

STUDY OVERVIEW

DDOT is conducting a feasibility study of the former Glen Echo Trolley line from St. Mary's Place, NW to Galena Place, NW in the Georgetown, Foxhall, and Palisades neighborhoods. The study area includes the Foundry Branch Trestle Bridge in Glover-Archbold Park at Canal Road.

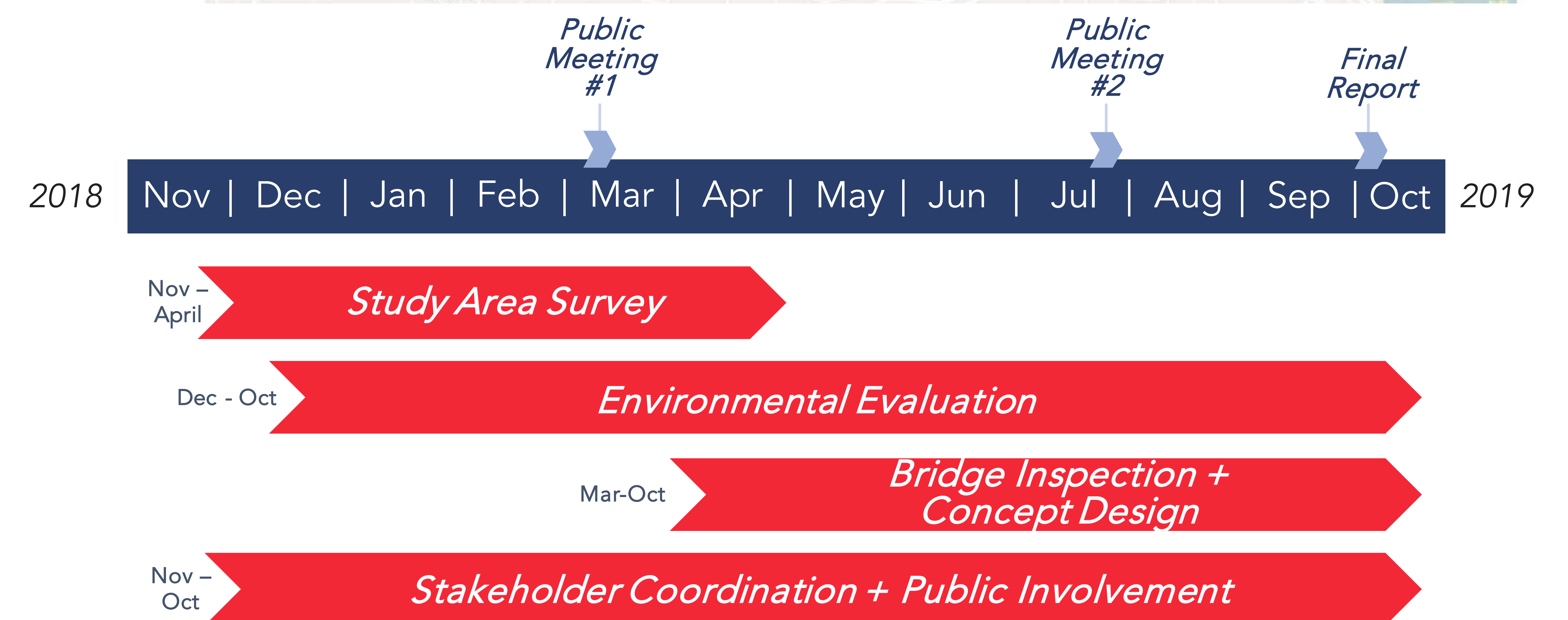
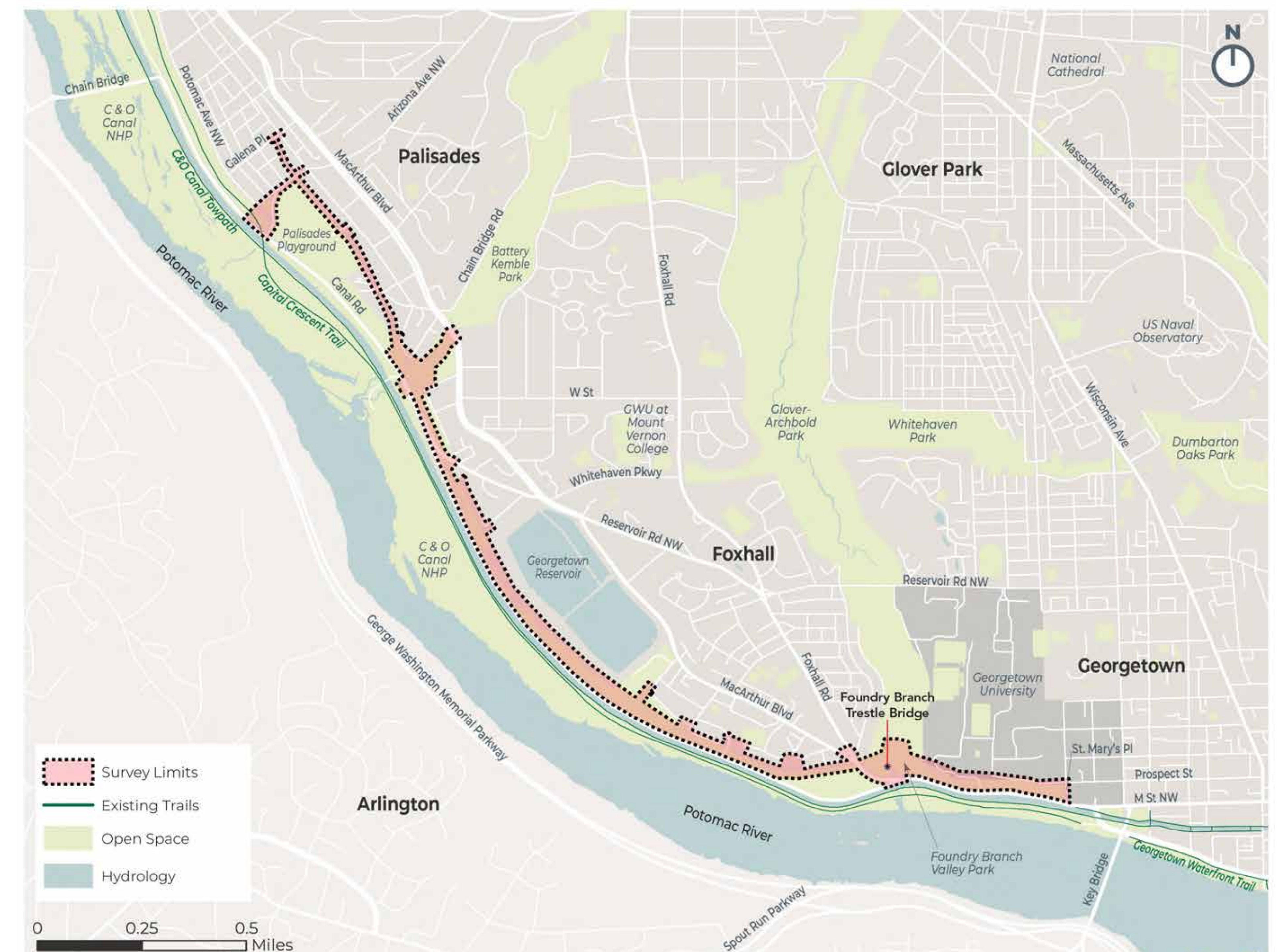
STUDY PURPOSE

The purpose of this feasibility study is to identify critical issues and challenges in developing a multi-use trail for pedestrians and bicyclists of all ages and abilities on the former Glen Echo Trolley line corridor (aka Palisades Trolley Trail). To determine the feasibility of the trail, the following questions will be answered:

- Would the trail provide a transportation function for pedestrians and/or bicyclists?
- Could the Foundry Branch Bridge be rehabilitated to be used as part of the trail? At what cost?
- How would the trail connect to other trails, neighborhoods, and destinations?
- What are the environmental steps and approvals needed to construct the project?
- This feasibility study is a local DDOT project ONLY. Preparation of National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) documentation will not be completed as part of the study.

STUDY SCOPE + SCHEDULE

- Site Surveys (condition, boundaries/ownership, utilities, historic resources)
- Structural Inspection of Foundry Branch Trestle Bridge
- Concept Design
 - » Foundry Trestle Bridge Rehabilitation/Reuse
 - » Trail Design/Trail Crossings
- Next Steps for Environmental Approvals
- It is anticipated the feasibility study will be completed in 2019



HISTORIC CONTEXT:

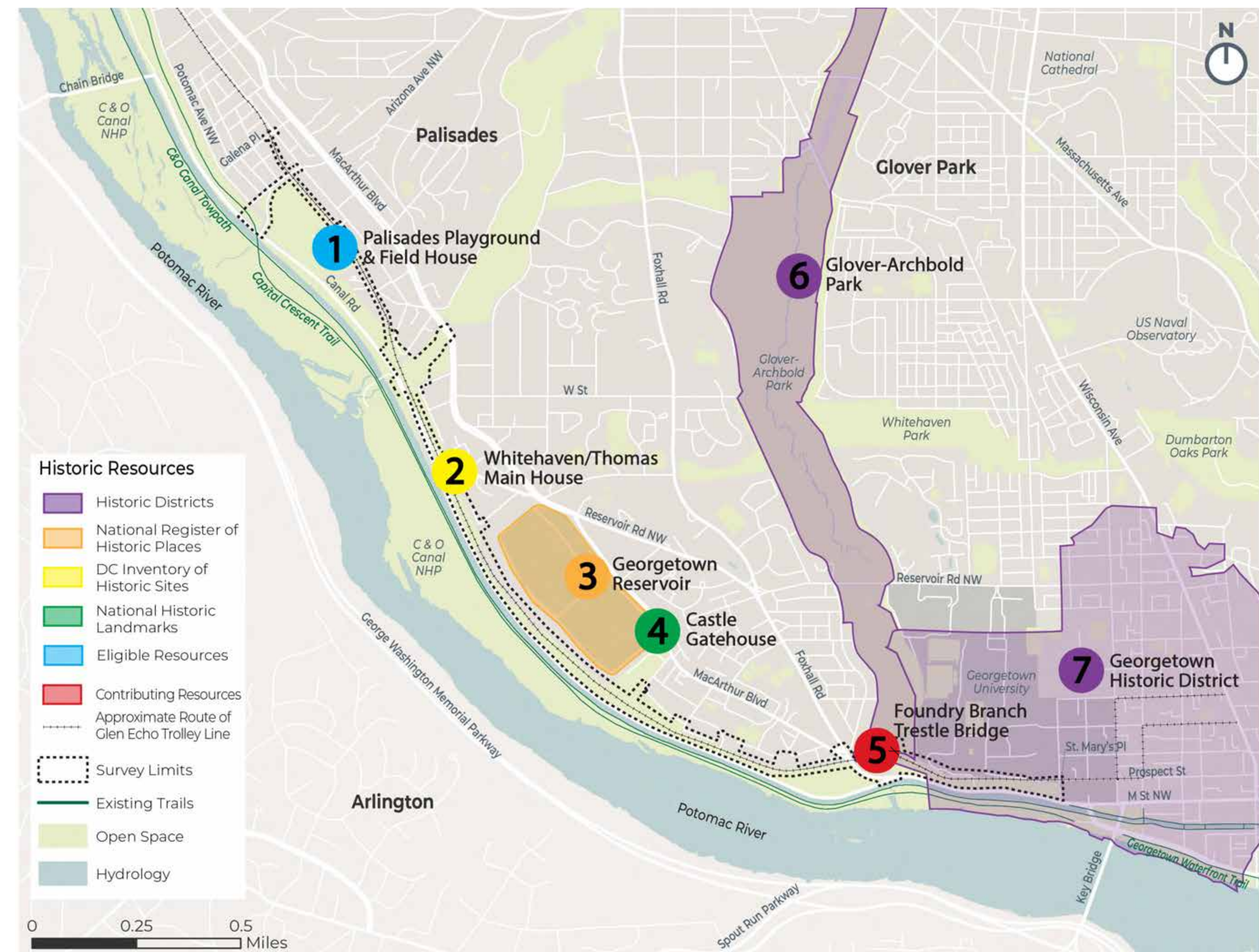
FOUNDRY TRESTLE BRIDGE + THE GLEN ECHO TROLLEY LINE

The **Foundry Trestle Bridge** is a steel trestle streetcar bridge located in Glover-Archbold Park. It is a **contributing element of the Glover-Archbold Park Historic District**, which is listed in the DC Inventory of Historic Sites and the National Register of Historic Places



BRIDGE INSPECTION

- « Project team conducted an inspection of the Foundry Branch Trestle Bridge and created a comprehensive assessment of its structural condition
- « Based on the inspection, the project team evaluated options to rehabilitate the Bridge for use by bicycles and pedestrians as part of the Palisades Trolley Trail



Five eligible or listed historic resources within the project area:

- 1 Palisades Playground and Field House
- 2 Whitehaven/Thomas Main House
- 3 Georgetown Reservoir
- 4 Castle Gatehouse (part of the Washington Aqueduct National Historic Landmark)
- 5 Foundry Branch Trestle Bridge
- 6 Glover-Archbold Park
- 7 Georgetown Historic District

HISTORIC TIMELINE



1896

Constructed on the Washington & Great Falls Electric Railway Company's trolley line between Georgetown and Cabin John, MD (commonly referred to as the Glen Echo Trolley Line)¹

1909

Potomac Heights Land Company was established to further develop and promote the Palisades neighborhood for prospective home buyers²

1920s

First significant residential development along the trolley line near Galena Place³

1960

Streetcar service was terminated and the trolley bridge was taken out of service⁴

1980s

Trolley bridges at Arizona, Battery Kemble/Maddox Branch, and Clark Place were removed for construction of a cross-town water main

1997

Bridge was acquired by the Washington Metropolitan Area Transit Authority (WMATA) from D.C. Transit as part of a court case

2003

WMATA fenced off ends of the bridge to deter trespassers

2008

WMATA begins looking for potential owners of the bridge

2014

WMATA structural analysis confirms the trestle is in poor condition

2016

WMATA installs fences to restrict access under the bridge due to safety concerns

2018

D.C. Historic Preservation Review Board denies WMATA a raze permit for the bridge

Image Sources:
1. 1939 Entrance to Glen Echo Park (Library of Congress, Prints & Photographs Division)
2. 1894 Baist Map (Plate 13 and 14) of the four Palisades Subdivisions
3. Traceris, 2019
4. Leonard W. Rice, collection of Md. Rail Heritage Library

PUBLIC OUTREACH

The project team used three key formats to obtain public input regarding stakeholders' opinions of the existing conditions of the trail; as well as determine the community's viewpoint of the trail's current uses, possible proposed uses and connectivity to other trails and neighborhoods.

PUBLIC MEETING #1

Time: March 7, 2019 from 6:30-8PM

Location: Palisades Neighborhood Library

Attendees: 66

Format: Presentation + Open House



ONLINE COMMUNITY SURVEY

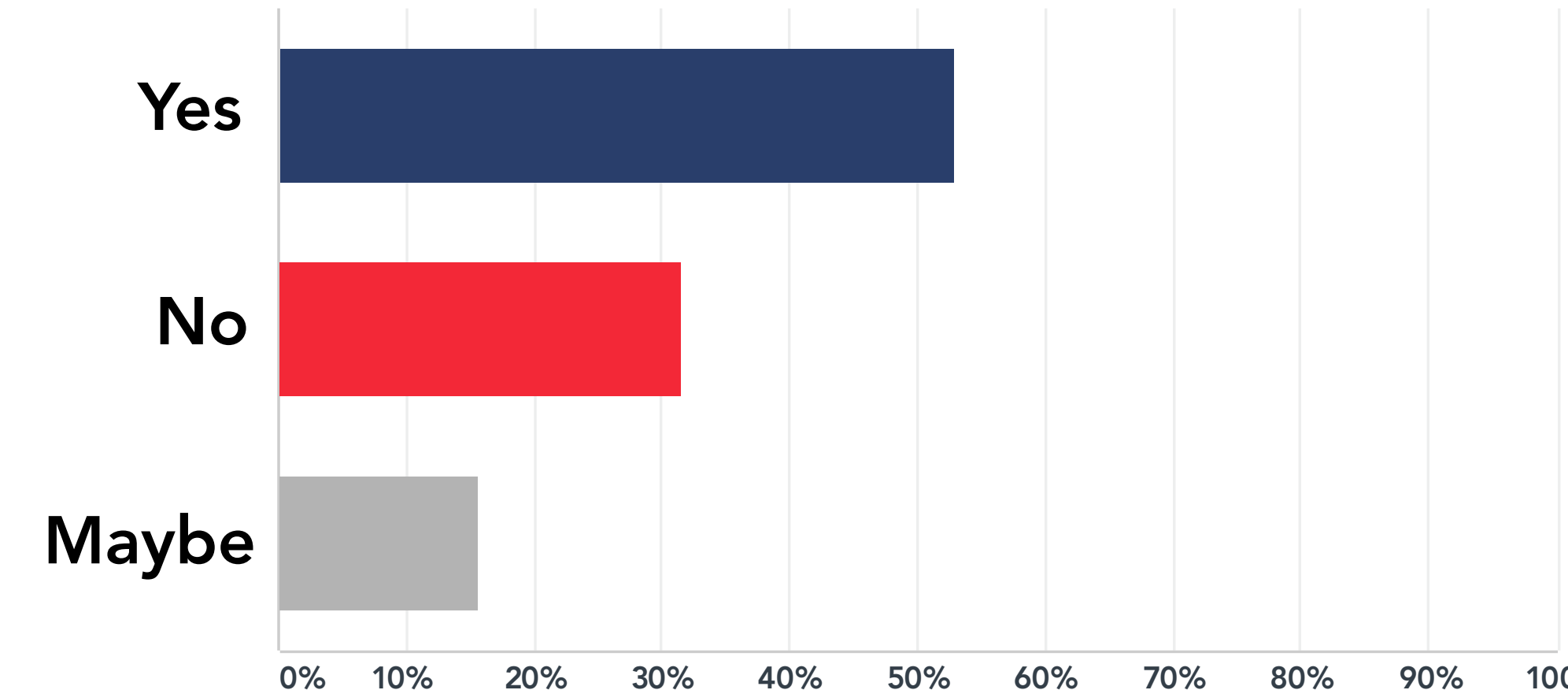
Time: March 7 - April 7, 2019

Responses: 499

Topics: Trail use and access, Foundry Trestle Bridge, opportunity for multi-use trail

Sample question and response:

If there was a multi-use trail, would you use it for transportation to access the Georgetown commercial district and/or Downtown DC?



ONLINE PUBLIC COMMENT MAP

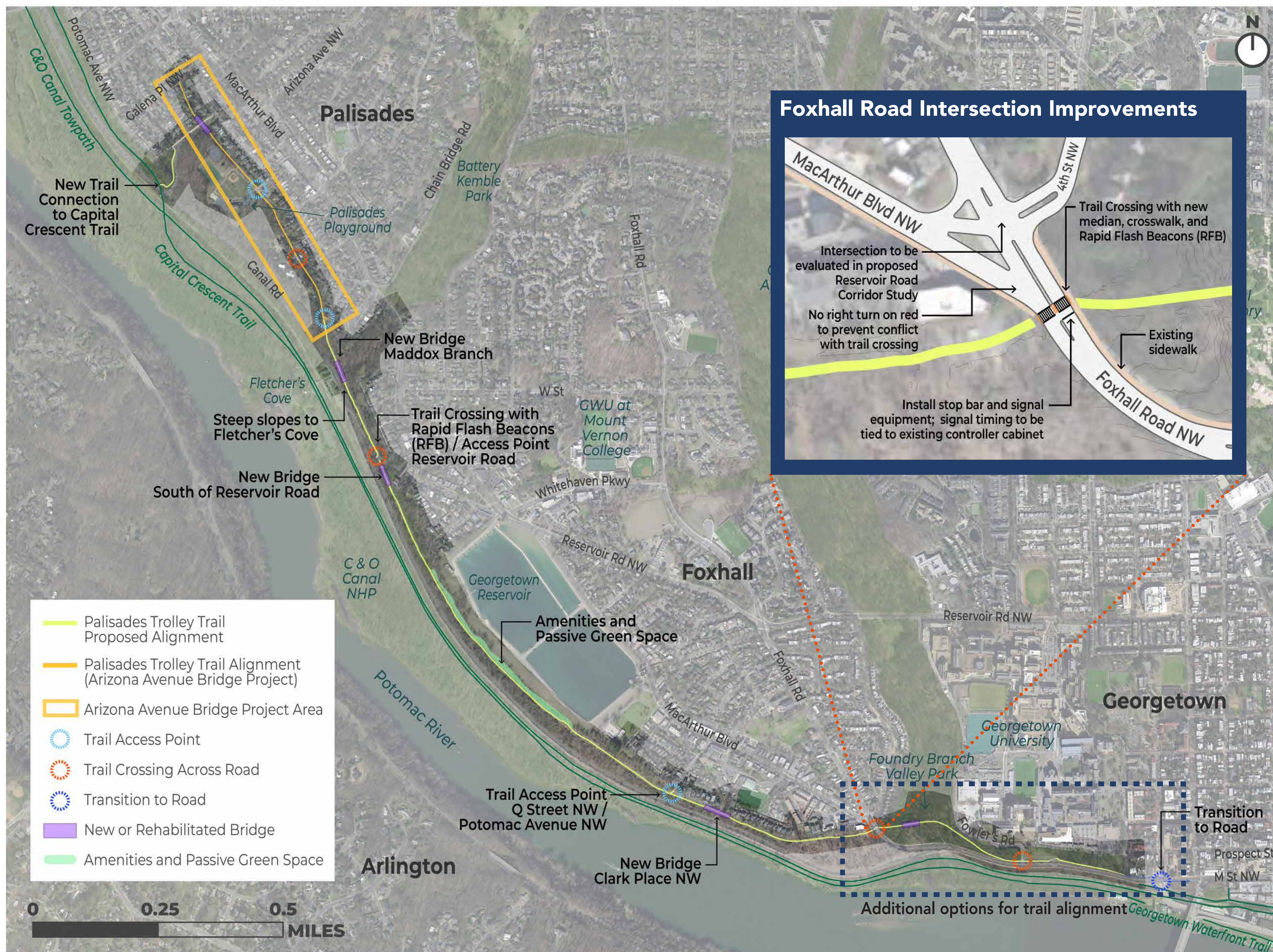
Time: March 7 - April 7, 2019 **Responses:** 162



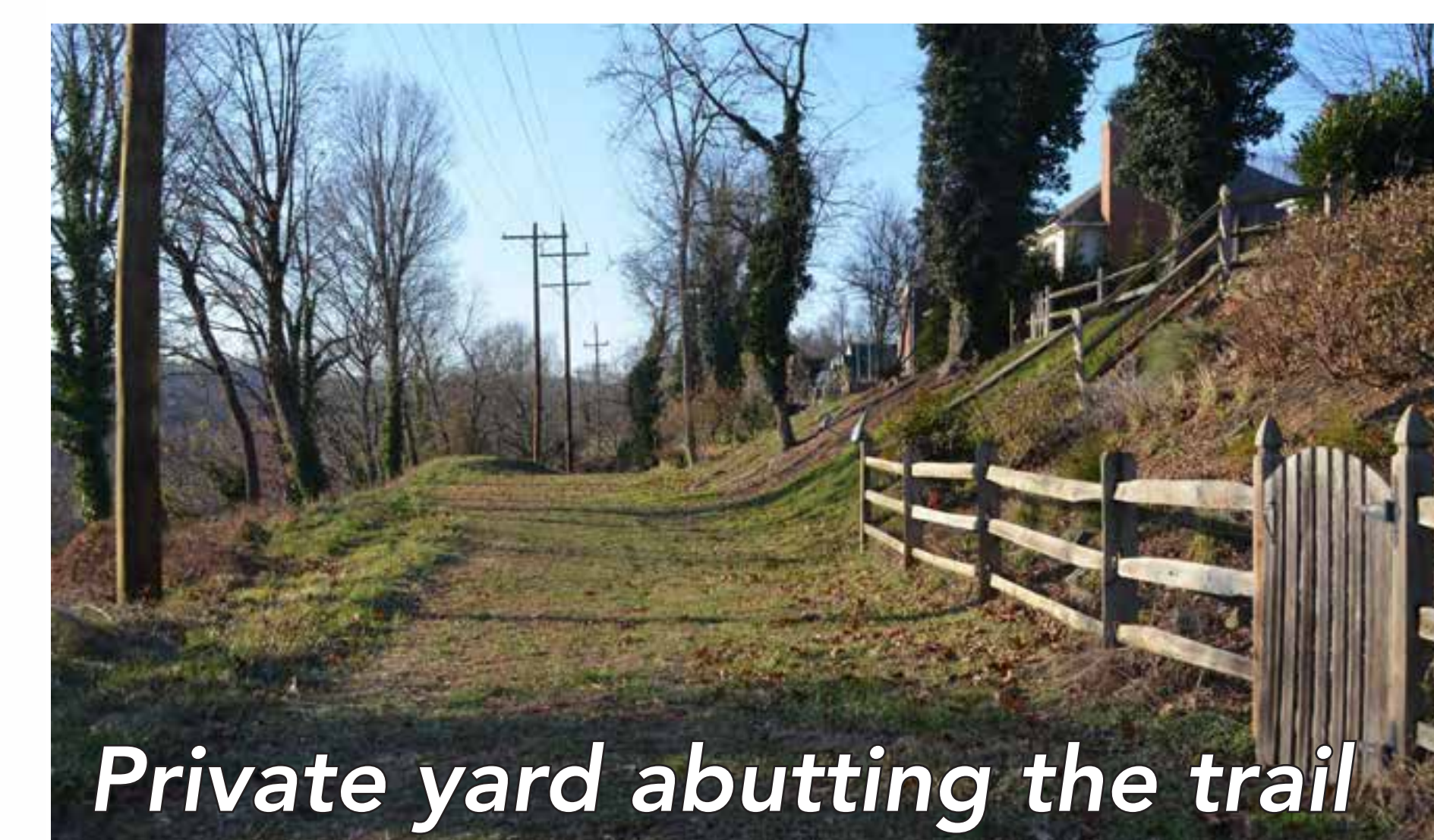
SUMMARY OF COMMENTS RECEIVED FROM ALL PUBLIC OUTREACH

- Concerns about **high speed bicycle traffic** on the trail in a neighborhood where kids play on the trail; this is an issue on the nearby Capital Crescent Trail.
- Concerns about **additional traffic, noise, lighting, and garbage** on the trail if it is converted to a multi-use facility.
- Concerns about the **cost of three new bridges and the rehabilitation of the Foundry Trestle Bridge**.
- Many see the project as infeasible.
- Desire to **keep the trail natural** and unpaved and concerns that the Arizona Avenue Bridge project will pave a large portion of the trail.
- Desire to **pave the trail** so it can be used as a multi-use facility.
- Drainage** on the trail is a major problem.
- Concerns about **bicycle and pedestrian safety** at the Foxhall Road/MacArthur Boulevard intersection.

POTENTIAL TRAIL ALIGNMENT



EXISTING TRAIL CONDITIONS:



TRAIL CONCEPTS

PROPOSED TRAIL DESIGN

- Elements to be determined during design
- 11' wide trail with 2' clear space on either side
- Trail Surface

West of Foundry Branch Bridge

- » Stabilized crushed granite trail surface proposed
- » Flexible porous pavement trail surface also possible

East of Foundry Branch Bridge

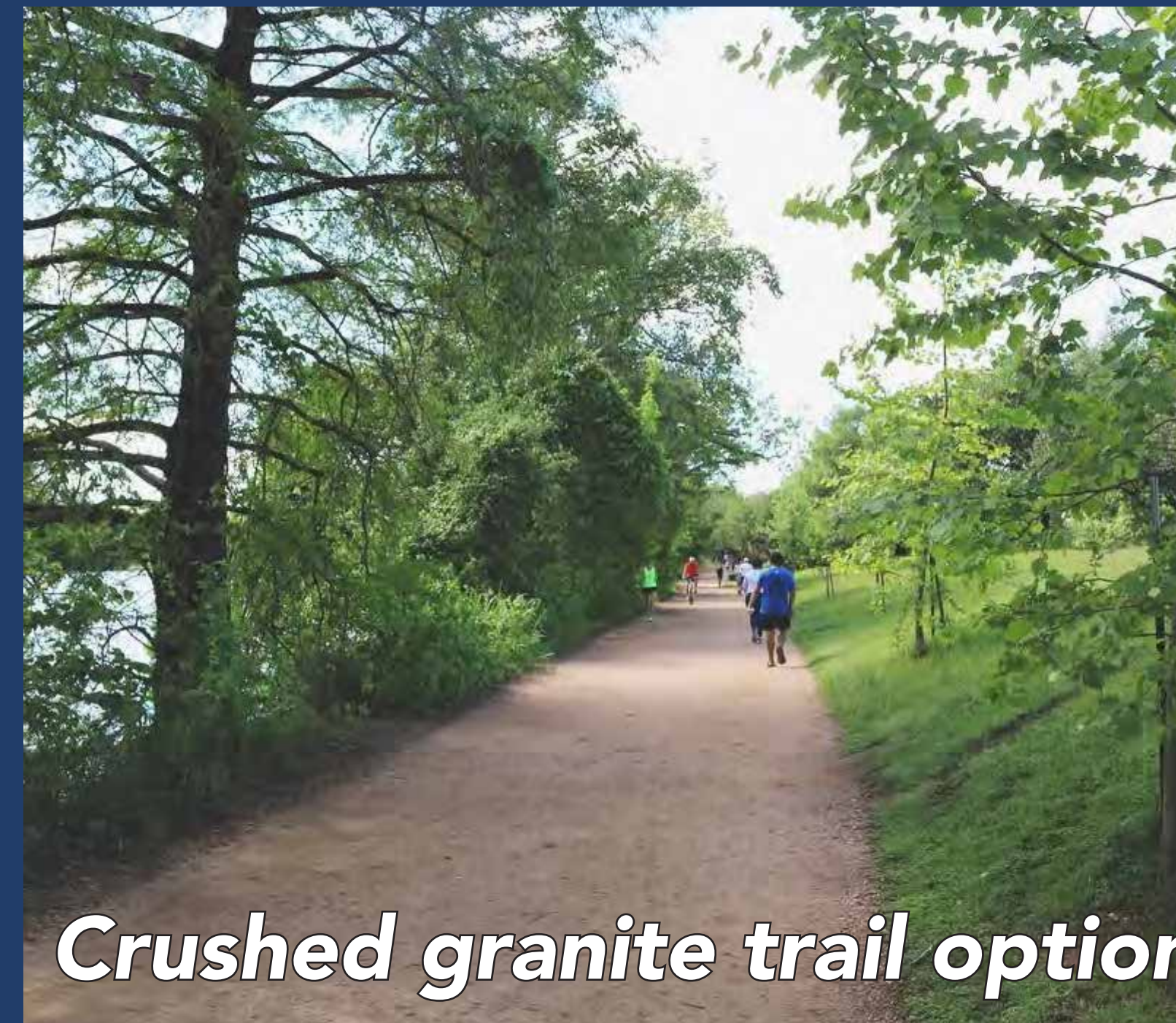
- » Asphalt trail surface proposed

- Passive open space adjacent to trail where possible
- Trailhead areas could include signage, seating, landscaping, bike racks, trash cans, and other amenities

ESTIMATED TRAIL COST

Does not include the cost of new bridges, rehabilitation of the Foundry Branch Bridge, connection to Capital Crescent Trail, or Arizona Avenue Bridge project

\$3.8-\$4 Million



Crushed granite trail option



Footpath adjacent to trail



Trailhead amenity area



View of proposed trail east of Clark Place



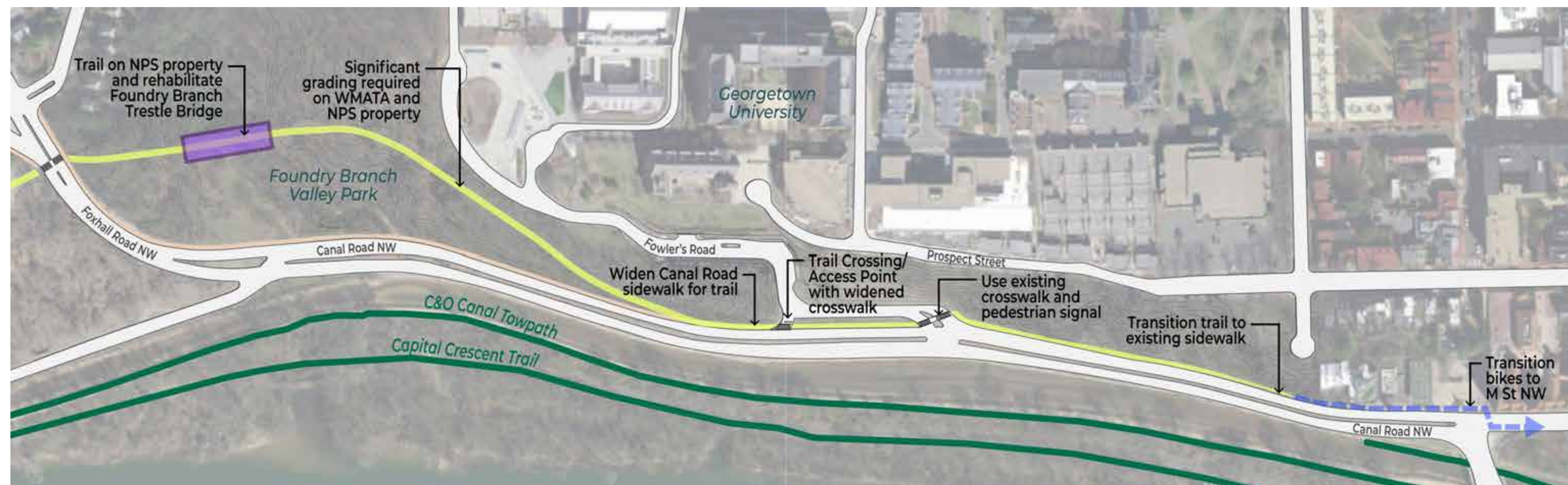
View of proposed trail adjacent to Georgetown Reservoir

! IMPACTS AND RISKS

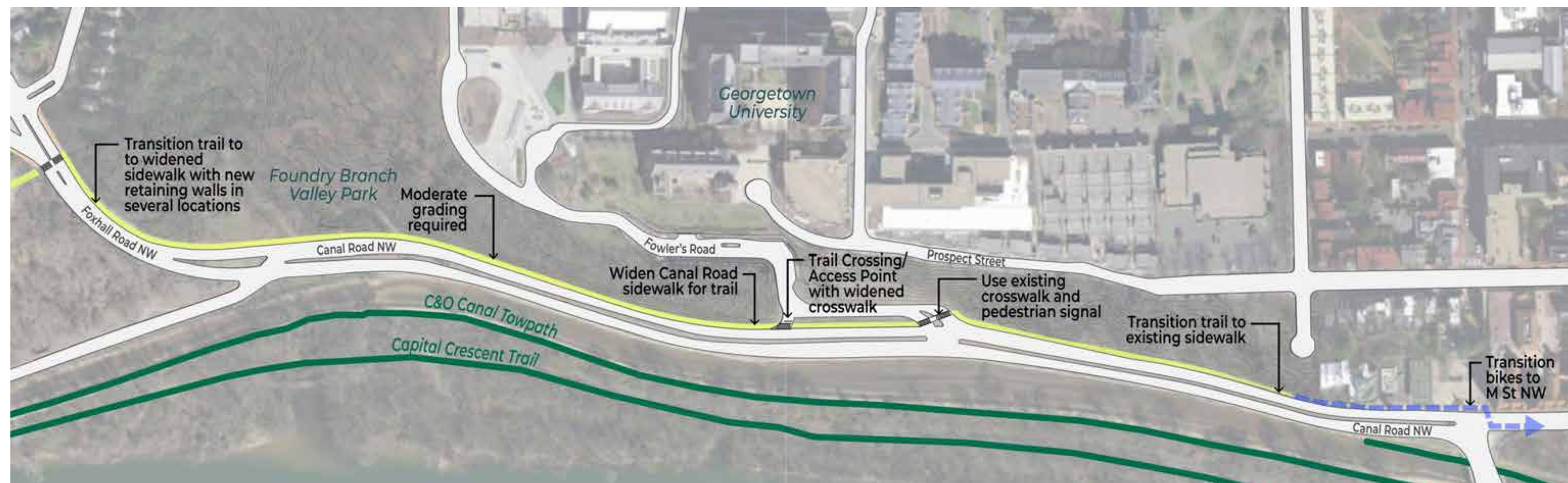
- Property agreements may be needed with National Park Service (NPS), Washington Metro Area Transit Authority (WMATA), Army Corps of Engineers, and Georgetown University
- Must accommodate maintenance access from Pepco and DC Water
- Steep slopes east of Foxhall Road require significant grading and earth work

TRAIL ALIGNMENT OPTIONS EAST OF FOXHALL ROAD

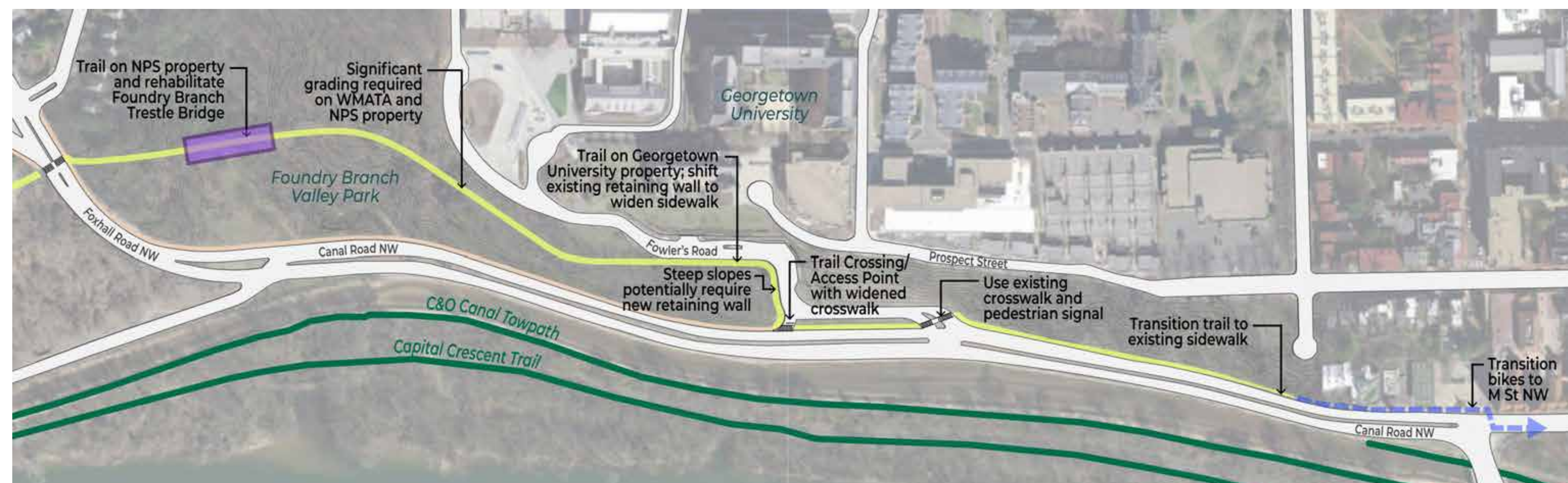
OPTION 1: FOUNDRY TRESTLE BRIDGE TO CANAL ROAD



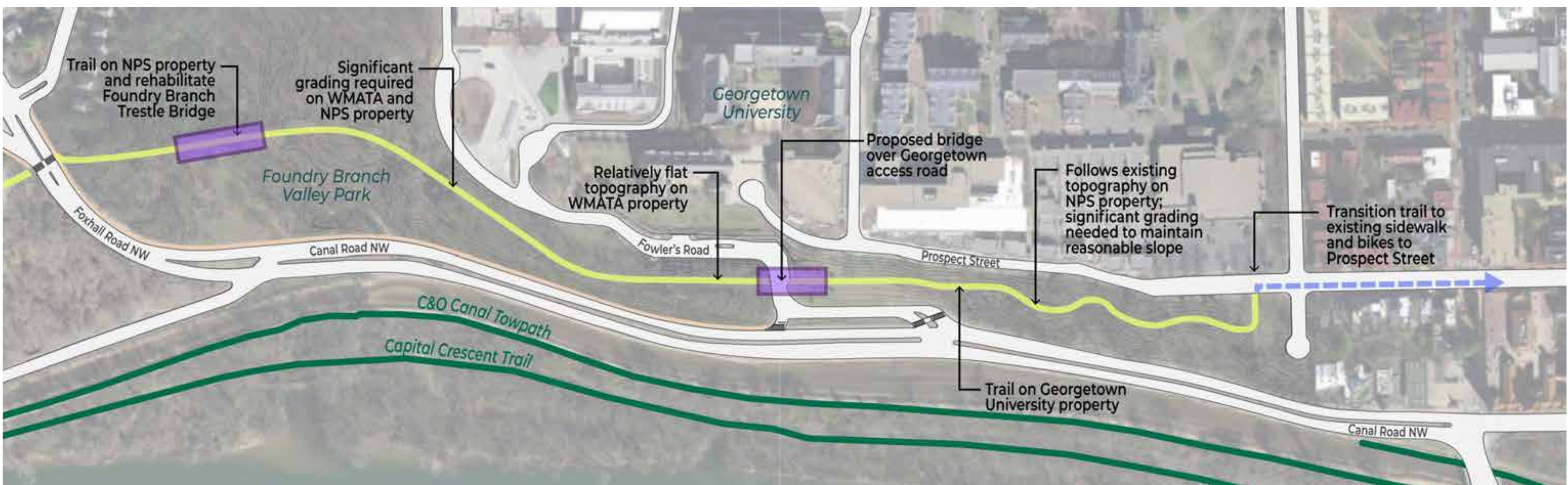
OPTION 2: CANAL ROAD




OPTION 3: FOUNDRY TRESTLE BRIDGE TO FOWLER ROAD TO CANAL ROAD



OPTION 4: FOUNDRY TRESTLE BRIDGE TO NEW BRIDGE TO PROSPECT STREET



Option	 Risks/Impacts
Option 1	<ul style="list-style-type: none">» Substantial grading and retaining walls needed to maintain a maximum 5% grade» Requires property agreements with WMATA and NPS
Option 2	<ul style="list-style-type: none">» Substantial grading and retaining walls needed to widen Canal Road sidewalk to accommodate the trail» Requires property agreements with NPS
Option 3	<ul style="list-style-type: none">» Relocation of retaining wall and substantial earth work needed to Georgetown Access Driveway sideway to accommodate the trail» Existing abutment may need to be removed» Requires property agreements with WMATA, Georgetown, and NPS
Option 4	<ul style="list-style-type: none">» Direct connection to downtown Georgetown street network» New bridge over Fowler Road» Substantial grading and retaining walls needed to traverse steep topography up to Prospect Street» Requires property agreements with WMATA, Georgetown, and NPS

FOUNDRY TRESTLE BRIDGE CONDITION

BRIDGE INSPECTION PROCESS

- Site Inspection
- 3D Scans
- Document geometry and condition of the bridge
- Develop structural analysis model
- Check if the structure can support a pedestrian trail
- Develop conceptual ideas for rehabilitating the bridge
- Planning level cost estimate for the rehabilitation

FINDINGS SUMMARY

Main Truss

- Can support the loads resulting from a 12-ft wide pedestrian trail
- Improvements needed: Dismantle truss, clean, paint and repair steelwork. Reassemble with replacing riveted connections with bolts

Approach Towers

- In poor condition
- Improvements needed:
- Multiple members need to be replaced due to their deteriorated condition
- Many members need to be strengthened to carry applied loads

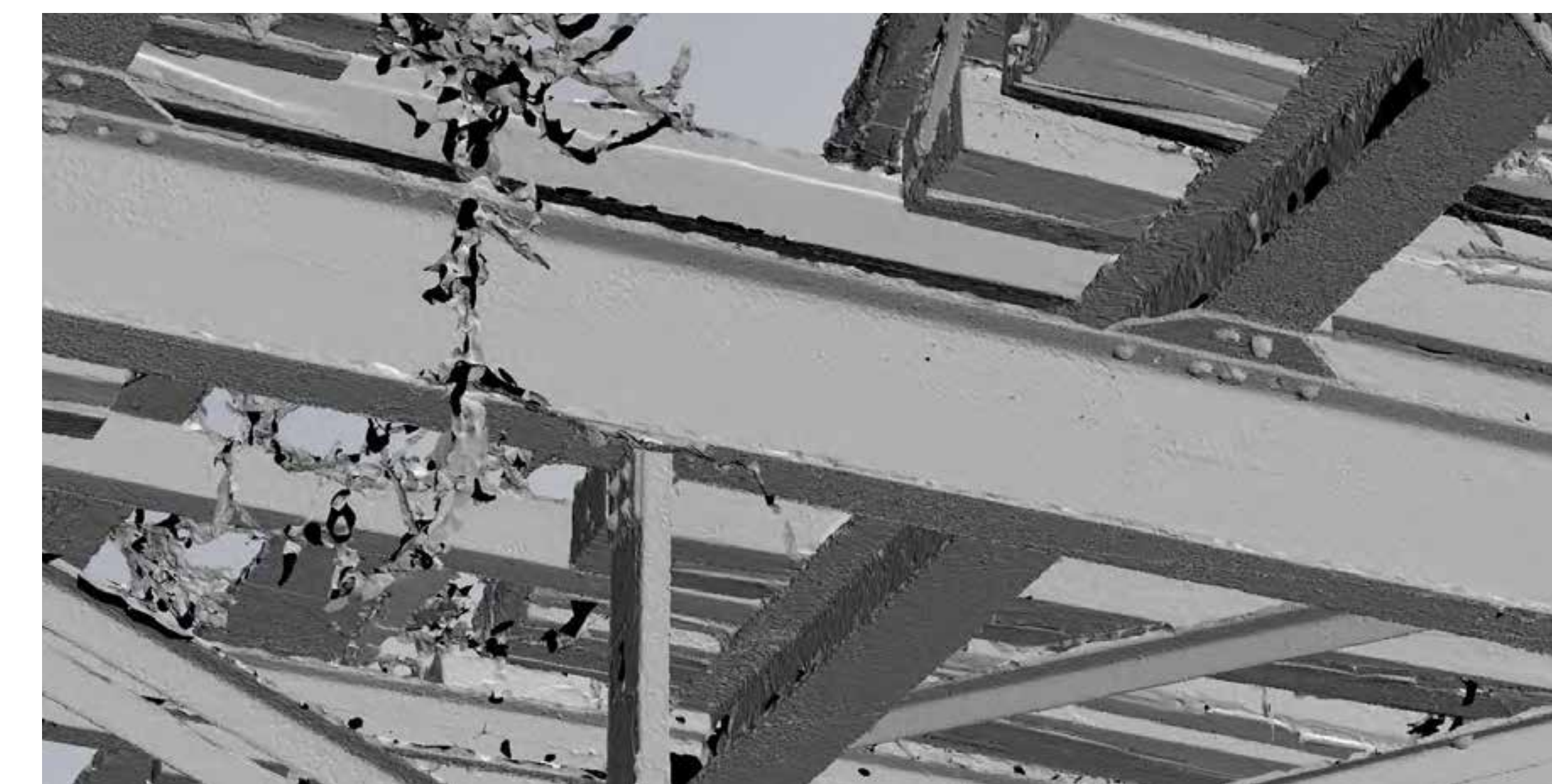
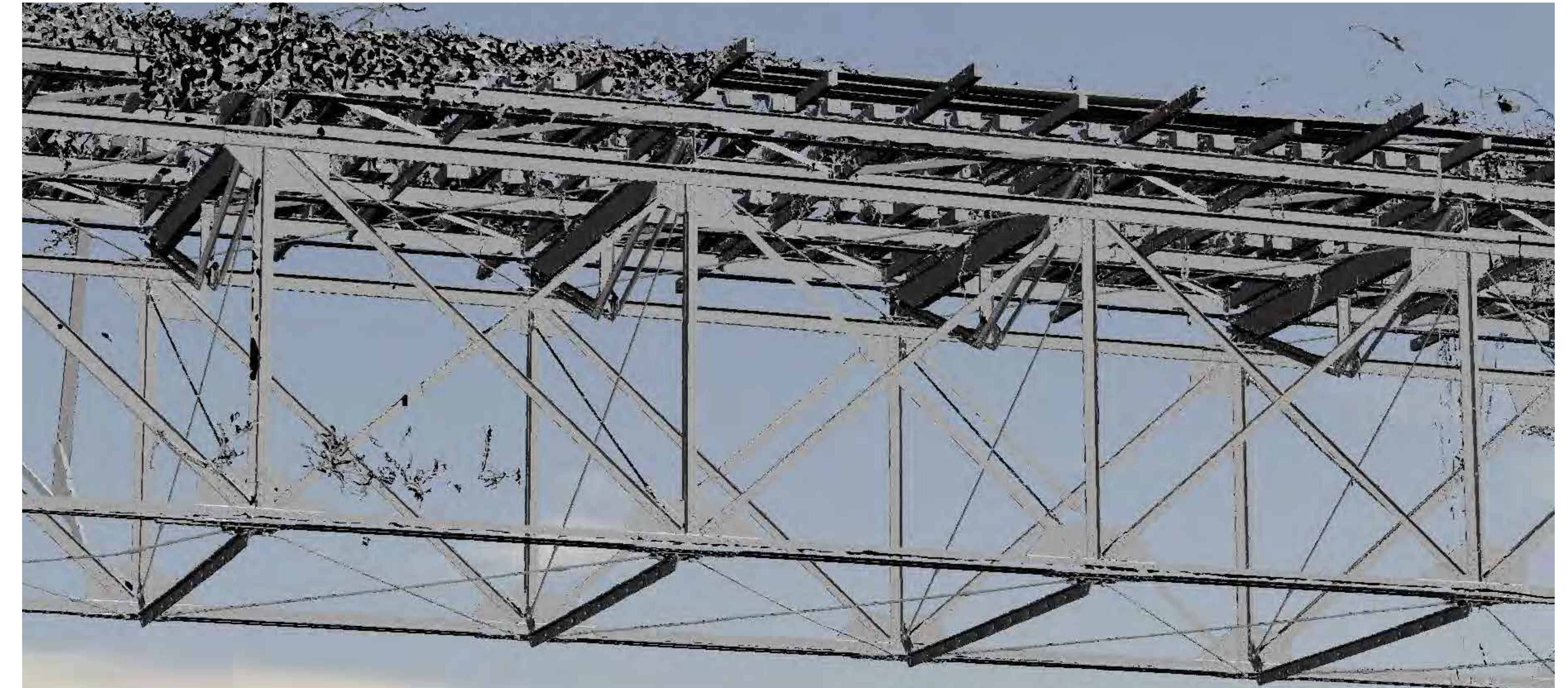
Visible Deck Members

- Show significant deterioration
- Likely additional unseen deterioration where moisture is trapped beneath rail ties

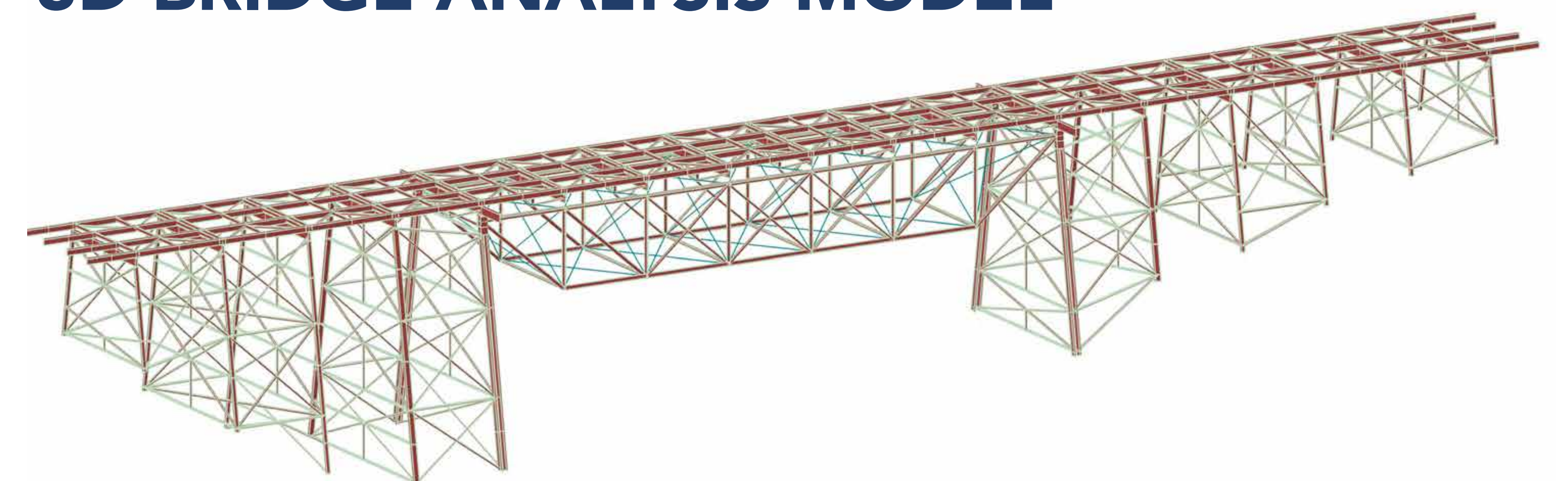


Images from inspection findings

BRIDGE LASER SCAN IMAGES



3D BRIDGE ANALYSIS MODEL



FOUNDRY TRESTLE BRIDGE REHABILITATION

OPTION 1: REHABILITATE + REPLACE EXISTING BRIDGE

- Re-construct west foundations and regrade area
- Remove vegetation from abutments and repair cracking
- Clean all steel to bare metal and re-paint
- Alternative to entirely replace approach towers foundations and steelwork also to be considered



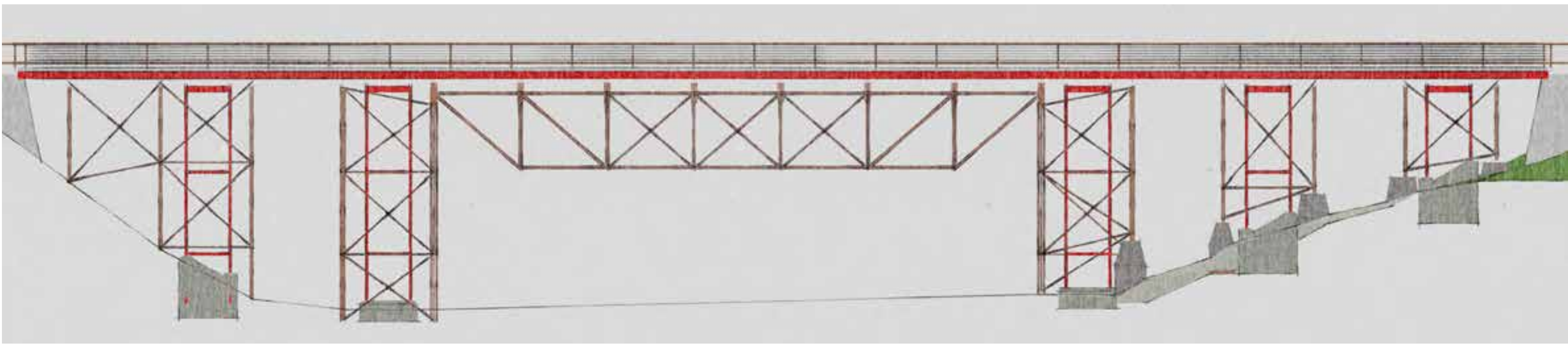
OPTION 2: REHABILITATE TRUSS + REPLACE APPROACHES

- Rehabilitate the truss span only
- Re-grade west end of the bridge
- New foundations for abutment support
- Construct new approach foundations/ piers and girder spans
- Remove vegetation from abutments, repair cracking

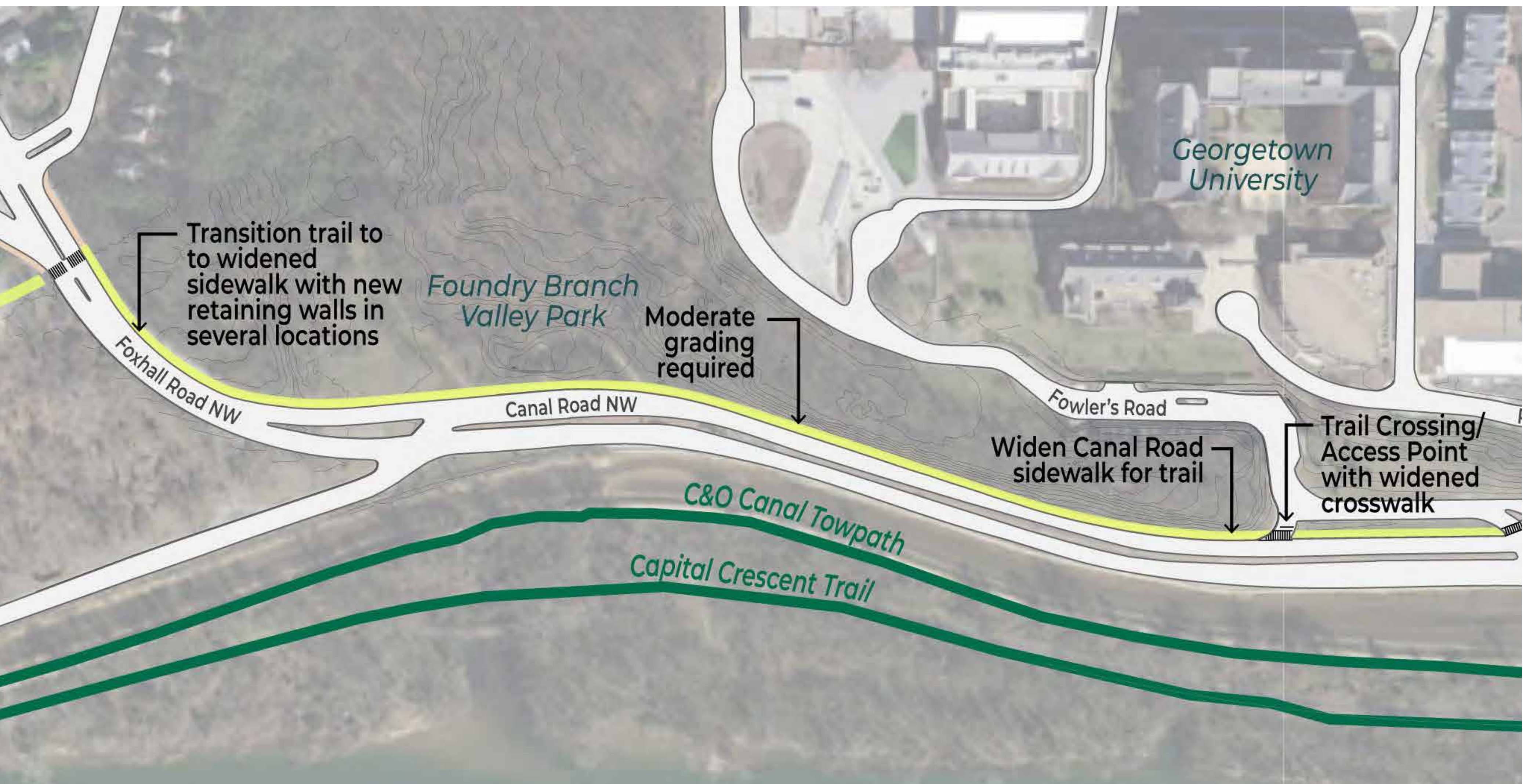




OPTION 3: RETAIN EXISTING APPROACHES AS A FACADE

- Rehabilitate the truss span to support trail loading
- Re-grade west end of the bridge to prevent water pooling
- Construct new approach piers and foundation within the existing approach towers
- Remove vegetation from abutments, repair cracking.
- Clean and paint existing approach towers. Tie to new steelwork for long term stability.

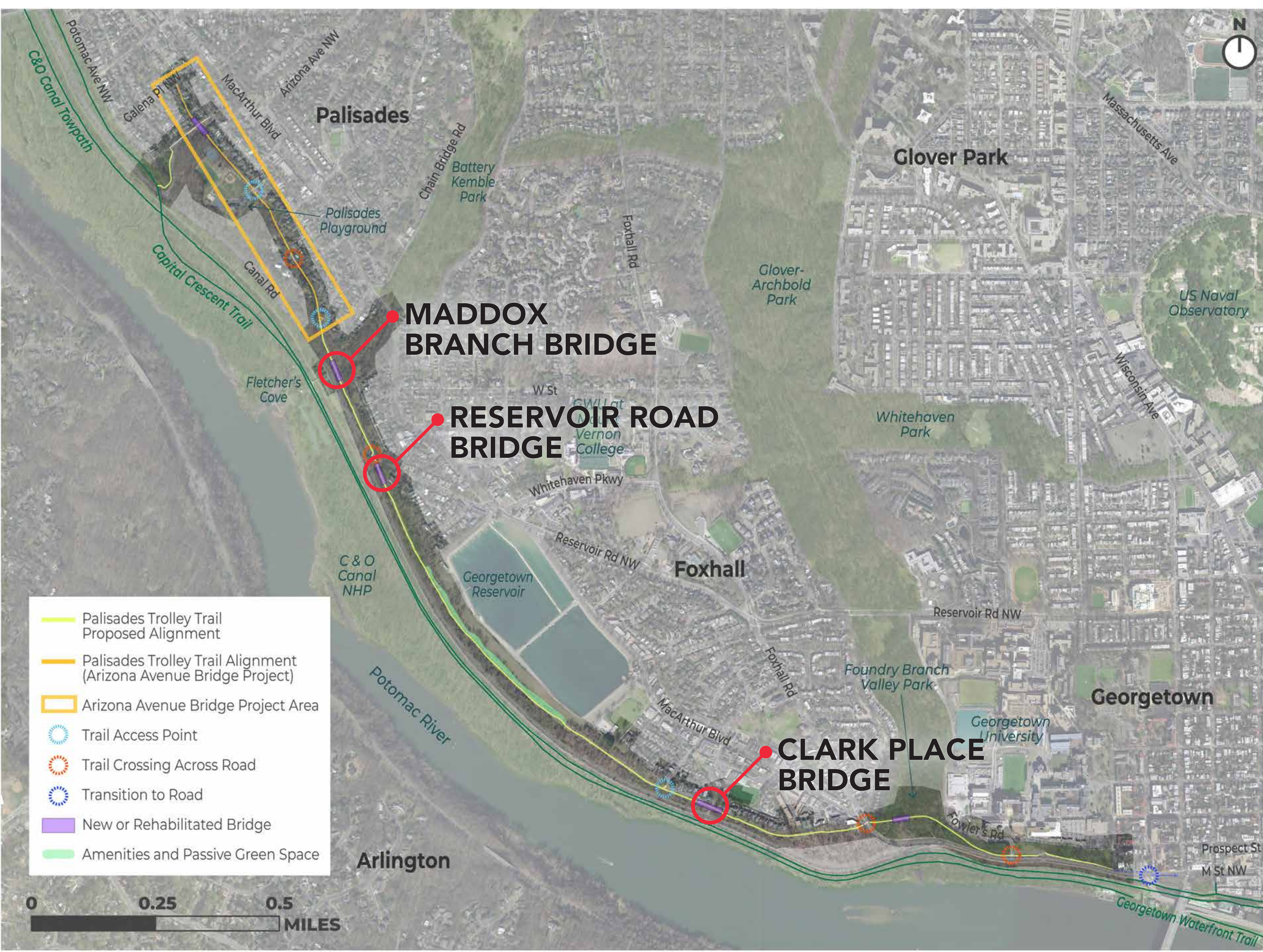


OPTION 4: TRAIL ALIGNMENT WITHOUT BRIDGE



Option	 Risks/Impacts	 Estimated Cost
Option 1	<ul style="list-style-type: none">» Condition of buried foundations is unknown» Deck members already show deterioration, likely that there is more beneath the wood ties» Possibility that very little of the original approach towers will remain	\$2.5-\$5.3 Million
Option 2	<ul style="list-style-type: none">» Only truss will remain as historic bridge towers will remain	\$2.1-\$4.5 Million
Option 3	<ul style="list-style-type: none">» New foundations may be needed to support historic steelwork, and many members may need to be replaced to ensure stability	\$2.9-\$6.3 Million
Option 4	<ul style="list-style-type: none">» Widen sidewalk on Canal Road from Foxhall Road to accommodate the trail» Does not require rehabilitation of the Foundry Branch Bridge	\$1.6-\$1.7 Million

NEW BRIDGES: OVERVIEW



BRIDGES AT A GLANCE

- Accommodate a 8' trail with 2' clear zones on either side (12' wide total)
- H-Truss, Bow String Arch, and Girder bridge options
- New bridges located within DC/DDOT Right of Way

Bridge	Length	Estimated Cost
Clark Place	156 ft	\$1.3-\$2.7 Million
Reservoir Road	128 ft	\$1.1-\$2.3 Million
Maddox Branch	171 ft	\$1.5-\$3.2 Million

⚠️ RISKS & IMPACTS

- Bridge footings must avoid DC Water 78" Watermain
- Temporary and/or permanent relocation of overhead utilities
- Temporary easements for construction
- Constructability challenges due to limited access



NEW BRIDGES: DESIGN OPTIONS

BOW STRING ARCH STYLE



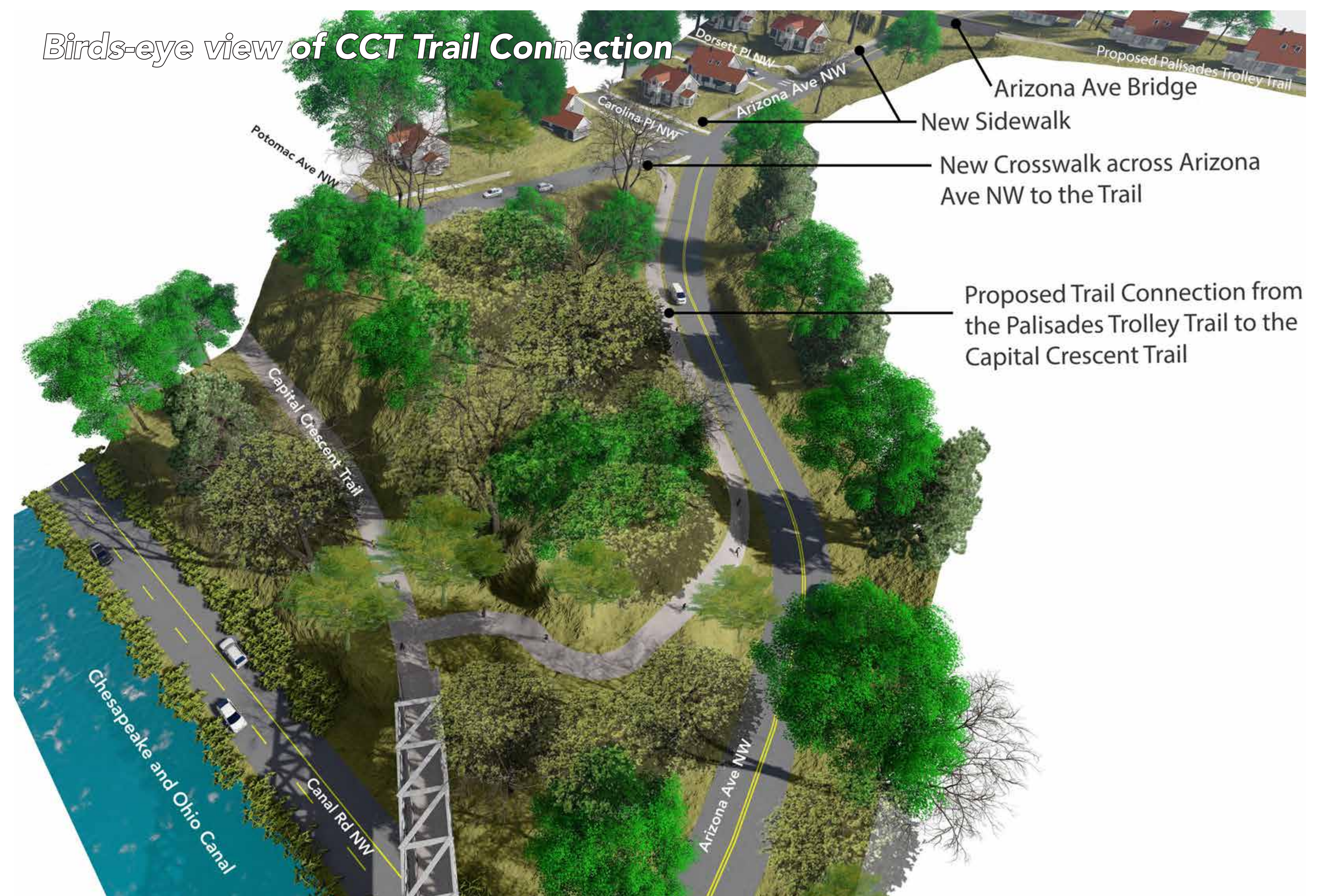
GIRDER STYLE



H-TRUSS STYLE



CAPITAL CRESCENT TRAIL CONNECTION



⚠️ RISKS & IMPACTS

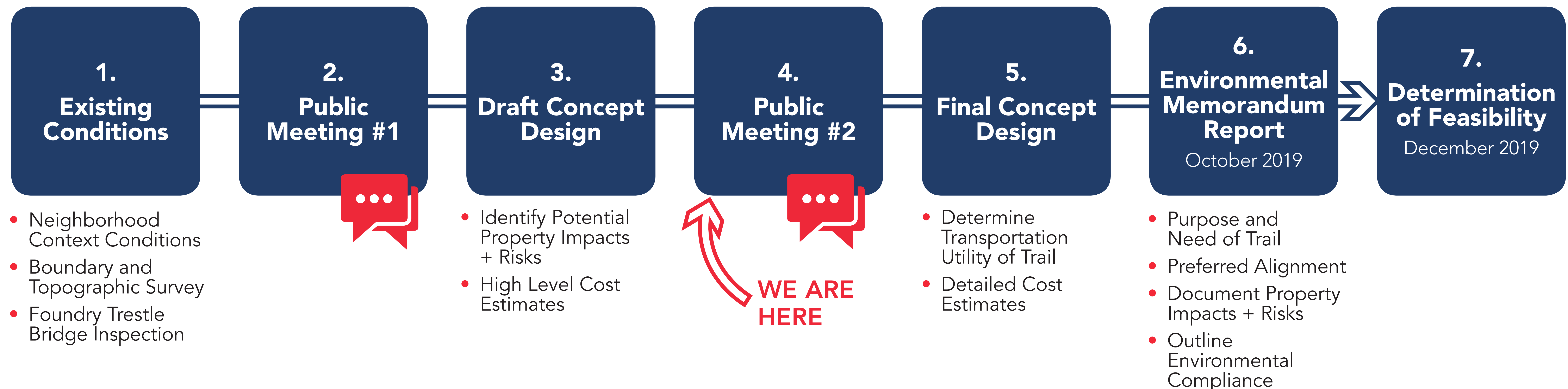
- Steep slopes
- Must maintain 5% grade to be ADA accessible
- Property agreement needed with Rock Creek Park and C&O Canal
- New street crossing on Arizona Avenue

💰 ESTIMATED COST:

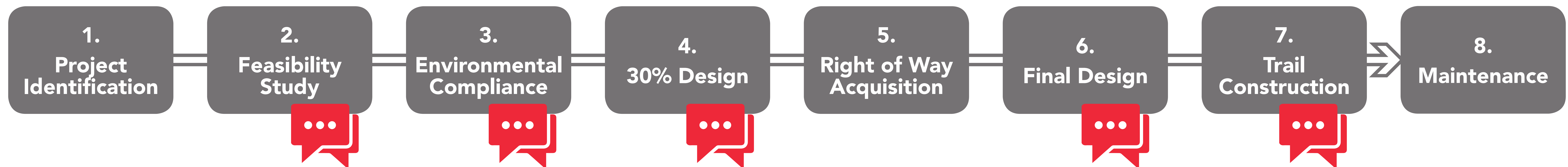
\$520,000-\$560,000

FEASIBILITY STUDY PROCESS FLOW CHART & NEXT STEPS

FEASIBILITY STUDY PROCESS FOR THE PALISADES TROLLEY TRAIL



DDOT TRAIL DEVELOPMENT PROCESS



HOW TO STAY INVOLVED

The Environmental Memorandum Report will be shared with ANCs 2E and 3D and posted to the project website here: <https://ddot.dc.gov/page/palisades-trolley-trail>

Feedback on the project can be sent to Michael Alvino at michael.alvino@dc.gov



Opportunities for Public Input

PEDESTRIAN BRIDGE AND CONNECTING TRAIL OVER ARIZONA AVE., NW

From Galena Place to Sherier Place/Nebraska Avenue N.W. loop

Project Scope:

- Reconstruction of a superstructure and rehabilitation of substructure of 110 foot long pedestrian bridge over Arizona Avenue, NW and connecting trail improvements to include conceptual design, recommended surface materials, and bridge treatments.

Project Status: 30% Preliminary Design On Going

- Feasibility study for East Ramp is completed.
- Public meeting held April 2018
- Traffic study for Arizona Ave/Sherier Pl Ped signal is under review.



Existing pedestrian bridge

Discussion Points:

- Bridge options
- Connecting trail surface treatments
- Additional sidewalk improvements
- East Ramp public acceptance issues

Project Schedule:

Project Started	August 2017
Preliminary Design completed	September 2019
Final Design Start Date	Winter 2019
Construction Start Date	TBD

Project Budget: TBD (Design & Construction)



Project Area Map