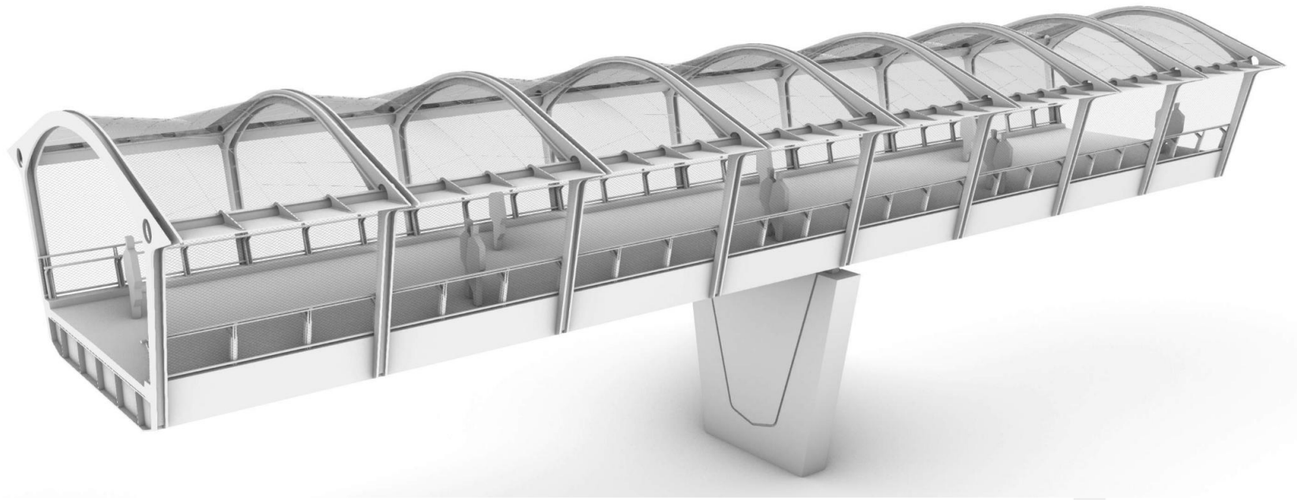
Bridge drains shall be pedestrian and bicycle friendly. Slots must be perpendicular to the face of curb and slot width must be limited to a half inch for pedestrian and combined facilities. Drain assembly sizing and materials will be developed in final design in close coordination with project stakeholders and property owners. Downspout, scuppers, and drainage pipes that carry water vertically off the bridge should be coordinated with canopy drainage and substructure locations to minimize visual appearance.

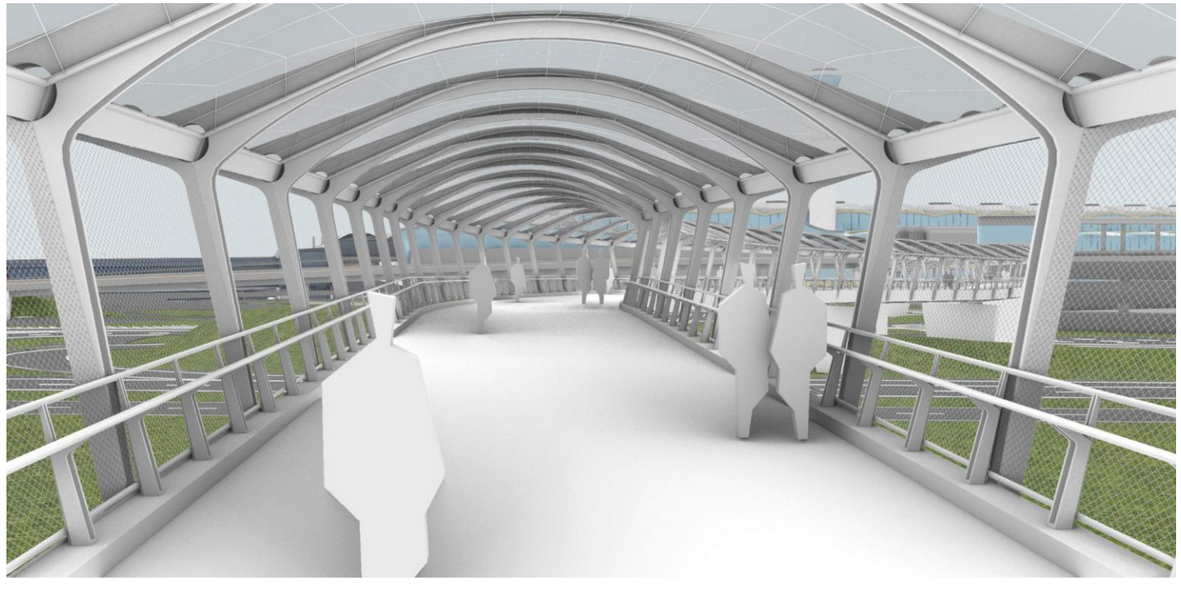


Proposed Design | Architectural Design

The goal of the architectural design is to unify the substructure, superstructure, and canopy elements with a simple approach that aligns with the Project's design principles. The canopy posts are inclined outward to open the user space and reduce the enclosed feeling that canopies and other roofing systems can sometimes create. In keeping the design holistic and continuous, the architectural design maintains the inclined edge from the superstructure to the piers. The tapered piers also reduce permanent impacts to the ground.

Other aesthetic decisions including color, finishes, and pier material will be coordinated during the final design phase. However, preliminary design consultations have indicated that painted steel with earth tones and concrete piers are the preferred options by the Signatories and Consulting Parties.





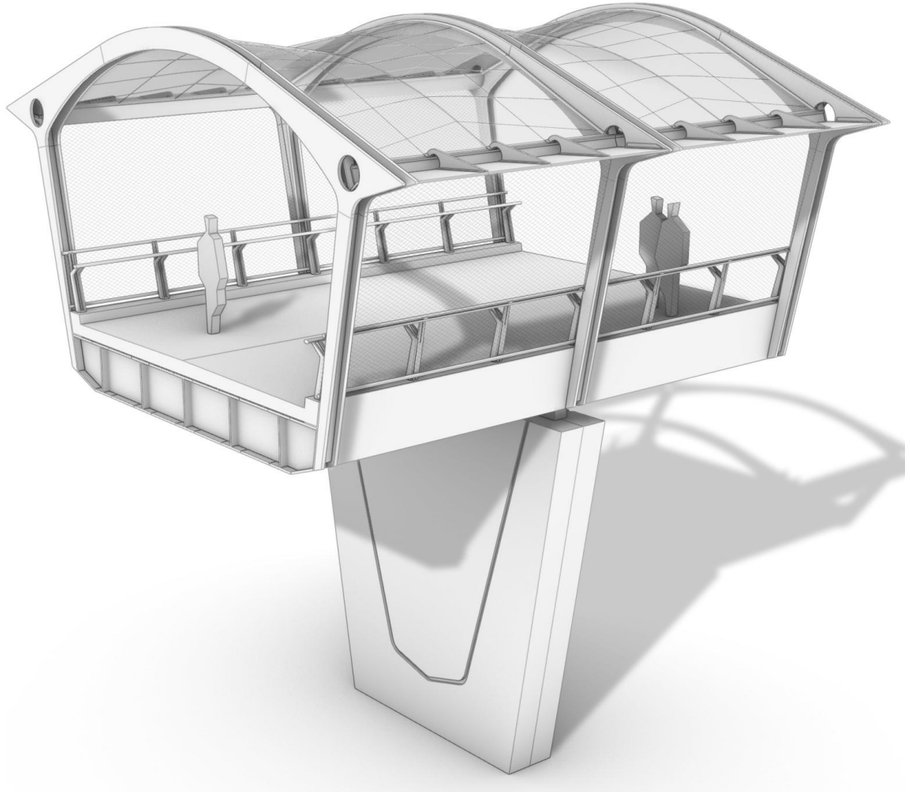


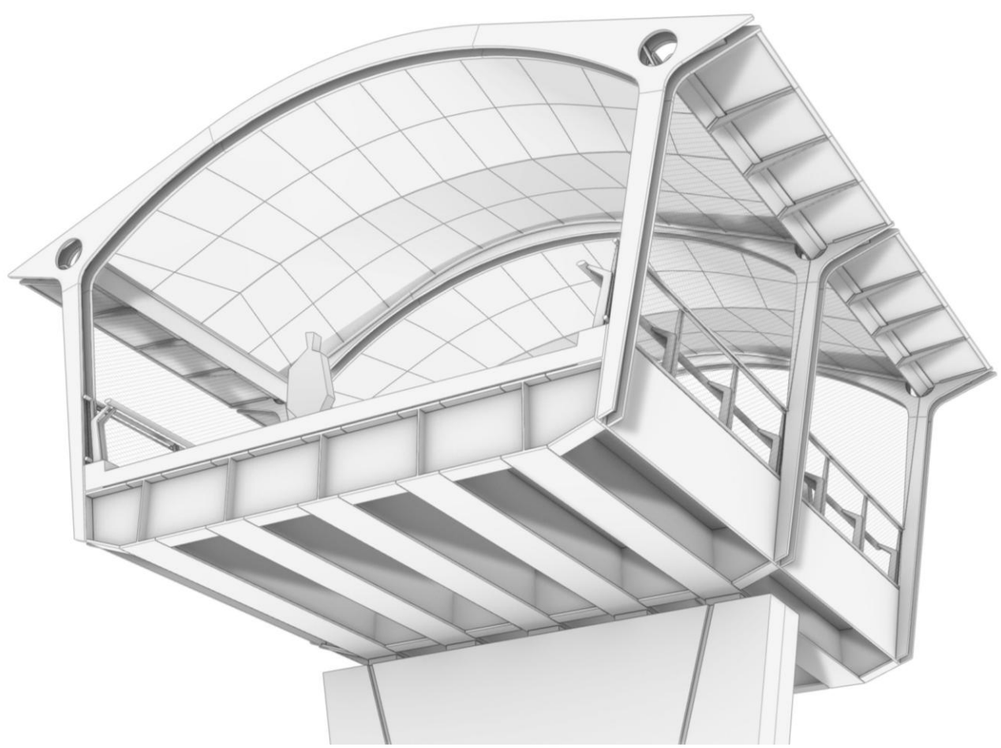
Color and material to be determined in the next phase of design.

Proposed Design | Canopy Design

A canopy is proposed along the entirety of the CC2DCA bridge as a result of public feedback requesting protection from sun and rain and other elements. The proposed canopy frame repeats every 15 feet, and the structure includes a gutter system where the canopy and the vertical members come together to catch runoff and snowfall; drainage is then carried down at pier locations to drain at ground level as required by property owners. The larger spacing of the canopy supports provides acceptable support for the canopy itself while allowing for larger openings to improve user experience and additionally reduce visual impact to those traveling under the structure such as from the GW Parkway, the MVT, and MWAA's roadway network. The goal of preliminary engineering canopy concept is to provide a cohesive, context-sensitive design with a focus on user experience and comfort.

This arched canopy avoids a tunnel or boxy effect and maintains a minimum 10-foot vertical clearance across the 20-foot-wide bridge deck. The fencing and railing systems will be independent from the canopy and can be designed to be discrete while meeting CSXT requirements and NPS and MWAA preferences. Additional coordination with property owners is anticipated following 30% design to approve the canopy design and determine preferred aesthetics.





Color and material to be determined in the next phase of design.

Proposed Design | User View

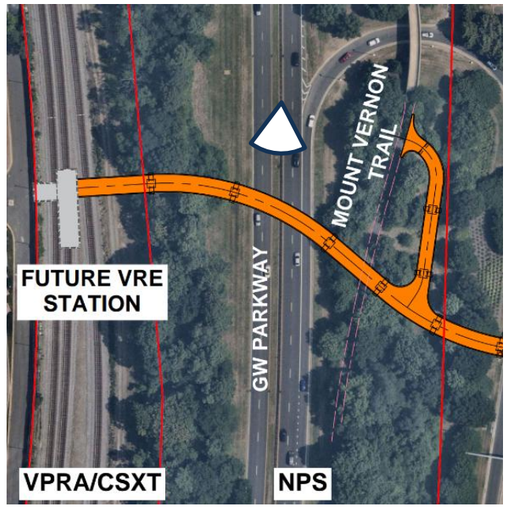
The rendering below shows the proposed bridge viewed from a user's perspective, facing East towards the Reagan National Airport.



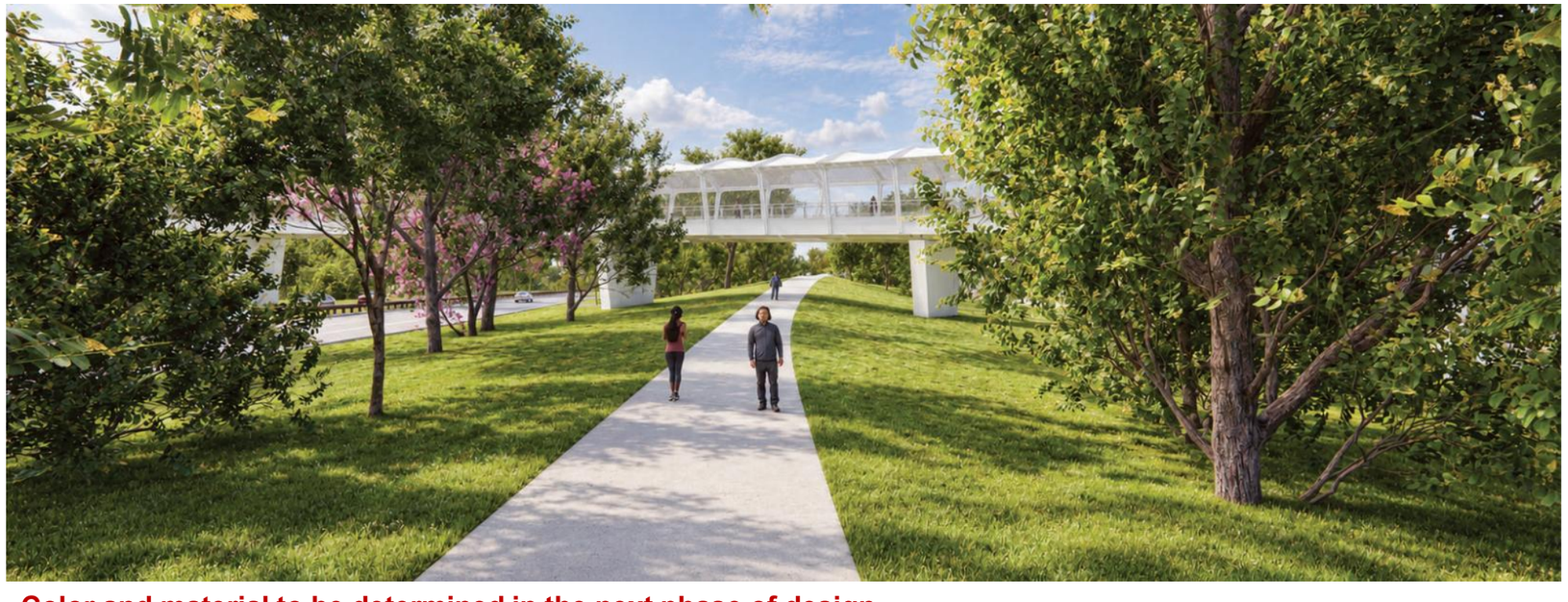
Color and material to be determined in the next phase of design.

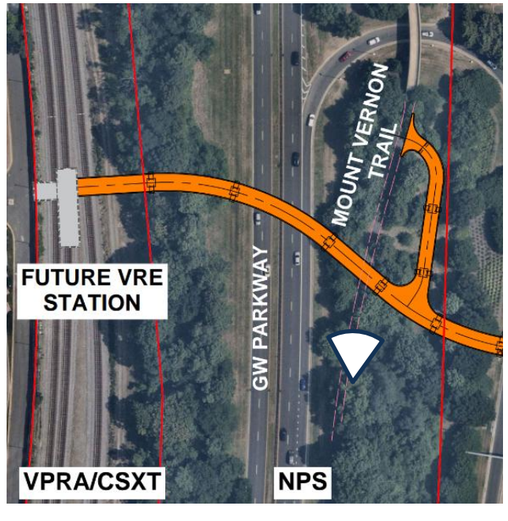
Proposed Design | Viewshed Impacts





Bridge viewed from the GW Parkway looking southbound





Bridge viewed from the MVT looking South

Color and material to be determined in the next phase of design.

Proposed Design | Canopy Material

ETFE Membrane

The proposed canopy material is an ETFE membrane, a lightweight, transparent, and flexible membrane with several advantages over glass or acrylic. The canopy system as envisioned and the superstructure as designed allows the opportunity to explore other materials during the final design phase.

ETFE is widely used as an alternative to glass in modern architectural applications such as roofs, facades, and canopies. Below is a list of the advantages to ETFE membranes:

- **Natural light transmission** – Creates a brighter and more comfortable space.
- **Lightweight** – ETFE is 1% the weight of glass which reduces the load on supports and foundations allowing for larger spans, more complex shapes, and lower structural steel requirements.
- **High flexibility and durability** – Highly flexible material capable of stretching 200-300% before breaking. It resists wind, hail, and other impacts without shattering, making it safer in high-wind areas.
- **UV and weather resistance** – Resistance to UV radiation and extreme temperatures, ensuring long-term performance without degradation.
- **Self-cleaning and low maintenance** – Smooth and non-stick surface allows rain to wash away dirt, reducing the need for frequent cleaning.
- **Fire safety** – Low flammability and self-extinguishing, producing little smoke and no molten material in fires.
- **Aesthetic and design versatility** – ETFE can be printed with frits for shading control and can be used in both single-layer and cushion forms for varied architectural expressions.





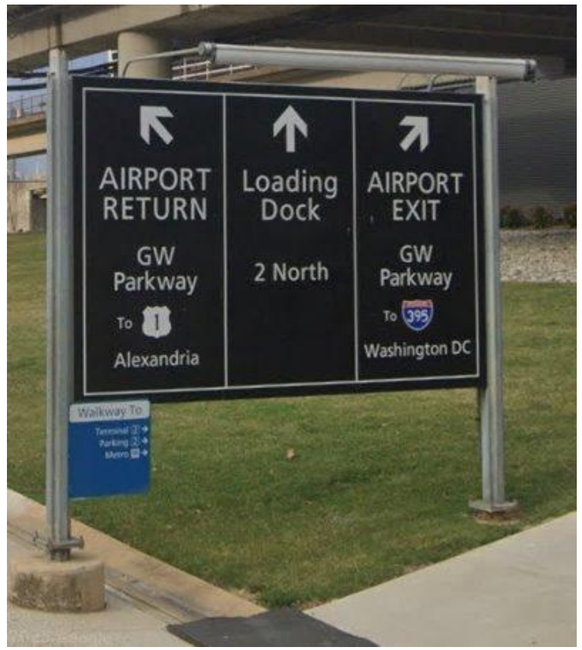




Additional Studies | Signage and Lighting

Wayfinding Signage

The Project will include wayfinding signage at the MVT connection which will follow NPS Harpers Ferry Center - Visitor Information System sign standards; additional wayfinding requirements will be coordinated with NPS and incorporated in the final design phase. The proposed signage at the DCA lobby will follow MWAA standards, and any signage at the Crystal City Station connection will match VRE's signage at the headhouse. Examples of MWAA and VRE signage are shown to the right. Additional signage needs and placement along the structure will be evaluated and determined in the final design phase.



MWAA Signage Example



VRE Signage Example

Lighting

Lighting is anticipated along the main spans of the CC2DCA bridge and at a minimum, will be located at the interface with the VRE headhouse, the DCA lobby, and the intersection with the MVT. In general, the lighting system will be designed for user comfort while minimizing energy cost and impacts to other resources.

The lighting goals are as follows: safe navigation, obstacle and trip hazard detection, and a strong sense of personal security. Per feedback during preliminary engineering design consultations, lighting will illuminate the bridge deck only, not the structure itself. Any proposed lighting must meet Dark Sky requirements.

The lighting design including the aesthetics of the lighting systems will be coordinated with stakeholders as identified in the Project's PA and be included following the 30% submission.

Other

Additional studies that will be coordinated further in the final design phase include incorporation features on the canopy to prevent snow and ice accumulation from falling onto roadways; pavement markings that could be used to direct users or separate pedestrian and bicyclist traffic; vandalism prevention and maintenance responsibilities; and vegetation protection and restoration plans including planting plans. Other design requirements, in addition to lighting, are driven by security measures due to the proximity to railroad tracks and proximity to a national airport. For example, the mesh fencing is required for user safety and to prevent users from throwing anything onto the railroad tracks or roadways.

Crystal City to Reagan National Airport (CC2DCA) Project

National Capital Planning Commission Preliminary Submission

December 2026