

ROCKY RUN PATHWAY UNDERPASS FEASIBILITY STUDY

TECHNICAL ADVISORY
COMMITTEE
OCTOBER 22, 2024



AGENDA

- Welcome and Introductions
- Overview
- Schedule and Meetings
- Brandywine Flood Study Coordination
- Hydraulic Analysis
- Path Forward



TECHNICAL ADVISORY COMMITTEE

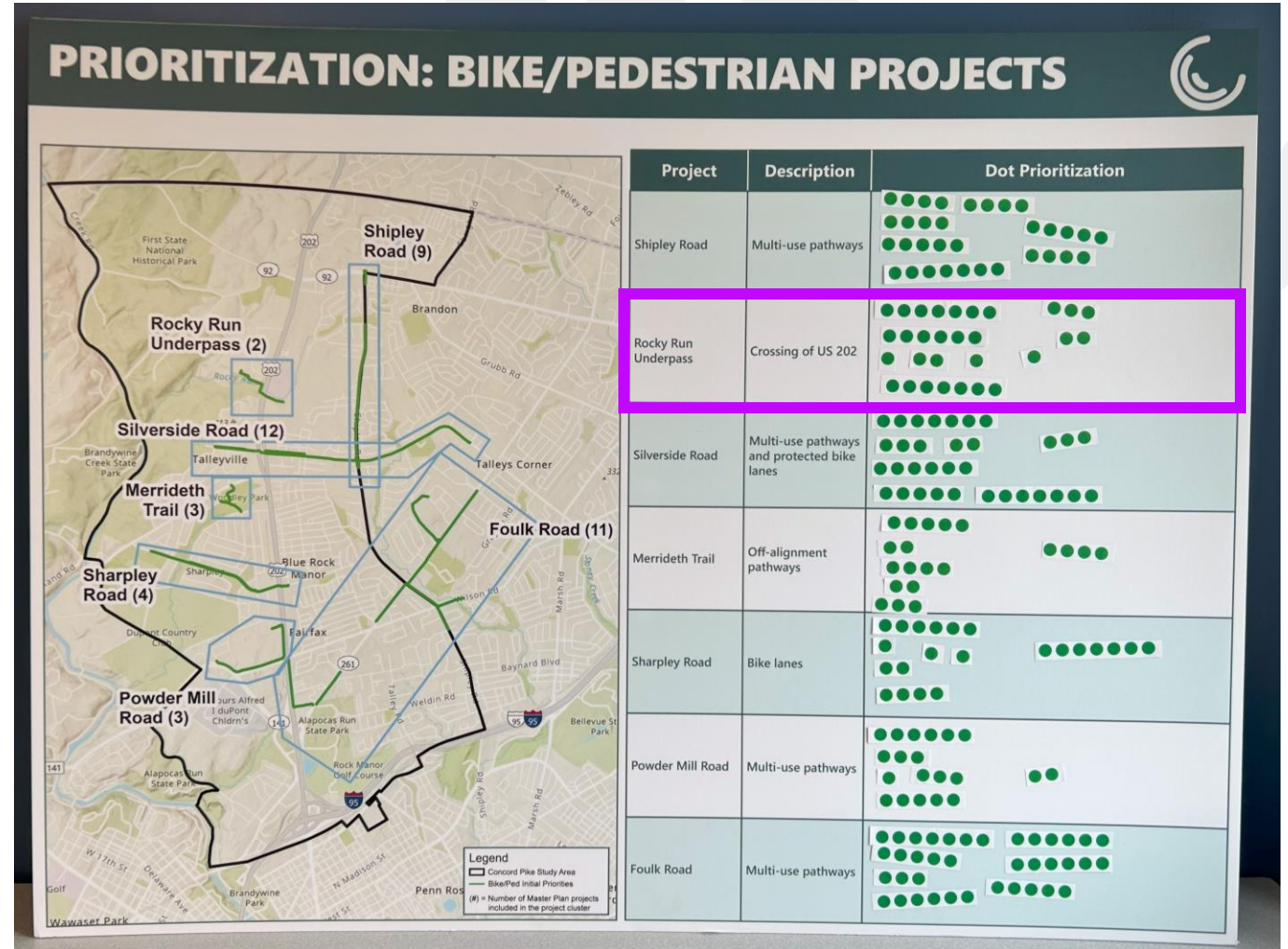
- **DeIDOT:** Bryce Baker, Cooper Bowers, Paul Moser, Scott Walls
- **New Castle County:** Matt Rogers
- **WILMAPCO:** Dan Blevins, Dave Gula
- **Woodlawn Trustees:** Rich Przywara
- **Brandywine Conservancy:** Elena Hadley
- **University of Delaware Water Resources Center:** Jerry Kauffman
- **RK&K:** Tara Cutillo, Tristan Jackson, Aidan Suiter, Mark Tudor
- **Kramer and Associates:** Andrew Bing

OVERVIEW

2023 PRIORITIZATION EXERCISE

Bike/Pedestrian Priorities:

- Foulk Road multi-use pathways
- Silverside Road multi-use pathways and protected bike lanes
- Shipley Road multi-use pathways
- Rocky Run underpass



OVERVIEW

PRELIMINARY HYDRAULICS CHECK – BR 1-024

- DeIDOT's Bridge Section performed a preliminary check to determine whether one cell of the culvert could be repurposed
 - Structure is currently in **Good** condition
 - Initial results indicate one cell of the existing culvert could be closed
- Preliminary check was not a full model of reconfiguring the culvert to accommodate a pedestrian underpass
 - Project would need to be initiated by another DeIDOT Section
 - DeIDOT Bridge Section will continue to provide technical support

OVERVIEW

REDIRECTING WATER

- Would need to physically block water from entering area to be used for pedestrians



OVERVIEW

REDIRECTING WATER

- Includes drainage from the roadway above



OVERVIEW

COORDINATION WITH MULTIPLE PROPERTY OWNERS

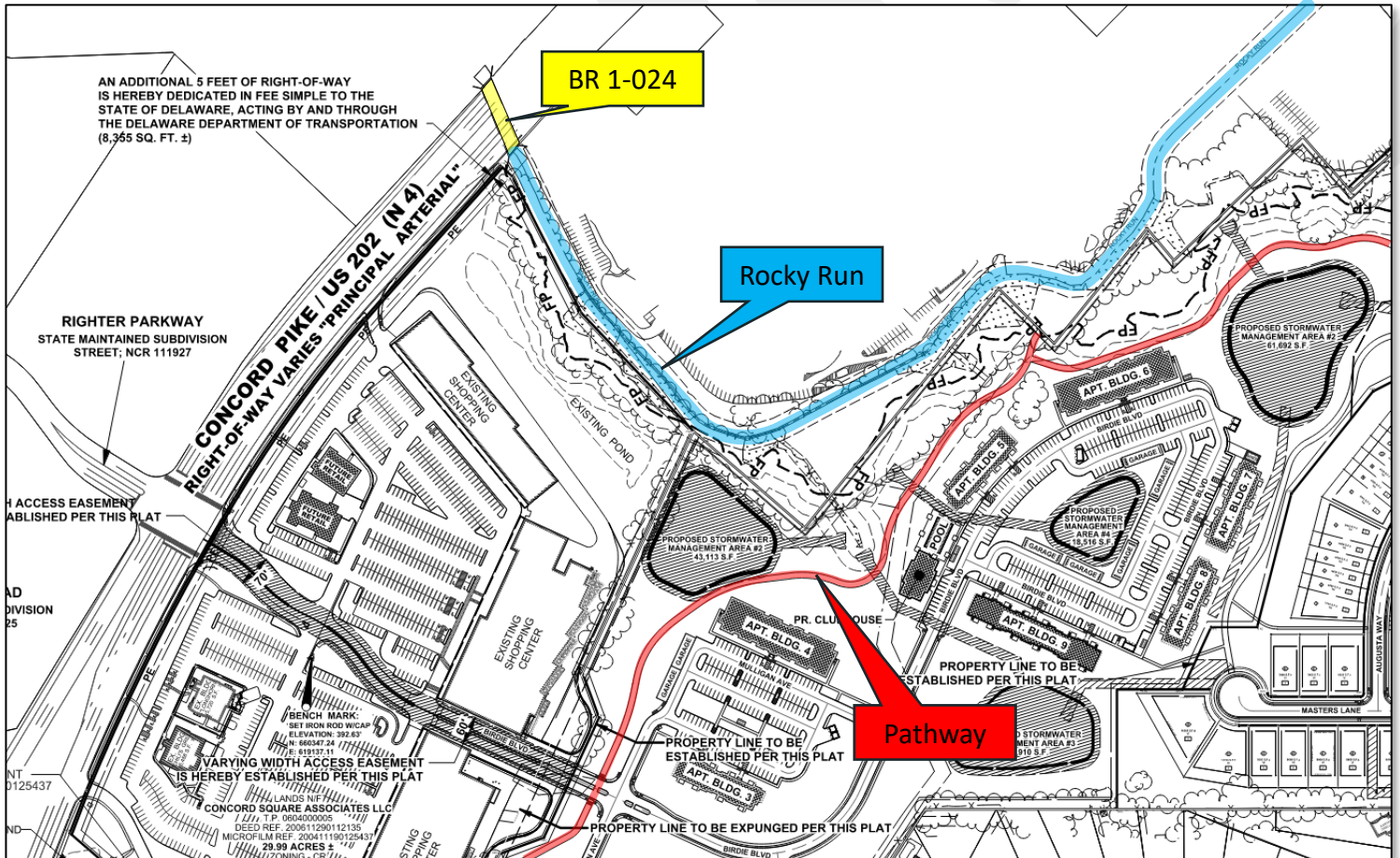


- Woodlawn Trustees / First State National Historical Park
- Widener University
- Brandywine Country Club Redevelopment (Capano)
- Concord Square Shopping Center
- Talleyville Shopping Center
- Brandywine Commons / Marriott / Holiday Inn

OVERVIEW

BRANDYWINE COUNTRY CLUB REDEVELOPMENT

- Record plan includes:
 - Sidewalks to Shipley Road
 - Shared use paths that are near but do not connect to culvert area
- Additional connections through other private properties would be needed



OVERVIEW

ADA REQUIREMENTS

Both the underpass and connections must be accessible and usable by people with disabilities. Consider:

- Slopes/grades
- Widths
- Transitions
- And more



OVERVIEW

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- And more



Not Optional: Required under the ADA Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

OVERVIEW

ADDITIONAL SAFETY & SECURITY CONSIDERATIONS

- Pedestrian lighting
- Surveillance
- Bigger storm events – what happens downstream with Brandywine River



Inside BR 1-024

Example pedestrian lighting in shared-use path underpass in North Carolina



SCHEDULE AND MEETINGS

- **Feasibility Study Completion: June 2025 (WILMAPCO's FY25 UPWP Funding)**
- **TAC meetings: 3-4 times (anticipated)**
- **Advisory Committee – Part of Concord Pike Monitoring Committee (CPMC)**
 - Fall 2024 CPMC: November 18th; 4pm-6pm – Talleyville Fire Hall
 - Spring 2025 CPMC: April 16, 2025 - TENTATIVE
- **Public Workshops**
 - Late January 2025
 - June 2, 2025 –As part of CPMC Annual Public Workshop – TENTATIVE
- **WILMAPCO Committees (TAC, PAC, Council)**
 - July 2025

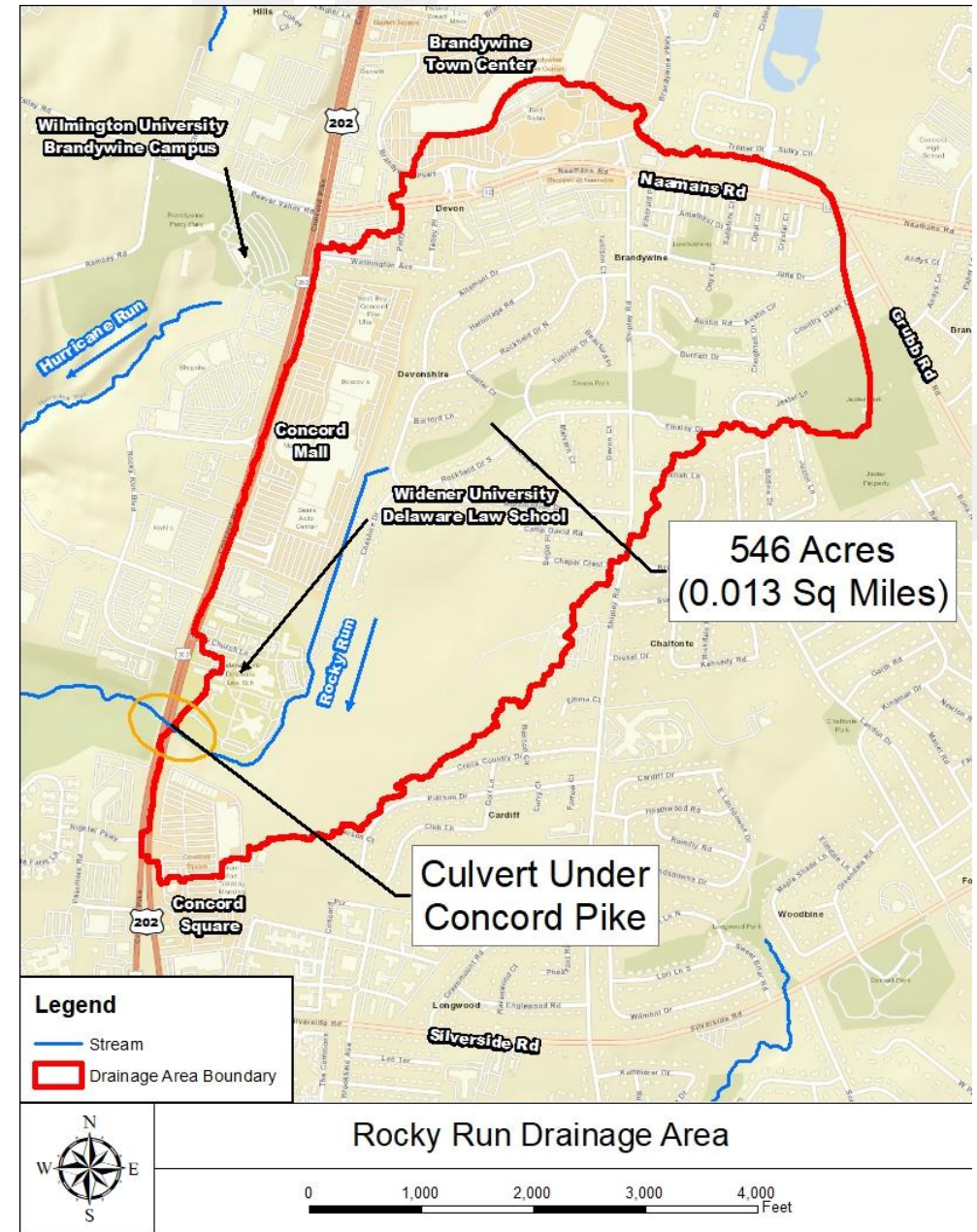
BRANDYWINE FLOOD STUDY COORDINATION

- Brandywine Creek Flood Study
 - Undertaken by Brandywine Conservancy, Chester County Water Resources Authority, and University of Delaware Water Resources Center
 - Focuses on the mainstem of Brandywine Creek and key tributaries, including Rocky Run
- Possible Areas of Coordination
 - Hydrology
 - Downstream Boundary Condition



HYDRAULIC ANALYSIS

- Tributary of Brandywine Creek
- Total Drainage Area: 546 Acres
- 27% Impervious Cover (2015)
- StreamStats Discharges
 - 10 Yr Storm: 579 cfs
 - 100 Yr Storm: 1,130 cfs



HYDRAULIC ANALYSIS



SURVEY

The RK&K Survey Team completed data collection of the culvert and topographic cross sections in late September 2024.



HYDROLOGY

The study will analyze the 10- and 100-year storm events using Fixed Regional Regression Equations (FRRE) and, possibly, TR-55 analysis from the Brandywine Creek Flood Study.



HYDRAULICS

USACE Hydrologic Engineer Center's River Analysis System (HEC-RAS) will be used to perform a 1D hydraulic analysis of the culvert.

PATH FORWARD

- Complete Hydraulic Analysis
- Coordination with Property Owners as part of trail planning
- Next TAC Meeting; Early January 2025