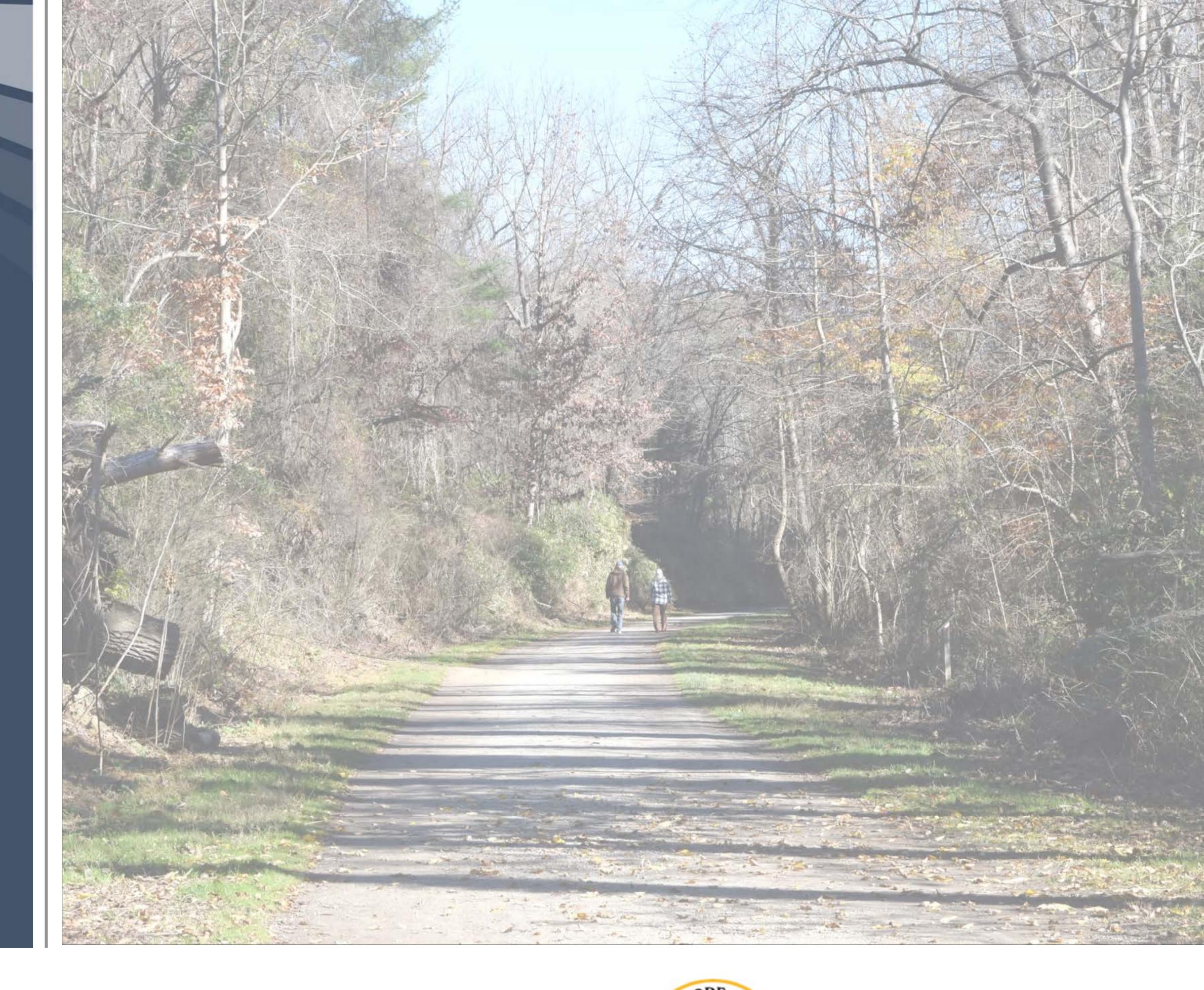
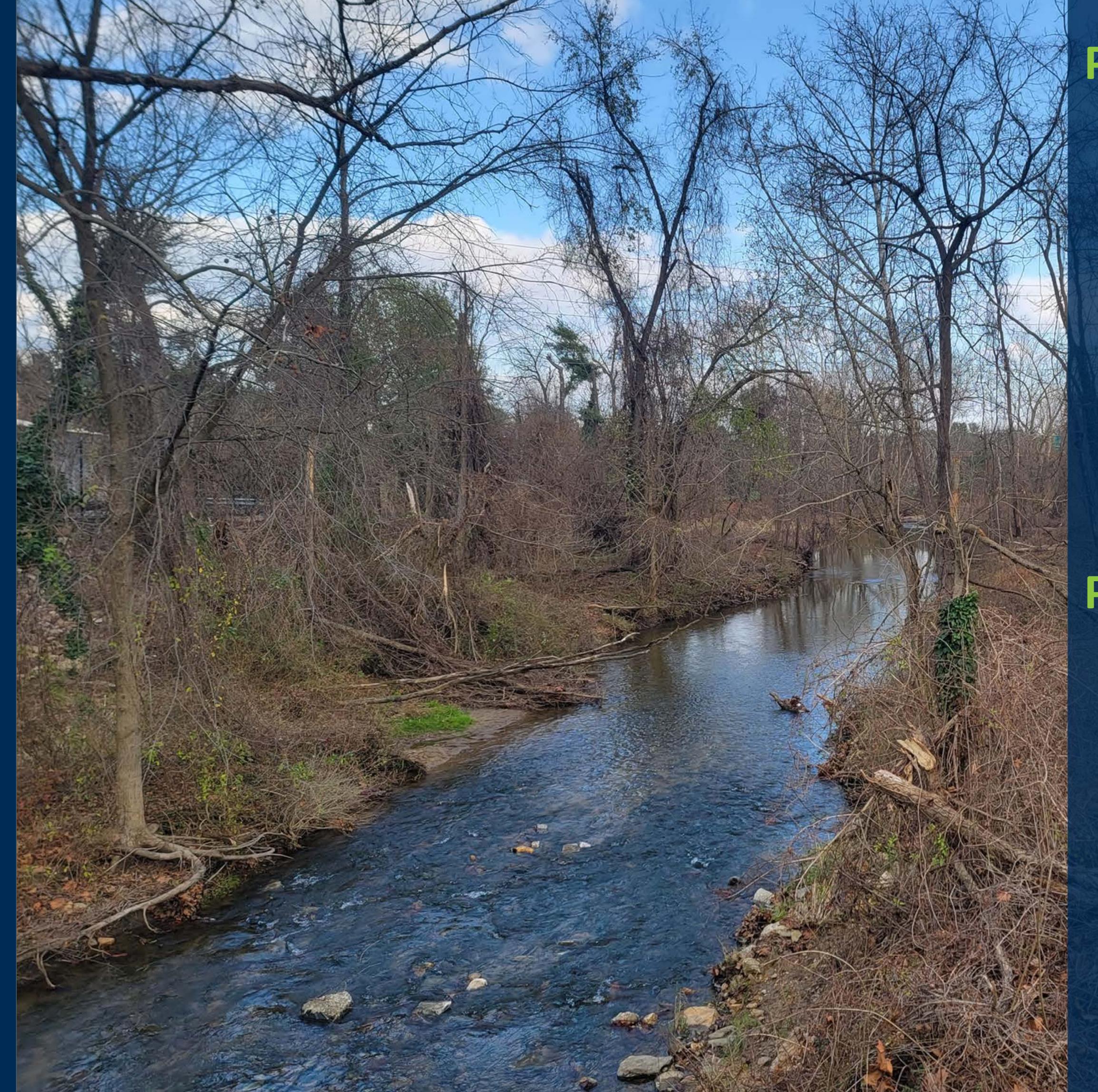
NORTH CENTRAL RAILWAY (NCR)
TRAIL EXTENSION
FEASIBILITY STUDY









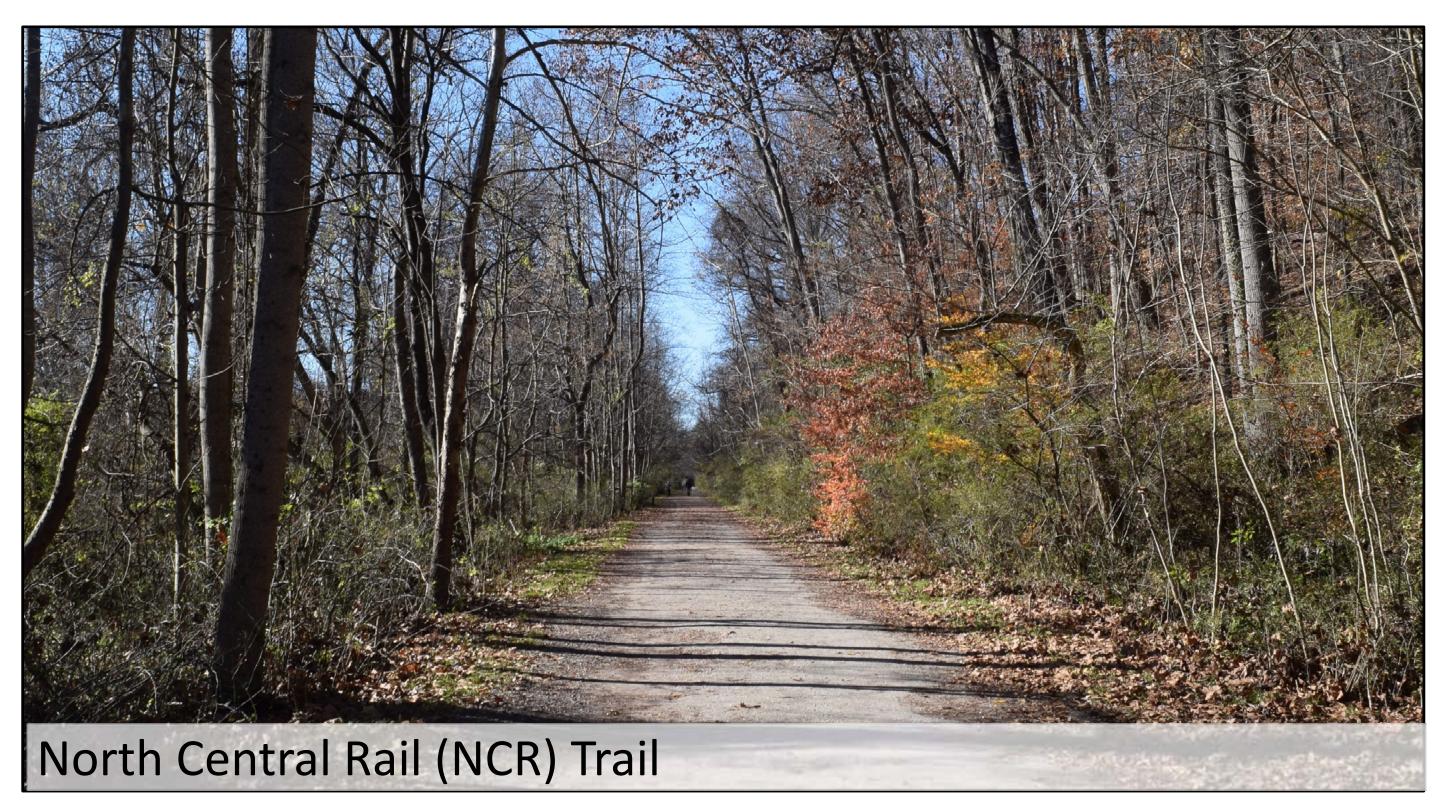
Project Background

- Torrey C. Brown Rail Trail, also known as the North Central Railroad (NCR) Trail
- Currently extends 19.7 miles from Ashland Road to PA / MD state line
- Continues North of the PA / MD state line as the York County Heritage Rail Trail extending 21 miles north to York, PA
- Existing trail is 10' wide with a stone dust surface
- Managed and maintained by the Maryland Department of Natural Resources

Project Goals

- Extend trail approximately 7 miles south from Ashland Road to Lake Roland Park.
- Create a trail that is accessible for all users.
- Improve active transportation connectivity between residential, commercial, and recreational areas.
- Minimize impacts to natural and cultural resources.
- Encourage active transportation to members of the public.

Types of Bicycle Facilities



Shared-Use Path



Two-Way Cycle Track*

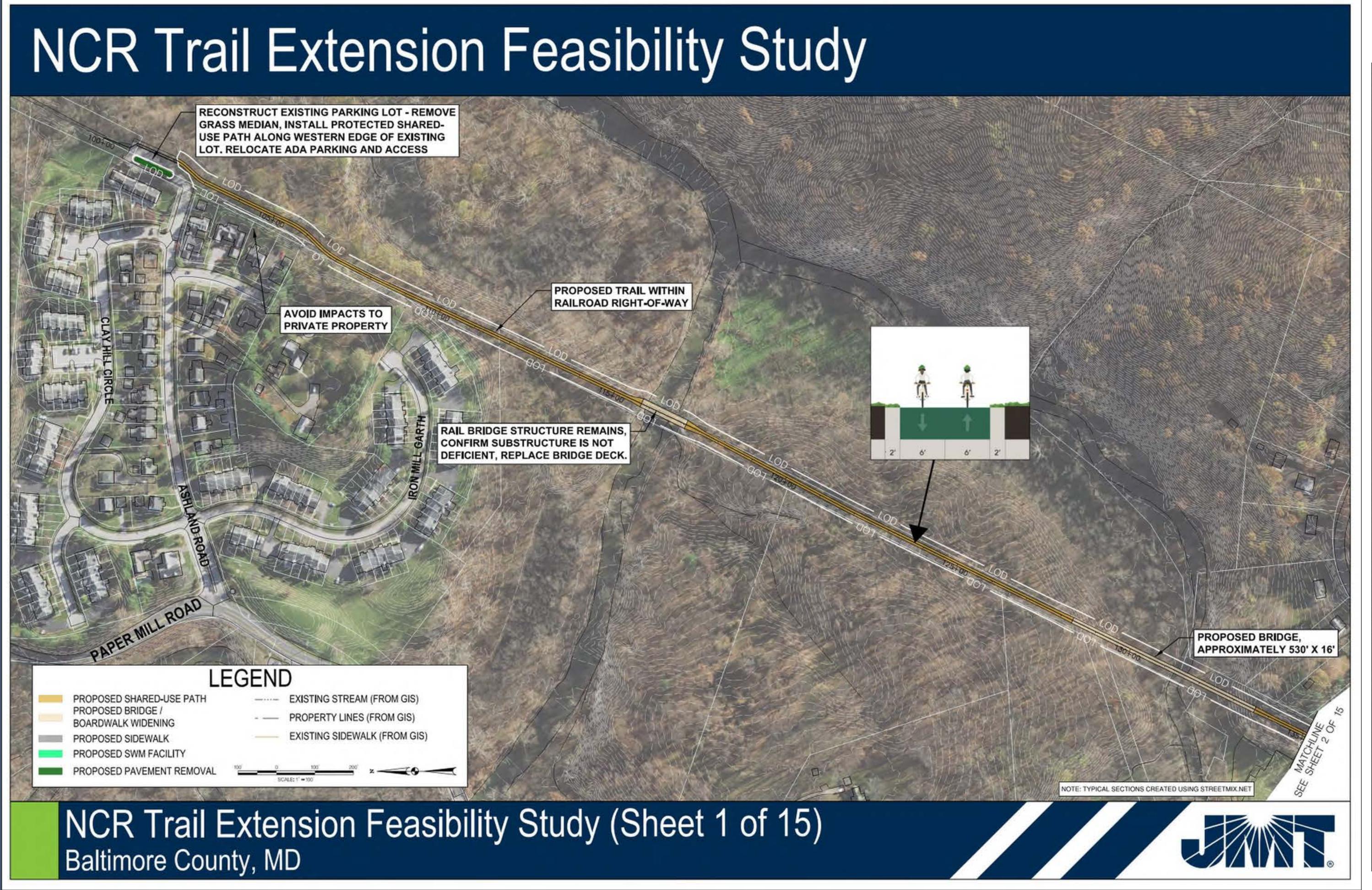


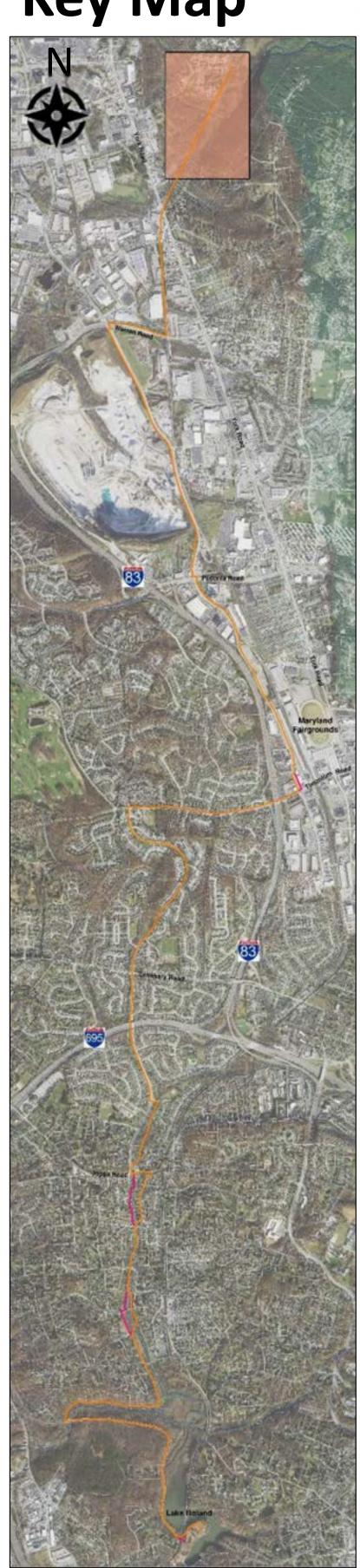
• Bike Lanes*



Separated Bike Lanes*

*Bike lane and cycle track facilities would be for bicycles only, with pedestrians using adjacent sidewalks.





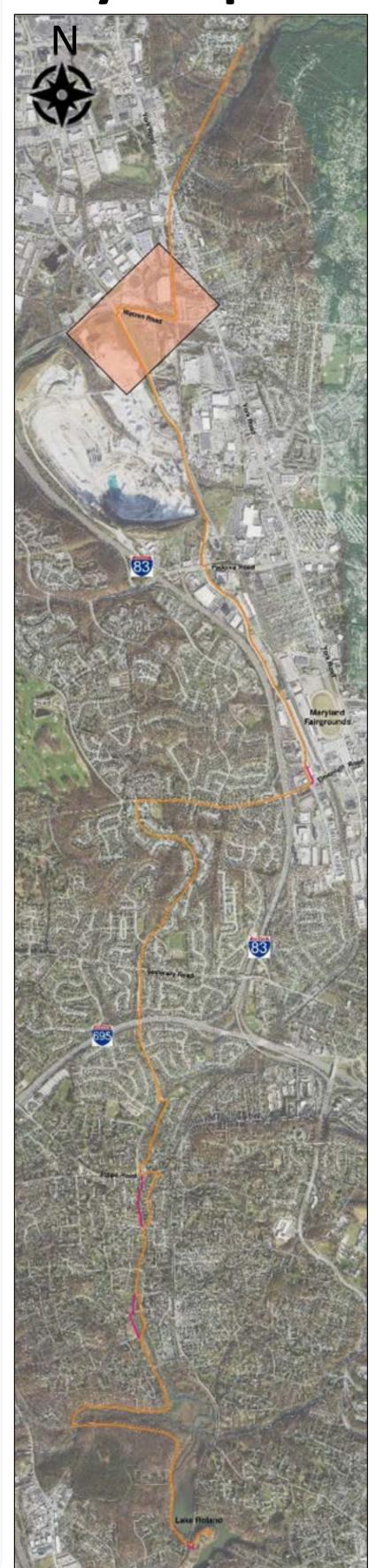
NCR Trail Extension Feasibility Study LEGEND **EXISTING STREAM (FROM GIS)** PROPERTY LINES (FROM GIS) EXISTING SIDEWALK (FROM GIS) RAILROAD RIGHT-OF-WAY RAILROAD AVENUE PEDESTRIAN REFUGE ISLAND FOR CROSSING YORK ROAD. ORK ROAD ECONSTRUCT PARKING ALONG

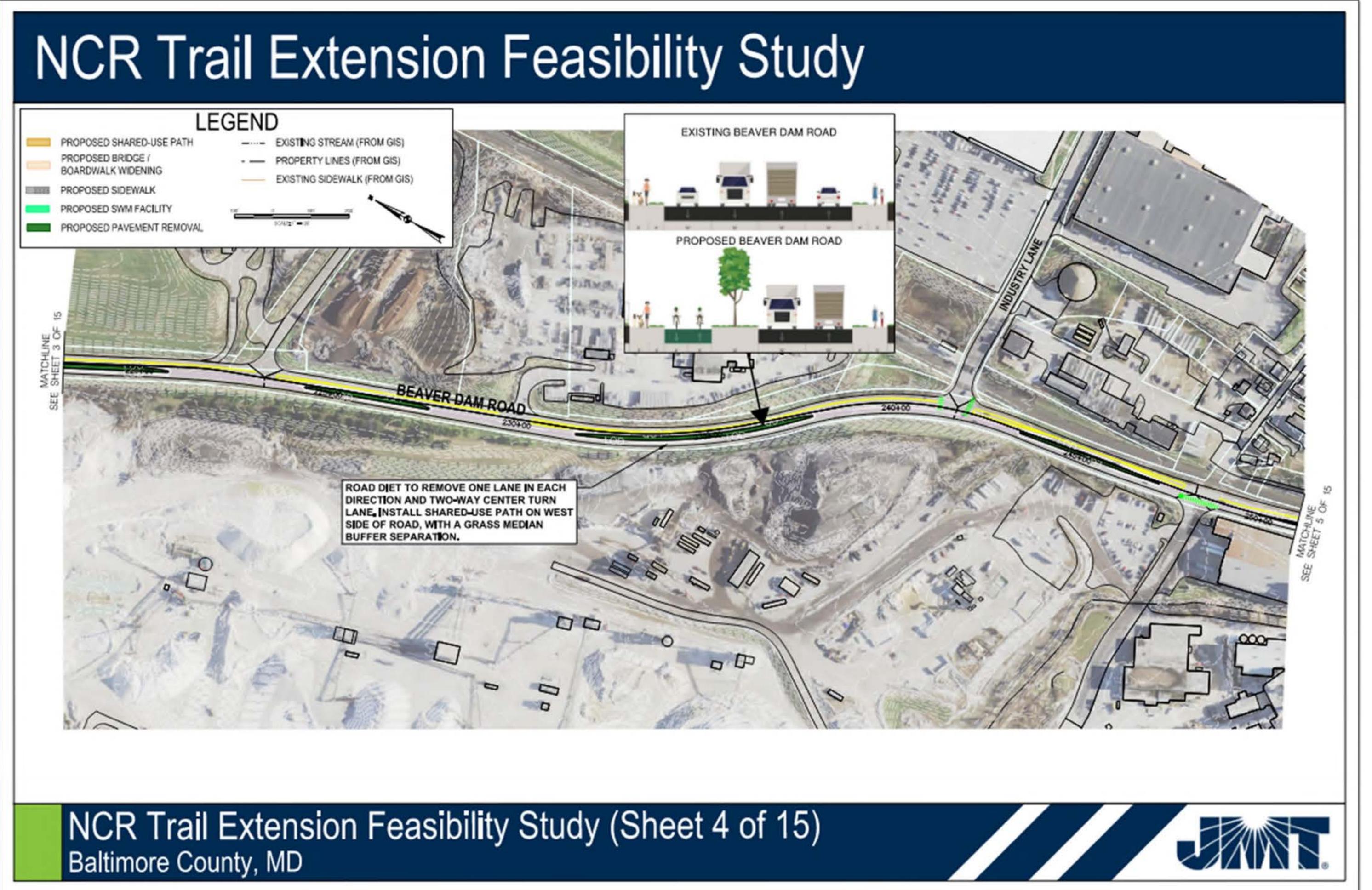
Key Map

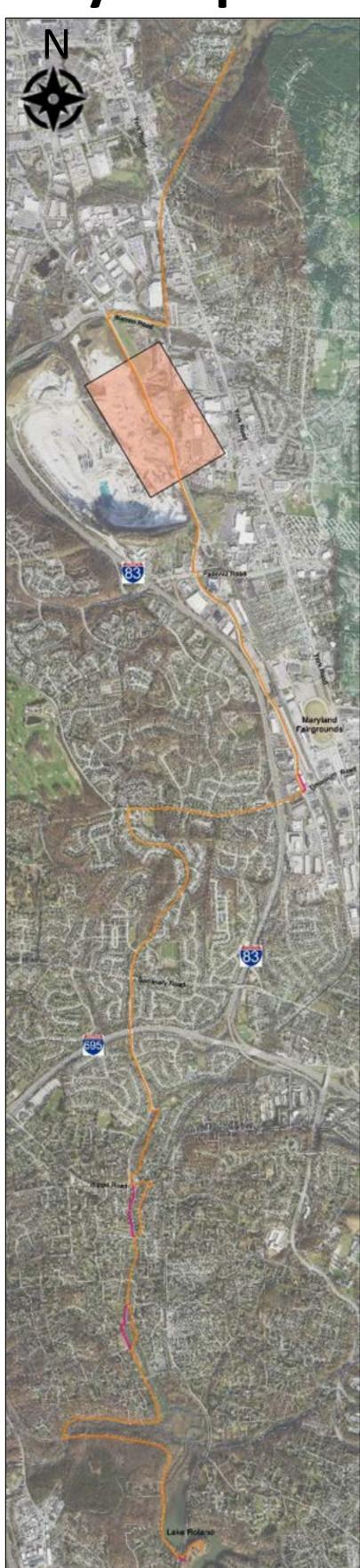


NCR Trail Extension Feasibility Study (Sheet 2 of 15)
Baltimore County, MD

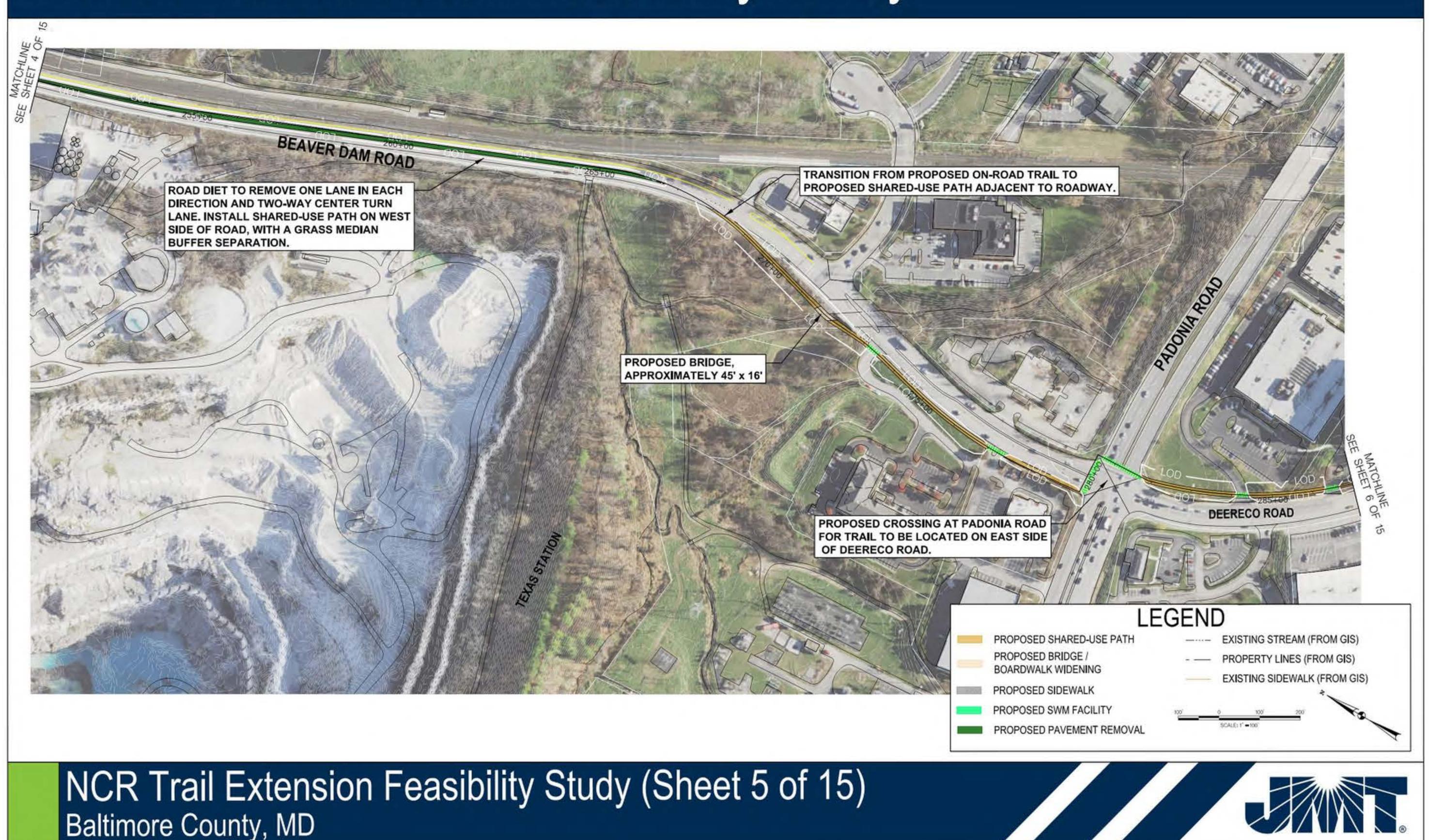
NCR Trail Extension Feasibility Study ROAD DIET TO REMOVE TWO-WAY CENTER TURI LANE. INSTALL SHARED-USE PATH ON WEST SIDE OF ROAD, WITH A GRASS MEDIAN BUFFER SEPARATION. EXISTING BEAVER DAM ROAD PROPOSED TRAIL WITHIN RAILROAD RIGHT-OF-WAY RESTRIPE TO REMOVE TWO-WAY CENTER TURN LANE, INSTALL TWO-WAY CYCLE TRACK WITH PHYSICAL SEPARATION FROM VEHICULAR TRAFFIC. REMOVE EXISTING SIDEWALK. INSTALL NEW 10-FOOT-WIDE SHARED-USE PATH WITH FIVE-FOOT BUFFER. **LEGEND** EXISTING STREAM (FROM GIS) PROPOSED SHARED-USE PATH PROPOSED BRIDGE / PROPERTY LINES (FROM GIS) BOARDWALK WIDENING EXISTING SIDEWALK (FROM GIS) PROPOSED SIDEWALK PROPOSED MICROBIORETENTION FACILITY. (SWM-1) PROPOSED SWM FACILITY PROPOSED PAVEMENT REMOVAL NCR Trail Extension Feasibility Study (Sheet 3 of 15) Baltimore County, MD







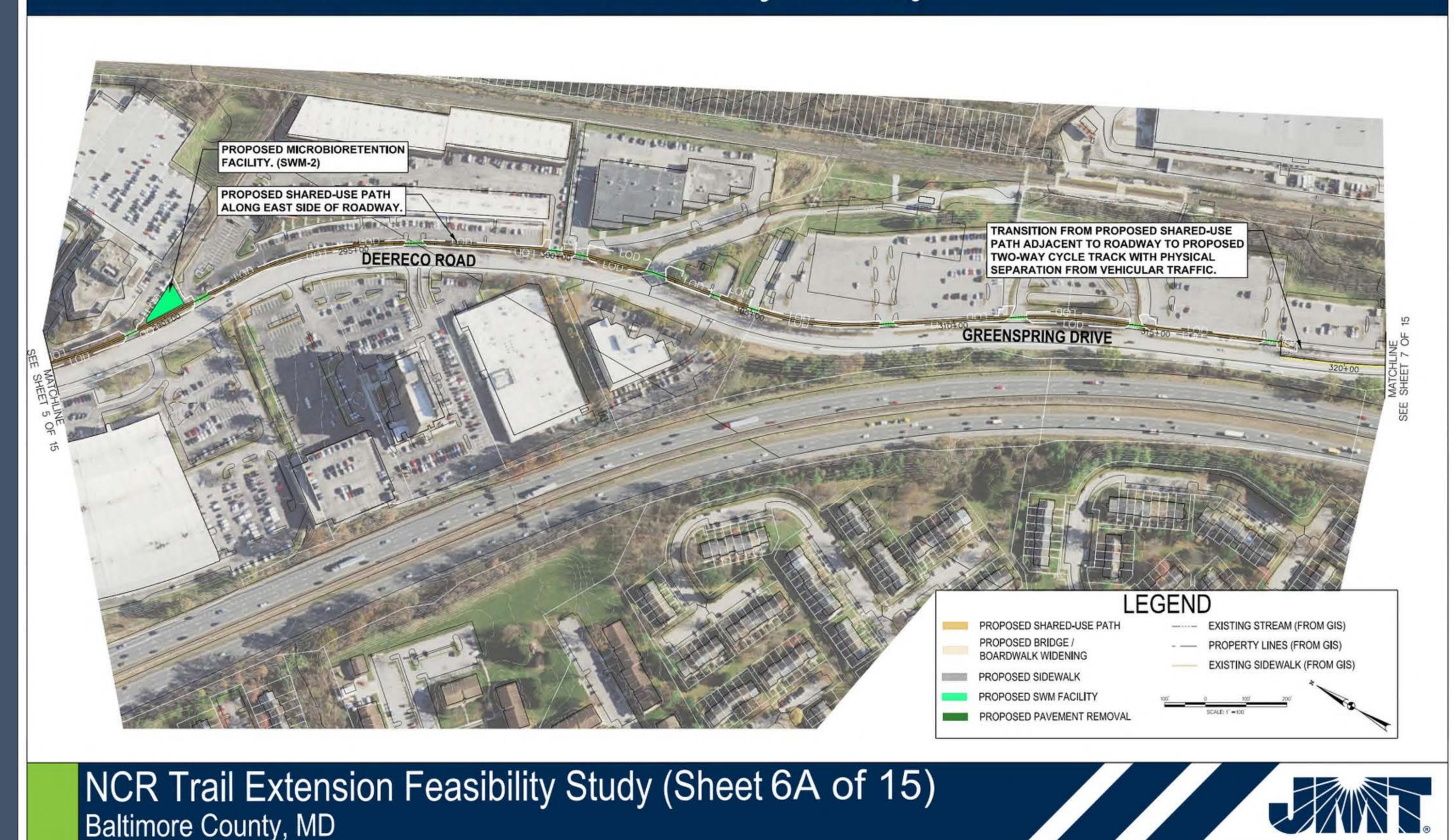
NCR Trail Extension Feasibility Study





Proposed NCR Trail Extension (Greenspring Drive Option 1)

NCR Trail Extension Feasibility Study





Proposed NCR Trail Extension (Greenspring Drive Option 1)

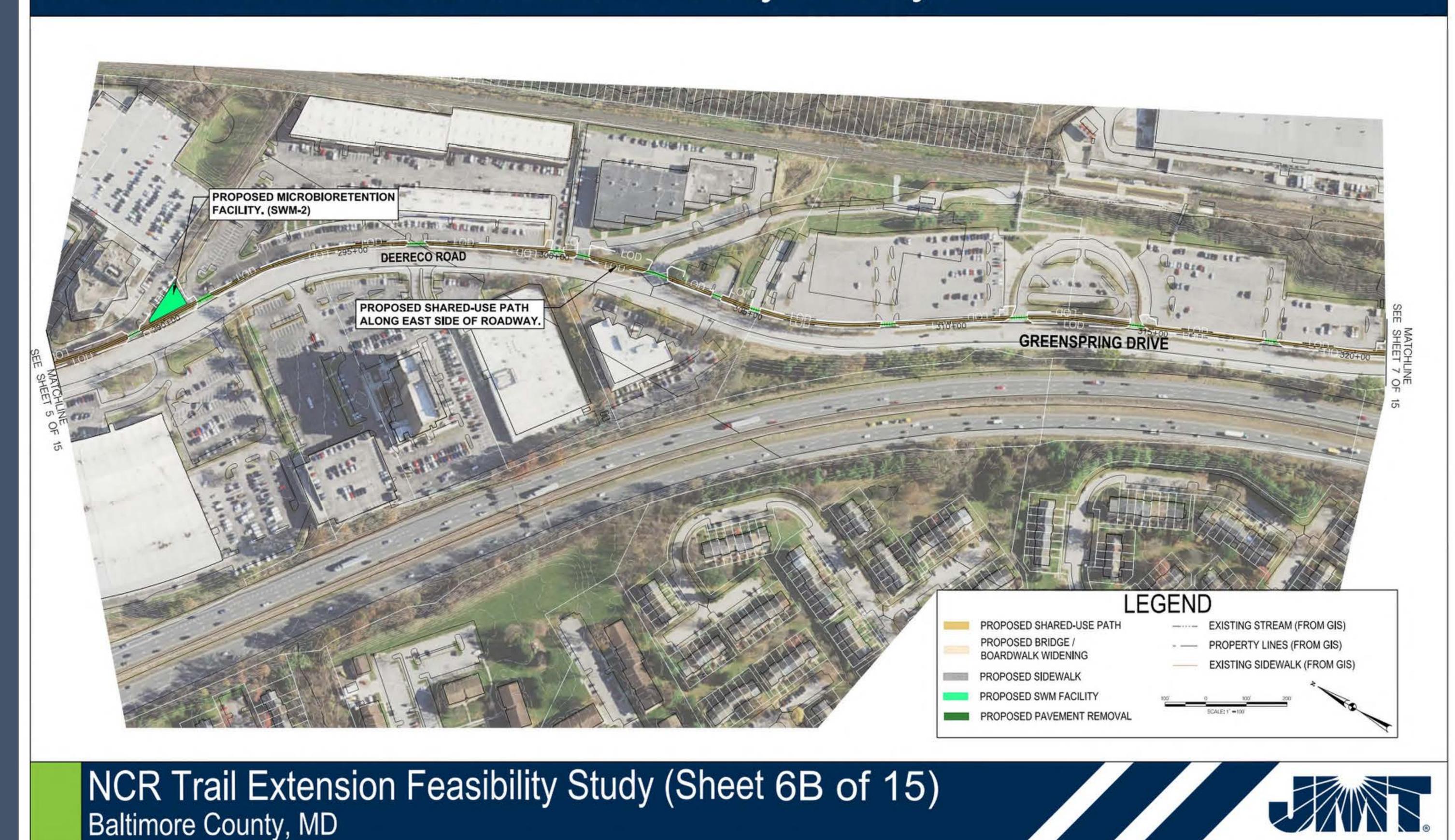
NCR Trail Extension Feasibility Study GREENSPRING DRIVE ADVANCE SIGNING TO INFORM TRAIL USERS OF A PINCH POINT AT THIS LOCATION DUE TO THE HIGHWAY OVERPASS. **LEGEND** EXISTING STREAM (FROM GIS) PROPOSED SHARED-USE PATH PROPOSED BRIDGE / PROPERTY LINES (FROM GIS) BOARDWALK WIDENING KISTING SIDEWALK (FROM GIS) PROPOSED SIDEWALK PROPOSED SWM FACILITY PROPOSED PAVEMENT REMOVAL WIDEN EXISTING SIDEWALK FROM 5 FEET TO 10 FEET. NCR Trail Extension Feasibility Study (Sheet 7A of 15)

Baltimore County, MD



Proposed NCR Trail Extension (Greenspring Drive Option 2)

NCR Trail Extension Feasibility Study

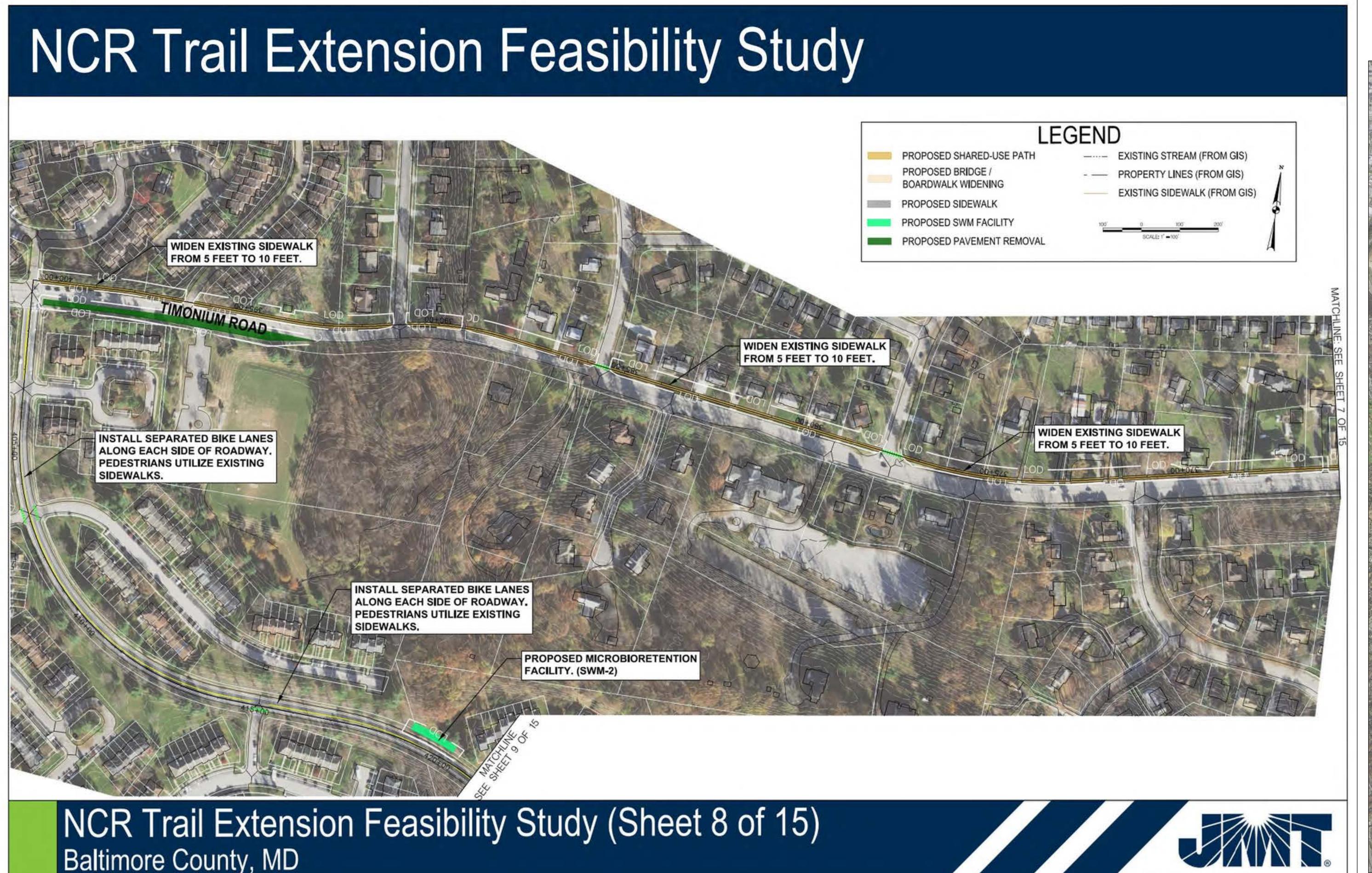




Proposed NCR Trail Extension (Greenspring Drive Option 2)

NCR Trail Extension Feasibility Study UTILIZE EXISTING SIDEWALK. INSTALL ADVANCE SIGNING TO INFORM TRAIL USERS OF A PINCH POINT AT THIS LOCATION DUE TO THE HIGHWAY OVERPASS. WIDEN EXISTING SIDEWALK FROM 5 FEET TO 10 FEET. **LEGEND** EXISTING STREAM (FROM GIS) PROPOSED SHARED-USE PATH PROPOSED BRIDGE / PROPERTY LINES (FROM GIS) BOARDWALK WIDENING EXISTING SIDEWALK (FROM GIS) PROPOSED SIDEWALK PROPOSED SWM FACILITY PROPOSED PAVEMENT REMOVAL NCR Trail Extension Feasibility Study (Sheet 7B of 15) Baltimore County, MD



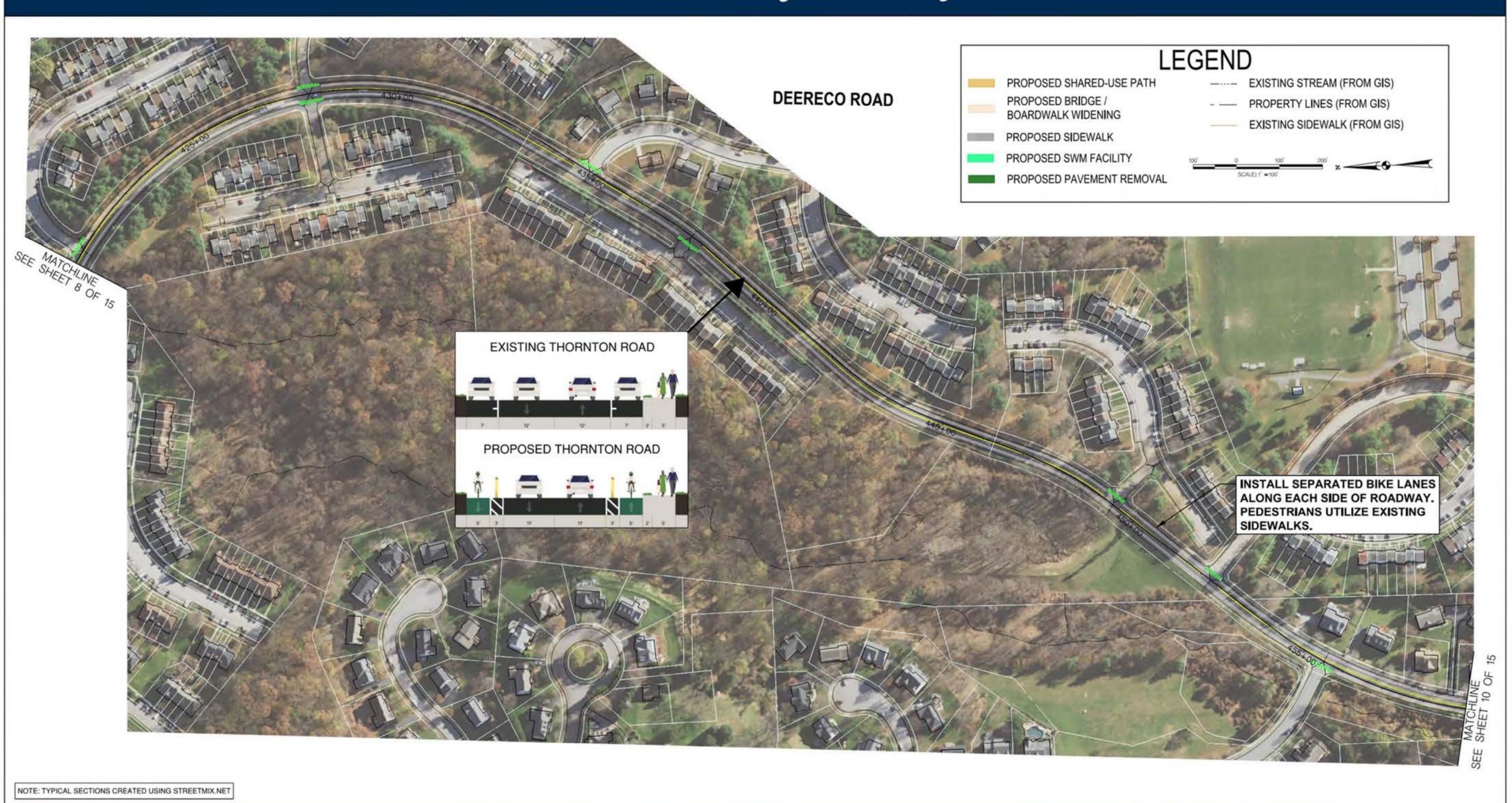




NCR Trail Extension Feasibility Study

NCR Trail Extension Feasibility Study (Sheet 9 of 15)

Baltimore County, MD





Baltimore County, MD

NCR Trail Extension Feasibility Study LEGEND EXISTING STREAM (FROM GIS) PROPOSED SHARED-USE PATH PROPERTY LINES (FROM GIS) EXISTING SIDEWALK (FROM GIS) PROPOSED SWM FACILITY PROPOSED PAVEMENT REMOVAL **EXISTING THORNTON ROAD** PROPOSED THORNTON ROAD WIDEN EXISTING SIDEWALK FROM FIVE FEET TO TEN FEET. PROPOSED SHARED-USE PATH. PROPOSED TWO-WAY CYCLE TRACK WITH PHYSICAL SEPARATION FROM VEHICULAR TRAFFIC. PEDESTRIANS TO USE EXISTING SIDEWALKS. **INSTALL SEPARATED BIKE LANES** ALONG EACH SIDE OF ROADWAY. POTENTIAL SWM SWALE. PEDESTRIANS UTILIZE EXISTING POTENTIAL MICROBIORETENTION SIDEWALKS. FACILITY. (SWM-6) NOTE: TYPICAL SECTIONS CREATED USING STREETMIX.NE NCR Trail Extension Feasibility Study (Sheet 10 of 15)

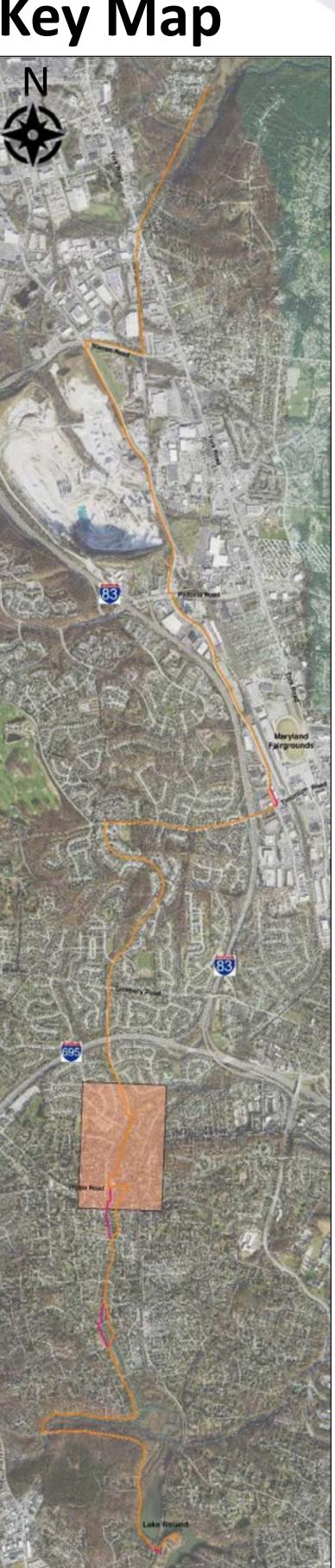


Proposed NCR Trail Extension (Roland Run Option 1)

NCR Trail Extension Feasibility Study



Key Map



NCR Trail Extension Feasibility Study (Sheet 11A of 15) Baltimore County, MD

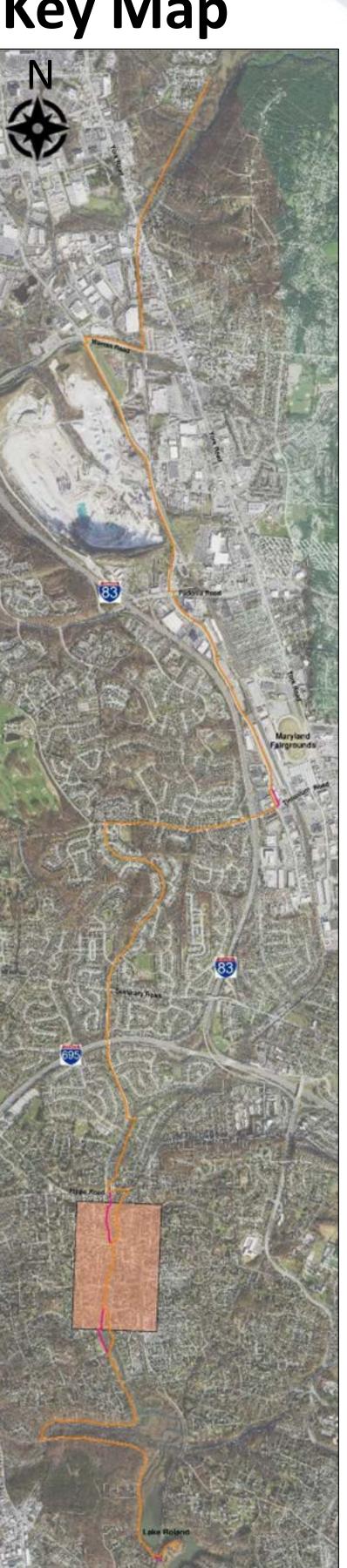
Proposed NCR Trail Extension (Roland Run Option 1)

NCR Trail Extension Feasibility Study



NCR Trail Extension Feasibility Study (Sheet 12A of 15) Baltimore County, MD



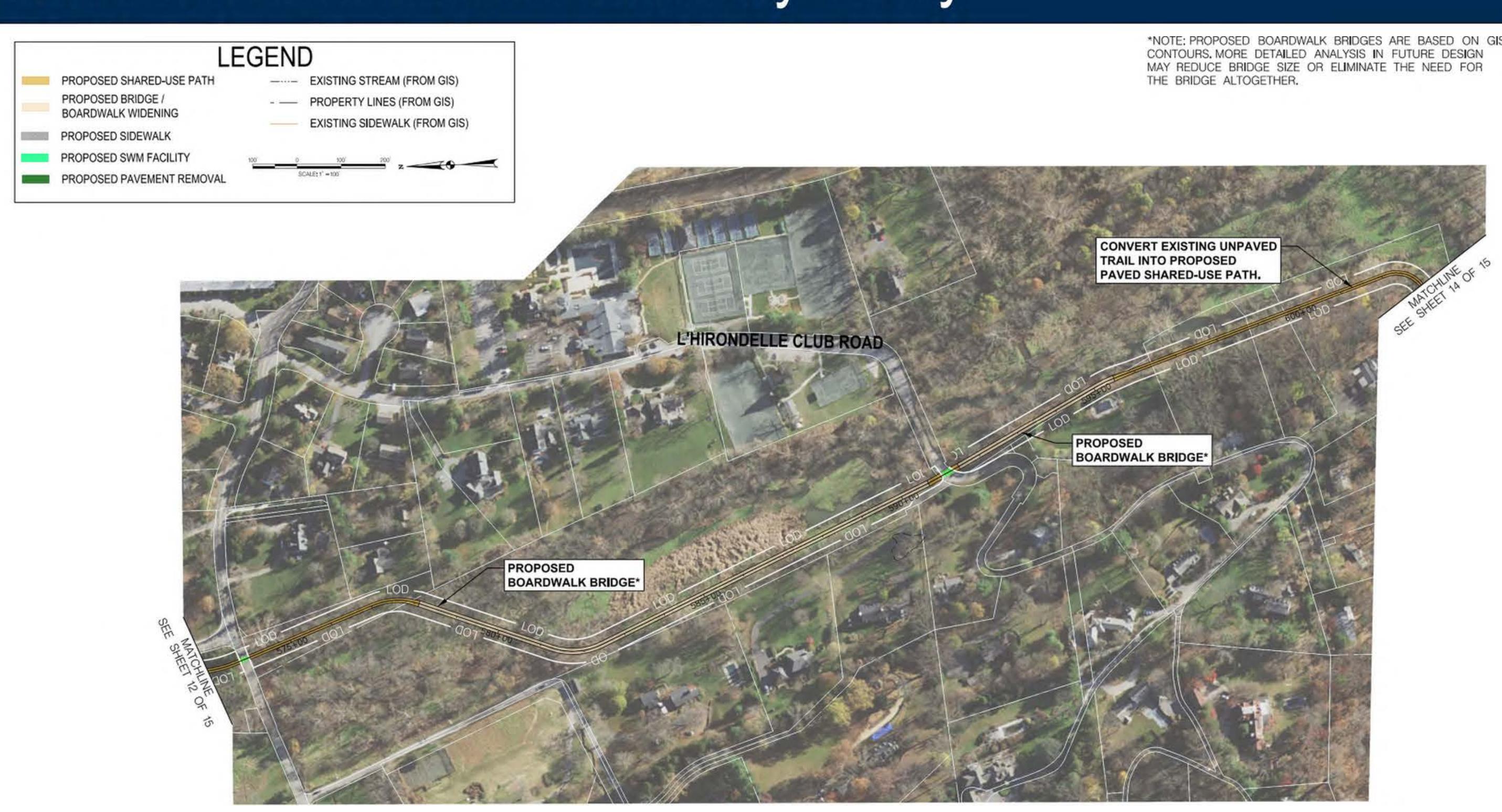


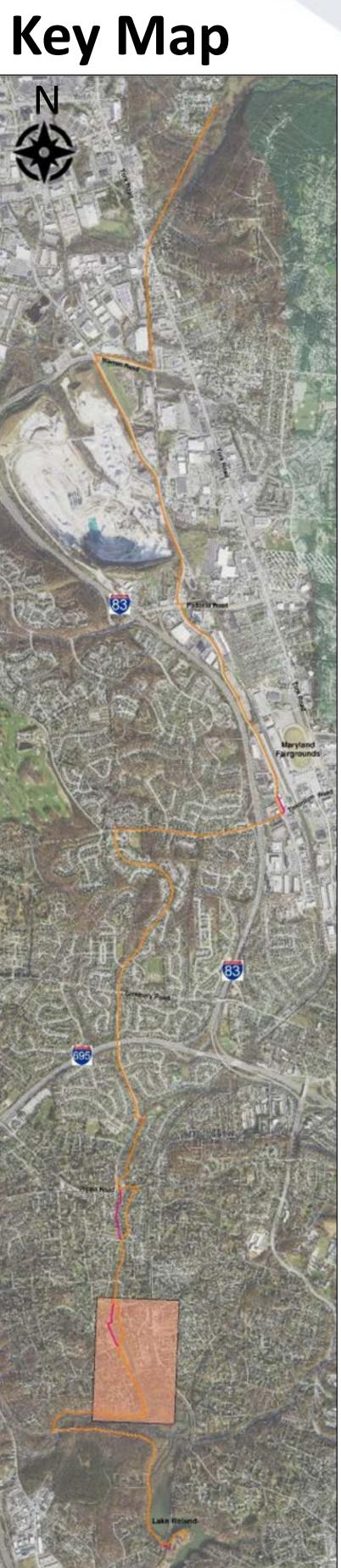
Proposed NCR Trail Extension (Roland Run Option 1)

NCR Trail Extension Feasibility Study

NCR Trail Extension Feasibility Study (Sheet 13A of 15)

Baltimore County, MD





Proposed NCR Trail Extension (Roland Run Option 2)

NCR Trail Extension Feasibility Study



Key Map



NCR Trail Extension Feasibility Study (Sheet 11B of 15)
Baltimore County, MD

Proposed NCR Trail Extension (Roland Run Option 2)

NCR Trail Extension Feasibility Study



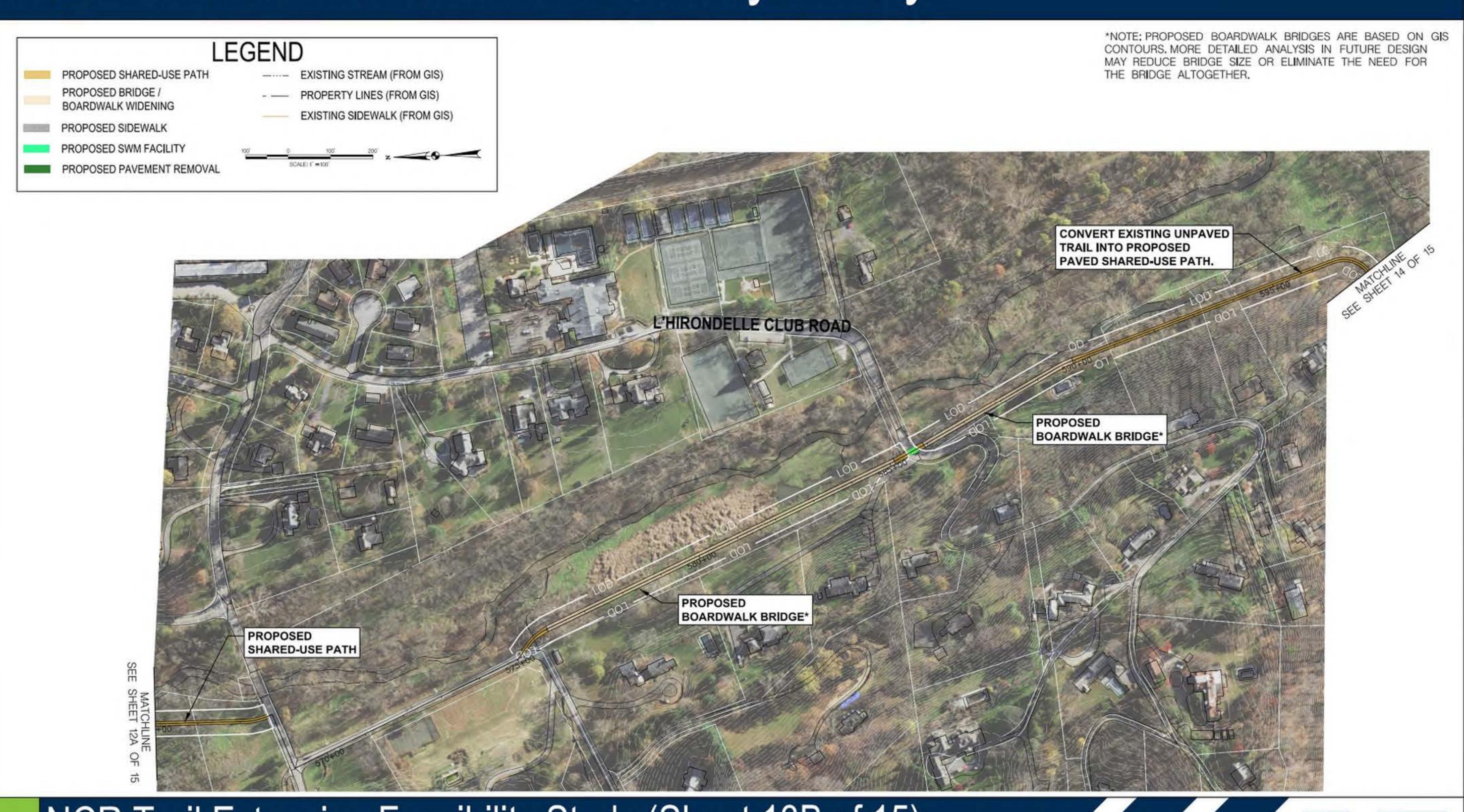
NCR Trail Extension Feasibility Study (Sheet 12B of 15) Baltimore County, MD





Proposed NCR Trail Extension (Roland Run Option 2)

NCR Trail Extension Feasibility Study

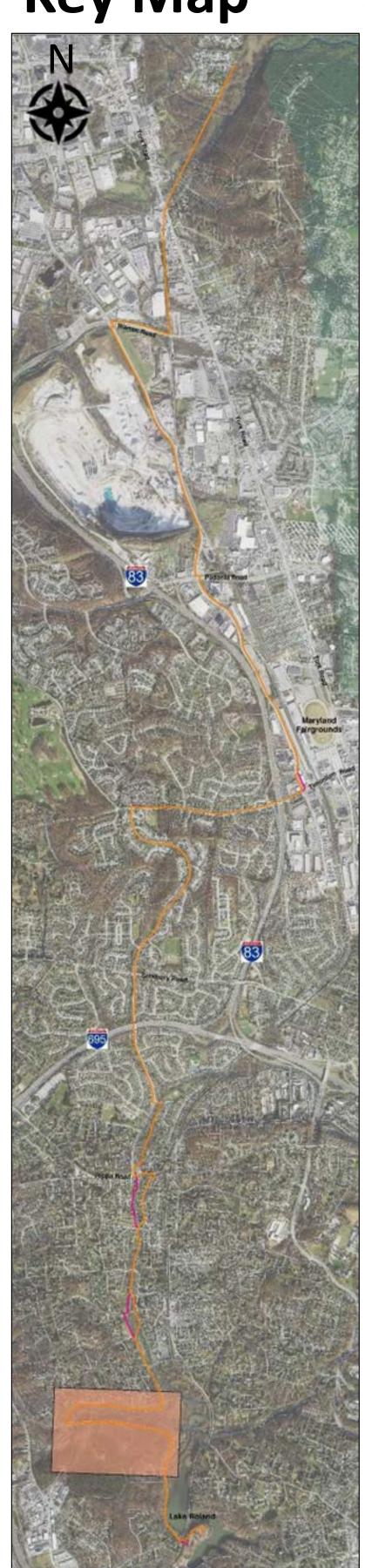


NCR Trail Extension Feasibility Study (Sheet 13B of 15) Baltimore County, MD



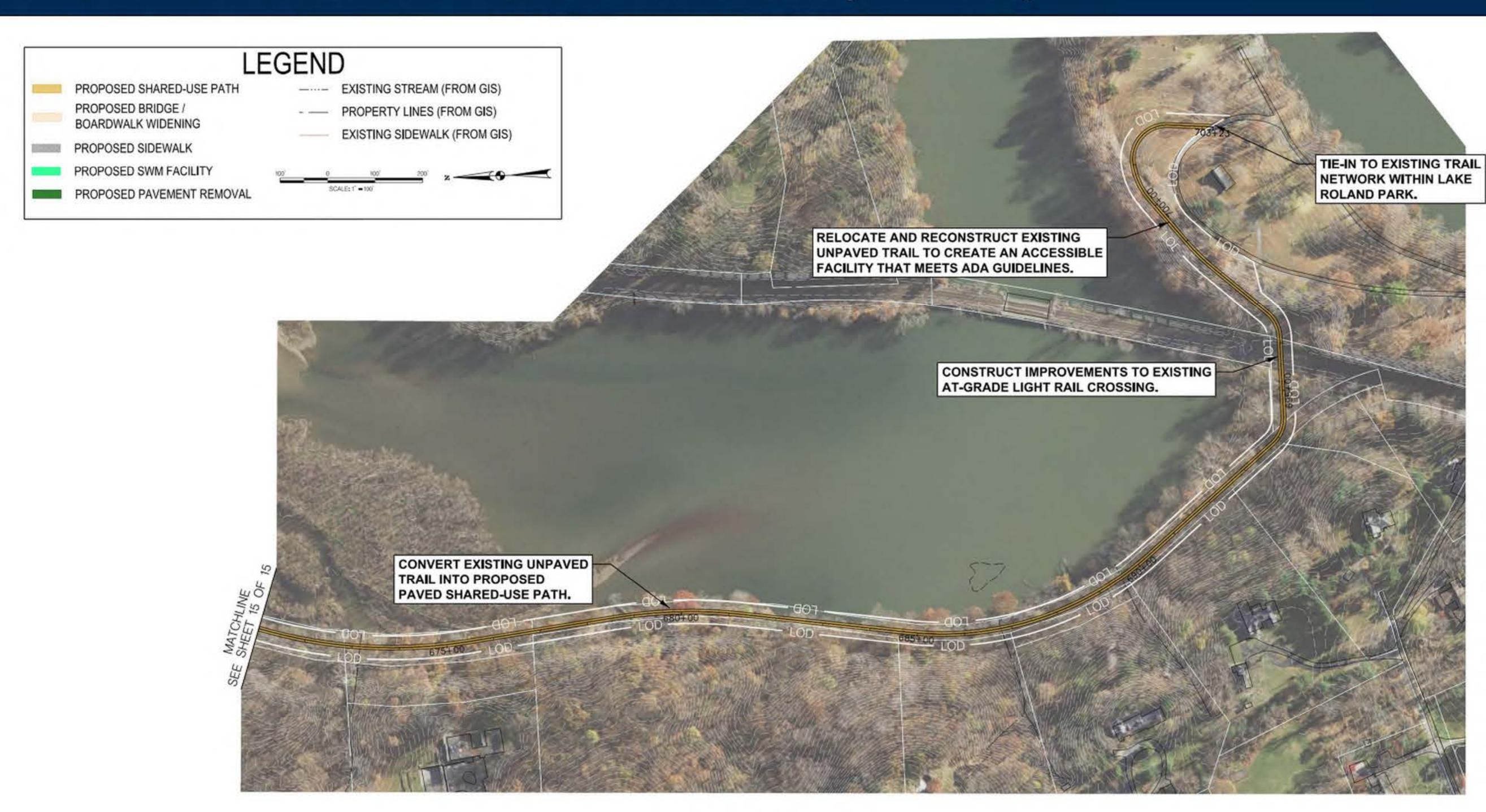


NCR Trail Extension Feasibility Study PAVED SHARED-USE PATH. CONVERT EXISTING UNPAVED TRAIL INTO PROPOSED UTILIZE PAVED SHARED-USE PATH. **EXISTING BRIDGE** CONVERT EXISTING UNPAVED TRAIL INTO PROPOSED PAVED SHARED-USE PATH. **LEGEND** EXISTING STREAM (FROM GIS) PROPOSED SHARED-USE PATH PROPOSED BRIDGE / PROPERTY LINES (FROM GIS) BOARDWALK WIDENING EXISTING SIDEWALK (FROM GIS) PROPOSED SIDEWALK PROPOSED SWM FACILITY PROPOSED PAVEMENT REMOVAL NOTE: TYPICAL SECTIONS CREATED USING STREETMIX.NET NCR Trail Extension Feasibility Study (Sheet 14 of 15) Baltimore County, MD



Proposed NCR Trail Extension (Lake Roland Option 1)

NCR Trail Extension Feasibility Study



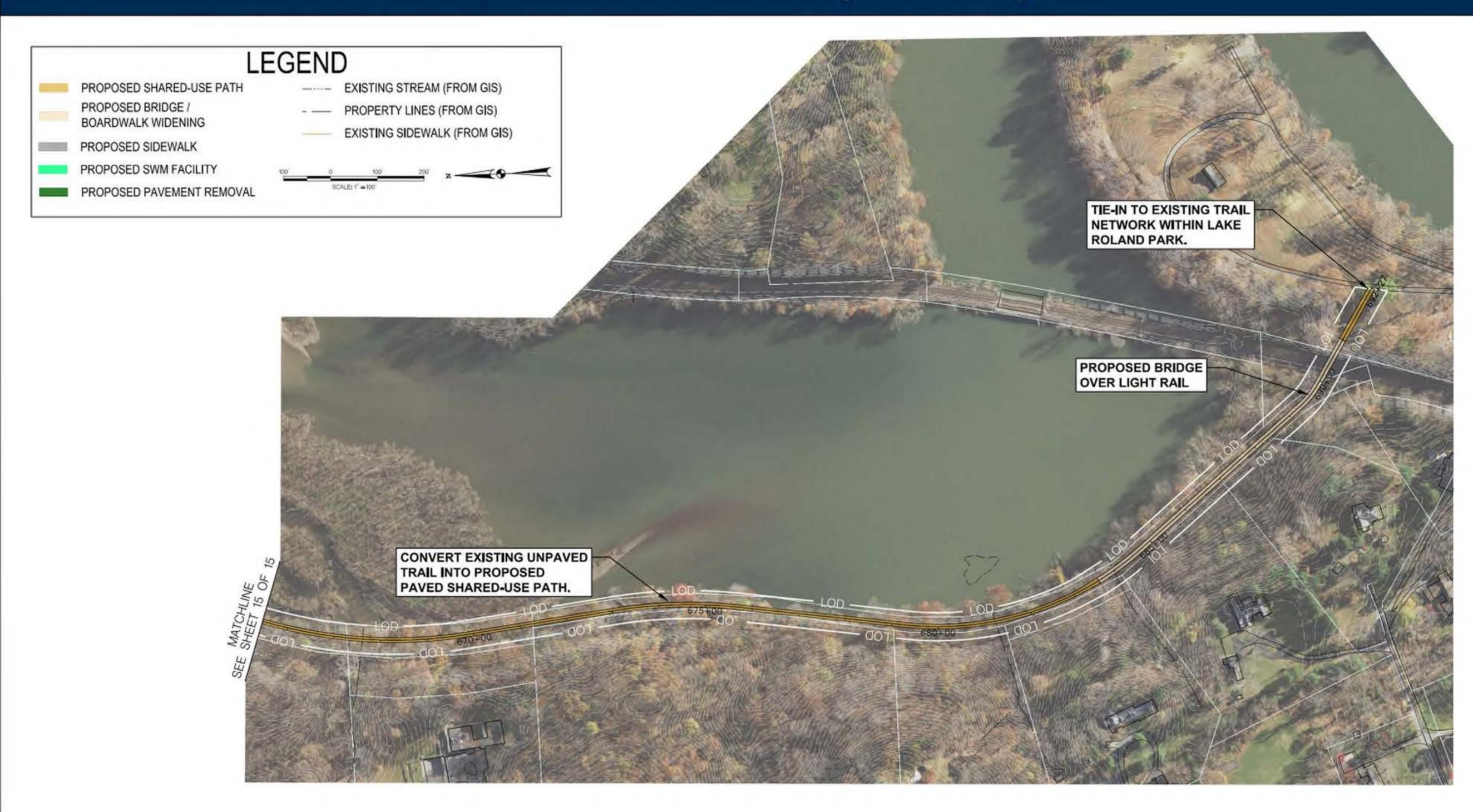
Key Map



NCR Trail Extension Feasibility Study (Sheet 15A of 15) Baltimore County, MD

Proposed NCR Trail Extension (Lake Roland Option 2)

NCR Trail Extension Feasibility Study



Key Map



NCR Trail Extension Feasibility Study (Sheet 15B of 15) Baltimore County, MD



Alignment Options Summary

- Three areas contain sub-options:
 - Greenspring Drive (plan sheets 6, 7)
 - Roland Run (plan sheets 11-13)
 - Lake Roland (plan sheet 15)
- Sub-options are independent of each other and can be mixed and matched as desired.
- Overall impacts are negligible between sub-options

Sub-option	Difference between sub-options			
	Impacts		Costs	
	Option 1	Option 2	Option 1	Option 2
Greenspring Drive				
Roland Run				
Lake Roland				+

^{*}Note: Lake Roland Option 2 will also most likely be more difficult to construct due to the proposed structure over the light rail.

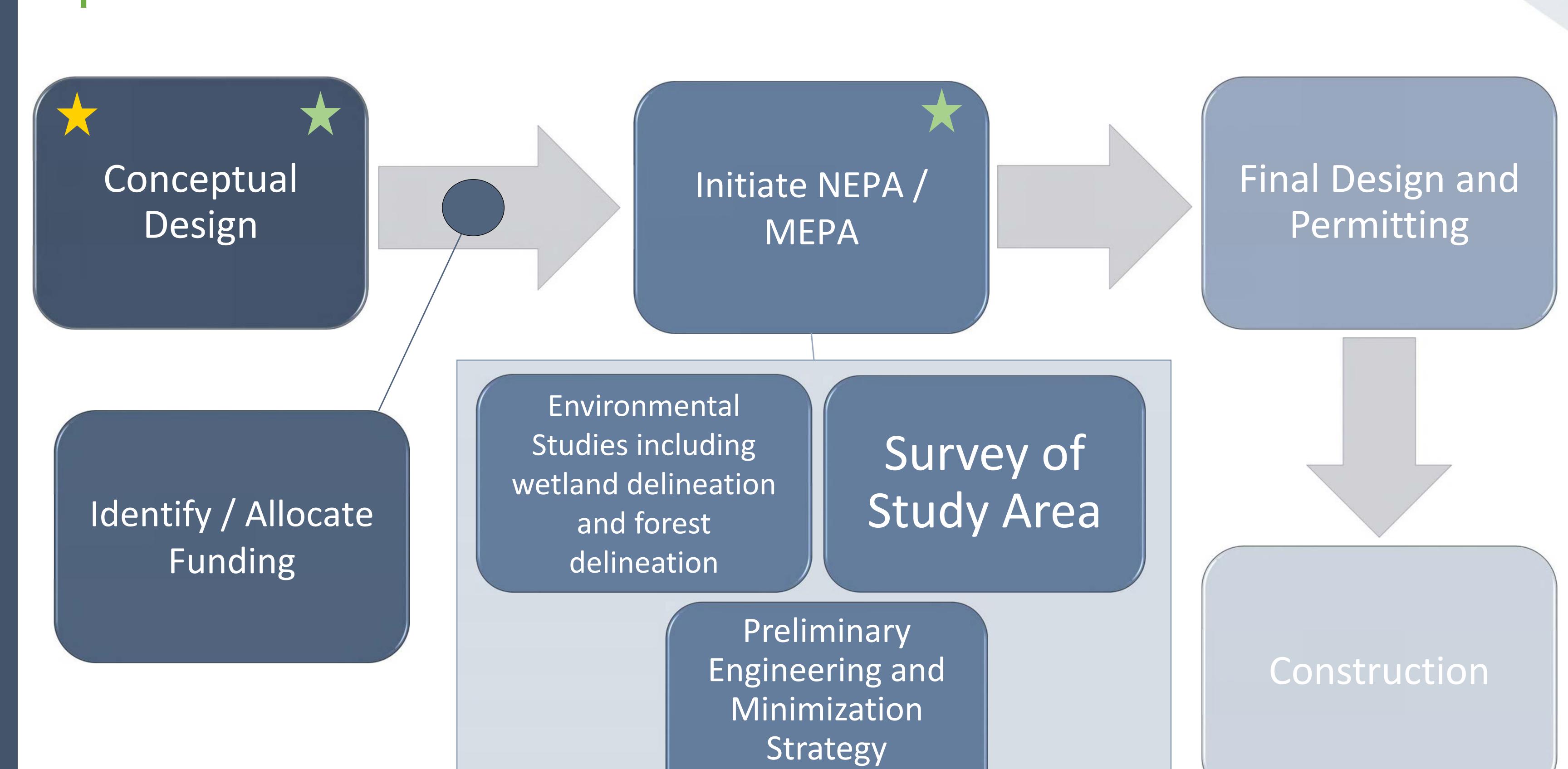
Preliminary Design Impact Comparison

	Alignment Options				
ITEM	A	В	C		
	NCR Trail Extension with: Greenspring Drive Sub-option 1 Roland Run Sub-option 1 Lake Roland Sub-option 1	NCR Trail Extension with: Greenspring Drive Sub-option 2 Roland Run Sub-option 2 Lake Roland Sub-option 2	NCR Trail Extension with: Greenspring Drive Sub-option 2 Roland Run Sub-option 2 Lake Roland Sub-option 1		
Right of way (acre)	11 - 12 acres	13 - 14 acres	13 – 14 acres		
Forested Area (acre)	12 - 13 acres	13 - 14 acres	12 – 13 acres		
Stream (LF)	1,700 - 1,900 LF	2,200 - 2,400 LF	2,200 – 2,400 LF		
Wetlands (SF)	1.5 – 3 acres	1.5 – 3 acres	1.5 – 3 acres		
100-Year Floodplain (acre)	6 – 7 acres	6 – 7 acres	6 – 7 acres		
Road Crossings (EA)	16 crossings	16 crossings	16 crossings		
Proposed Bridges (EA) (Total SF)	9 bridges 38,000 – 41,000 SF	9 bridges 47,000 – 50,000 SF*	8 bridges 37,000 – 40,000 SF		
Proposed Physical Barrier (LF)	6,000 - 6,100 LF	3,100 - 3,200 LF	3,100 - 3,200 LF		
COST ESTIMATE					
Cost Range (2024)	\$38-42 Million	\$40-44 Million	\$36 - \$40 Million		

Next Steps

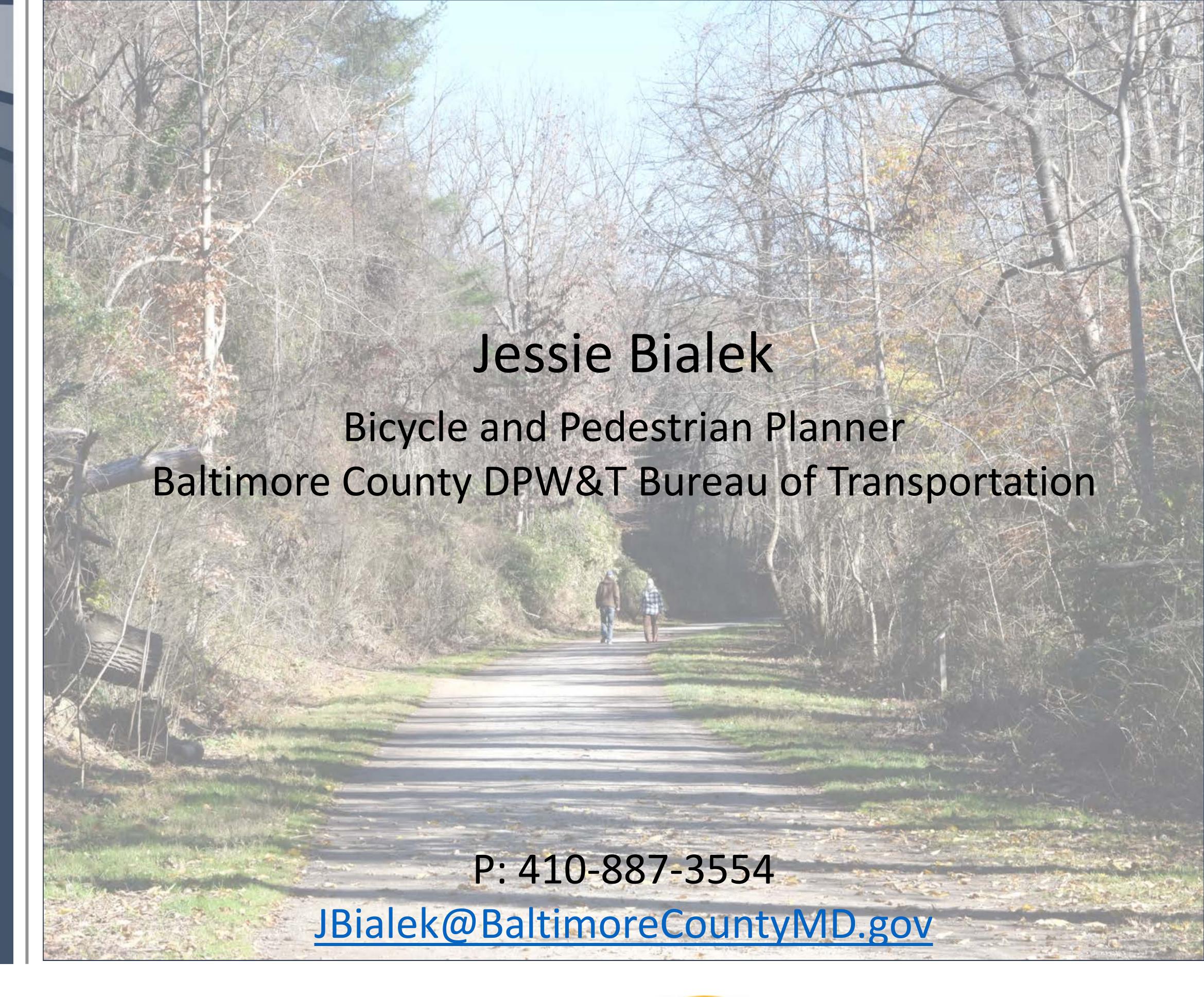
Future Design Phases





Development

NORTH CENTRAL RAILWAY (NCR)
TRAIL EXTENSION
FEASIBILITY STUDY







NORTH CENTRAL RAILWAY (NCR)
TRAIL EXTENSION
FEASIBILITY STUDY

