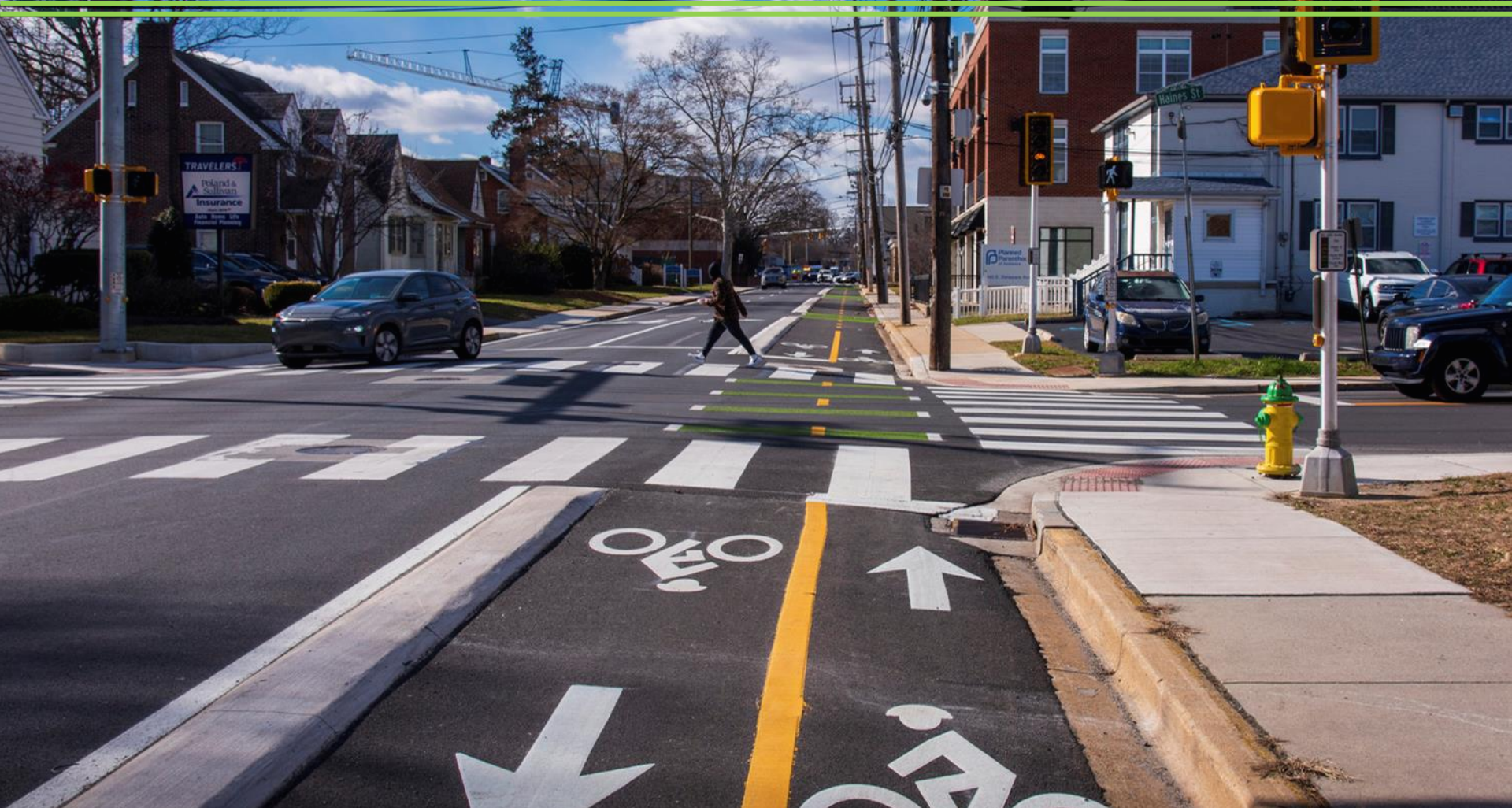
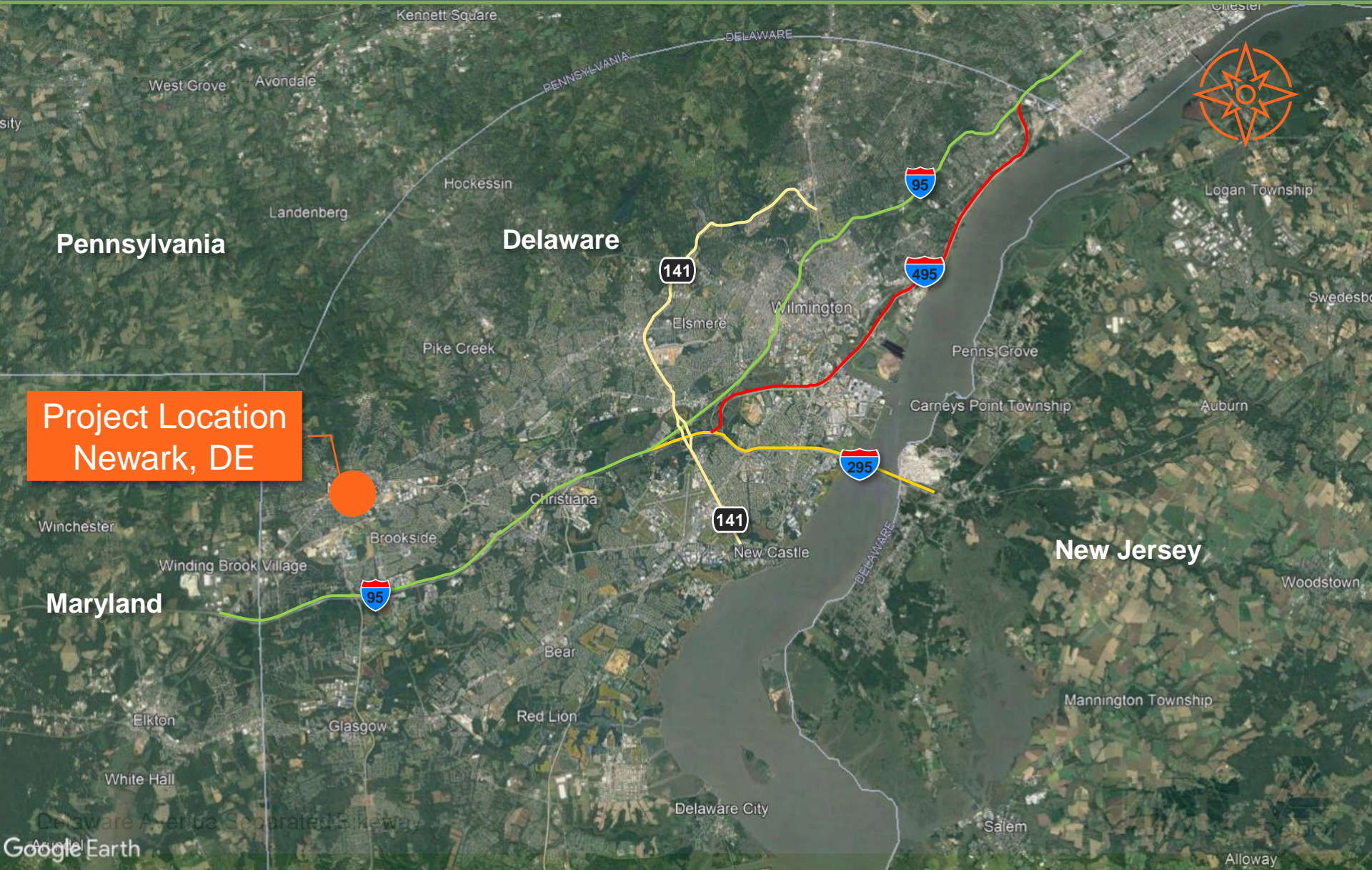


DELAWARE AVENUE

Separated Bikeway

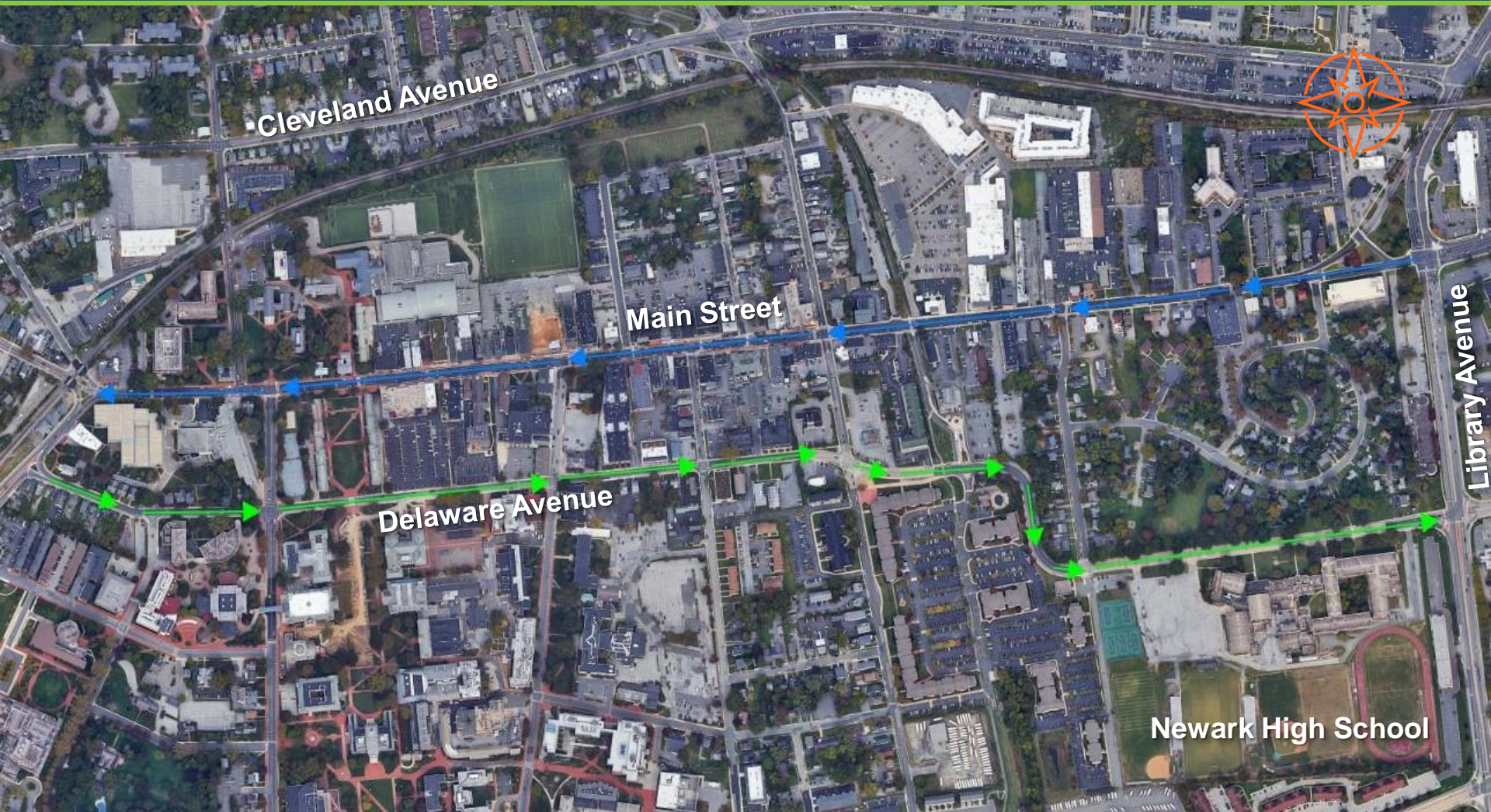


Project Location



Project Location
Newark, DE

Project Location



Project Overview

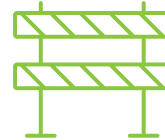
Project Purpose and Goals:

1. Provide a designated and predictable two-way bicycle route on one-way street.
2. Reduce bicycle level of stress for on-street bicycle use.
3. Improve pedestrian facilities to be ADA compliant.
4. Rehabilitate and replace deteriorated pavement.
5. Engage public in project decisions and process.

Stakeholder Committee



Project Timeline



2014 - 2017

Planning &
Feasibility Study

2018 – 2021

Concept and Final
Design

2021 – 2022

Construction

2022 - 2023

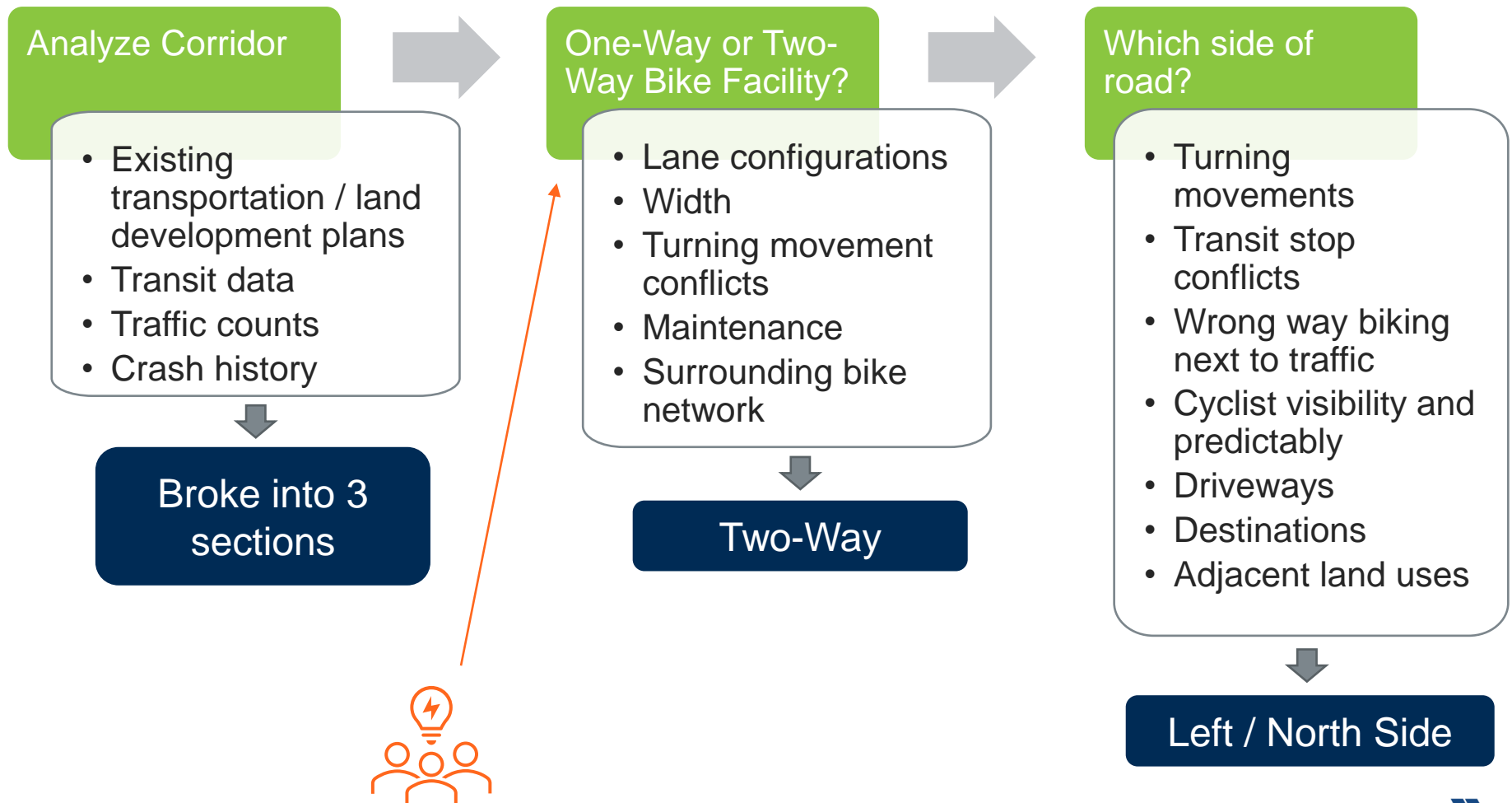
- *Open to Public*
- *Ongoing Monitoring*

For more information, please visit:

[Delaware Avenue Separated Bikeway - Orchard Road to Library Avenue Project Website – DeIDOT](https://delawareaveseparatedbikeway.com/)

<https://delawareaveseparatedbikeway.com/>

Planning Study – Stepped Decision Process



Pop-Up Public Demonstration



- *“Move the cycle track to the left side”*
- *“It’s wide enough”*



Delaware Avenue Separated Bikeway

Planning Study – Initial Alternatives

Low Impact Alternative

- Constructable without modifying curb to curb width

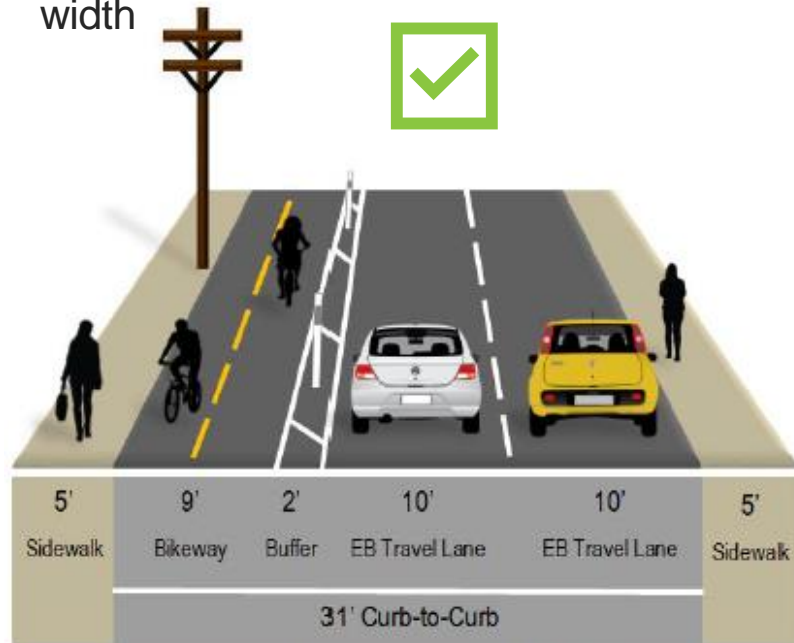


Figure 5: Section 1 – Low Impact Alternative
Delaware Avenue: Orchard Road to S. College Avenue

Ideal Alternative

- Wider more protected facility

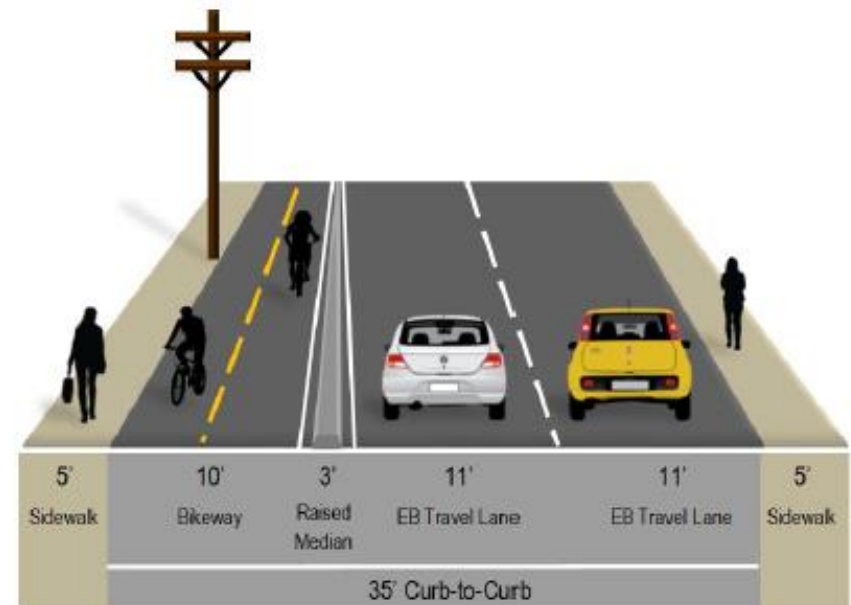


Figure 8: Section 1 – Ideal Alternative
Delaware Avenue: Orchard Road to S. College Avenue

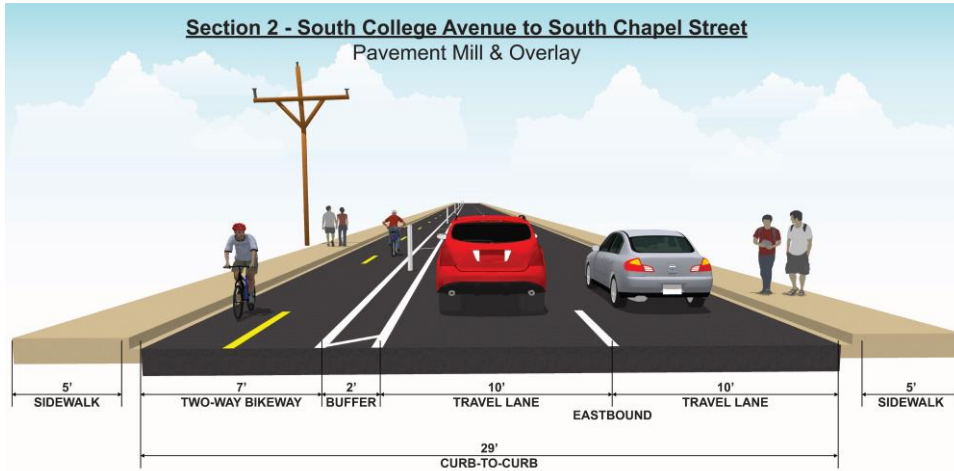
* FHWA Separated Bike Lane Design Guide was published when we were looking at alternatives.

Concept Development – Where everything changed....

New Information Uncovered:

- Traffic Study
 - Solidified need for bicycle signals
 - Bicycle signals under experimental FHWA approvals would cause traffic congestion and intersection failures
- Case Studies of Comparable Projects
 - Flashing yellow “permissive” bicycle signals
- Transitions and Connections
 - Split from two-way to one-way bikeways at Pomeroy Trail
 - Two one-way bike lanes transition at Library Avenue
 - One-way bike lane at S. Main Street with shared lane transition down Orchard to Amstel
- Dutch Cycling Ambassadors
 - Vertical concrete buffers / raised bike lanes

Project Design – One-Way Bikeway Section

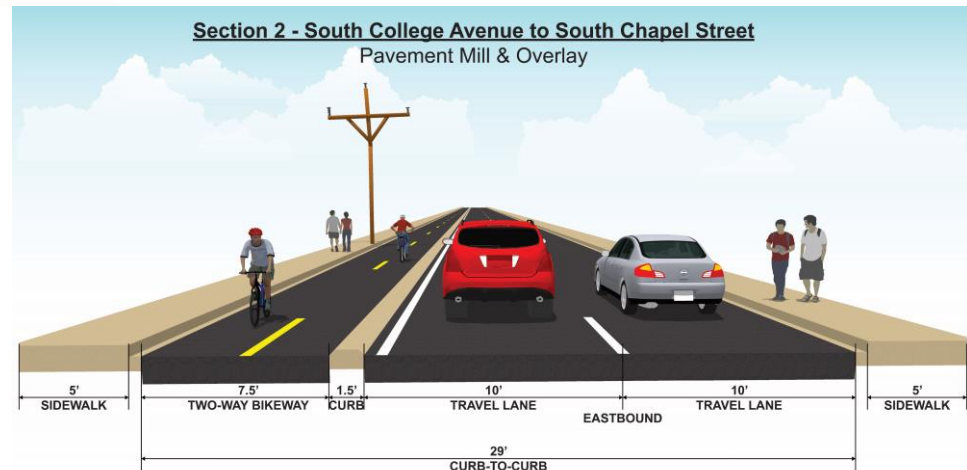


- Striped Buffer
- Delineators

Preliminary Design

Final Design

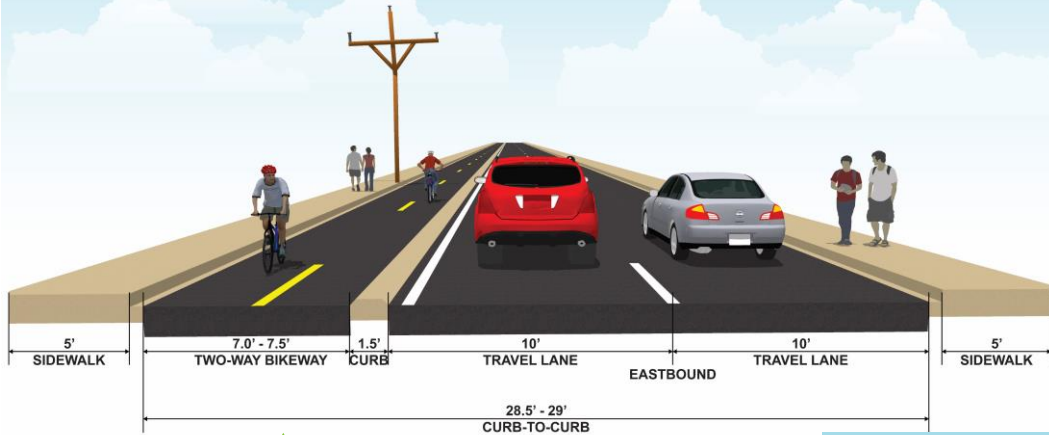
- Curbed Buffer
- No Delineators



Project Design – Two General Sections

Section 2 - South College Avenue to South Chapel Street

Pavement Mill & Overlay

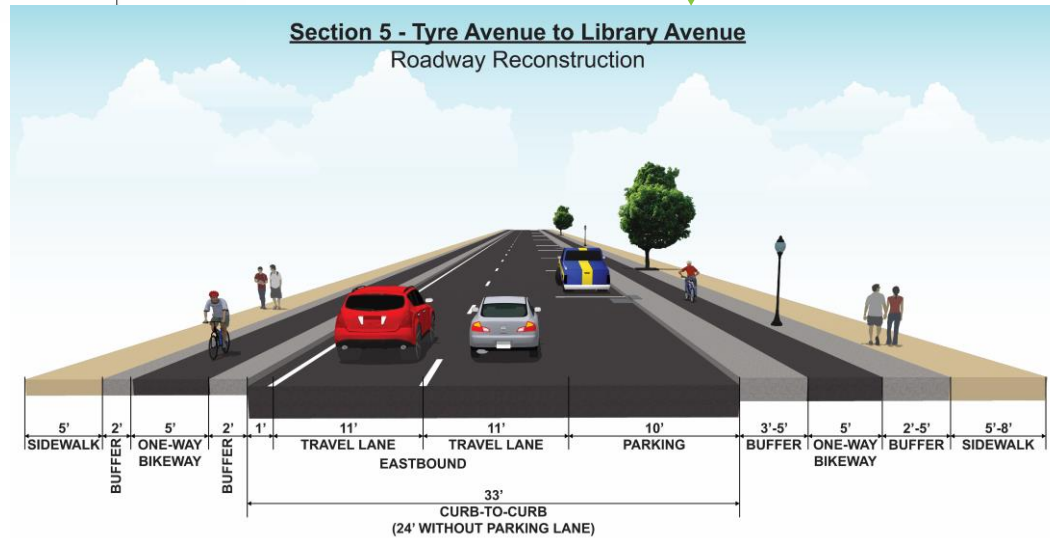


Two-way separated

Two one-way bike lanes

Section 5 - Tyre Avenue to Library Avenue

Roadway Reconstruction



Construction – S. Chapel St to Tyre Ave

- PCC Pavement Reconstruction
- Maintain
 - One Travel Lane
 - Pedestrian Access



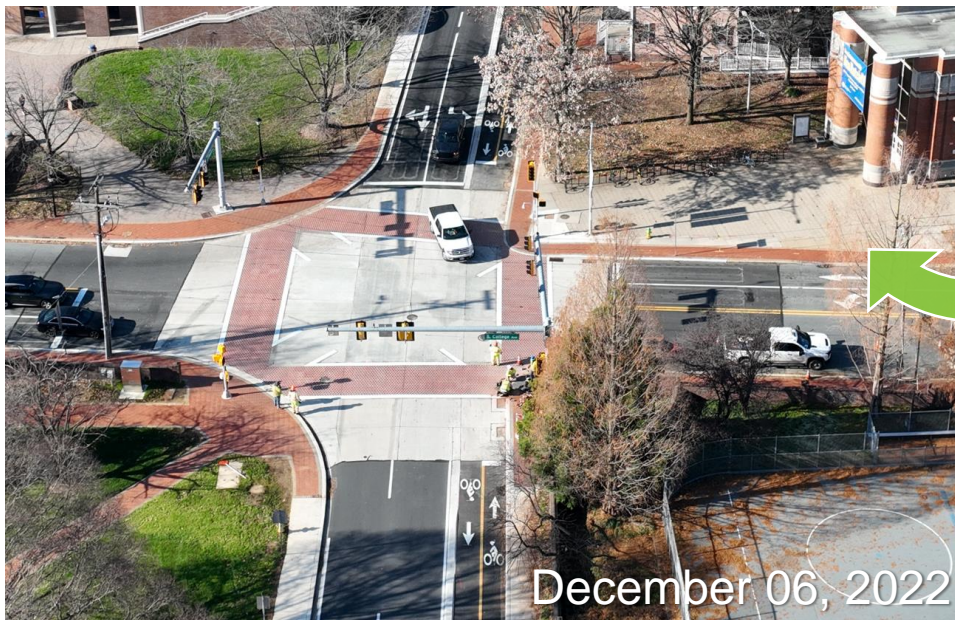
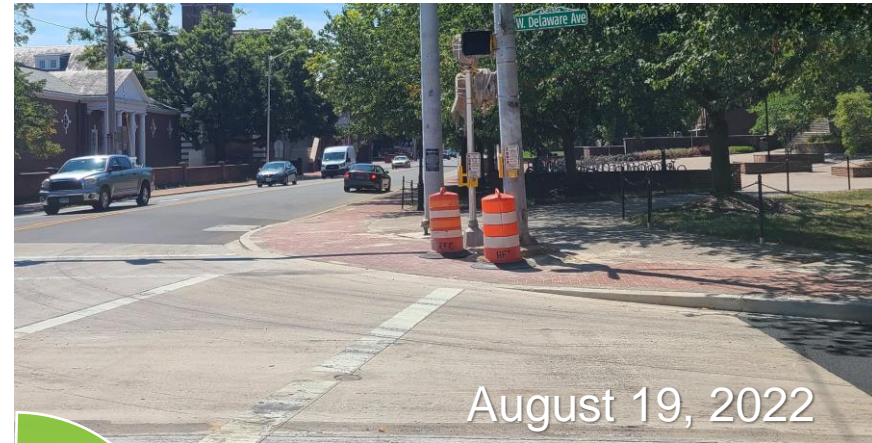
Construction - South College Avenue

- PCC Pavement Reconstruction in two phases
 - South Side
 - North Side
- Partial Vehicular Detours



Construction - South College Avenue

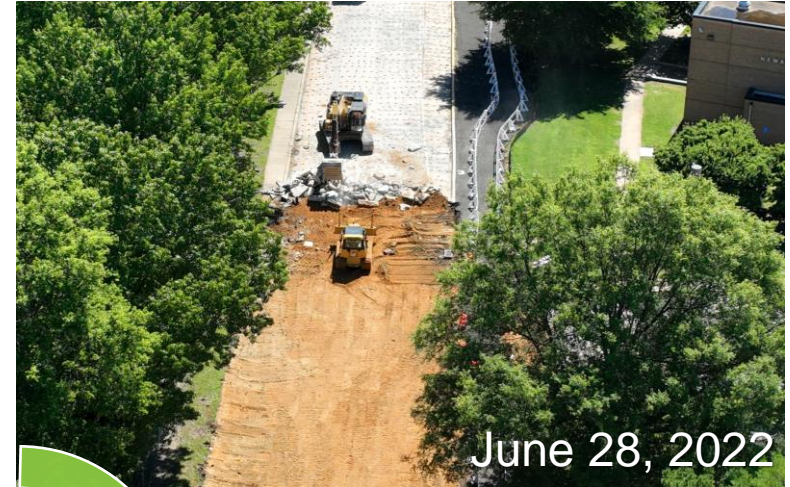
- Tabletop/Raised Intersection
- Patterned Crosswalks



Delaware Avenue Separated Bikeway

Construction - Newark High School Frontage

- Asphalt Pavement Reconstruction
- Summer Closure Period
- Vehicular Detours
- Maintained Emergency Access



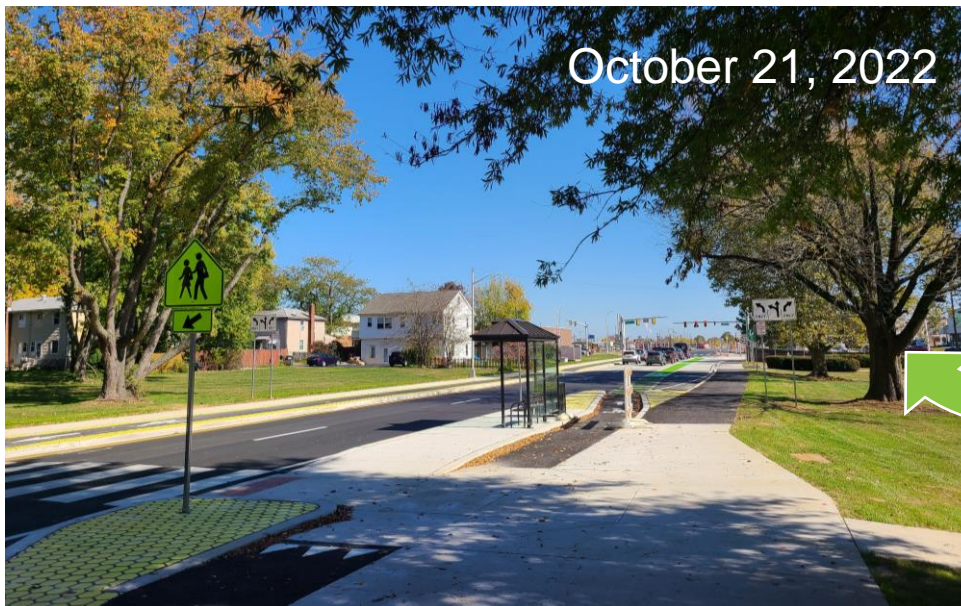
Delaware Avenue Separated Bikeway

Construction - Newark High School Frontage

- New Pedestrian Lighting
- Upgrade Street Lighting
- Honeycomb Buffer Pattern
- Floating DART Bus Stop
 - Separate bike/ped/transit users



October 18, 2022



October 21, 2022

Delaware Avenue Separated Bikeway

Construction - Connection to The Grove

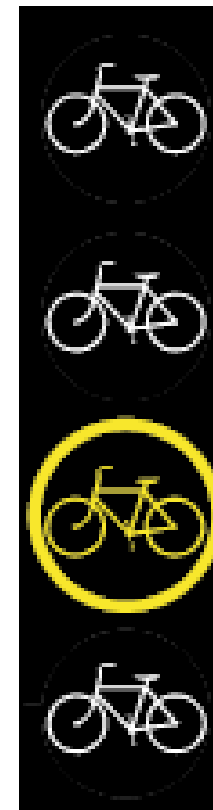
- Developer Coordination
- Upgraded Intersection / Signals
- Continuous Bike / Pedestrian Connections



Bicycle Signal Operation



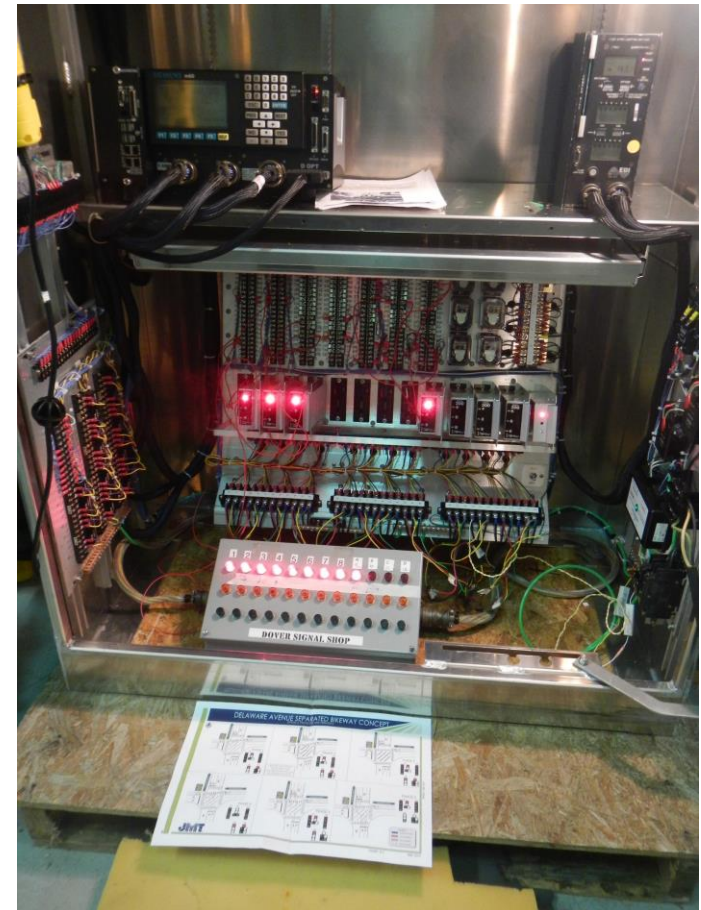
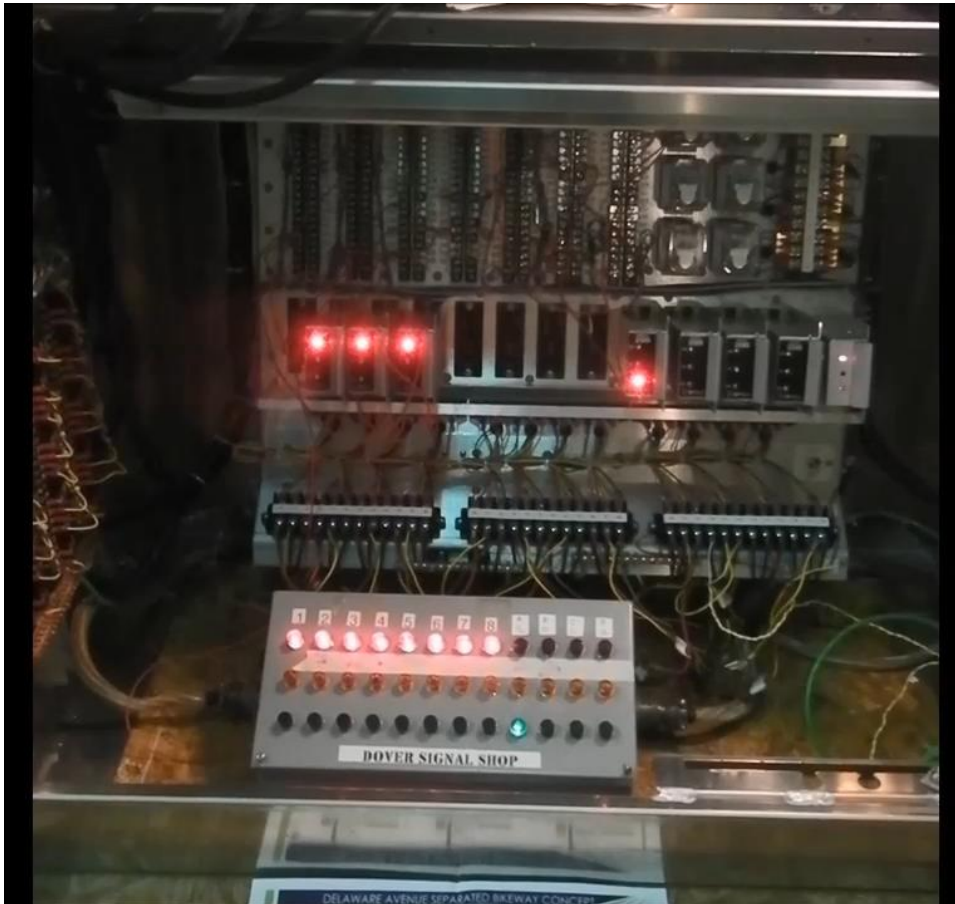
FHWA Experimentation



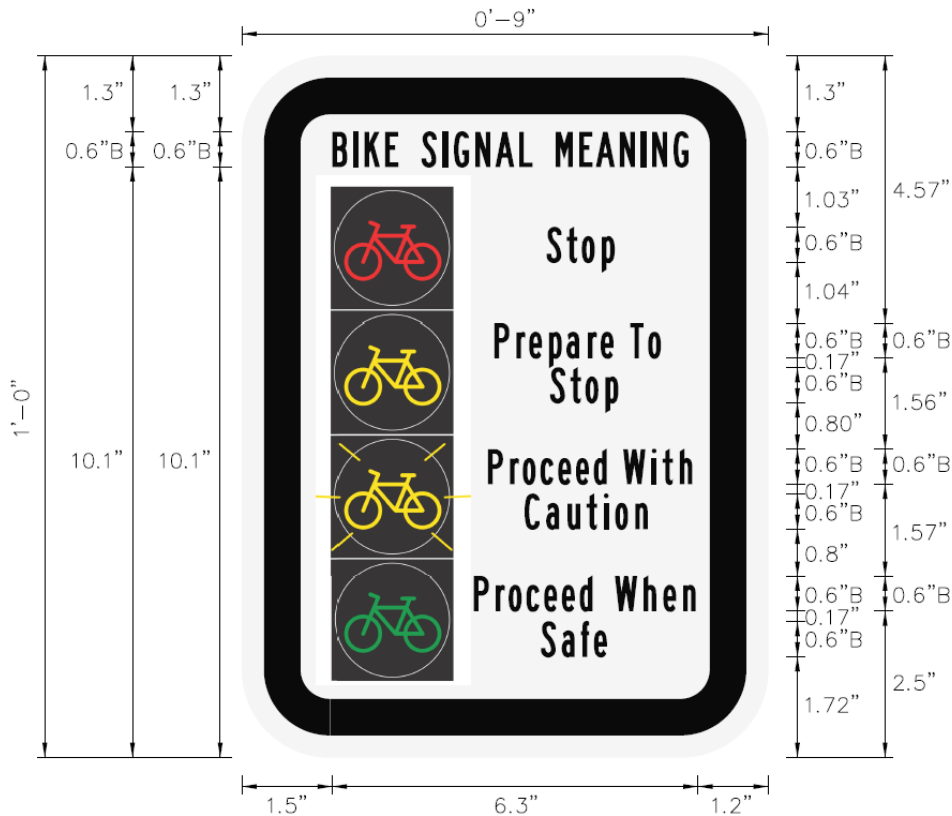
Flashing Yellow

Delaware Avenue Separated Bikeway

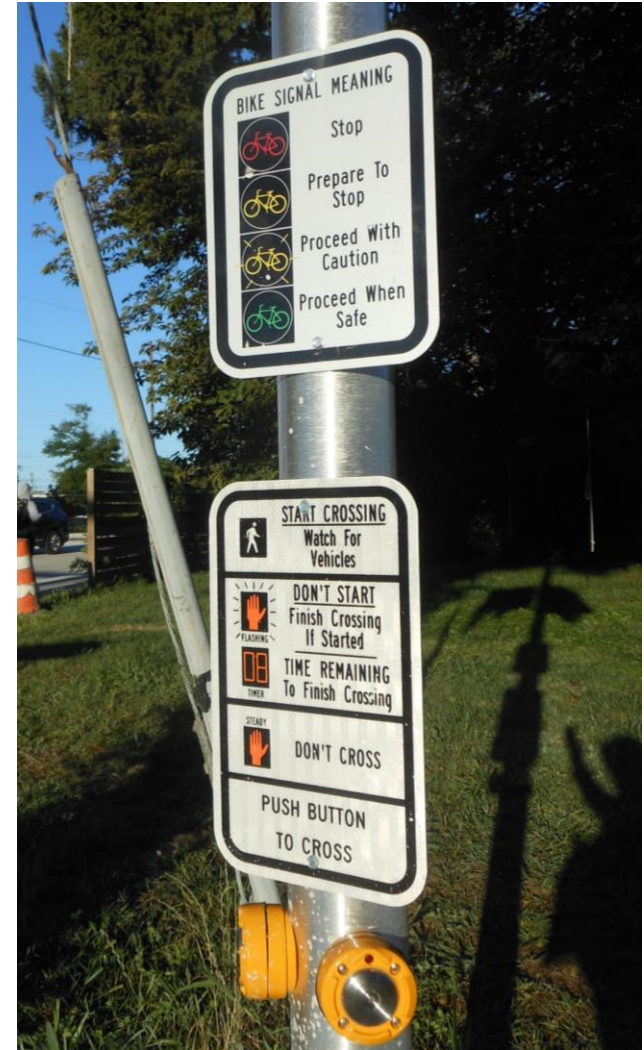
Traffic Signal Controller Cabinet Testing



Bike Signal Signage



R10-3J-DE5





Delaware Department of Transportation

CONTACT US:

delawareaveseparatedbikeways@delaware.gov

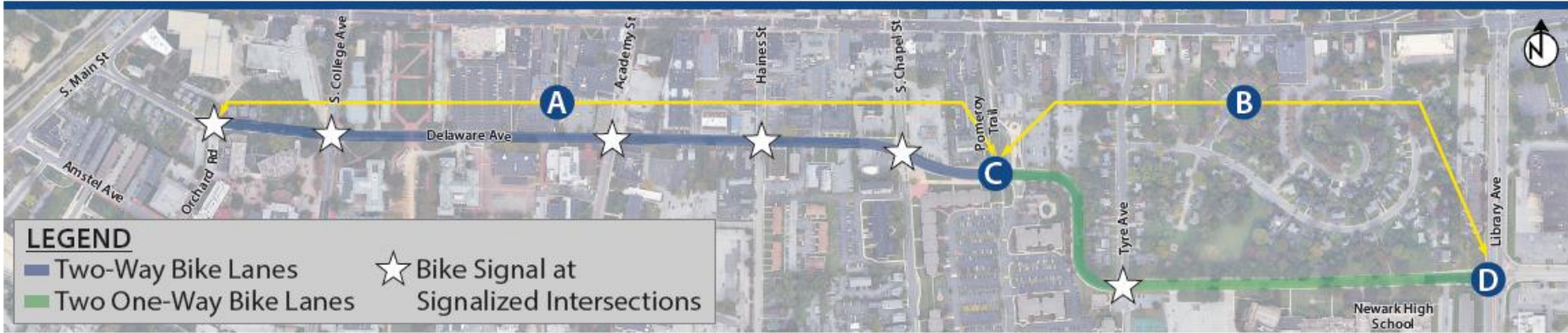
REPORT AN ISSUE:
Contact DelDOT TMC
302-659-4600
TMC1@delaware.gov



Delaware Avenue

SEPARATED BIKEWAYS

www.delawareaveseparatedbikeway.com



LEGEND

- Two-Way Bike Lanes
- Two One-Way Bike Lanes
- ☆ Bike Signal at Signalized Intersections



HOW TO USE BIKE LANE CROSSING



Bikes use green crosswalk to continue.

HOW TO USE BIKE BOX

When signal is red and cars have come to a complete stop, bikes may position themselves in front of vehicles to enter intersection ahead of cars.



BIKE SIGNAL MEANING

- ☆ **Steady Red:** Stop
- Steady Yellow:** Prepare to stop
- Flashing Yellow:** Proceed with caution, turning bikes yield to vehicles and pedestrians
- Steady Green:** Proceed when safe

Ongoing Monitoring and Evaluation

Purpose:

1. Ensure signal equipment is operating correctly
2. Monitor safety and success of experimental signals
3. Report to FHWA to demonstrate success of experiment for permanence

Process:

- “After Study” Data Collection
 - Intersection observations
 - Camera observation periods
- Crash data review
- Public experience opinion survey



Ribbon Cutting November 18, 2022



QUESTIONS?

Jerry Lovell, PE
Jerry.Lovell@delaware.gov

JMT Staff:

Laura Berzina, PE
lberzina@jmt.com

Angie Hernandez, AICP
ahernandez@jmt.com

For more information about this project join ASHE First State Section's presentation on April 20, 2023, or visit:

<https://delawareaveseparatedbikeway.com>