VIRGINIA PASSENGER RAIL AUTHORITY

# U.S. Commission of Fine Arts

## Long Bridge South Project
## Final Design Approval Submittal

January 15, 2026

# Project Agency and Team

## Project Name

**Long Bridge South**

## Project Location

**Washington, DC**

## Agency Contacts

- Virginia Passenger Rail Authority | Shirlene Cleveland | shirlene.cleveland@vpra.virginia.gov | 1800 Diagonal Street, Suite 300, Alexandria, VA 22314
- National Park Service | Laurel Hammig | laurel_hammig@nps.gov 1100 Ohio Drive SW, Washington, DC 20242

## Project Team

- LBRP | Bryon Breese | Bryon.Breese@LBRPJV.com
- LBRP| Fred Parkinson, PE | Fred.Parkinson@STVinc.com

# Project Context | Design Parameters from FEIS/ROD

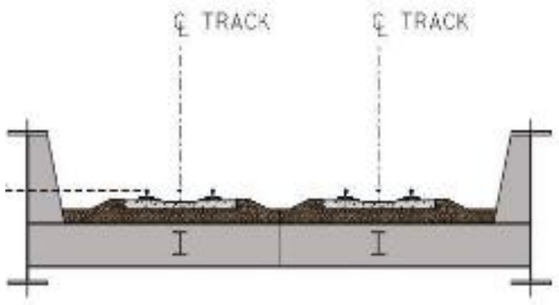

| GW PARKWAY | POTOMAC RIVER | EAST & WEST POTOMAC PARKS | MAINE AVENUE SW AREA |
|---|---|---|---|
| Compatible vocabulary with George Washington Memorial Parkway | Consistent, compatible vocabulary with historic railroad bridge | Use of retaining walls to reduce footprint | Use of retaining walls to reduce footprint |
| Rail Bridge: Steel through-plate girder structure | Rail Bridge: Steel through-plate girder structure | Design walls to be compatible with character of existing resources and appropriate for context of the Monumental Core | Design of walls to be compatible with character of existing resources and appropriate for context of the Monumental Core |
| Bicycle-Pedestrian Bridge: Pre-fabricated truss spans | Rail Bridge: Piers & retaining walls similar in size and form to historic piers and walls | Design landscaping to mitigate visual impacts to East and West Potomac Parks | |
| Bicycle-Pedestrian Bridge: Connection to Long Bridge Park, Long Bridge Aquatics & Fitness Center, Mount Vernon Trail | Bicycle-Pedestrian Bridge: Pre-fabricated truss spans | | |
| | Bicycle-Pedestrian Bridge: Single-column concrete piers w/concrete caps | | |
| | Bicycle-Pedestrian Bridge: Opportunity for interpretive displays to communicate Long Bridge corridor history | | |

Yellow: Long Bridge South - Included in this Submission

Blue: Long Bridge North – Previously Submitted

# Design Overview and Intent

## Bridge Type




STEEL THROUGH GIRDER

**Design Intent:**

- Weathering steel girders
- Through plate girders over George Washington Memorial Parkway, Mt. Vernon Trail, Potomac River, and Ohio Drive S/W

## Retaining Walls, Piers & Abutments

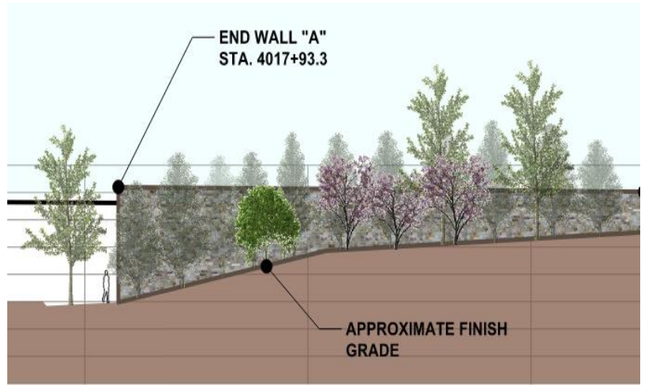
*Proposed Stone cladding for GW Parkway*

*Proposed stone cladding for Potomac River & DC*

**Design Intent:**

- Granite Stone Cladding applied to Rail Bridge River Piers in the Potomac River
- Broken Ashlar Stone Cladding applied to Rail Bridge Substructure Elements at George Washington Memorial Parkway and Mt. Vernon Trail

## Landscaping




**Design Intent:**

- Restore historic and cultural landscapes planned in parkland around rail corridor
- Provide filtered views to existing and proposed rail bridges and walls
- Maintain critical viewsheds within the National Parks
- Bicycle-Pedestrian Ramp landscaping design to address safety concerns and maximize visibility of users
- Provide a plant palette that creates pollinator habitat and is in line with the historic planting plan

# Structural Elements

# CSX Long Bridge over Potomac River | Existing

# Long Bridge South – Structures | Proposed

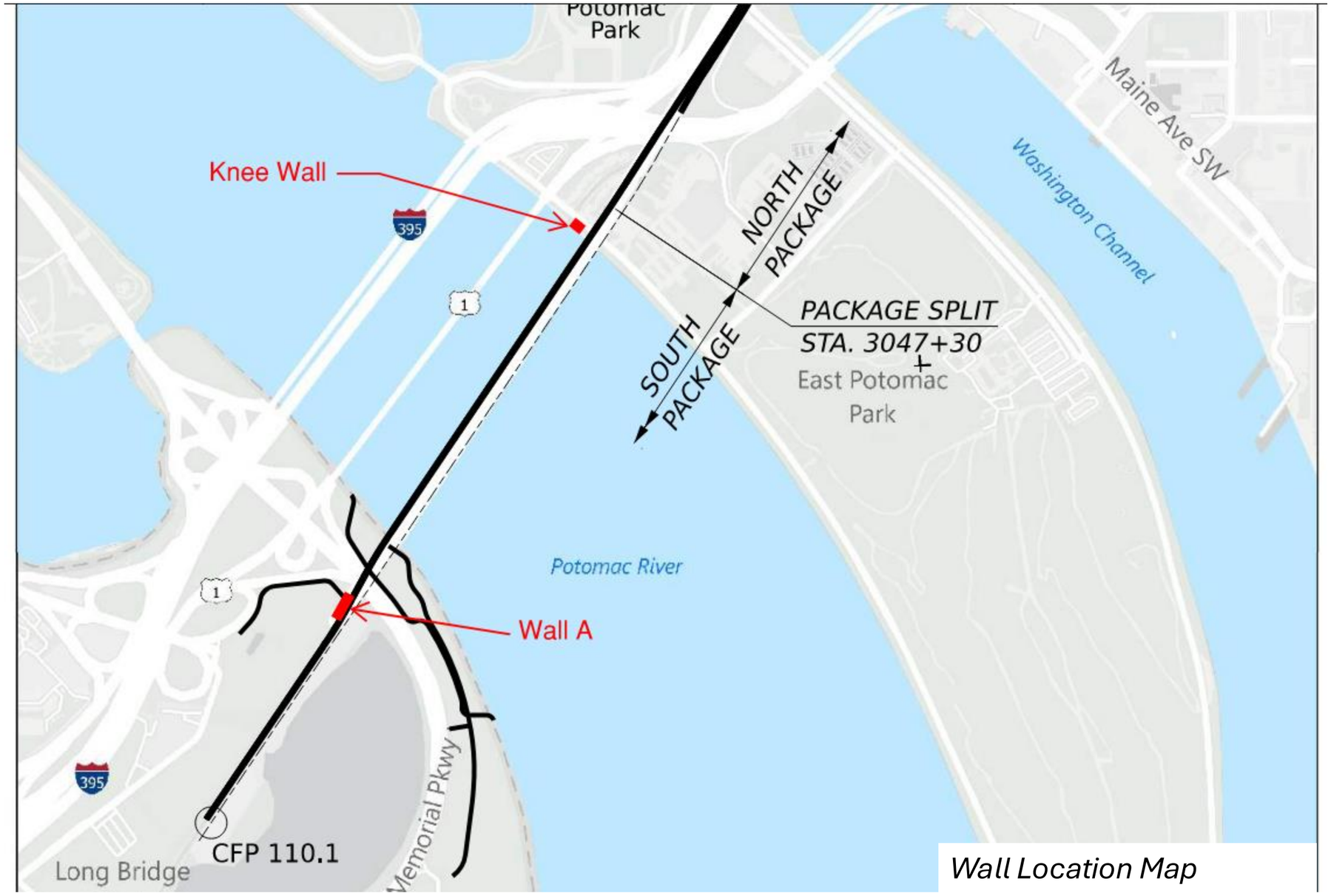
## Structural Design Approach:

- **Consistent Corridor Wide Aesthetic**
- **Retaining Wall Parapet** – 7’-8” Height, Concrete (consistent with 30% Plans)
- **Stone Pattern** – Broken Ashlar and Granite Cladding, Dimensions Varying (river piers similar to existing bridge)
- **Stone Projections** – Match existing
- **Bridge Girders** – Weathering Steel (will weather gradually and naturally)
- **Wall Piers** – Bullnosed ends for piers on water
- **Abutments** – Plumb (not battered)
- **Retaining Wall A** – Precast Panels to Match Adjacent Bridge Abutment

# Retaining Walls

# Retaining Walls | Proposed

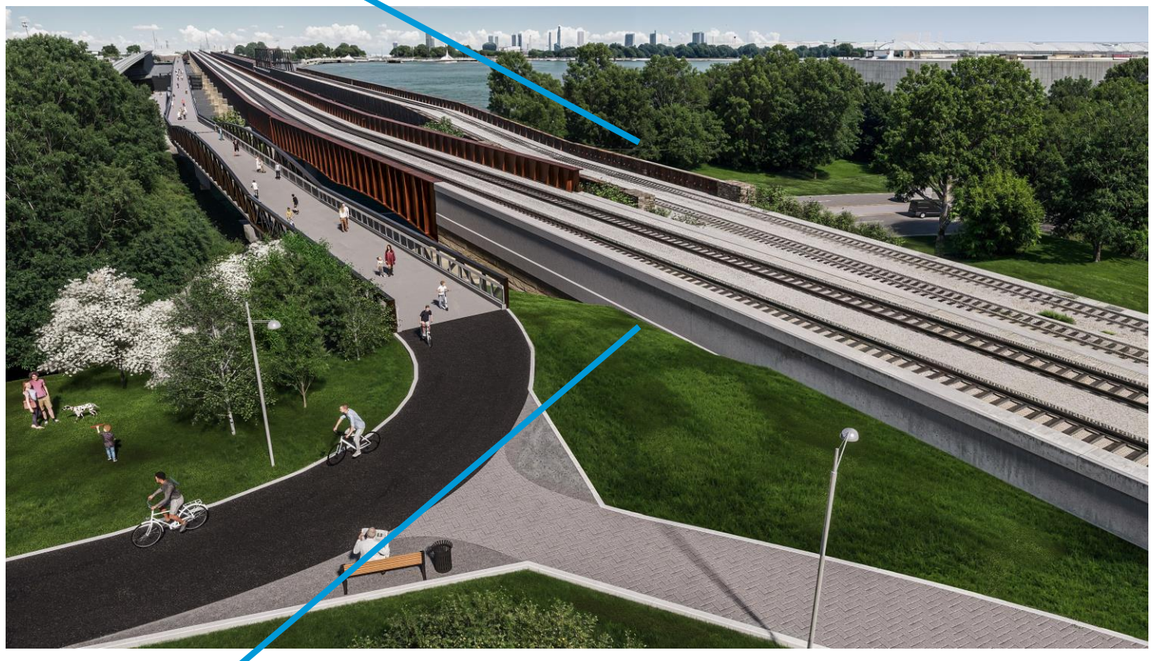
## Long Bridge South - Retaining Wall Locations




*Wall Location Map*

# Retaining Walls | Proposed

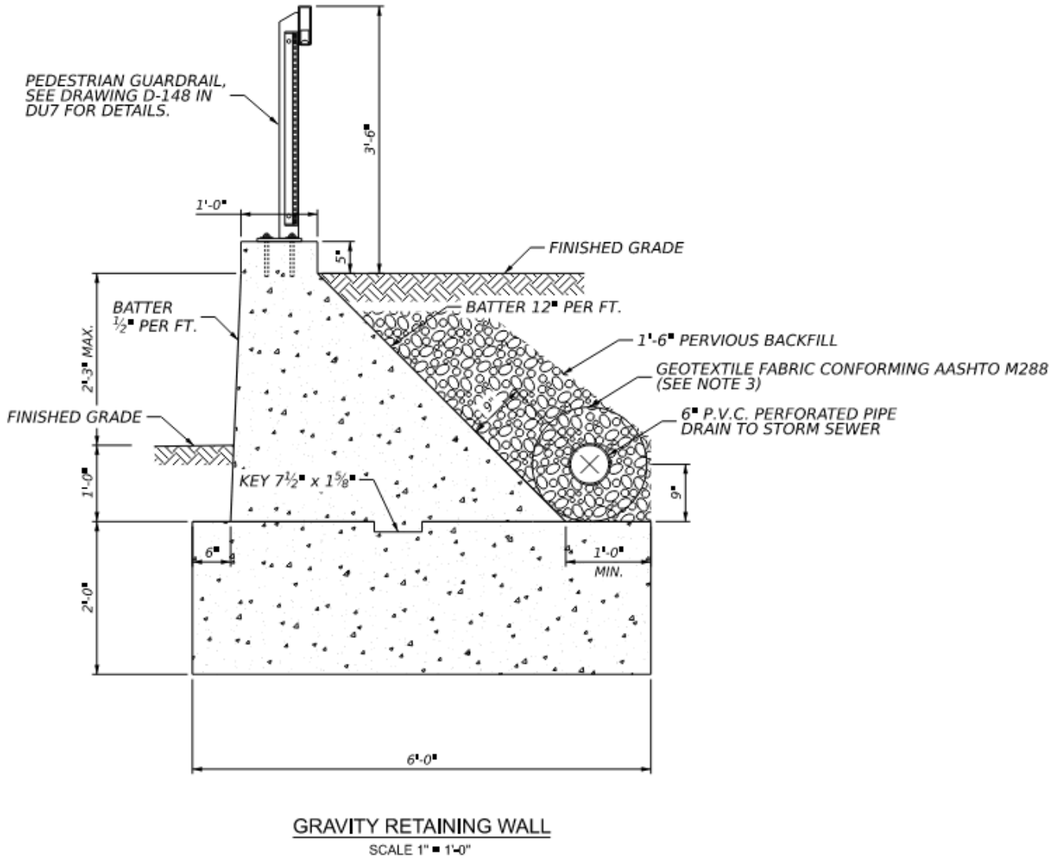
## Retaining Wall A, Long Bridge Park, VA (landscaping not shown)



*Wall “A” Elevation (length 154' - 6")*

# Retaining Walls | Proposed

## Knee Wall – East Potomac Park, along Ohio Drive S/W


*Wall Section View*

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# Bridges

# Bridges | Proposed Rail Bridge over the Potomac River


| Pier Element | Existing Long Bridge River Piers | Proposed Potomac River Rail Piers |
|---|---|---|
| Pier Cap Pedestal | 30" Deep Granite Blocks | Reinforced, High-Performance Concrete with Block Joints |
| Pier Cap Coping | 8'-2" to 10'-8" Wide | 7'-8" Wide |
| Coping Overhang | 4" | Matches Existing |
| Pier Cap Chamfer | 6" | Matches Existing |
| Pier Cap Coping Elevation | Approx. El. 19.5' | Approx. El 20.0' |
| Stem Geometry | Battered in all directions | Not Battered, Constant Width and Length |
| Upstream End | Ice Breaker Nose, Tapered | Matches Existing |
| Downstream End | Rounded End, Battered | Rounded End, Not Battered |
| Architectural Treatment | Granite Blocks | 6" Thick Granite Stone Cladding, Matches Existing Patterning |
| Pile Cap | Top of Cap is below Mean Low Water | Top of Concrete Cap extends minimum 2' above Mean High Water |

# Bridges | Proposed Rail Bridge over the Potomac River

# Bridges | Proposed Rail Bridge over George Washington Memorial Parkway

*Proposed Bike/Ped Bridge shown in foreground*

# Bridges | Proposed Rail Bridge over George Washington Memorial Parkway

# Bridges | Proposed Rail Bridge over George Washington Memorial Parkway

# Bridges | Proposed Bike/Pedestrian Bridge over the Potomac River

*Proposed Rail Bridge shown in background*

# Bridges | Bike/Pedestrian Bridge Landing at Ohio Drive S/W, East Potomac Park

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# Lighting

# Long Bridge South – Lighting | Proposed

## Lighting Design Approach:

- **Consistent Corridor Wide Aesthetic**
- **Light poles / Fixtures**– Reuse / Relocate lights where feasible
- **Underbridge Lighting** – Wall Packs and Underside Fixtures to enhance light levels in darkened areas under the two proposed bridges
- **Pedestrian Bridge Lighting** – Downlighting provided under the handrails along both sides of the bridge, ramp and stairs

# Lighting | Proposed

## Bike/Pedestrian Bridge Landing at East Potomac Park, 8-ft spacing of handrail

# Landscape Design

# Landscape Design Approach

**Goals:**

- Create a planting palette that is visually and historically consistent with the NPS-GWMP corridor
- Vary the selection and arrangement of plantings to achieve a naturalized look
- Maintain viewsheds
- Integrate plantings on the Bike/Pedestrian Bridge while preserving key viewsheds and maintain sightlines for users
- For trees removed for the project, replace as many as possible within the project area
- Integrate both pollinator and native species

# Plant Palette

## Canopy and Medium Trees

*Aesculus flava* – Yellow Buckeye

*Betula nigra* – River Birch

*Liriodendron tulipifera* – Tulip Tree

*Nyssa sylvatica* – Black Gum

*Platanus occidentalis* – American Sycamore

*Quercus palustris* – Pin Oak

*Quercus phellos* – Willow Oak

*Quercus vellutina* – Black Oak

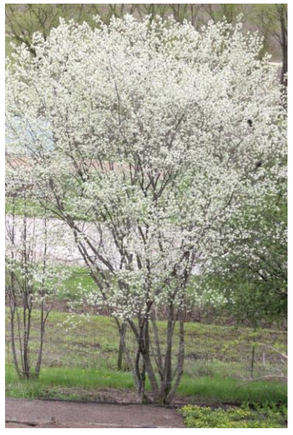
*Tilia americana* – American Linden

*Ostrya virginica* - Hophornbeam

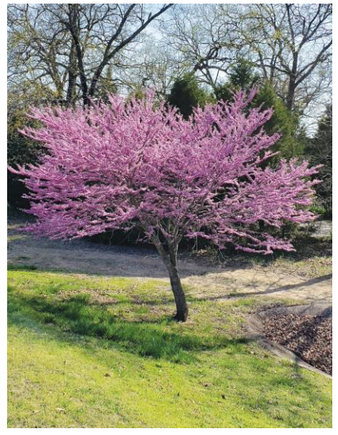
*Sassafras albidum* - Sassafras

# Plant Palette

## Flowering and Evergreen Trees



*Amelanchier arborea* – Downy Serviceberry



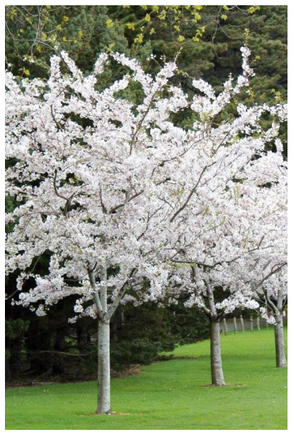
*Cercis canadensis* – Eastern Redbud

*Chionanthus virginicus* – White Fringetree

*Cornus florida* – Flowering Dogwood

*Crataegus phaenopyrum* – Washington Hawthorn

*Malus coronaria* – Sweet Crabapple



*Prunus x yedoensis 'Yoshino'* – Yoshino Cherry

*Ilex opaca* – American Holly

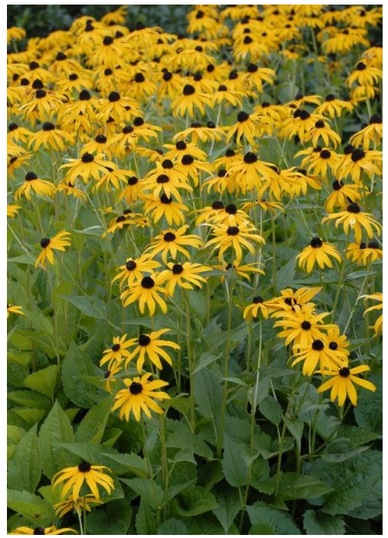
# Plant Palette

## Shrubs and Groundcover

*Hydrangea arborescens ; 'Haas' Halo'* - Haas Halo Hydrangea

*Asclepias incarnata* - Swamp Milkweed

*Pycanthemum muticum* - Clustered Mountain Mint

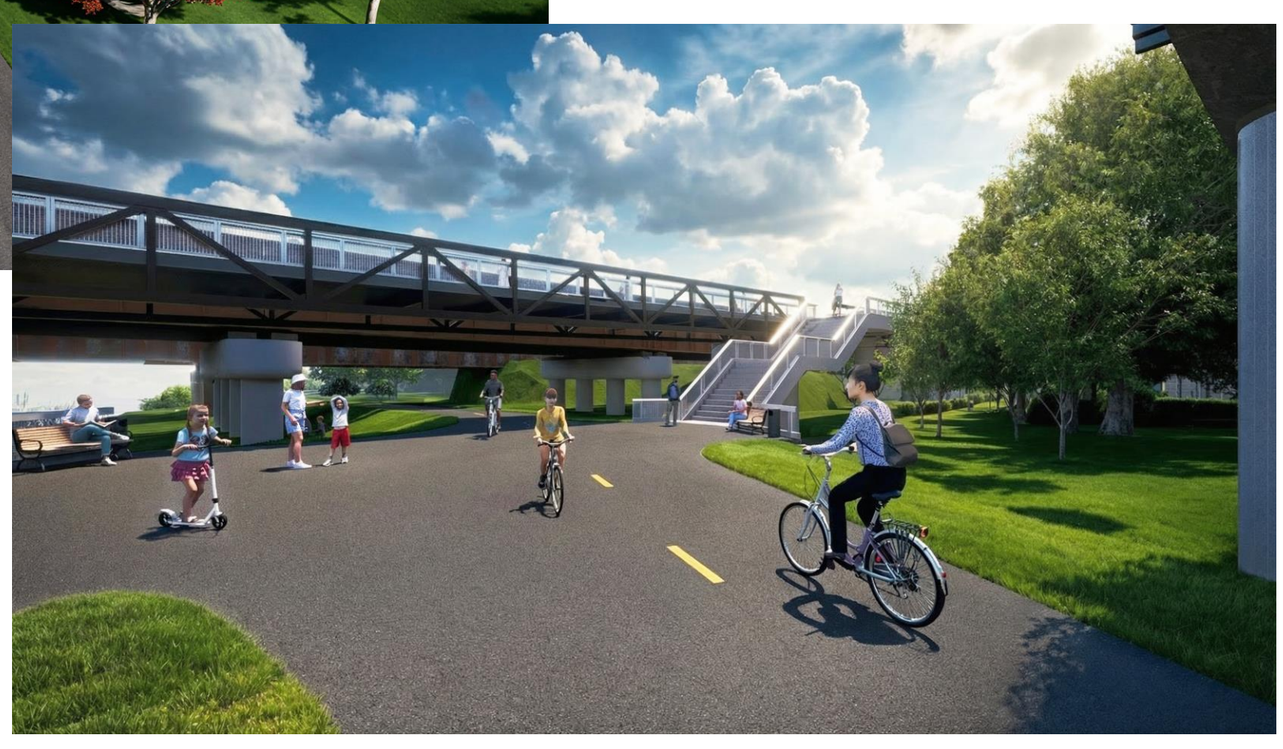


*Rudbeckia fulgida var. sullivantii* - Orange Coneflower

*Panicum virgatum* - Switchgrass

# Site A

# Site B



# Site C

# Site D

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# U.S. Commission of Fine Arts

## Long Bridge South Project
## Final Design Approval Submittal

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# Project Scope and Schedule

## Site Acquisition

The Long Bridge Act of 2020 authorized the National Park Service (NPS) to convey to Virginia or the District of Columbia (the District) approximately 4.4 acres of NPS land for the construction of rail and other infrastructure relating to the Project. In 2019, VPRA struck an agreement to purchase railroad right-of-way and tracks owned by CSX Transportation (CSXT) for the Long Bridge Project (Project). Additional property acquisitions are underway.

## Project Schedule

The overall Project schedule is shown below. The Project is currently in the Final Design phase following the issuance of the National Environmental Policy Act (NEPA) Final Environmental Impact Statement/Record of Decision (FEIS/ROD) in August 2020 and selection of Design Build contractors for the North and South contract packages. The North Package reached the 60% design milestone in 2024; final design is underway. The South Package is currently working toward 60% design.

## Project Cost and Funding Status

The current total Project cost is $2.3 billion. Current funding partners for the Project include VPRA, FRA, Amtrak, CSXT, and VRE. The Project received a Federal/State Partnership grant from the FRA and a RAISE grant for the bike/pedestrian bridge. The Project is fully funded.

**DDOT Led**

**2011-2016**
**Pre-NEPA**

- 2011 FRA ARRA Grant
- Phase I Study 2012-2015
- Phase II Study 2015-2016
- DDOT-DRPT Partnership Through MOU

**2016-2020**
**NEPA**

- 2016 FRA TIGER Grant
- FEIS/ROD Complete September 2020
- Long Bridge Act December 2020
- Identified Mitigation Commitments & Permit Identification

**VPRA Led**

**2021-2023**
**Preliminary Engineering**

- Design 30%
- Determine Project Delivery Method
- Begin Environmental Mitigation & Permitting
- Agreements with Partner Organizations

**2025-2030**
**Final Design & Construction**

- Design 100%
- Land Acquisition
- Permitting
- Construction

# Introduction

## Project Phases


*Project Map – Project Phases*

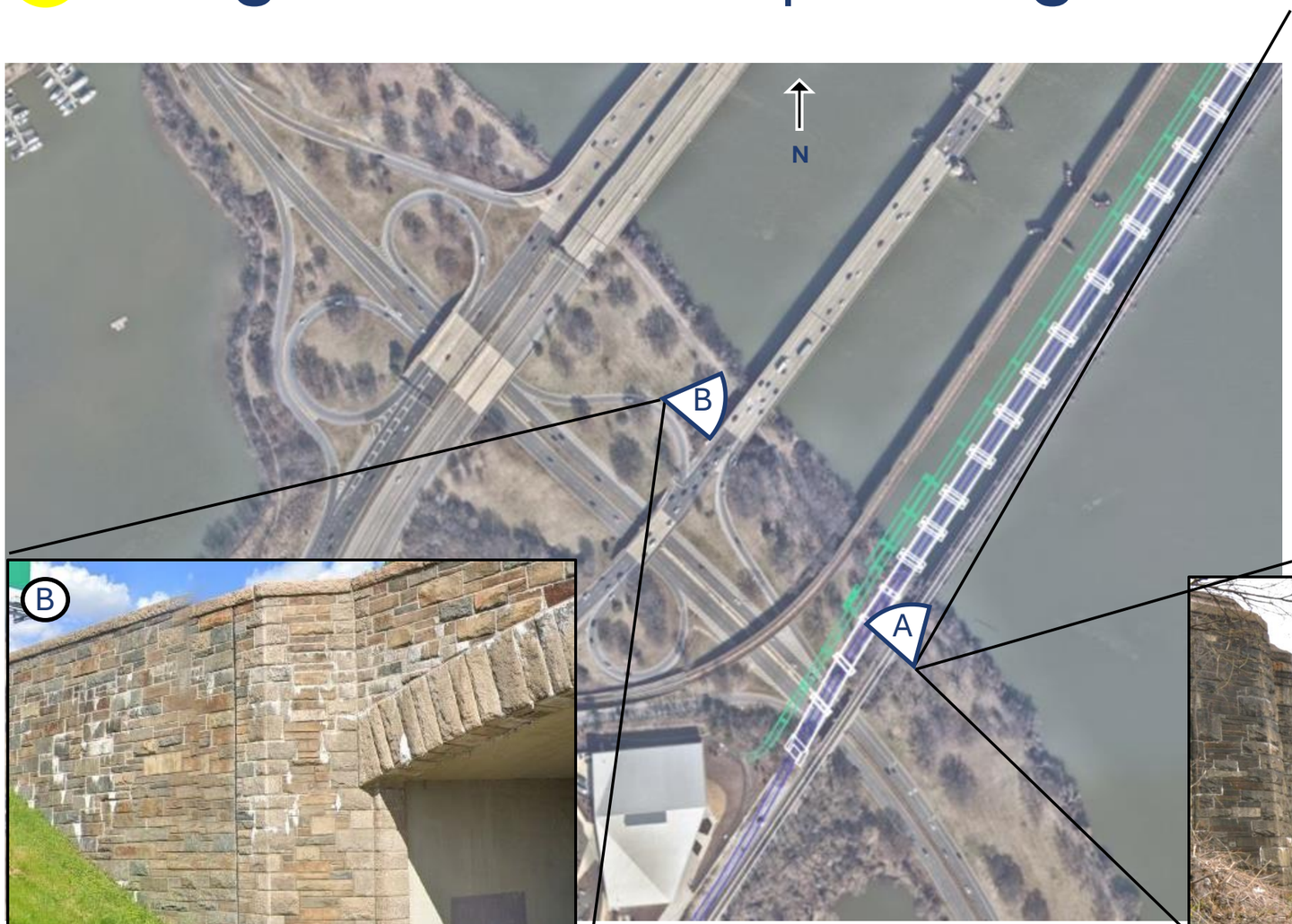
The Project corridor is separated into four phases reflecting the varying site conditions and context that transitions from parkland to an urban context, see figure above and table to the right.

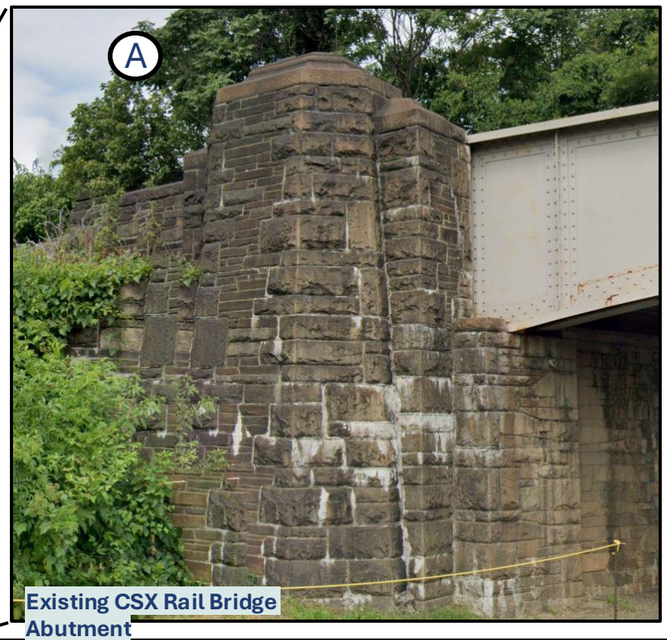
Yellow: Long Bridge South - Included in this submission (1 & 2)

Blue: Long Bridge North – Previously submitted (3 & 4)

| Phase | | Structures |
|---|---|---|
| 1 | **GW Parkway** | • Potomac River Rail Bridge (extends over the Parkway and Potomac River)<br>• Potomac River Bicycle-Pedestrian Bridge (extends over the Parkway and Potomac River to Long Bridge Park) |
| 2 | **Potomac River** | • Potomac River Rail Bridge (extends over the Parkway and Potomac River)<br>• Potomac River Bicycle-Pedestrian Bridge (extends over the Parkway and Potomac River)<br>• Retaining Walls and Landscape Design |
| 3 | **East & West Potomac Parks** | • Potomac River Bicycle-Pedestrian Bridge Landing<br>• WMATA/I-395 Bridge<br>• Ohio Drive SW (East) Bridge<br>• Washington Channel Rail Bridge<br>• Retaining Walls and Landscape Design |
| 4 | **Maine Avenue SW Area** | • Maine Avenue SW Rail Bridge<br>• Retaining Walls<br>• Maine Avenue SW Pedestrian Bridge |

# 1 Bridges over GWMP | Existing




Existing CSX Rail Bridge Abutment


Existing I-395 North Bridge Abutment (1950)


Existing CSX Rail Bridge over GWMP (1904)

# Long Bridge South – Structures | Existing

**Existing structures will remain.**

## 1 CSXT Rail Bridge over Ohio Drive SW, the Potomac River and the Mount Vernon Trail (Long Bridge) - 1904

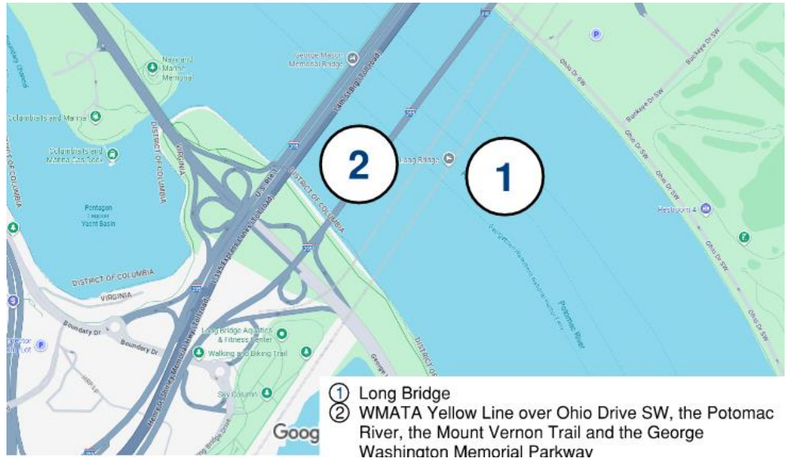
Originally constructed in 1904 and substantially modified in 1943, the existing CSXT Rail Bridge over Ohio Drive SW, the Potomac River and the Mount Vernon Trail in Arlington, VA and Washington, DC consists of coated steel through girders, transverse flooorbeams and an open deck. The abutments and piers consist of stone masonry blocks.

*Long Bridge – Topside, Looking Northeast*

*Long Bridge – West Side*

## 2 WMATA Yellow Line Bridge over Ohio Drive SW, the Potomac River, the Mount Vernon Trail and the George Washington Memorial Parkway - 1977

The WMATA Yellow Line Bridge over Ohio Drive SW, the Potomac River, the Mount Vernon Trail and George Washington Memorial Parkway in Arlington, VA and Washington, DC was constructed in 1977. Bridge consists of coated steel box girders with a concrete deck. The abutments and piers consist of reinforced concrete. Security fencing is located on top of the 90-degree wingwall to prevent access to WMATA right-of-way.




① Long Bridge
② WMATA Yellow Line over Ohio Drive SW, the Potomac River, the Mount Vernon Trail and the George Washington Memorial Parkway

*WMATA Yellow Line Bridge Tunnel Portal*

*WMATA Yellow Line Bridge Tunnel Portal*

# Long Bridge South – Structures | Existing

### 3 CSXT Rail Bridge over George Washington Memorial Parkway (GWMP) – 1930

Constructed in 1930, the existing CSXT Rail Bridge over George Washington Memorial Parkway in Arlington, VA consists of coated steel through girders, transverse floor beams and concrete deck. The abutments and pier consist of stone masonry blocks supported on pile foundations.

*CSXT over GWMP – East Side*

*CSXT over GWMP – West Side*

### 4 Retaining Wall adjacent to Ohio Drive SW

The Retaining Walls adjacent to Ohio Drive SW abut either side of the North Abutment of the Long Bridge is located in Washington, DC. Both structures are gravity retaining walls that consist of stone masonry blocks with stone coping.


③ PCSXT Rail Bridge over George Washington Memorial Parkway
④ Retaining Wall adjacent to Ohio Drive SW

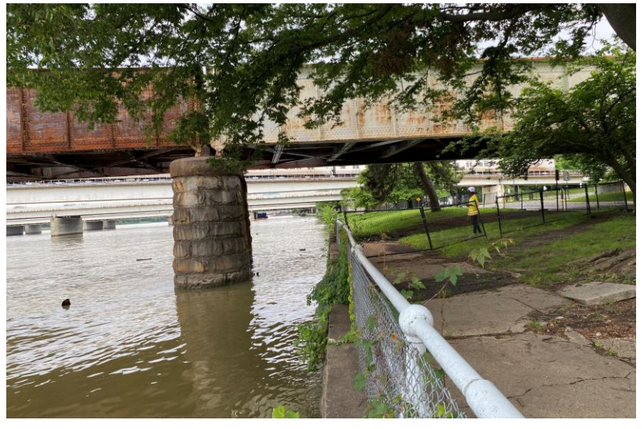

*West Retaining Wall adjacent to Ohio Dr SW (Left)*
*East Retaining Wall adjacent to Ohio Dr SW (Right)*


*East Retaining Wall adjacent to Ohio Drive SW*

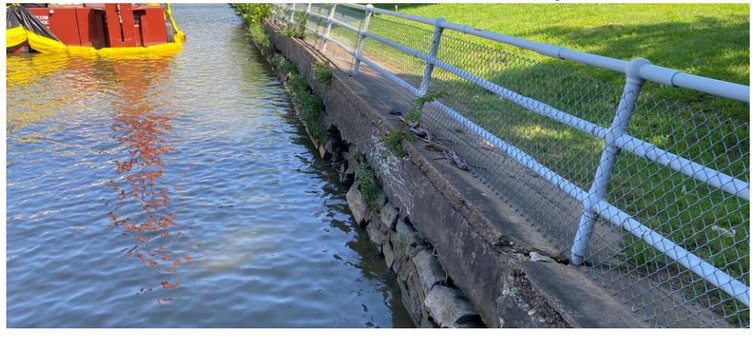
# Long Bridge South – Structures | Existing

## 5 Potomac River Seawall – 1884 - 1913

Constructed between 1884 and 1913, the existing Potomac River Seawall in Washington, DC consists of a stone masonry block stem. Based on the estimated section the stem is supported by a wide trench filled by riprap. There is a sidewalk and steel pipe handrail on top of the seawall. The portion of the seawall from the Arland D. Williams Jr. Memorial Bridge over the Potomac River to approximately 125 feet southeast of the Long Bridge was surveyed as part of the Long Bridge Project – South Package.



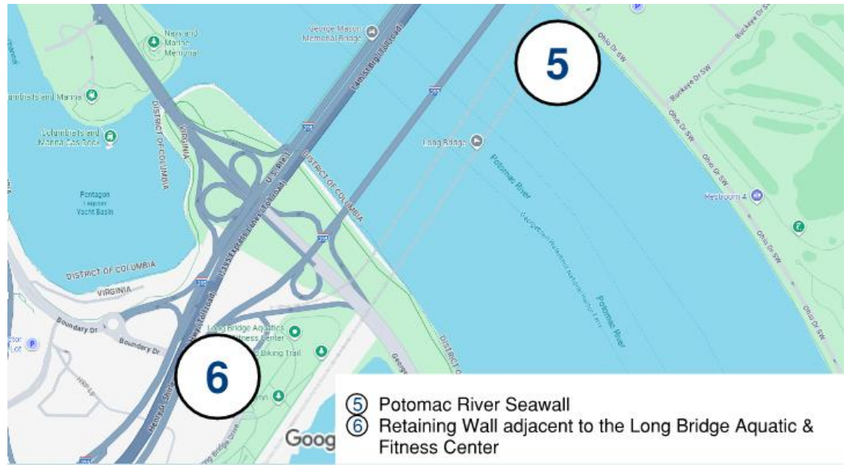
*Potomac River Seawall - East End of Surveyed Section*



*Potomac River Seawall – West of Long Bridge*

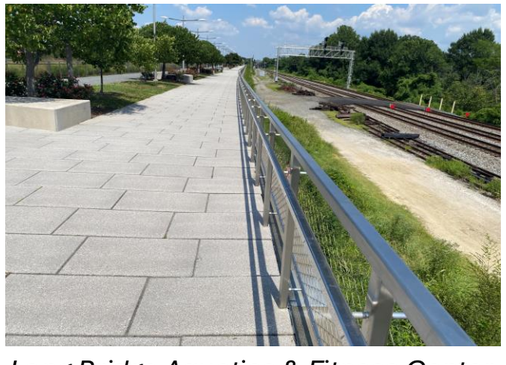
## 6 Retaining Walls adjacent to the Long Bridge Aquatics & Fitness Center - 2019

The retaining wall separating the Railroad right-of-way and the Long Bridge Aquatics & Fitness Center in Arlington, VA was built in 2019. The wall consists of a gabion faced reinforced soil retaining wall system made up of galvanized steel welded wire mesh facing, holding select rock. There are stainless steel guardrails at the top of the retaining wall. The portion of the wall surveyed as part of the Long Bridge Project – South Package measures 1,700 feet in length, starting from the north end of the wall at the CSXT Bridge over George Washington Memorial Parkway approach.




⑤ Potomac River Seawall
⑥ Retaining Wall adjacent to the Long Bridge Aquatic & Fitness Center

*Long Bridge Aquatics & Fitness Center – South End of Surveyed Section (Left), North End (Right)*



*Long Bridge Aquatics & Fitness Center - Topside*

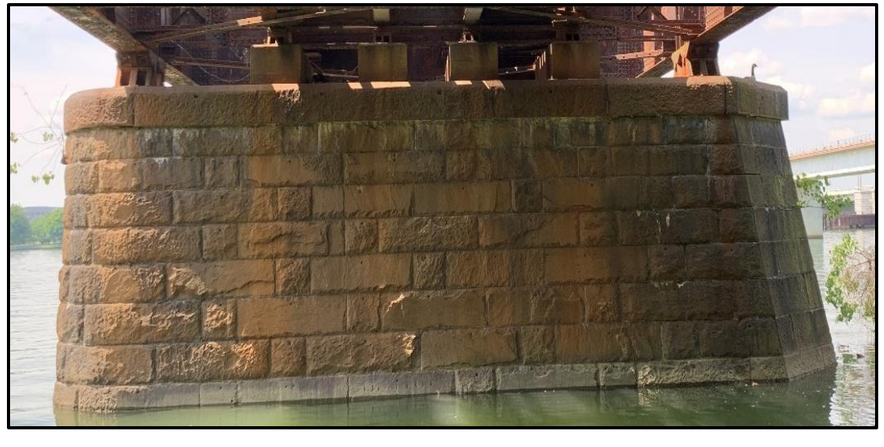
# Long Bridge South – Structures | Existing

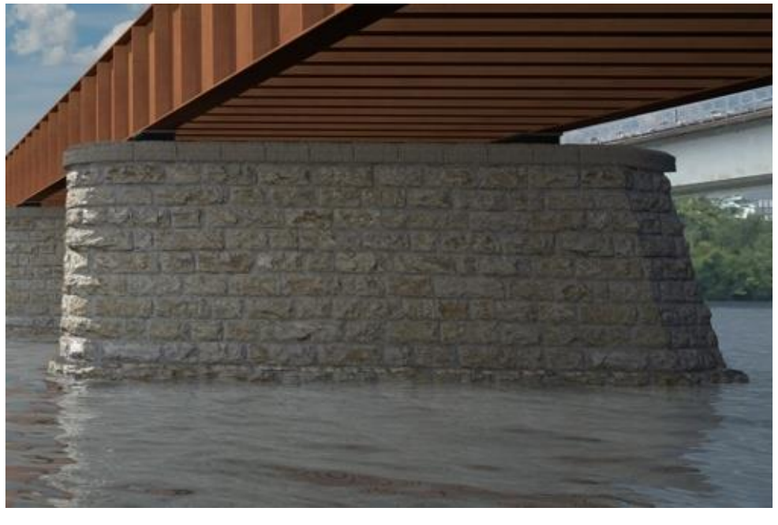
## 7 CSXT Rail Bridge over Ohio Drive SW, Potomac River and the Mount Vernon Trail Fenders

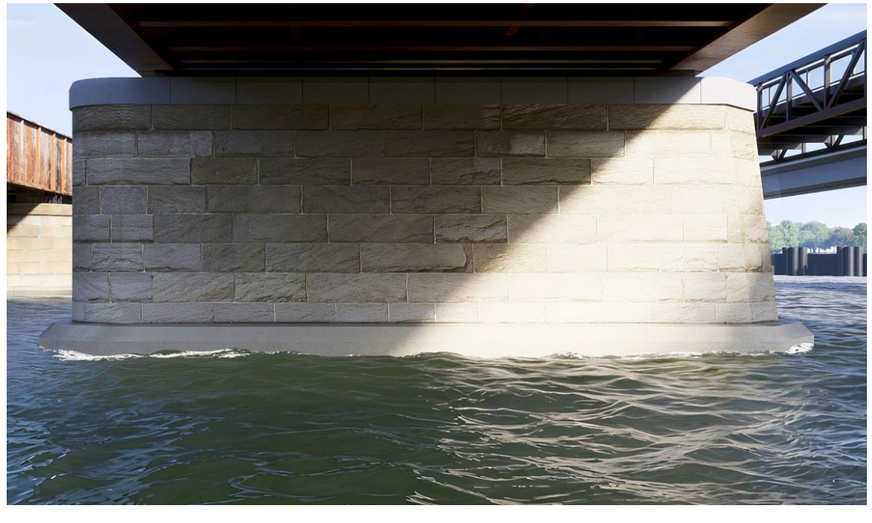
There are existing fender systems in front of the north and east faces of Pier 9 and encircling Pier 8. The fender system at Pier 9 appears to consist of the original vertical timbers placed side-by-side. The fender system at Pier 8 consist of a rebuilt system with vertical timber posts and horizonal wales, built in the late 1990's.


*Long Bridge Fender System – Pier 8, East Side*

# Bridges | Proposed Rail Bridge over the Potomac River







| Existing | Preliminary Engineering (30% Design) | Current (60% Design) |
|---|---|---|
| **Pier Element** | **Existing Long Bridge River Piers** | **Potomac River Rail Piers (30% Preliminary Engineering Concept)** | **Potomac River Rail Piers (Current Concept)** |
| Pier Cap Pedestal | 30" Deep Granite Blocks | Varying Height Reinforced Concrete | Reinforced, High-Performance Concrete with Block Joints |
| Pier Cap Coping | 8'-2" to 10'-8" Wide | 11'-8" Wide | 7'-8" Wide |
| Coping Overhang | 4" | Matches Existing | Matches Existing |
| Pier Cap Chamfer | 6" | Matches Existing | Matches Existing |
| Pier Cap Coping Elevation | Approx. El. 19.5' | Approx. El 20.0' | Approx. El 20.0' |
| Stem Geometry | Battered in all directions | Not Battered, Constant Width and Length | Not Battered, Constant Width and Length |
| Upstream End | Ice Breaker Nose, Tapered | Matches Existing | Matches Existing |
| Downstream End | Rounded End, Battered | Rounded End, Not Battered | Rounded End, Not Battered |
| Architectural Treatment | Granite Blocks | 6" Thick Granite Stone Cladding, Matches Existing Patterning | 6" Thick Granite Stone Cladding, Matches Existing Patterning |
| Pile Cap | Top of Cap is below Mean Low Water | Top of Concrete Cap extends minimum 2' above Mean High Water | Top of Concrete Cap extends minimum 2' above Mean High Water |

# Bridges | Proposed Rail Bridge over the Potomac River

# Bridges | Proposed Rail Bridge over the Potomac River

# Bridges | Proposed Bike/Pedestrian Bridge over the Potomac River

# Bridges | Proposed Bike/Pedestrian Bridge over the Potomac River

# Bridges | Bike/Pedestrian Bridge Landing at East Potomac Park, Landscaping at NPS Parking Lot C

# Bridges | Bike/Pedestrian Bridge Landings at Mt. Vernon Trail, NPS-GWMP, VA

# Bridges | Bike/Pedestrian Bridge Landings at Mt. Vernon Trail, Wayfinding Signage



*Existing MVT Wayfinding Signs*

# Bridges | Bike/Pedestrian Bridge Landing at Long Bridge Park, Arlington, VA

# Lighting | Proposed

## Bike/Pedestrian Bridge Landing at East Potomac Park, 4-ft spacing of handrail

# Lighting | Proposed

## Bike/Pedestrian Bridge Landings at Mount Vernon Trail, 4-ft spacing of handrail lights

# Lighting | Proposed

## Bike/Pedestrian Bridge Landings at Mount Vernon Trail, 8-ft spacing of handrail lights

# Lighting | Proposed

## Bike/Pedestrian Bridge Landing at Long Bridge Park, 4-ft spacing of handrail lights

# Lighting | Proposed

## Bike/Pedestrian Bridge Landing at Long Bridge Park, 8-ft spacing of handrail lights

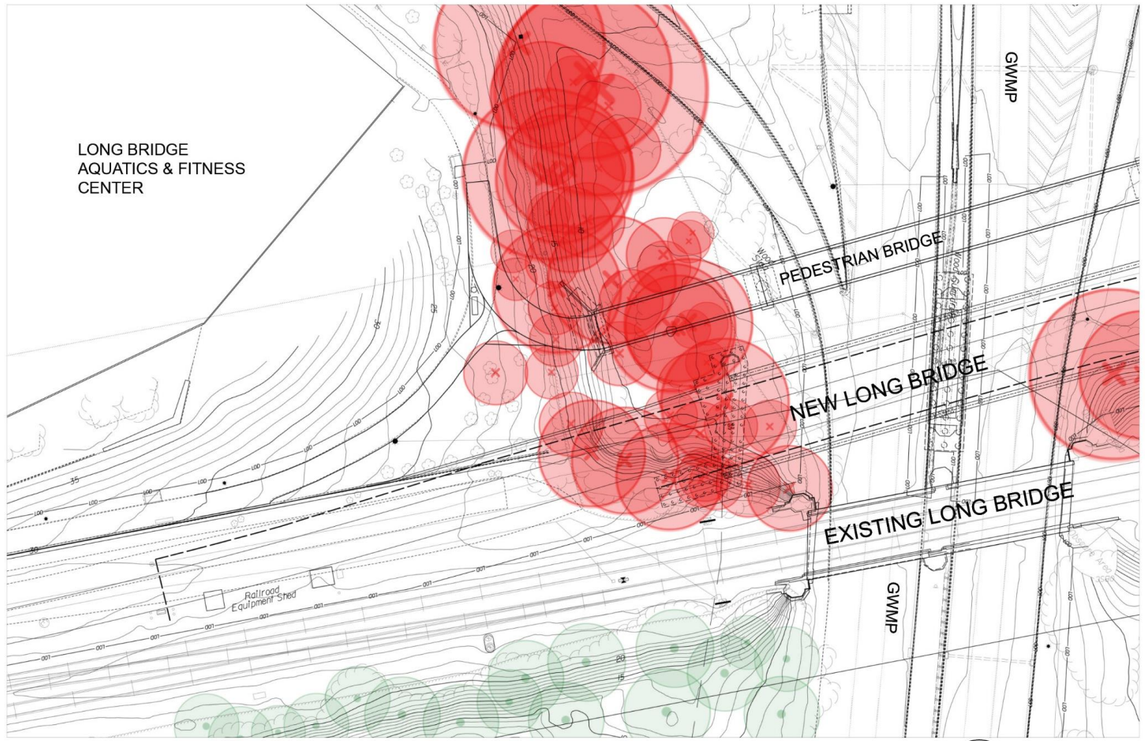
# Site A

## SITE A TREE PRESERVATION


SITE A KEY MAP

LEGEND

- TREE TO BE REMOVED AS PART OF LBS PROJECT
- TREE TO REMAIN
- TREE TO BE REMOVED AS PART OF LBN PROJECT




SITE A TREE PRESERVATION AND REMOVAL

*RIGHT:* DIAGRAM ILLUSTRATING TREES TO BE PROTECTED AND TREES TO BE REMOVED DUE TO IMPACTS FROM CONSTRUCTION EFFORTS

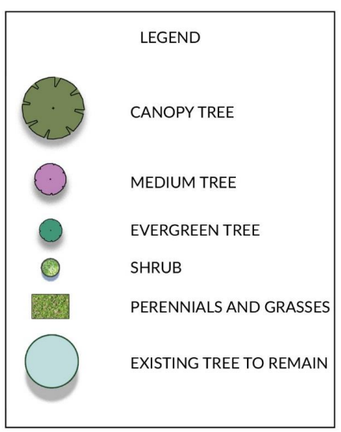
# Site A

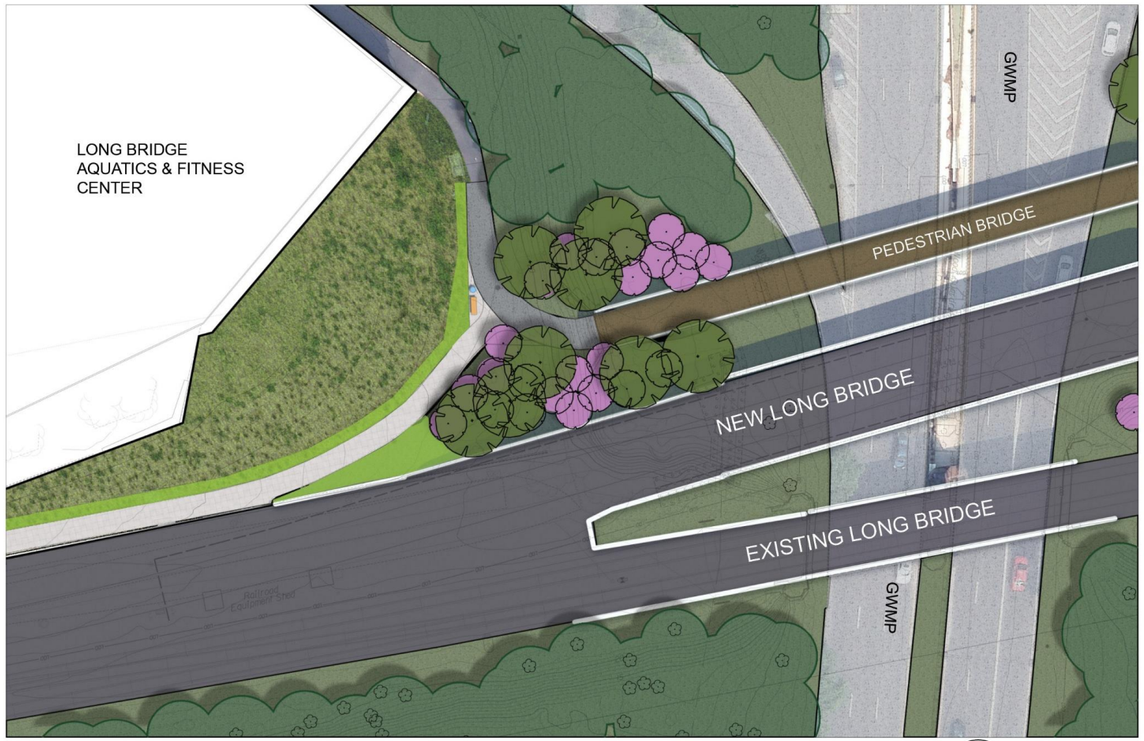
## SITE A LANDSCAPE AESTHETIC


SITE A KEY MAP

The landscaping design intent throughout the project area is to emulate the naturalized clustering and spacing of existing trees throughout the project space, and to plant a diverse range of tree sizes to recreate the successional nature of the existing space. Trees are clustered and spaced to provide views through the trees and to the proposed bridges and walls within the landscape. The design is intended to be consistent with the proposed planting and aesthetic on the Long Bridge North Project, producing one cohesive landscaped corridor.

*RIGHT*: Illustrative plan showing the proposed landscape conditions throughout Site A.

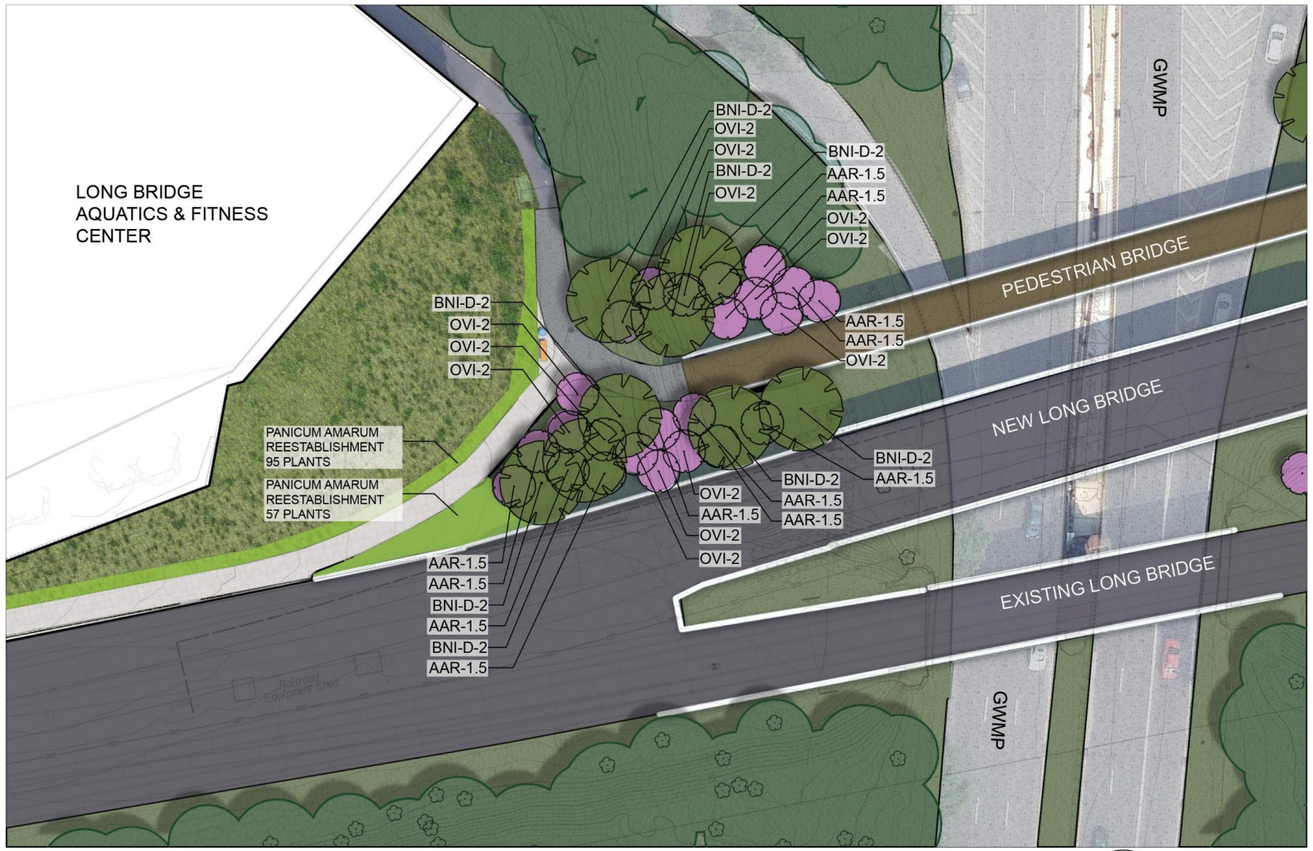



SITE A PROPOSED PLANTING

# Site A

## SITE A LANDSCAPE AESTHETIC



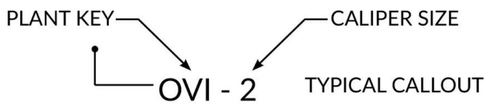

SITE A LANDSCAPE PLAN

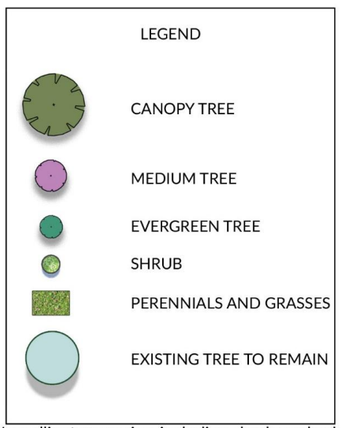
1" = 15'


SITE A KEY MAP

*TOP LEFT:* Plan illustrating proposed tree species and caliper sizes throughout the Site A, adjacent to the Long Bridge Aquatic Center, where the proposed pedestrian bridge meets the existing trail.

*BOTTOM LEFT:* Schedule of proposed tree species. The historic reference column identifies the basis of selection




| PLANT SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| **Key** | **Quantity** | **Botanical name** | **Common name** | **Size** | **Root (Depth/Diameter)** | **Historical Justification** |
| **CANOPY TREES** | | | | | | |
| BNI-D | 8 | *Betula nigra* ; Duraheat | River Birch | 2" caliper | 14 3/8 in. / 24 in. | Bridges Area Species: 1971, as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report |
| **UNDERSTORY TREES** | | | | | | |
| AAR | 12 | *Amelanchier arborea* | Downy Serviceberry | 6-7' HT. | N/A / 24 in. | |
| OVI | 12 | *Ostrya virginica* | Hop Hornbeam | 2" caliper | 15 5/8 in. / 24 in. | Bridges Area Species: 1932, as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report |
| **ORNAMENTAL GRASSES** | | | | | | |
| PAM | 152 | *Panicum amarum* | Bitter Switchgrass | 24"-36" wide | | |

NOTE: No pollinator species, including shrubs or herbaceous species, are present at this site. Site D showcases pollinator species, and a schedule with bloom time and mix of native species is shown on a later slide.

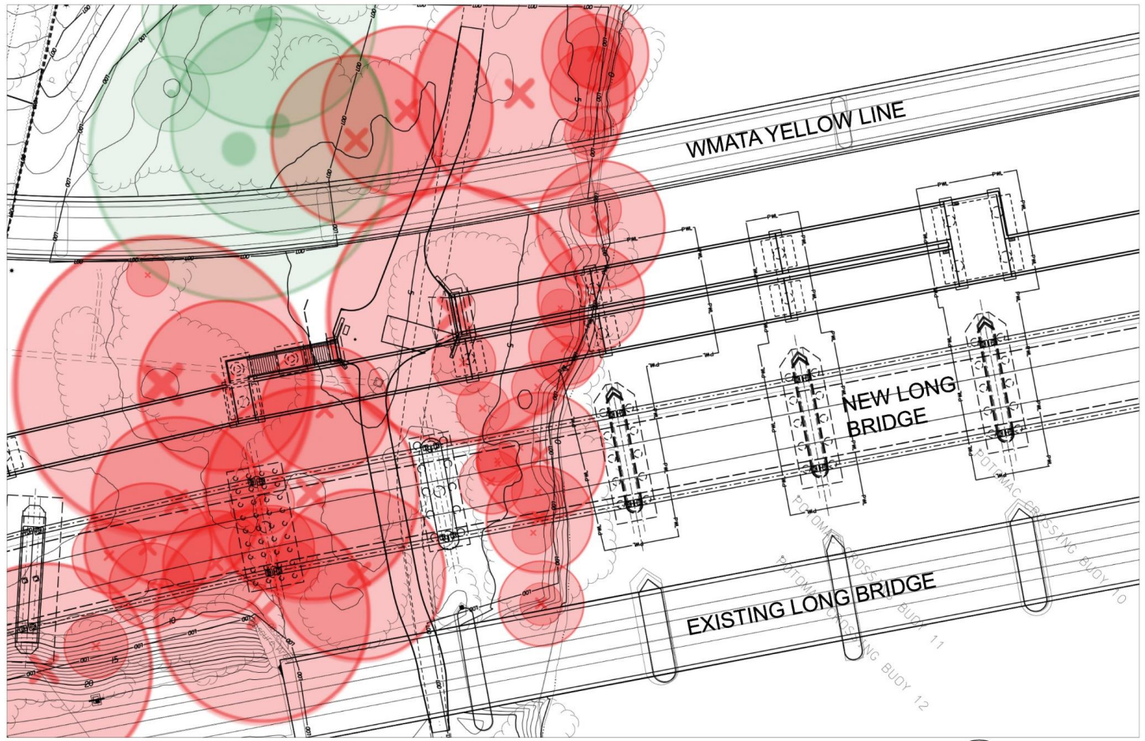
# Site B

## SITE B TREE PRESERVATION


SITE B KEY MAP

LEGEND

- TREE TO BE REMOVED AS PART OF LBS PROJECT
- TREE TO REMAIN
- TREE TO BE REMOVED AS PART OF LBN PROJECT




SITE B TREE PRESERVATION AND REMOVAL

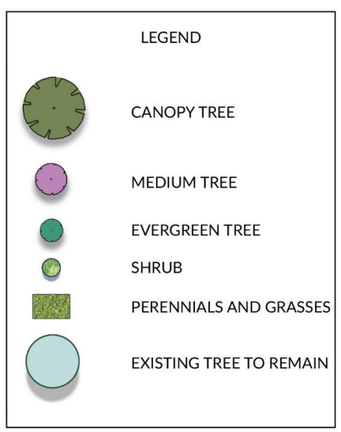
*RIGHT*: DIAGRAM ILLUSTRATING TREES TO BE PROTECTED AND TREES TO BE REMOVED DUE TO IMPACTS FROM CONSTRUCTION EFFORTS

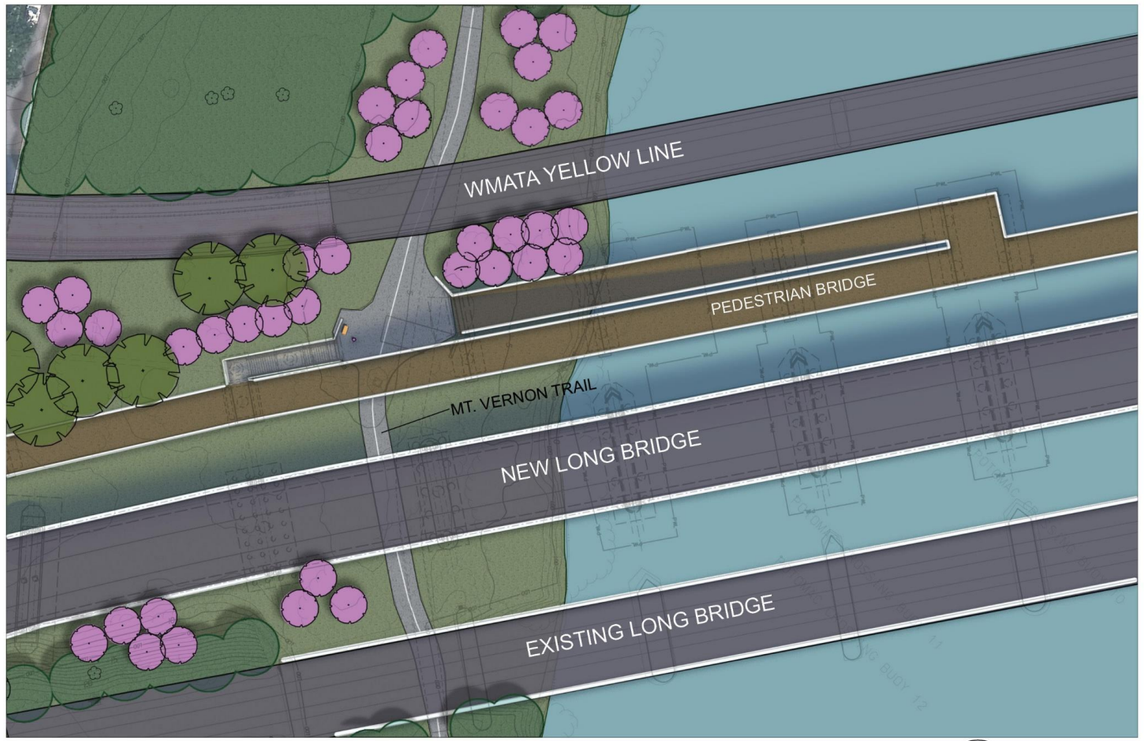
# Site B

## SITE B LANDSCAPE AESTHETIC


SITE B KEY MAP

*RIGHT:* Illustrative plan showing the proposed landscape conditions throughout Site B.

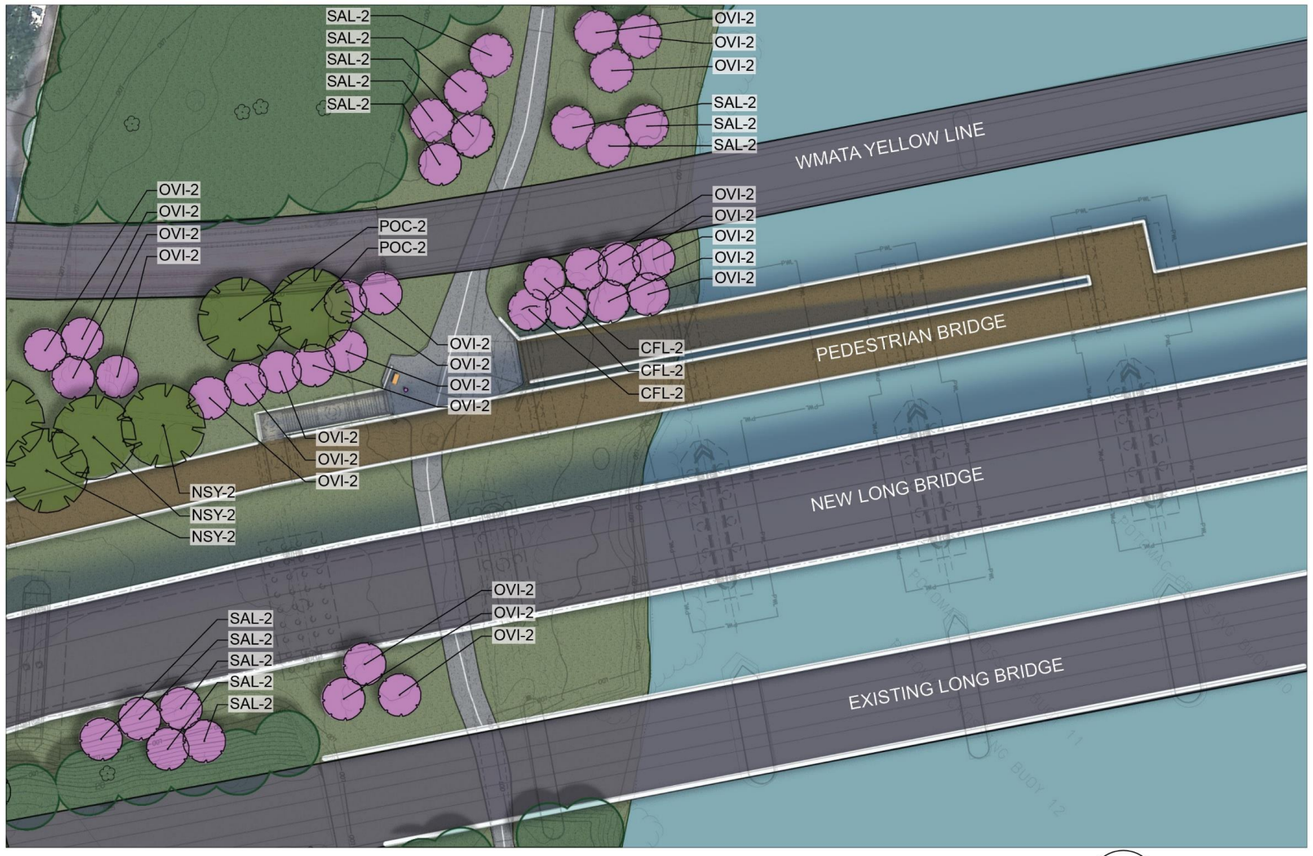



SITE B PROPOSED PLANTING

# Site B

## SITE B LANDSCAPE AESTHETIC




SITE B LANDSCAPE PLAN

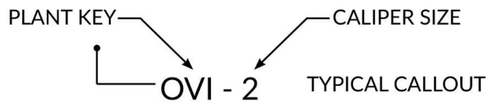
1" = 15'

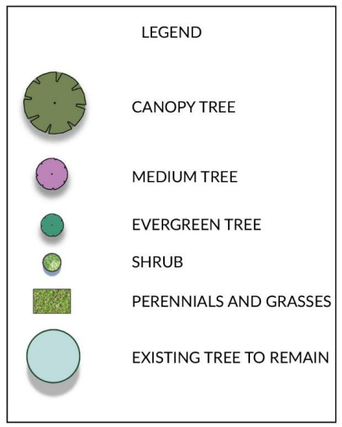
| PLANT SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| Key | Quantity | Botanical name | Common name | Size | Root (Depth/Diameter) | Historical Justification |
| **CANOPY TREES** | | | | | | |
| NSY | 3 | *Nyssa sylvatica* | Black Gum | 2" caliper | 14 3/8 in. / 24 in. | The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report recommended native alternatives and replacement for *Broussonetia papyrifera* and *Morus alba* |
| POC | 2 | *Platanus occidentalis* | American Sycamore | 2" caliper | 14 3/8 in. / 24 in. | Bridges Area Species: 1932, as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. Replace with p. occidentalis |
| **UNDERSTORY TREES** | | | | | | |
| CFL | 3 | *Cornus florida* | Flowering Dogwood | 2" caliper | 15 5/8 in. / 24 in. | Bridges Area Species: 1932, 79, 31, 8, as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| OVI | 11 | *Ostrya virginica* | Hop Hornbeam | 2" caliper | 15 5/8 in. / 24 in. | Bridges Area Species: 1932, as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| SAL | 13 | *Sassafras albidum* | Sassafras | 2" caliper | 15 5/8 in. / 24 in. | The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report recommended native alternatives and replacement for *Broussonetia papyrifera* and *Morus alba* |


SITE B KEY MAP

*TOP LEFT:* Plan illustrating proposed tree species and caliper sizes throughout the Site B, along the Mount Vernon Trail, where the proposed pedestrian bridge crosses the trail, and the ramp and stairs join with the trail elevation.

*BOTTOM LEFT*: Schedule of proposed tree species. The historic reference column identifies the basis of selection




NOTE: No pollinator species, including shrubs or herbaceous species, are present at this site. Site D showcases pollinator species, and a schedule with bloom time and mix of native species is shown on a later slide.

# Site C

## SITE C TREE PRESERVATION


SITE C KEY MAP

LEGEND

- TREE TO BE REMOVED AS PART OF LBS PROJECT
- TREE TO REMAIN
- TREE TO BE REMOVED AS PART OF LBN PROJECT


SITE C TREE PRESERVATION AND REMOVAL

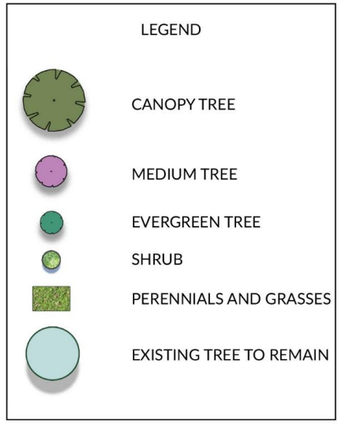
*RIGHT*: DIAGRAM ILLUSTRATING TREES TO BE PROTECTED AND TREES TO BE REMOVED DUE TO IMPACTS FROM CONSTRUCTION EFFORTS

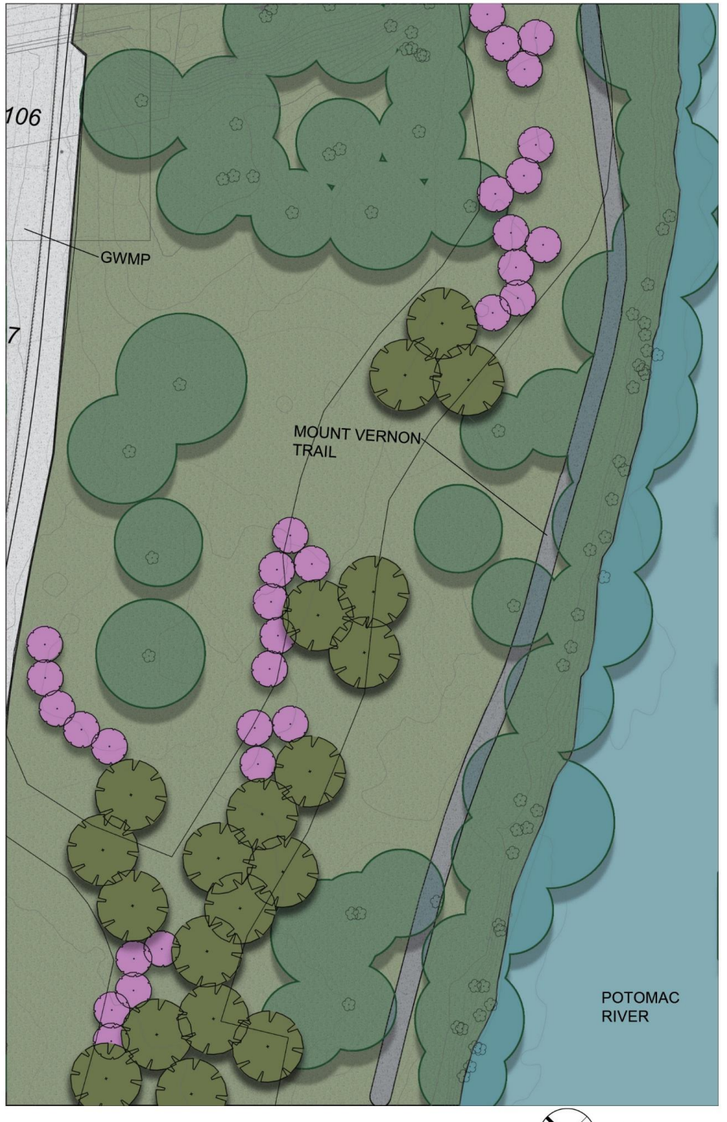
# Site C

## SITE C LANDSCAPE AESTHETIC


SITE C KEY MAP

*RIGHT*: Illustrative plan showing the proposed landscape conditions throughout Site C.



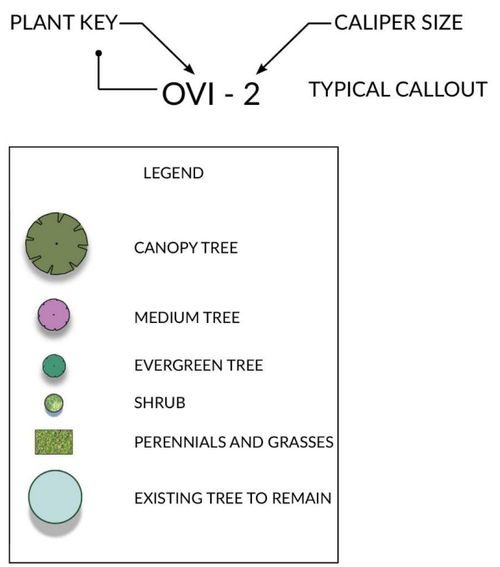




SITE C PROPOSED PLANTING

# Site C

## SITE C LANDSCAPE AESTHETIC


SITE C LANDSCAPE PLAN





SITE C KEY MAP

*TOP LEFT:* Plan illustrating proposed tree species and caliper sizes throughout the Site C, adjacent to the Mount Vernon Trail and the Gravelly Point Park.

*BOTTOM LEFT*: Schedule of proposed tree species. The historic reference column identifies the basis of selection

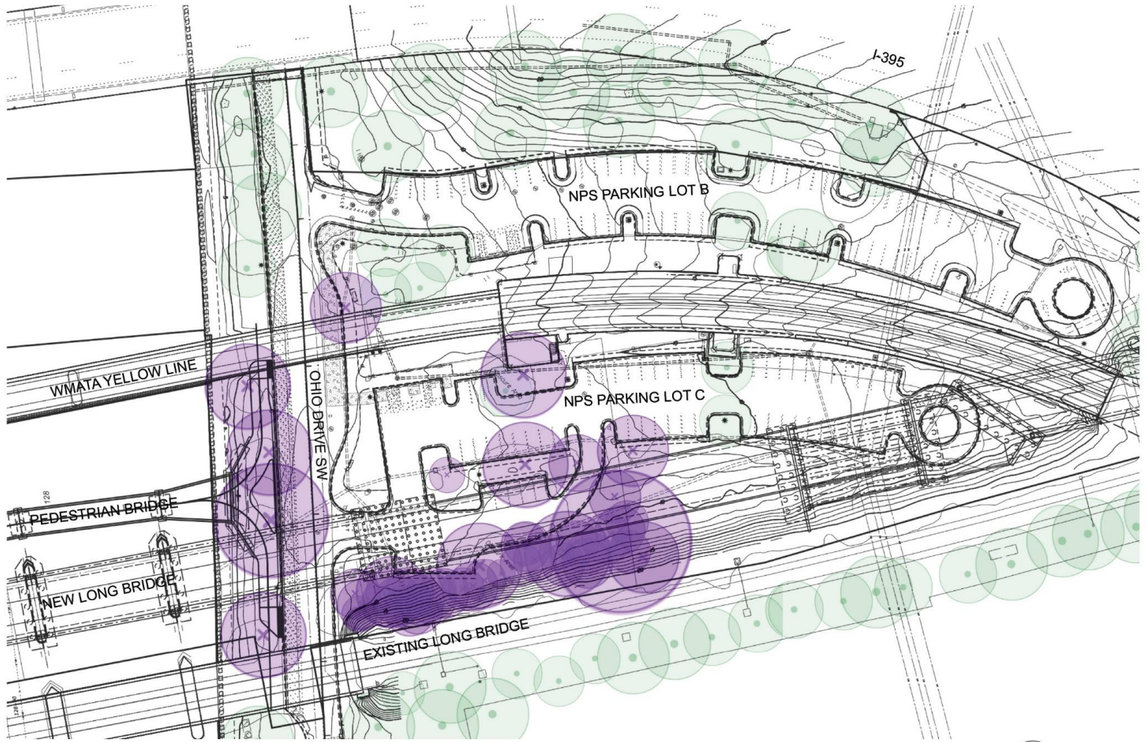
| PLANT SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| Key | Quantity | Botanical name | Common name | Size | Root (Depth/Diameter) | Historical Justification |
| **CANOPY TREES** | | | | | | |
| LTU | 6 | *Liriodendron tulipfera* | Tulip Tree | 2" caliper | 14 3/8 in. / 24 in. | Bridges Area Species: 1969 (GWMP CLR), as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| POC | 3 | *Platanus occidentalis* | American Sycamore | 2" caliper | 14 3/8 in. / 24 in. | Bridges Area Species: 1932, as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. Replace with p. occidentalis |
| QPA | 2 | *Quercus palustris* | Pin Oak | 2" caliper | 14 3/8 in. / 24 in. | Bridges Area Species: 1980 (GWMP CLR), as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| QPH | 3 | *Quercus phellos* | Willow Oak | 2" caliper | 14 3/8 in. / 24 in. | Bridges Area Species: 1932, 1971, 1974, 1980 (GWMP CLR), as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| TAM | 6 | *Tilia americana* | American Linden | 2" caliper | 14 3/8 in. / 24 in. | The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report recommended native alternatives and replacement for Broussonetia papyrifera. |
| **UNDERSTORY TREES** | | | | | | |
| CCA | 3 | *Cercis canadensis* | Eastern Redbud | 2" caliper | 15 5/8 in. / 24 in. | Bridges Area Species: 1969, 1974, 1980 (GWMP CLR), as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| CPH | 7 | *Crataegus phaenopyrum* | Washington Hawthron | 2" caliper | N/A / 24 in. | Bridges Area Species: 1932, 1969 (GWMP CLR), as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| CVI | 16 | *Chionanthus virginicus* | White Fringetree | 2" caliper | 15 5/8 in. / 24 in. | Bridges Area Species: 1932 (GWMP CLR), as defined in The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report. |
| SAL | 5 | *Sassafras albidum* | Sassafras | 2" caliper | 15 5/8 in. / 24 in. | The Vegetation of the George Washington Memorial Parkway Central Section: Alexandria to Arlington Memorial Bridge Cultural Landscape Report recommended native alternatives and replacement for *Broussonetia papyrifera* and *Morus alba* |

NOTE: No pollinator species, including shrubs or herbaceous species, are present at this site. Site D showcases pollinator species, and a schedule with bloom time and mix of native species is shown on a later slide.

# Site D

## SITE D TREE PRESERVATION


SITE D KEY MAP




SITE D TREE PRESERVATION AND REMOVAL

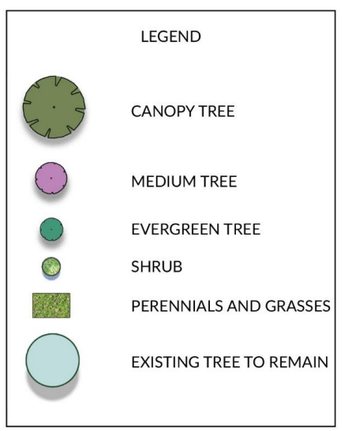
*RIGHT:* DIAGRAM ILLUSTRATING TREES TO BE PROTECTED AND TREES TO BE REMOVED DUE TO IMPACTS FROM CONSTRUCTION EFFORTS

# Site D

## SITE D LANDSCAPE AESTHETIC


SITE D KEY MAP

*RIGHT*: Illustrative plan showing the proposed landscape conditions throughout Site D. Trees to be planted as part of LBN project are shown in transparency.

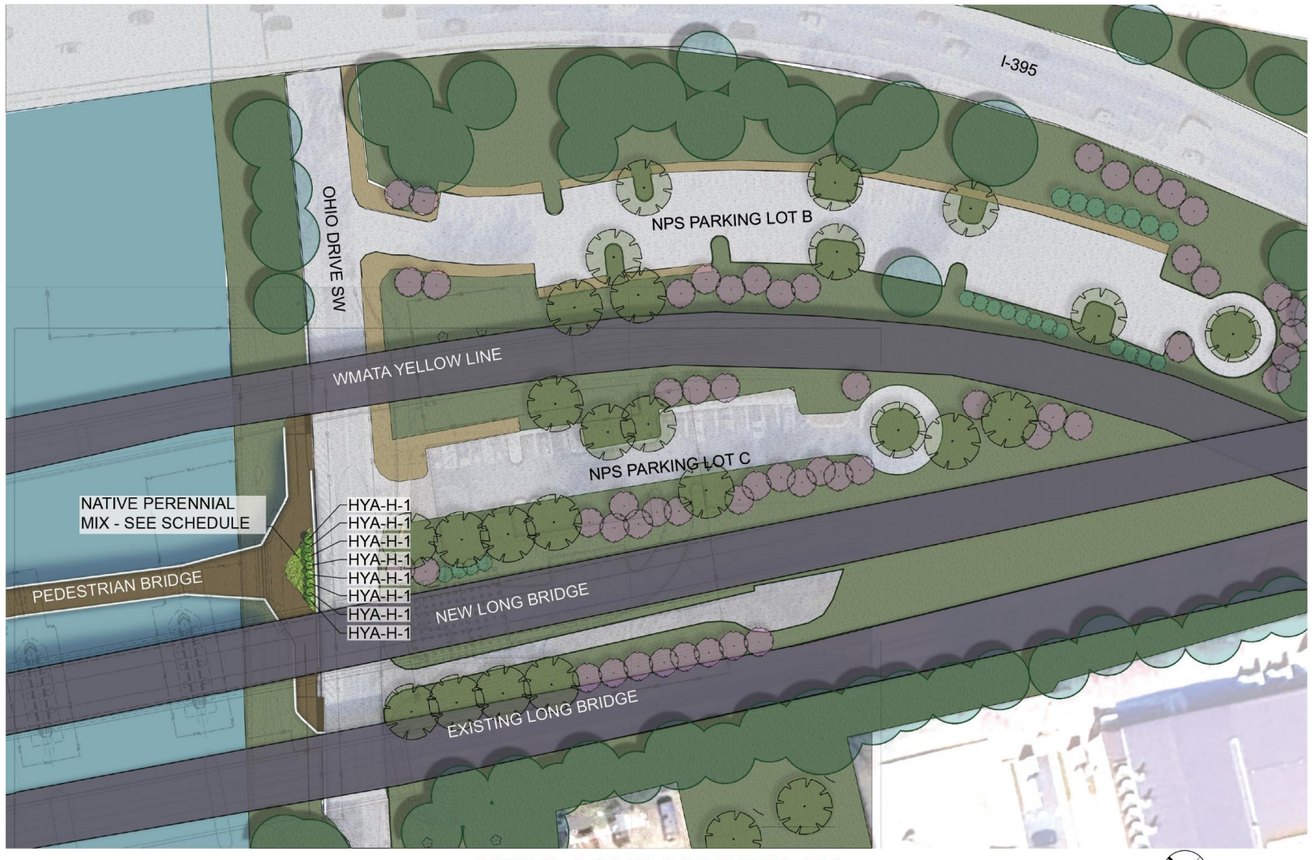




SITE D PROPOSED PLANTING

# Site D

## SITE D LANDSCAPE AESTHETIC



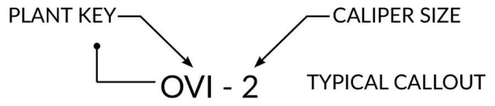

SITE D LANDSCAPE PLAN

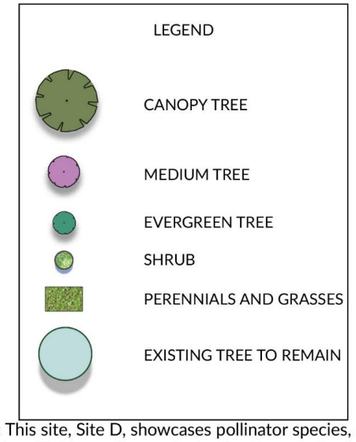
| PLANT SCHEDULE | | | | | |
|---|---|---|---|---|---|
| **Key** | **Quantity** | **Botanical name** | **Common name** | **Size** | **Root (Depth/Diameter)** |
| **SHRUBS** | | | | | |
| HYA-H | 8 | *Hydrangea arborescens* ; 'Haas' Halo' | Haas Halo Hydrangea | 4-5' HT. | 15 1/2 in. / 26 in. |
| **HERBACEOUS PERENNIALS** | | | | | |
| ASI | 6 | *Asclepias incarnata* | Swamp Milkweed | 12-24" HT. / 12-18" WD. | |
| PAV | 7 | *Panicum virgatum* | Switch grass | 36-48" HT. / 24-36" WD. | |
| PYM | 14 | *Pycanthemum muticum* | Clustered Mountain Mint | 24-36" HT. / 12-18" WD. | 12-18 in. / N/A |
| RUF-S | 8 | *Rudbeckia fulgida var. sullivantii* | Orange Coneflower | 36-48" HT. / 24-36" WD. | |


SITE D KEY MAP

*TOP LEFT*: Plan illustrating proposed tree species and caliper sizes throughout the Site D, adjacent to Ohio Drive, where the proposed pedestrian bridge meets the existing trail. This is also where the project meets the LBN project. Planting as part of the LBN project is shown in transparency.

*BOTTOM LEFT*: Schedule of proposed tree species. The historic reference column identifies the basis of selection

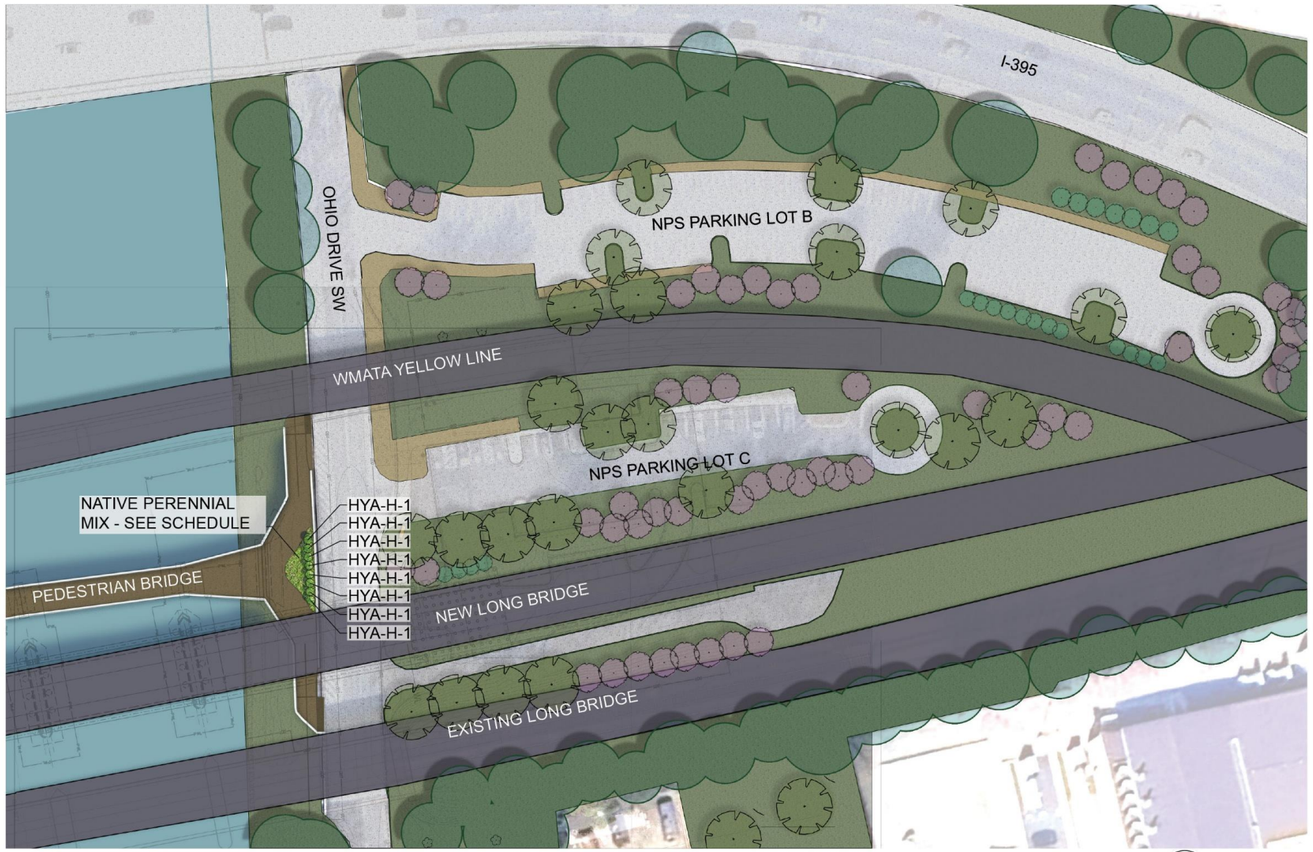



NOTE: This site, Site D, showcases pollinator species, and a schedule with bloom time and mix of native species is shown on a later slide.

# Site D

## SITE D LANDSCAPE AESTHETIC




SITE D LANDSCAPE PLAN


SITE D KEY MAP

*TOP LEFT*: Plan illustrating proposed pollinator species within the proposed planting area at the terminus of the pedestrian bridge near Ohio Drive. Planting as part of the LBN project is shown in transparency.

*BOTTOM LEFT*: Schedule of proposed species fit for proposed conditions and chart illustrating bloom times for each proposed species.

| PLANT SCHEDULE | | | |
|---|---|---|---|
| Key | Quantity | Botanical name | Common name |
| **SHRUBS** | | | |
| HYA-H | 8 | *Hydrangea arborescens* ; 'Haas' Halo' | Haas Halo Hydrangea |
| **HERBACEOUS PERENNIAL MIX** | | | |
| ASI | 6 | *Asclepias incarnata* | Swamp Milkweed |
| PAV | 7 | *Panicum virgatum* | Switch grass |
| PYM | 14 | *Pycanthemum muticum* | Clustered Mountain Mint |
| RUF-S | 8 | *Rudbeckia fulgida var. sullivantii* | Orange Coneflower |

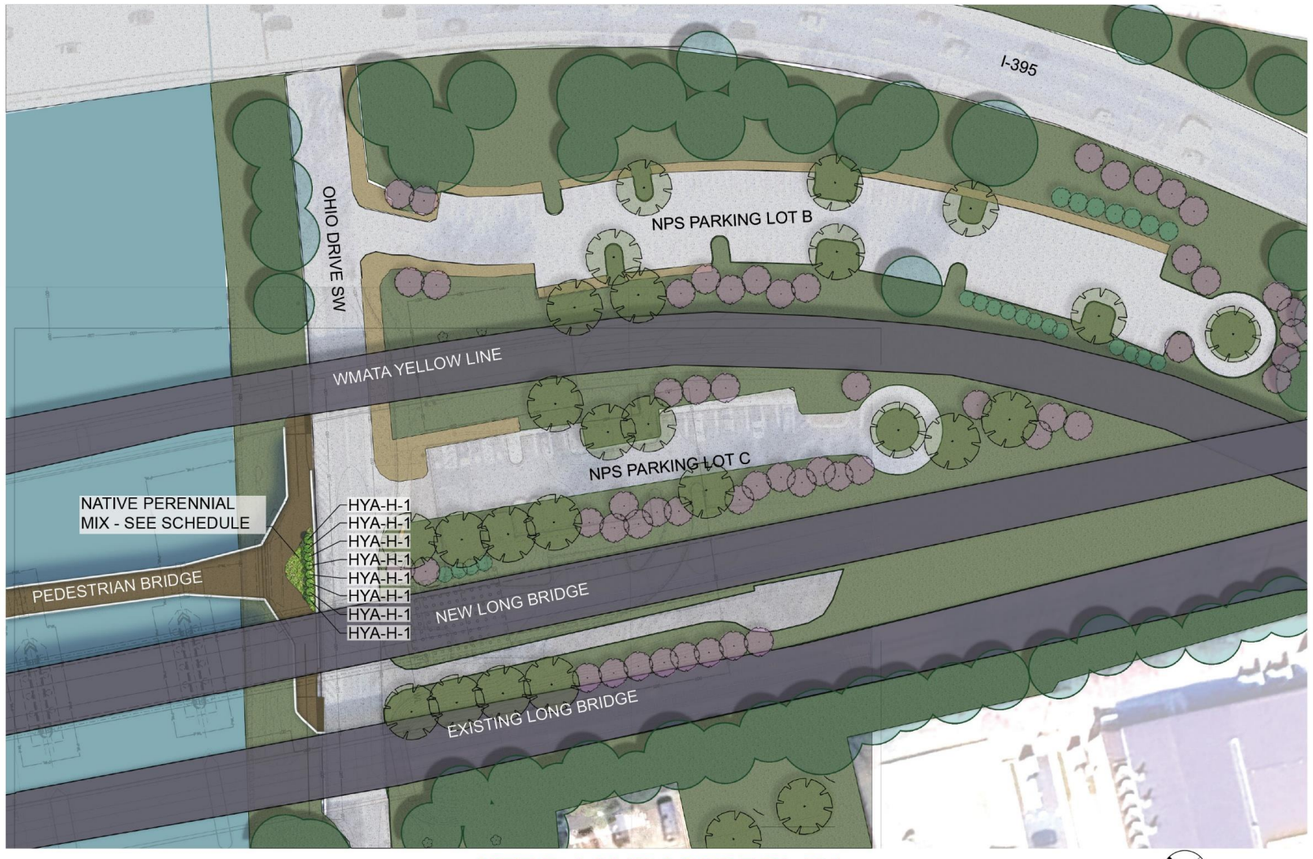
| POLLINATOR SCHEDULE | Bloom Time | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Early Spring | Mid Spring | Late Spring | Early Summer | Mid Summer | Late Summer | Early Autumn | Mid Autumn | Late Autumn | Early Winter | Mid Winter | Late Winter |
| HYA-H | | | | | | | | | | | | |
| ASI | | | | | | | | | | | | |
| PAV | | | | | | | | | | | | |
| PYM | | | | | | | | | | | | |
| RUF-S | | | | | | | | | | | | |

LEGEND

- CANOPY TREE
- MEDIUM TREE
- EVERGREEN TREE
- SHRUB
- PERENNIALS AND GRASSES
- EXISTING TREE TO REMAIN

# Site D

## SITE D LANDSCAPE AESTHETIC




SITE D LANDSCAPE PLAN


SITE D KEY MAP

*TOP LEFT*: Plan illustrating proposed pollinator species within the proposed planting area at the terminus of the pedestrian bridge near Ohio Drive. Planting as part of the LBN project is shown in transparency.

*BOTTOM RIGHT*: Native species composition breakdown for proposed planting area at the terminus of the pedestrian bridge near Ohio Drive..

LEGEND

- CANOPY TREE
- MEDIUM TREE
- EVERGREEN TREE
- SHRUB
- PERENNIALS AND GRASSES
- EXISTING TREE TO REMAIN

PROPOSED PLANTING COMPOSITION