



American Planning Association  
**Pennsylvania Chapter**

*Making Great Communities Happen*

# New Castle Industrial Track Trail Delaware's Bicycle Highway

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## OVERALL NETWORK

Opportunity to complete an active transportation connection from the City of New Castle to the City of Wilmington

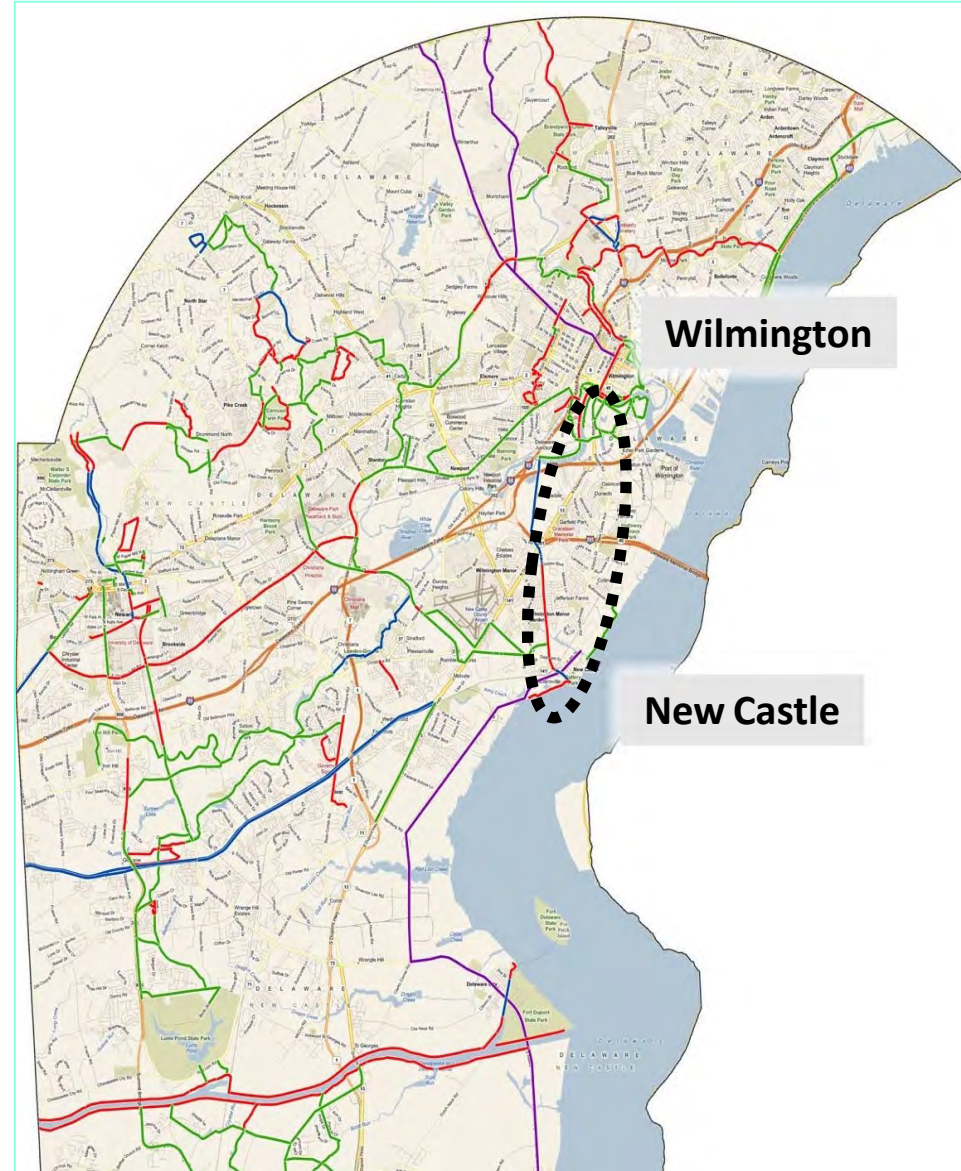
Seven miles (when complete)

Only two at-grade road crossings

Dense suburban and urban land use

Critical segment of the East Coast Greenway

Partnership between DeIDOT & New Castle County



## OVERALL NETWORK

Connects to existing active transportation networks

Tourism potential for Wilmington Riverwalk

- Redeveloped riverfront with shopping & restaurants
- Easy access to downtown
- Transit connections, including Amtrak
- Highlights Wilmington's historic shipbuilding industry



## OVERALL NETWORK

Modal choice for commuters

Bicycling versus driving

### Approximate travel times

Route	Length	Bicyclist at 12 mph	Bicyclist at 20 mph	Motorist
Industrial Track Trail	6.4 miles	32 min	19 min	N/A
SR 141 and US 13	6.2 miles	31 min*	19 min*	14 min**
SR 9/A St	6.2 miles	31 min*	19 min*	18 min**
I-95 via SR 141	7.7 miles	N/A	N/A	11 min**

\* Does not include delay at traffic signals.

\*\* As estimated by Google Maps. May be longer during peak hours.



# PHASE 1

Two mile section

Rail trail; former Industrial Track freight line

State-owned right of way

American Recovery and Reinvestment Act (ARRA) funding

Extremely fast-track schedule

Survey & concept and final design in 5 months

Completed in 2010

















## PHASE 1

Unsignalized, mid-block crossing  
at Boulden Boulevard

Daily traffic = 14,000 vehicles/day

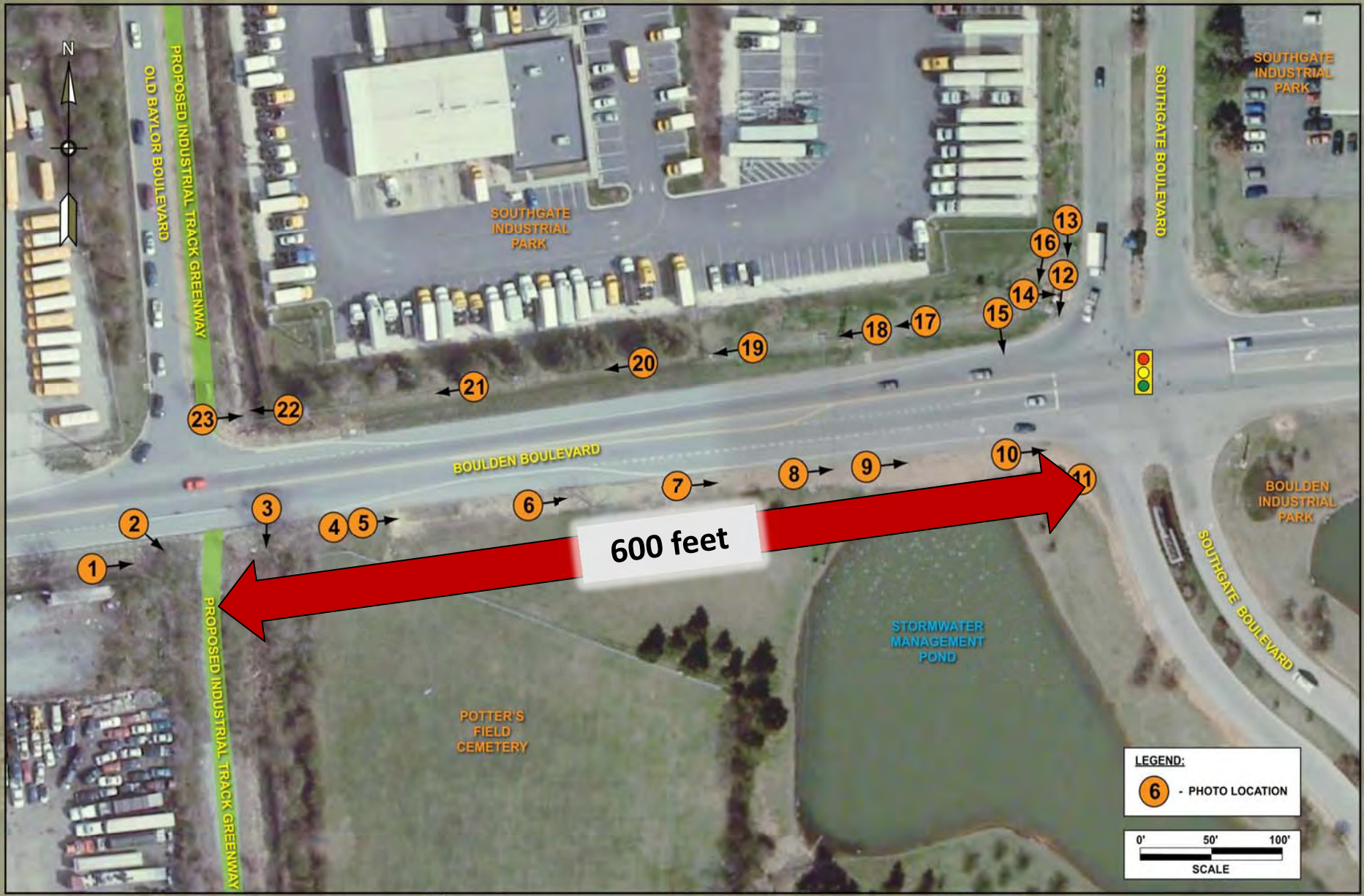
High peak-hour volumes

Speeds averaging 40 mph

Shift alignment to nearby signal?



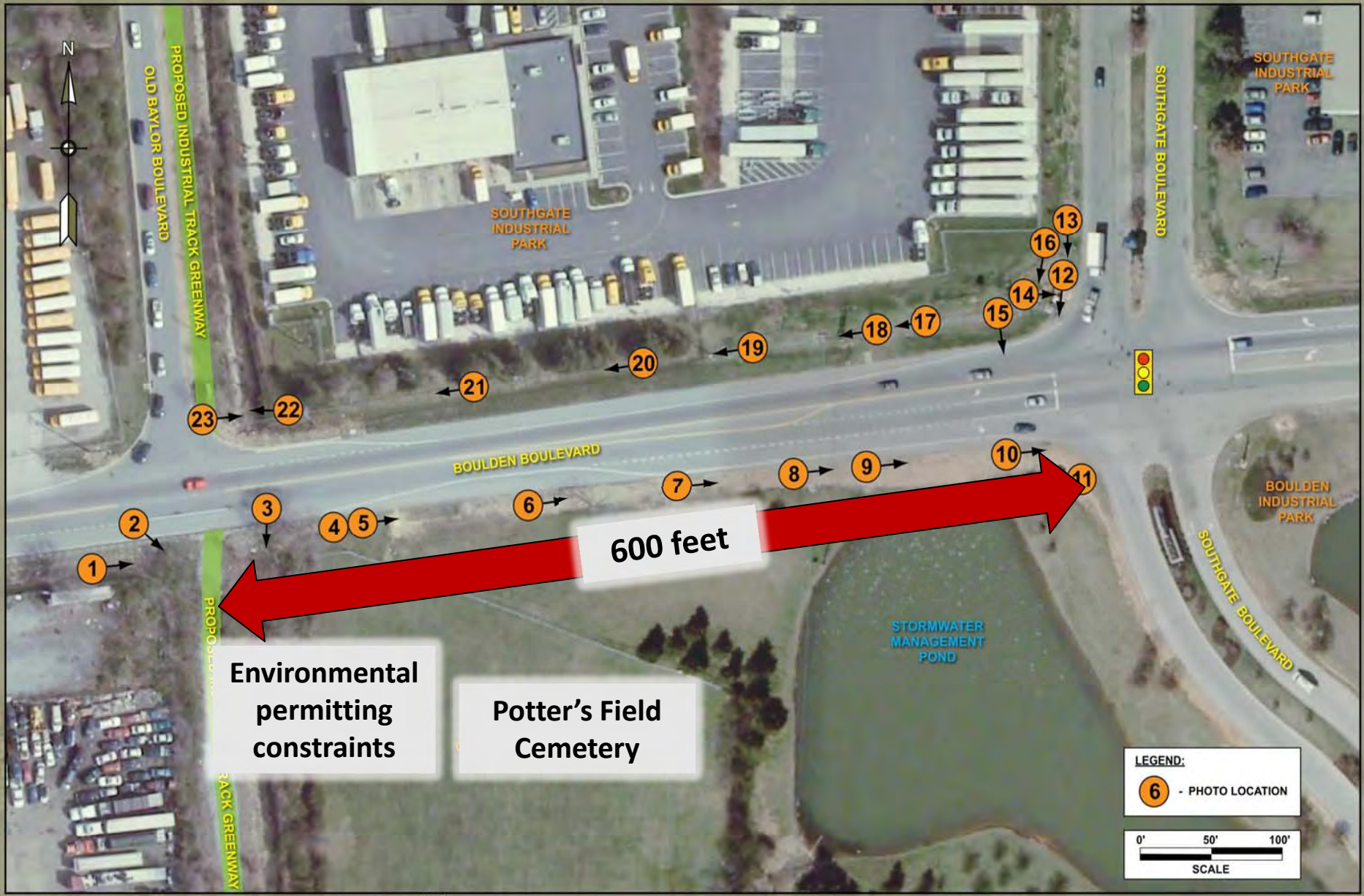
# BOULDEN BOULEVARD DESIGN CONSTRAINTS



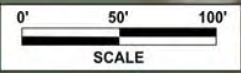
**LEGEND:**  
6 - PHOTO LOCATION



# BOULDEN BOULEVARD DESIGN CONSTRAINTS



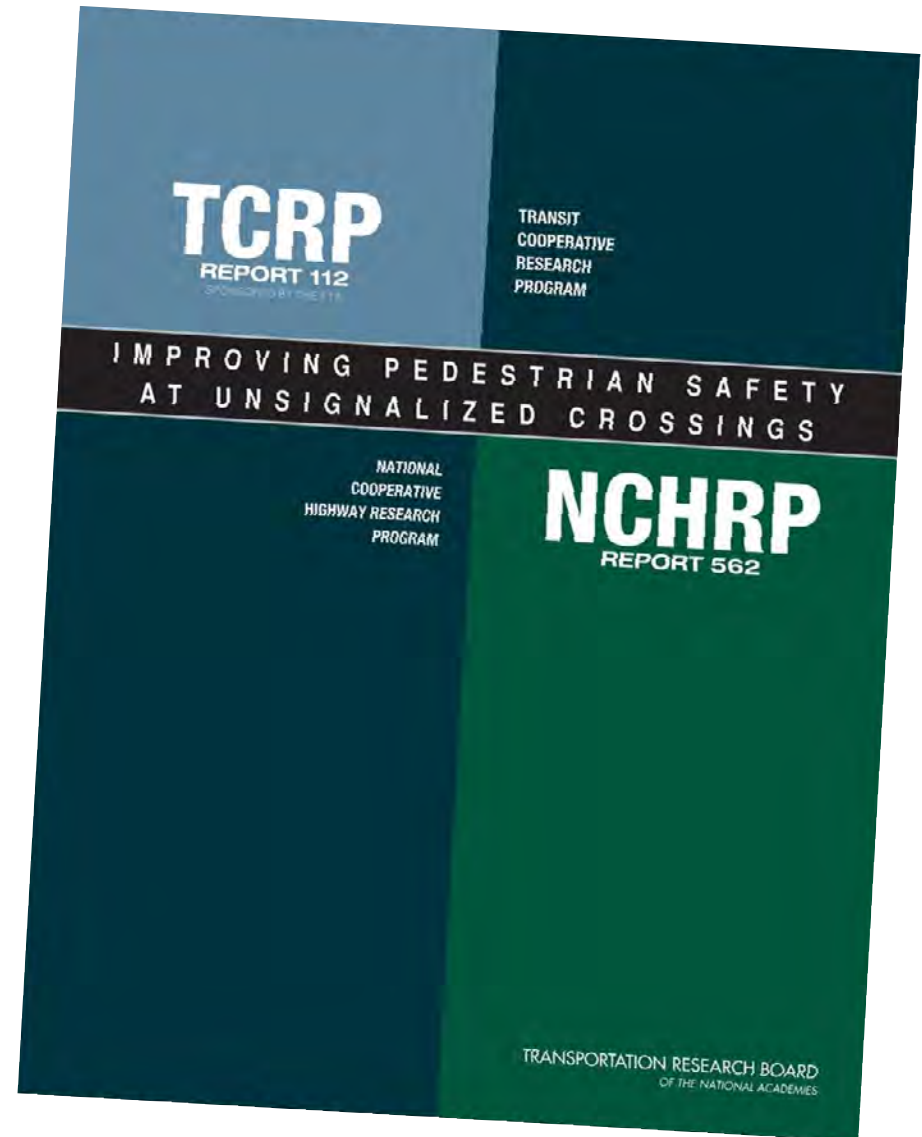
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## PHASE 1

### NCHRP Report 562: Improving Pedestrian Safety at Unsignalized Crossings

- Best practices for evaluating uncontrolled crosswalks
- Required data collection
  - Traffic volumes
  - Crossing distance
  - Trail user volumes (anticipated)





# PHASE 1

## Toolbox of Treatments

### “Enhanced” devices

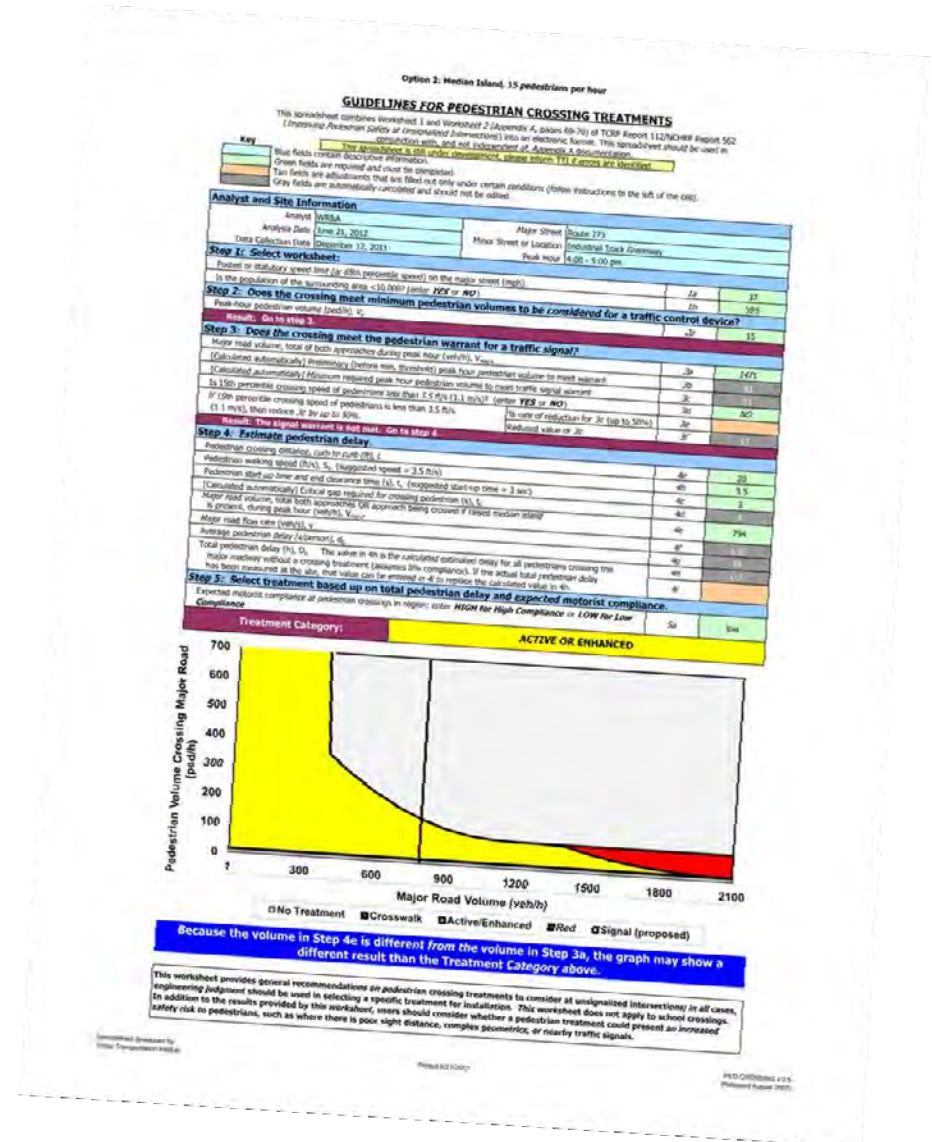
- Signs and high-visibility markings

### “Active” devices

- User-actuated flashing beacons
- User-actuated rectangular rapid flash beacons (RRFB)

### “Red indication” devices

- Pedestrian crosswalk signal
- HAWK signal





PENSKE





SIDEWALK  
CLOSED

TRUCK  
STOP

## PHASE 2

1.5 mile section

New Castle County designed & is currently constructing

Will extend along the abandoned rail right of way to the south bank of the Christina River

Completion anticipated in 2013



# PHASE 3

1.5 mile section

Feasibility Study completed in summer 2012

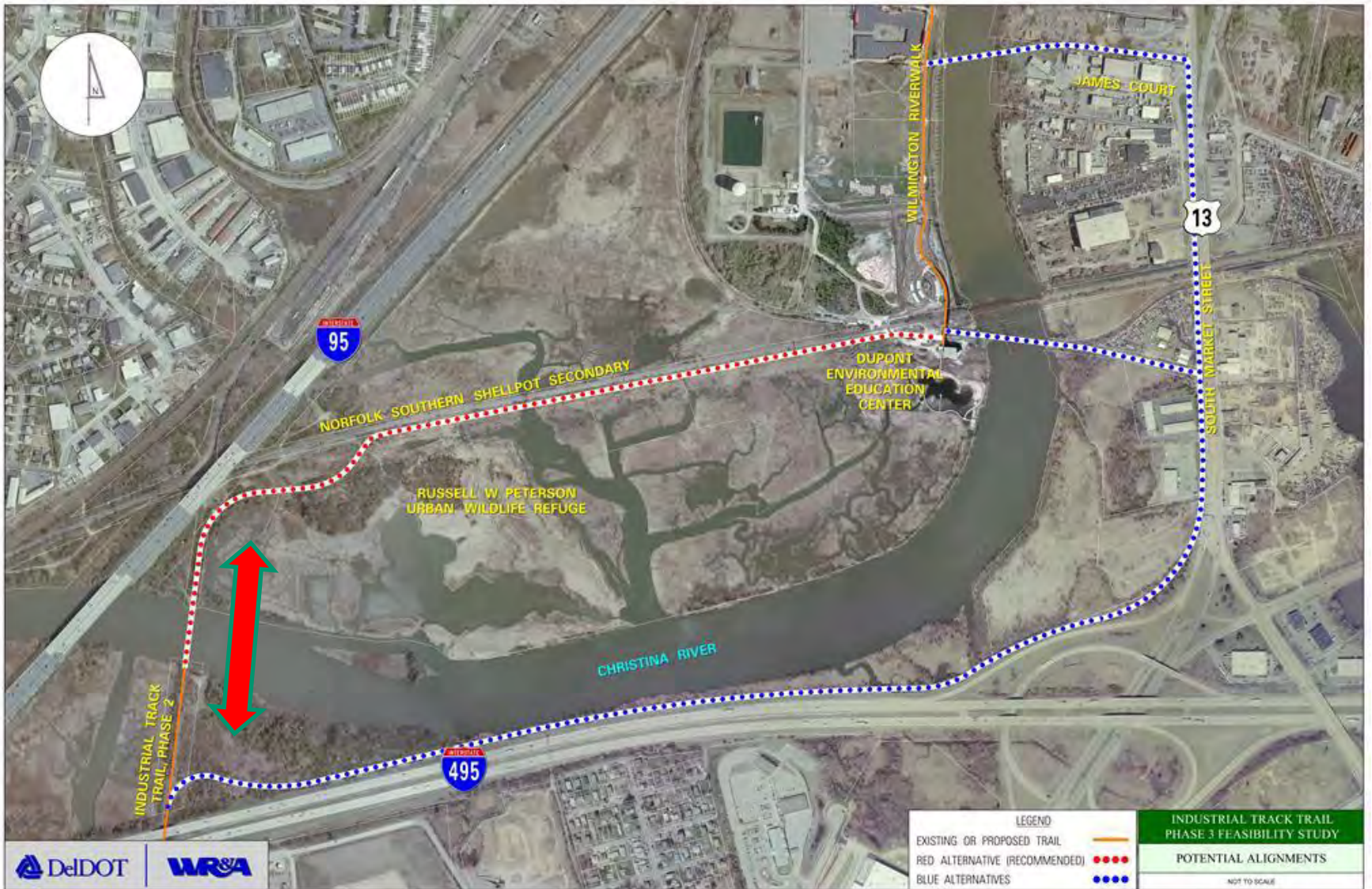
Challenging segment

- Crossing Christina River
- Tidal wetlands
- In-service rail line

Opportunity for a signature bicycle and pedestrian bridge



# PHASE 3







**High Trestle Trail Bridge, Madrid, IA**



**Town Lake Pedestrian Bridge, Tempe, AZ**



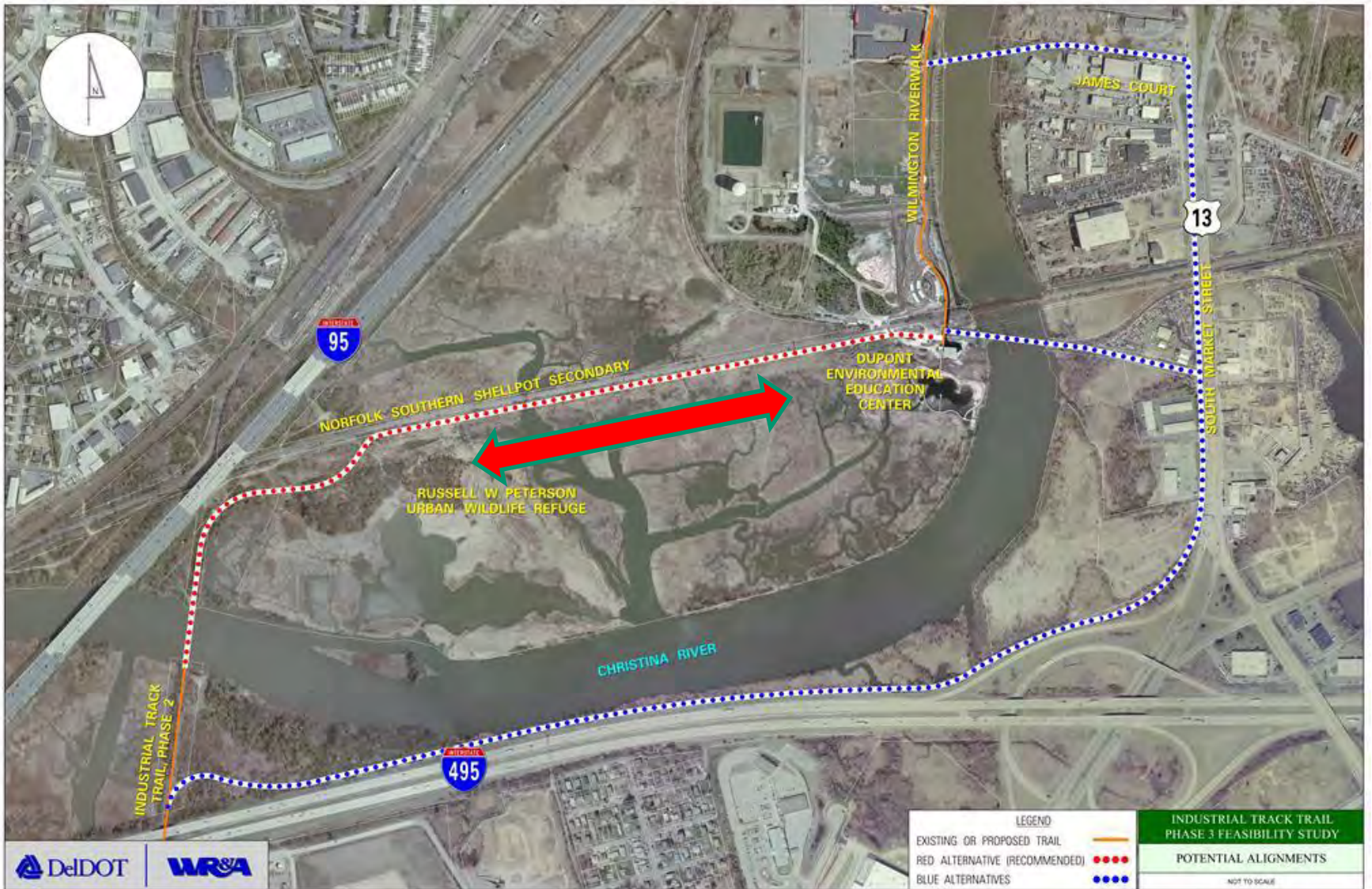
**Seafarers Bridge, Melbourne, Australia**



**Martin Olav Sabo Bridge, Minneapolis, MN**



# PHASE 3





## PHASE 3

### Option 1:

- Rail with trail condition within rail right of way
- Former second track within upland area
- No wetland impacts

### Option 2 (if rail with trail not allowable):

- Shift trail into wetland area
- Construct boardwalk with Thru-Flow decking



## PHASE 3

Discussions with rail owner  
on-going

Ultimately connect to  
Environmental Education  
Center & Wilmington  
Riverwalk

Completion timeline TBD



# FILLING IN THE GAPS

## Gap #1: Interstate 295 & US 13 Interchange



# FILLING IN THE GAPS

## Gap #1: Interstate 295 & US 13 Interchange

- Trail underpasses incorporated into current construction projects
- Completion anticipated in 2016

BEFORE



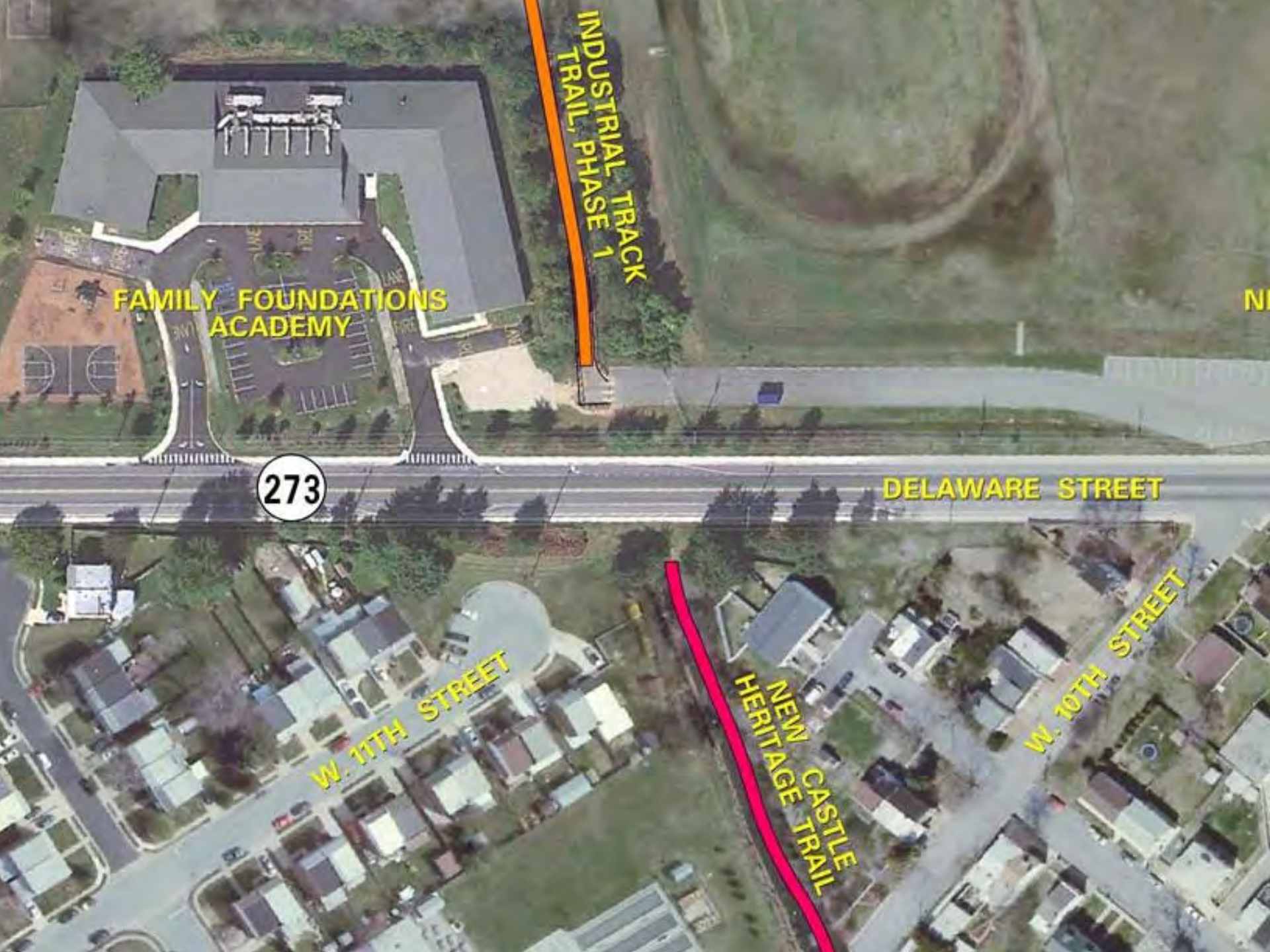
AFTER



# FILLING IN THE GAPS

## Gap #2: Connecting to New Castle





FAMILY FOUNDATIONS  
ACADEMY

INDUSTRIAL TRAIL,  
PHASE 1

273

DELAWARE STREET

W. 11TH STREET

NEW CASTLE  
HERITAGE TRAIL

W. 10TH STREET

N



## FILLING IN THE GAPS

### Gap #2: Connecting to New Castle

Another unsignalized, mid-block crossing

No nearby signal

Higher traffic volumes = 16,000 vehicles/day

Similar speeds of 40 mph



## FILLING IN THE GAPS

### Gap #2: Connecting to New Castle

Follow-up evaluation on flashing beacons installed during Phase 1 (Boulden Blvd.)

- Motorist yielding percentage in 20% range
- Average national rate about 50%
- However, nationally rates vary widely from 10% to 91%



## FILLING IN THE GAPS

### Gap #2: Connecting to New Castle

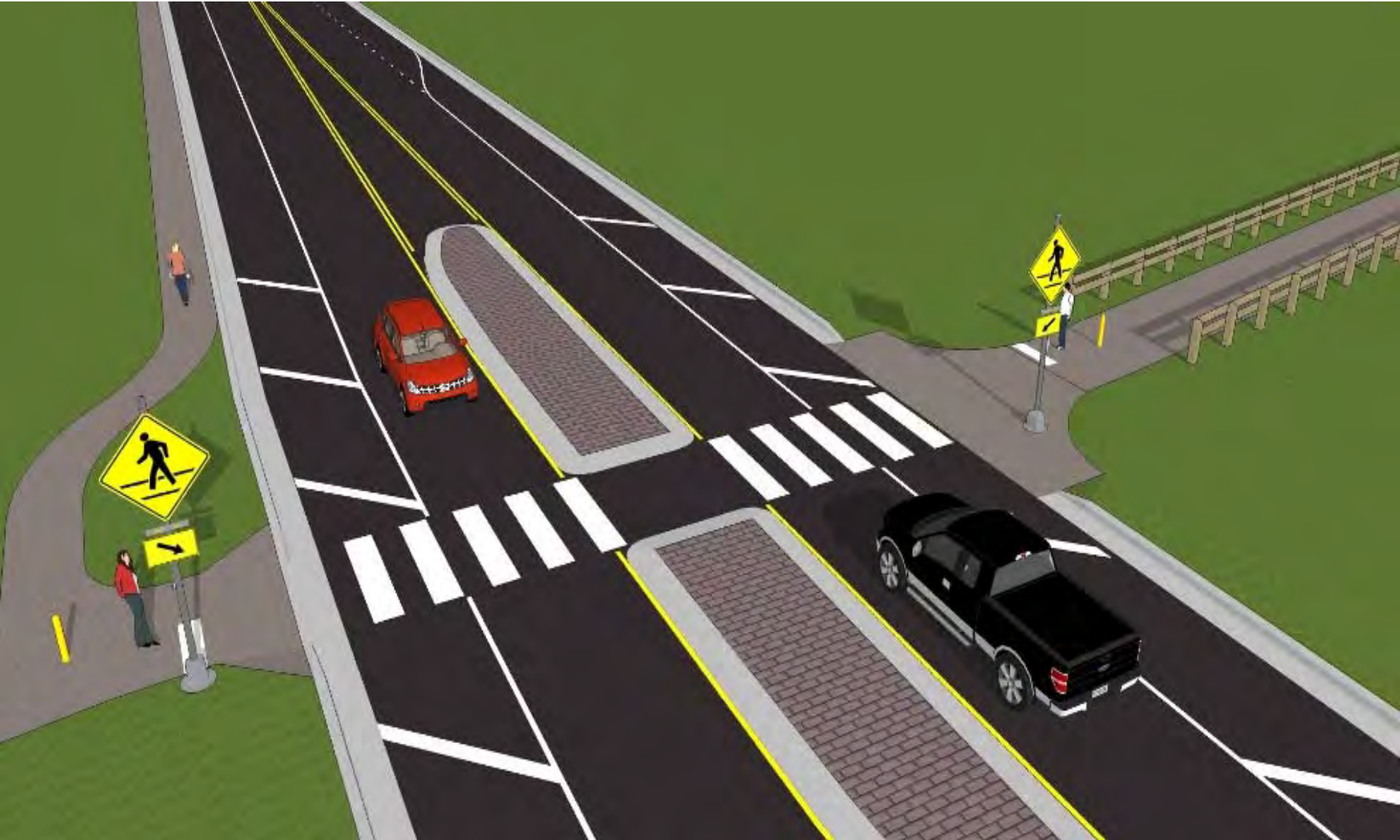
#### How to Improve?

Research shows yielding compliance rates of 80% and higher for rapid flash beacons (RRFB)

Will install the first RRFB in Delaware once trail demand grows



# FILLING IN THE GAPS



# SUMMARY

Measurable progress on all segments

- Completed: Phase 1
- Under construction: Phase 2
- In design: Gap #1 & Gap #2
- In planning: Phase 3

Anticipated completion in 2016 at the earliest

Benefits include economic, environmental & health

Creating active and vibrant communities



**WR&A** WHITMAN, REQUARDT  
& ASSOCIATES, LLP

