PA TURNPIKE

Interchange Study

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DELAWARE VALLEY
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REGIONAL
PLANNING COMMISSION

VIRTUAL OPEN HOUSE

July 8, 2020

Agenda

- **Introduction**
  Alison Hastings, Delaware Valley Regional Planning Commission (DVRPC)
- **Background on this Study**
  Matthew Edmond, Montgomery County Planning Commission (MCPC)
- **Project Overview and Scope of Work**
  Sarah Moran, DVRPC
- **What We Heard at the Last Open House**
  Al Beatty, DVRPC
- **Findings and Recommendations**
  Kelsey McElduff, DVRPC
- **Question & Answer**
  Facilitated by Alison Hastings, DVRPC
- **Thanks & Next Steps**
  Matthew Edmond, MCPC

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Ground Rules

- Purposes of this open house:
  - **MCPC to provide context to the study**
  - **DVRPC to wrap up 3-year study and share analyses**
- Please enter questions in the Q&A tool as we move through the presentations
- Organizers will not address off-topic questions and comments
- Organizers will combine similar questions during the Q&A period
- Organizers reserve the right to ignore and strike from the materials offensive or inappropriate questions and comments
- Organizers may remove an attendee if being disruptive, antagonistic, or threatening

Study Background

Matthew Edmond - MCPC

Turnpike Corridor Reinvestment Project

Prepared by the Montgomery County Planning Commission, 2015

http://www.montcopa.org/TurnpikeCorridorProject

dvrpc | *2015 Report*

Purpose of the 2015 PA Turnpike Corridor Reinvestment Study

- Encourage **economic revitalization and reinvestment** in Montgomery County's aging business parks
- Provide **more direct connections** to key employment centers
- **Better distribute** local and regional traffic
- Bring **new revenue** to the Turnpike Commission to pay for the interchanges

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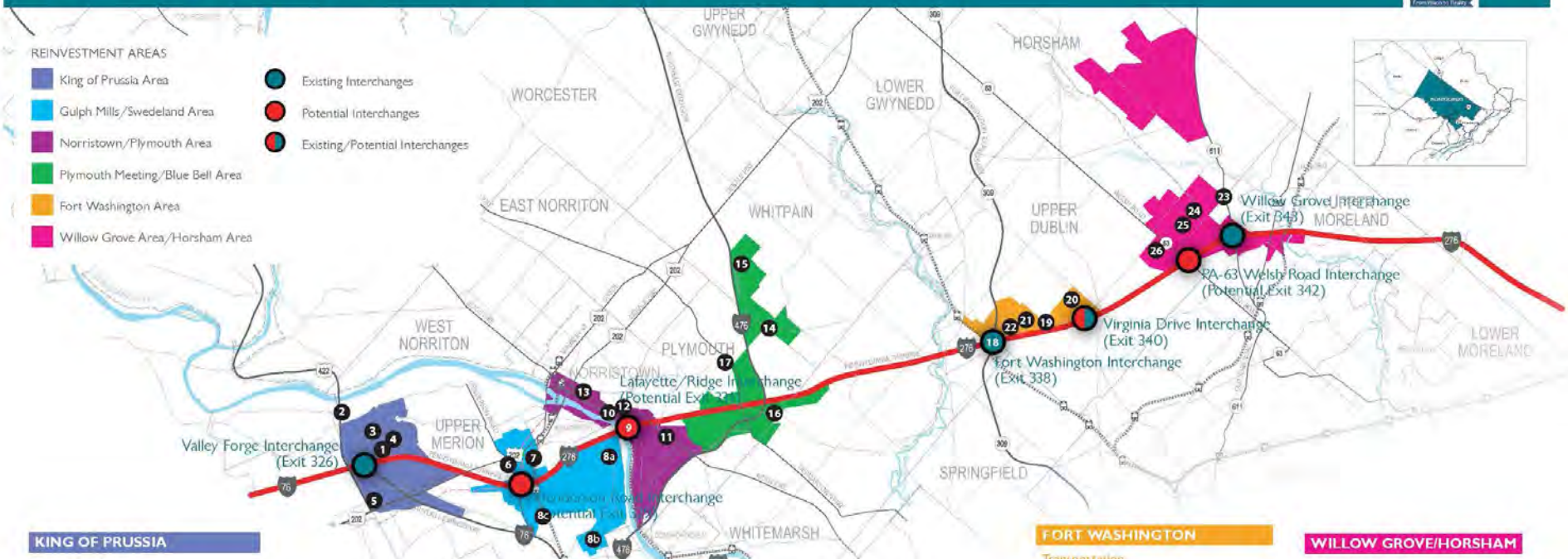
2015 - 2017 *Progress Towards a Transportation and Land Use Vision!*



KING OF PRUSSIA

Transportation

1. *SEPTA's KOP Rail Extension in the KOP Mall and Business Park—Route chosen, EIS drafted, public hearings scheduled*
2. *PADOT began widening the US 422 bridge and improving the PA 363 and PA 23 bridges in Valley Forge*

Land Use

3. *KOP Business Park rezoned for mixed-use, pedestrian- and transit-friendly redevelopment, 559 apartments and 112 hotel rooms already proposed and 110,000 SF of new office constructed*
4. *THE PARK completed—a demonstration project heralding the beginning of the 2.6 mile Linear Park for First Avenue*
5. *Village at Valley Forge—New high density mixed use town center with 2,000 apartments and 500,000 sf of commercial space approved or under construction*

GULPH MILLS/SWEDELAND

Transportation

6. *SEPTA's KOP Rail Extension to include a station at Henderson Road*
7. *Chester Valley Trail connection fully funded with engineering underway and construction planned for 2019-20*

Land Use

8. *Large scale development proposed or recently constructed:*
   - a *Fed Ex Distribution Center*
   - b *GlaxoSmithKline campus sold for redevelopment*
   - c *Luxury apartments proposed at Hughes Park Rail Station*

NORRISTOWN/PLYMOUTH

Transportation

9. *New Lafayette St. Turnpike Interchange fully funded—Engineering begins Fall 2017*
10. *Lafayette Street Extension—Phases 1 & 2 complete. Phase 3 construction begins Fall 2017*
11. *Ridge Pike Improvement Project—design underway from Turnpike to Chemical Road with construction in 2020*

Land Use

12. *A new Wawa recently opened near the future Lafayette Street Interchange*
13. *Five Saints Distillery opened on Main Street in Norristown*

PLYMOUTH MEETING/BLUE BELL

Transportation

14. *Whitpain Township received a county grant to improve walkability at the corner of Township Line, Walton, and Norristown Roads*

Land Use

15. *Arborcrest Corporate Center completed—650,000 sf office in 4 buildings*
16. *PARC apartments built in existing employment center at the I-476 mid-county interchange*
17. *Plymouth Township partners with MCPC to write new municipal comprehensive plan*

FORT WASHINGTON

Transportation

18. *Turnpike interchange slip ramp to Commerce Drive fully funded by Upper Dublin—construction in 2018*
19. *Virginia & Commerce Drive Road Diet and Cross County Trail fully funded by Upper Dublin, County and PADOT—construction in 2018*
20. *Upper Dublin created an authority to facilitate improvements in the Fort Washington Office Park and at the Virginia Drive interchange*

Land Use

21. *New mixed-use zoning adopted wit h transfer of development rights (TDR) program—incentivizes development to move out of the floodplain with higher density and additional uses*
22. *Lifetime Fitness opened a new upscale fitness complex at Commerce Drive next to the future interchange slip ramp*

WILLOW GROVE/HORSHAM

Transportation

23. *PADOT prepared the Route 611 Transportation Study—first project underway is the realignment of the former Rt. 611-New Road intersection alongside a new Wawa development*

Land Use

24. *Horsham Business Parks Master Plan adopted to spur higher-density mixed-use development in a Core Center and more amenities throughout the Park.*
25. *Zoning being written to implement the Master Plan*
26. *Mixed Use Town Center proposed on the Prudential Campus next to the future Welsh Road interchange*

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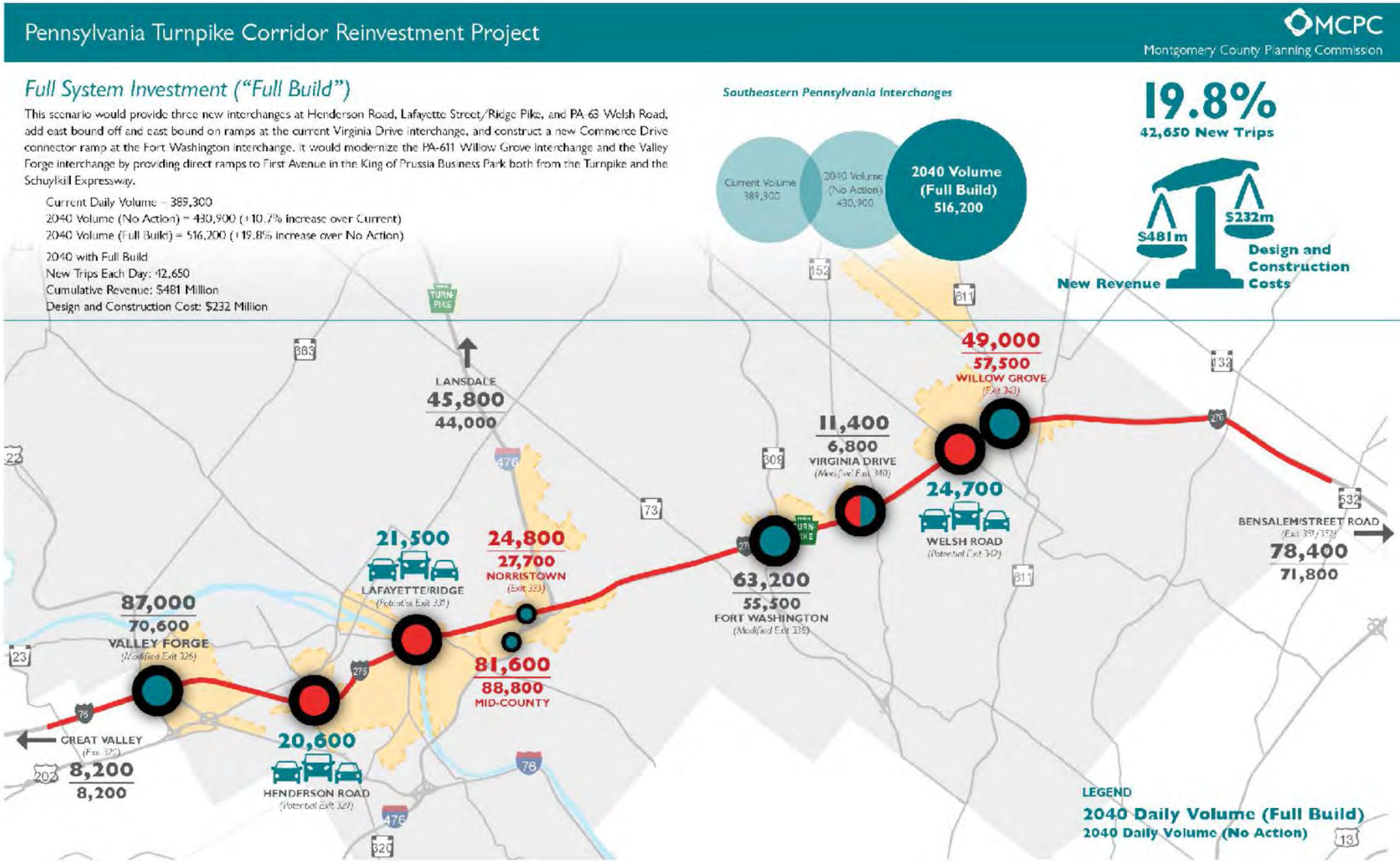
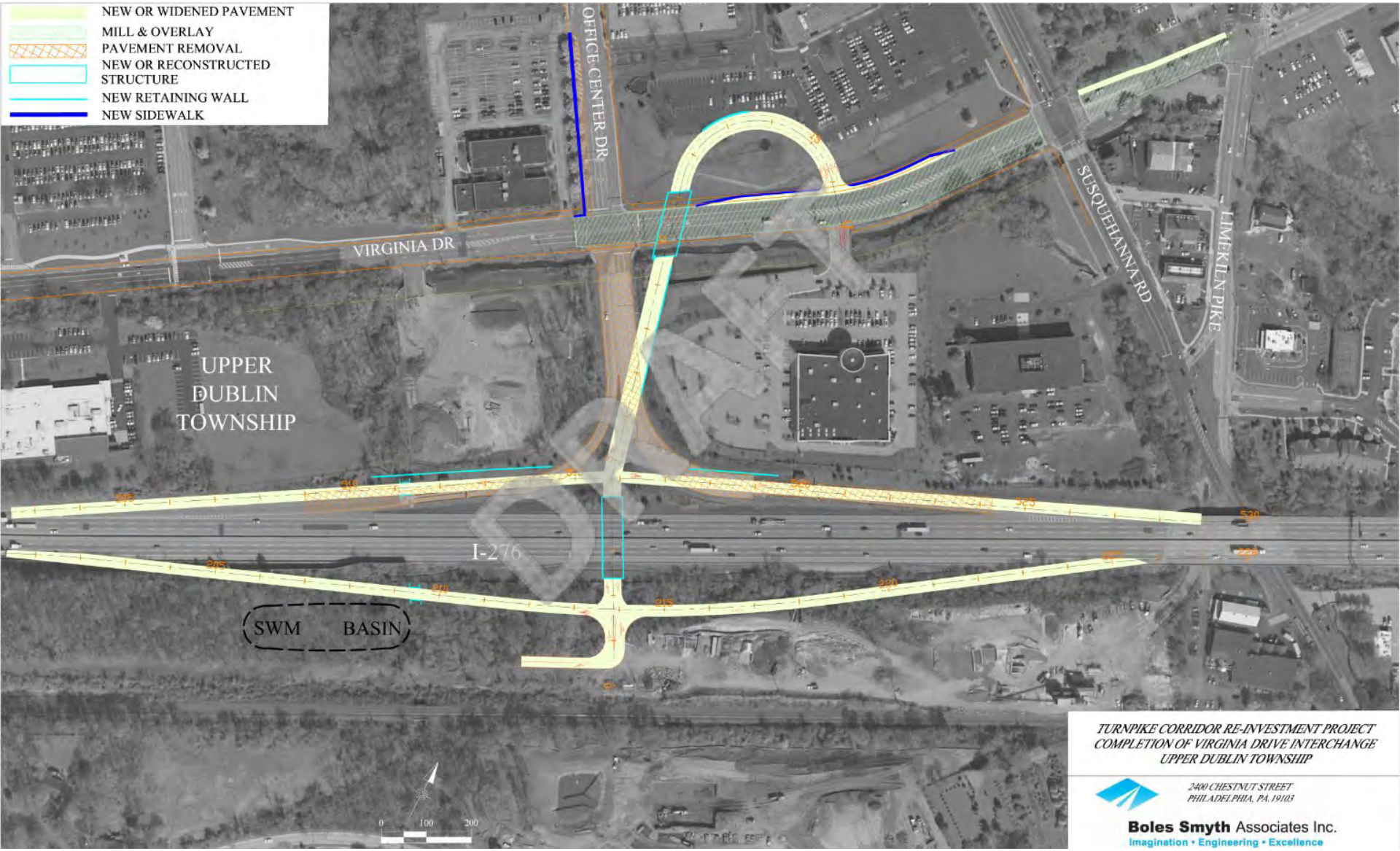
Turnpike Corridor Reinvestment Project



dvrpc | *Turnpike Corridor Reinvestment Project*



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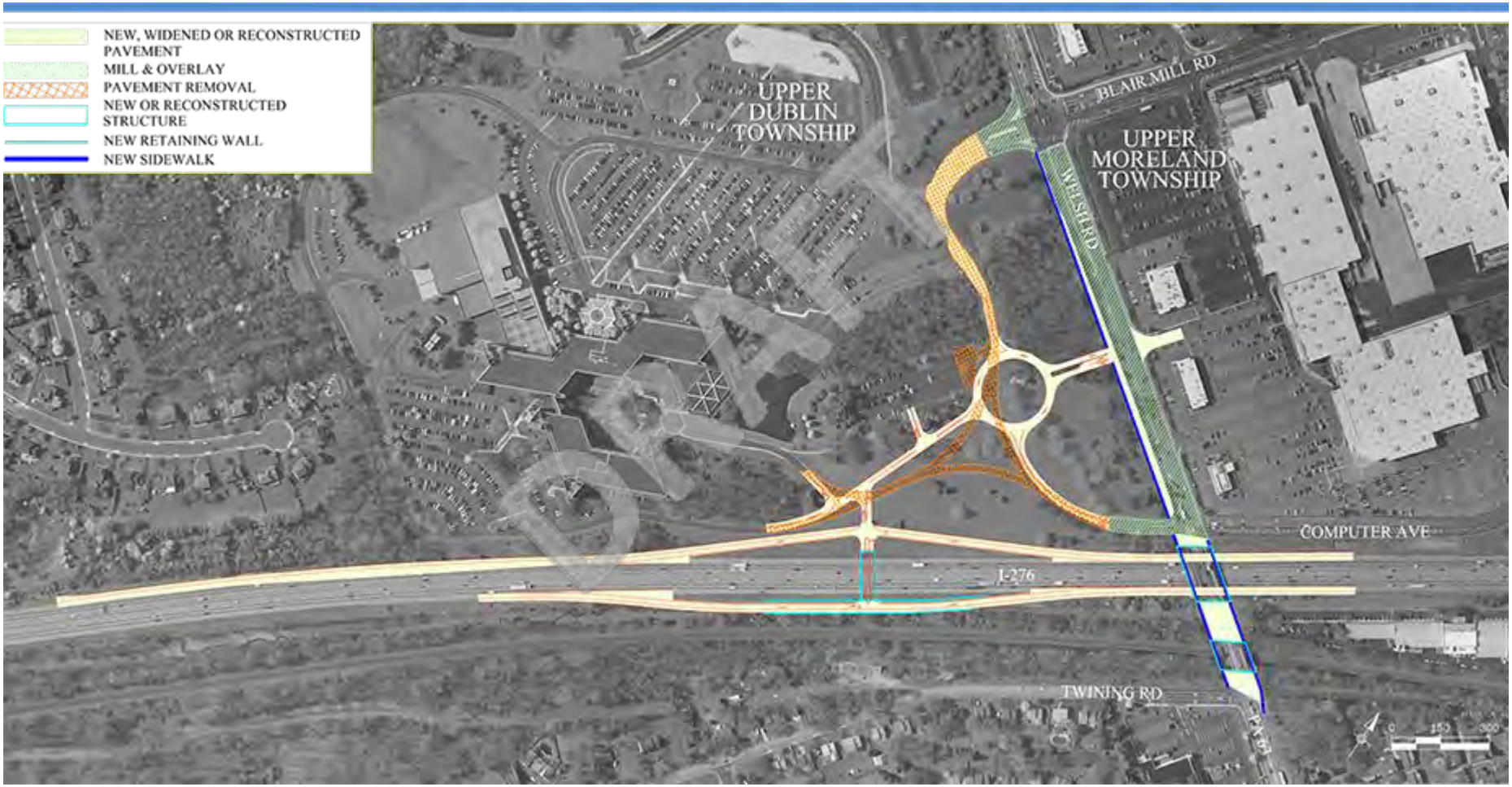
Virginia Drive Interchange Concept



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Welsh Road Interchange Concept

What is the new 2020 PA Turnpike Interchange Study?

- Consists of 2 Study Areas
  - Henderson Road Interchange
  - **Welsh Road and Virginia Drive Interchanges**

- A deeper traffic analysis than in 2015 - this time looking at local impacts to Levels of Service (LOS)
  - **2015 modeling showed traffic increased and decreased in different locations - what does that mean for congestion?**

- Modeling includes new developments, zoning, and transportation projects since 2015
  - **Improvements to Willow Grove interchange**
  - **The Promenade at Upper Dublin**

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Why are we doing the new 2020 PA Turnpike Interchange Study?

- Earnestly address concerns from citizens and elected officials about traffic impacts from the new interchanges

- Meant to answer two questions:
  - **Do the roads still work when the interchanges are built?**

  - **If the answer is no, what road improvements need to be made beforehand to make it work?**

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Project Overview

Sarah Moran - DVRPC

Project Purpose

- Identify the potential impacts of the proposed new interchanges on local traffic

- Identify areas where traffic congestion may increase as a result of the proposed new interchanges
  - **Provide a more detailed analysis of the impacts on the new interchanges on local traffic flow**

- Develop recommendations to ease traffic congestion on local roads
  - **Peak hour traffic conditions and needs**
  - **Provide analytical support and develop supplemental strategies for the proposed new PA Turnpike Interchanges**

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Study Area

- The proposed Welsh Road interchange will provide a **complete connection to I-276.**

- The proposed completion of the Virginia Drive interchange will add an **eastbound connection to I-276** just west of Susquehanna Road, in addition to the westbound connection.

- Major local roads and intersections connecting routes to and from these areas were evaluated for potential traffic impact.

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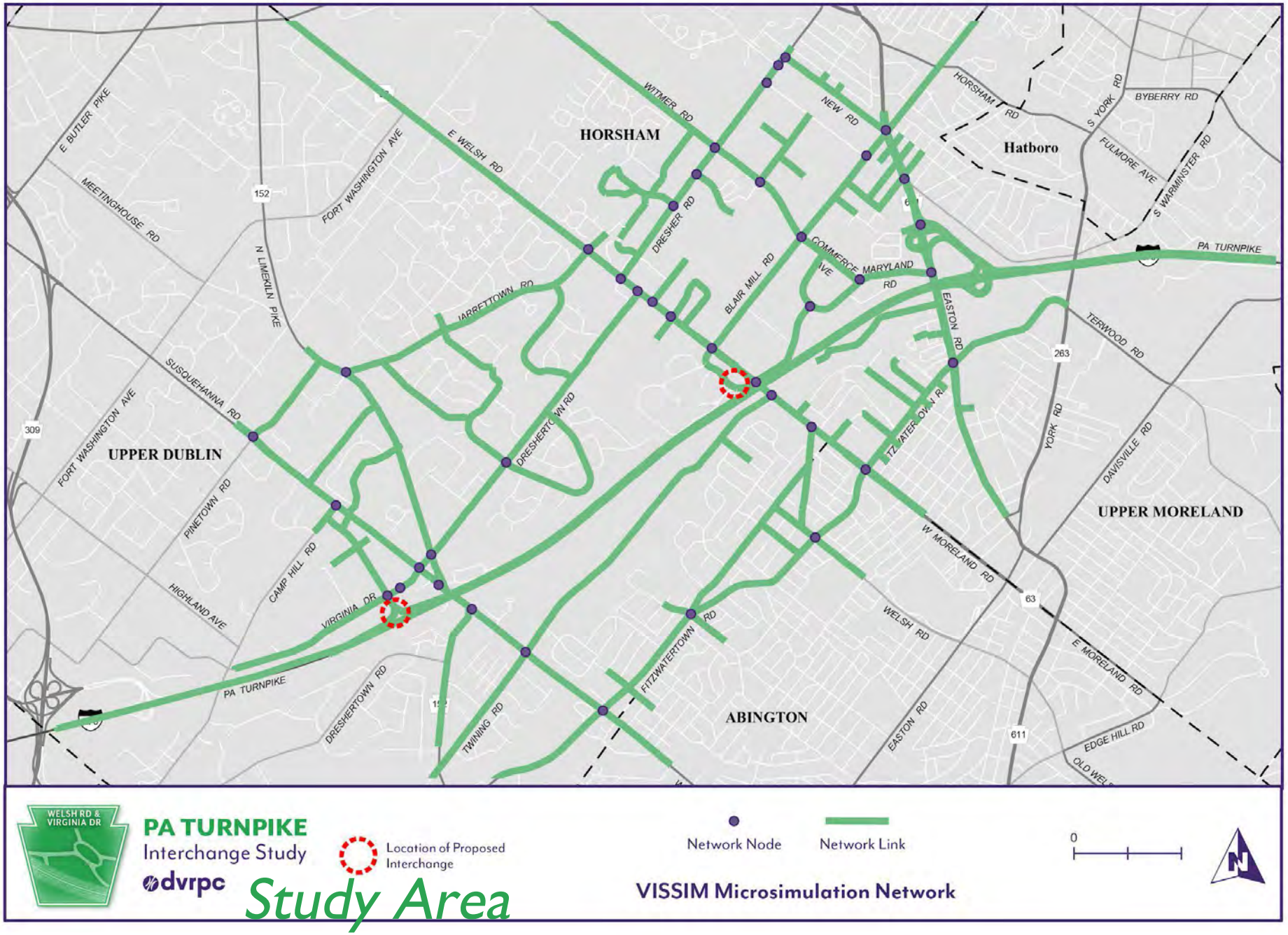
WELSH RD & VIRGINIA DR
PA TURNPIKE
Interchange Study
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Location of Proposed Interchange
Study Area
Network Node
Network Link
0
VISSIM Microsimulation Network
HORSHAM
Hatboro
UPPER DUBLIN
UPPER MORELAND
ABINGTON
E BUTLER PIKE
MEETINGHOUSE RD
FORT WASHINGTON AVE
N LIMEKILN PIKE
E WELSH RD
WITMER RD
NEW RD
HORSHAM RD
S YORK RD
BYBERRY RD
FULMORE AVE
S WARMINSTER RD
DRESHER RD
BLAIR MILL RD
COMMERCE AVE
MARYLAND RD
PA TURNPIKE
EASTON RD
TERWOOD RD
YORK RD
DAVISVILLE RD
JARRETTOWN RD
SUSQUEHANNA RD
DRESHERTOWN RD
PINETOWN RD
CAMP HILL RD
HIGHLAND AVE
VIRGINIA DR
FITZWATERTOWN RD
TWINING RD
W MORELAND RD
WELSH RD
E MORELAND RD
EDGE HILL RD
152
309
263
63
611

Project Steering Committee

- Montgomery County Planning Commission
- Abington Township
- Horsham Township
- Upper Dublin Township
- Upper Moreland Township
- SEPTA
- Pennsylvania Department of Transportation
- PA Turnpike Commission
- Greater Valley Forge Transportation Management Assoc.
- Boles Smyth Associates
- BET Investments
- Partnership TMA
- Prudential

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Scope of Work

Phase 1:

- Project steering committees were formed
- Traffic counts and field data were collected
- Base network of roads within the study area was prepared with traffic simulation software

Phase 2:

- Traffic operational modeling was conducted
- Deficiencies in the transportation network were identified
- Solutions were modeled

2017 2020

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Fall 2018 Open House

Al Beatty - DVRPC

Fall 2018 Open House

- September 20, 2018
- Fort Washington Fire House
- Objectives:
  - **Introduce the project**
  - **Gather early public input - benefits and concerns**
- Information presented:
  - **Project background and scope**
  - **Study area description**
  - **Existing traffic conditions**

Poll

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Fall 2018 Open House

- Information collected
  - **How do you believe the proposed new interchange would impact your commute or daily travel?**
  - **What do you believe are the possible benefits of the proposed new interchange?**
  - **What concerns do you have about the proposed new interchange?**
  - **Do you have any remaining questions or comments about the PA Turnpike Interchange Study at Welsh Road?**

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Fall 2018 Open House

- 71 attendees
- 42 surveys completed
  - **32 of 42 respondents (76%) shop in the study area**
  - **29 (69%) live in the study area**
  - **25 (60%) work in the study area**
  - **19 (45%) visit friends or family in the study area**
- Additional feedback through post-its and conversations

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Fall 2018 Open House

Potential Benefits?

- **Reduced congestion** on the Turnpike near existing interchanges, on major roads (PA 63, PA 611, PA 309) and on neighborhood streets
- **Economic development** and ability to attract employees
- **Improved access** to the Turnpike
- **Shorter commutes** for area residents and employees

Concerns?

- **Increased congestion** on the Turnpike, Route 63, Twining Road, Welsh/Moreland Road, and local residential streets.
- **Increased traffic volume** generally throughout the study area, negative impact on property values
- **Other projects should take priority** (Willow Grove interchange improvements, Dresher Triangle)

Source: survey results and post-it activity from Fall 2018 Open House

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Findings & Recommendations

Kelsey McElduff - DVRPC

DVRPC Regional Model

- DVRPC uses a well-tested regional travel demand model to simulate the travel behavior of people in the 9-county region.

- The model is guided by Federal Highway Administration guidelines and industry standards, and model forecasts are approved by the DVRPC Board.

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Microsimulation Modeling

Microsimulation is a method for evaluating the localized impacts of proposed improvements to the transportation system, such as the proposed interchanges at Welsh Road and Virginia Drive.

- Regional model outputs are calibrated using current local traffic counts.

- By modeling the future traffic in the study area with and without the proposed interchanges, we can estimate **how the interchanges will affect traffic flow**.

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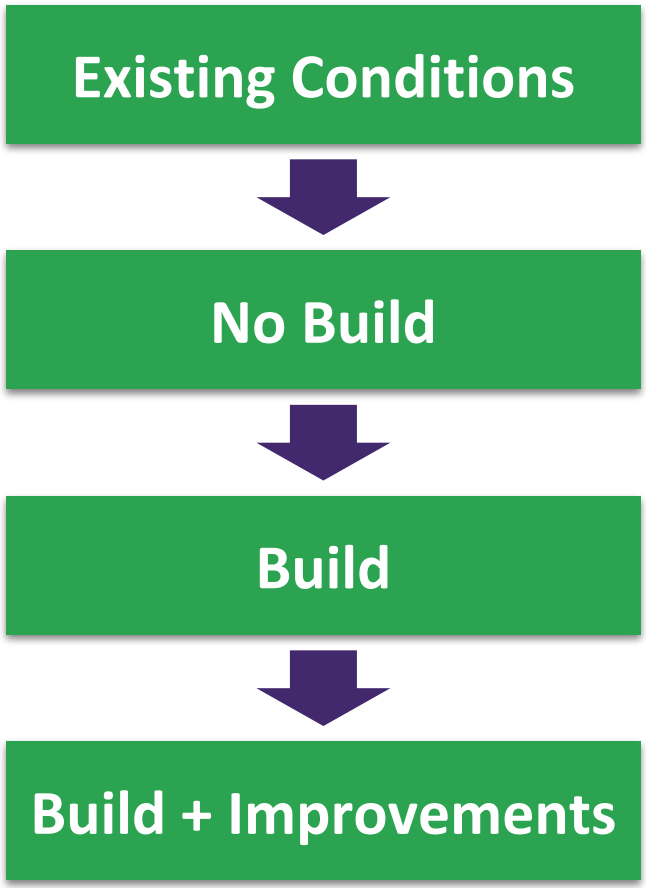
Modeling Scenarios



What does traffic look like **now**?

What will traffic look like in **2045** if the proposed interchanges are **not built**?

What will traffic look like in **2045** if the proposed interchanges are **built**?

How can **changes to the local street network** improve traffic flow?

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Performance Measures

Demand is the total **number of vehicles** entering, or attempting to enter, the study area during the peak hour.

Delay is the average **amount of time**, in seconds, that it takes a vehicle passing through an intersection beyond what would be experienced in a free-flow condition.

Level of Service (LOS) values are letter grades assigned to various degrees of delay.

Level of Service	Delay (s)	
A	≤10	
B	>10 - 20	Predictable and Stable Flow
C	>20 - 35	
D	>35 - 55	Predictable, Approaching Unstable
E	>55 - 80	Unstable and Unpredictable
F	>80	

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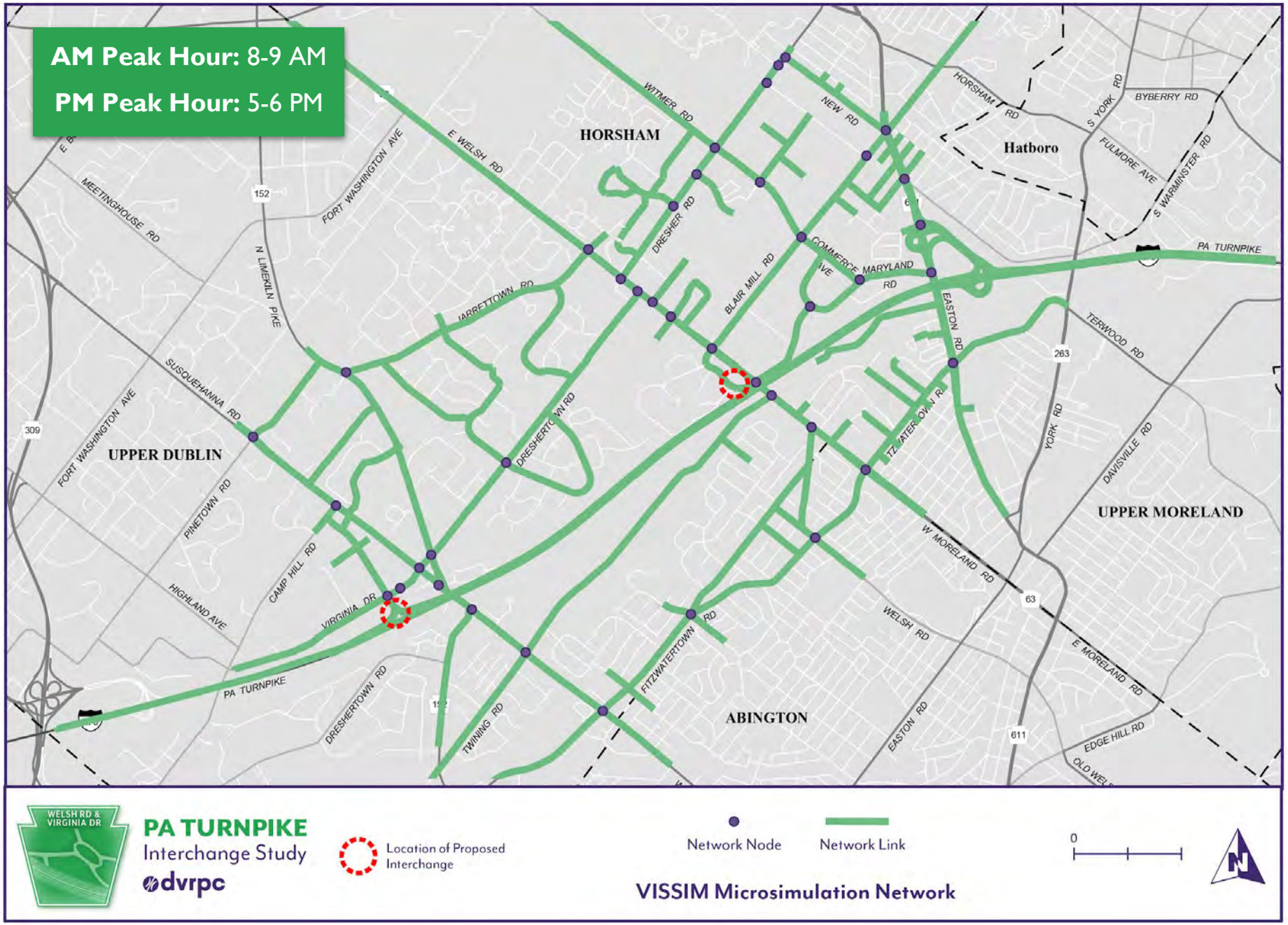
AM Peak Hour: 8-9 AM
PM Peak Hour: 5-6 PM
HORSHAM
Hatboro
UPPER DUBLIN
UPPER MORELAND
ABINGTON
WITMER RD
NEW RD
HORSHAM RD
S YORK RD
BYBERRY RD
FULMORE AVE
S WARMINSTER RD
E WELSH RD
MEETINGHOUSE RD
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PA TURNPIKE
Interchange Study
dvrpc
Location of Proposed Interchange
Network Node
Network Link
0
VISSIM Microsimulation Network

Existing Conditions (2019)

- Reflects the **current transportation network** in the vicinity of the proposed Welsh Road interchange and the proposed completion of the Virginia Drive interchange

- Traffic volumes are based on **DVPRC's 2015 regional model** forecast and traffic counts completed in 2017–2019

AM Peak Hour:

Network Demand:

21,400 vehicles

Average delay per vehicle:

1.5 minutes

PM Peak Hour:

Network Demand:

24,400 vehicles

Average delay per vehicle:

2.2 minutes

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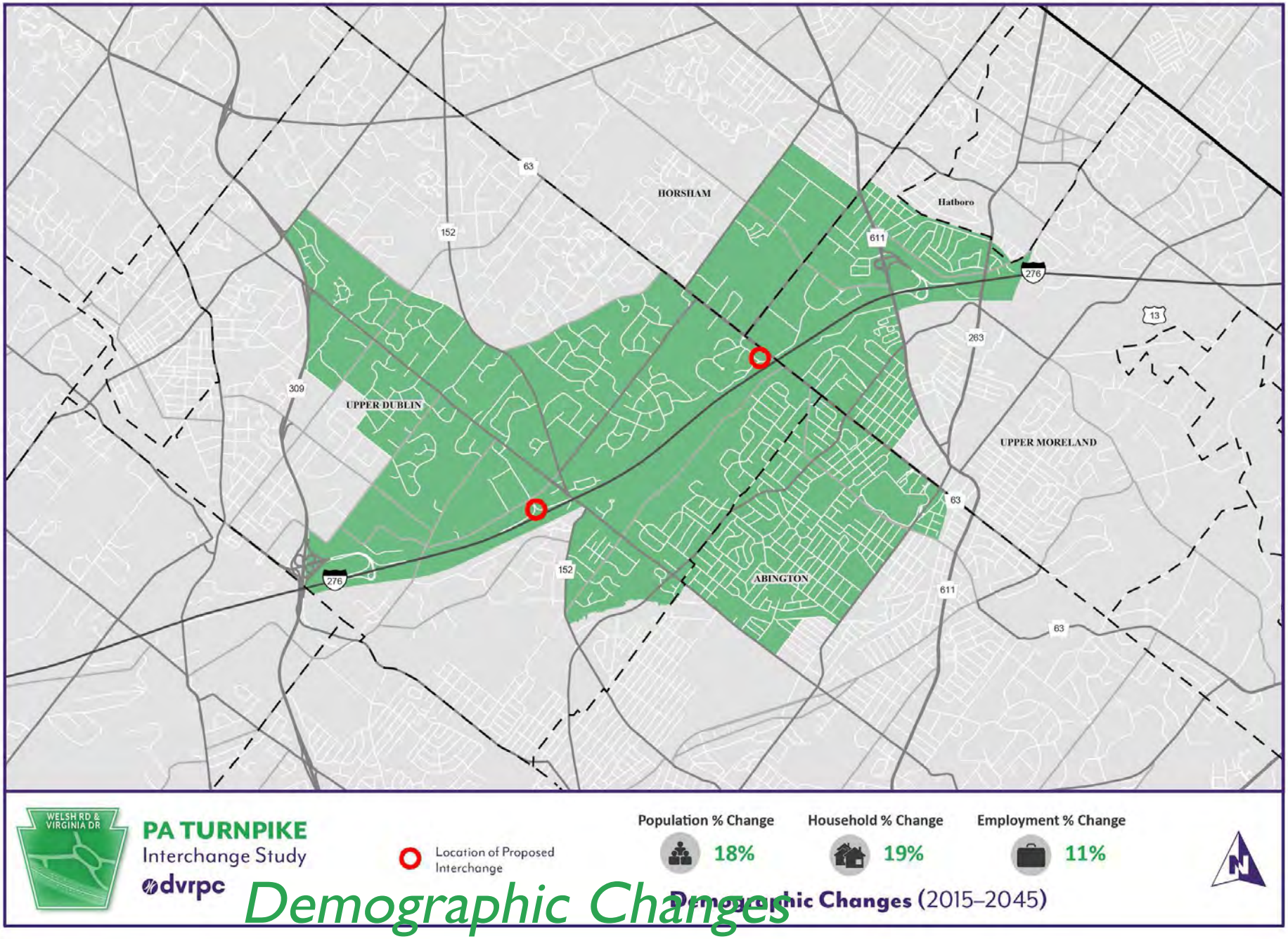


Demographic Changes

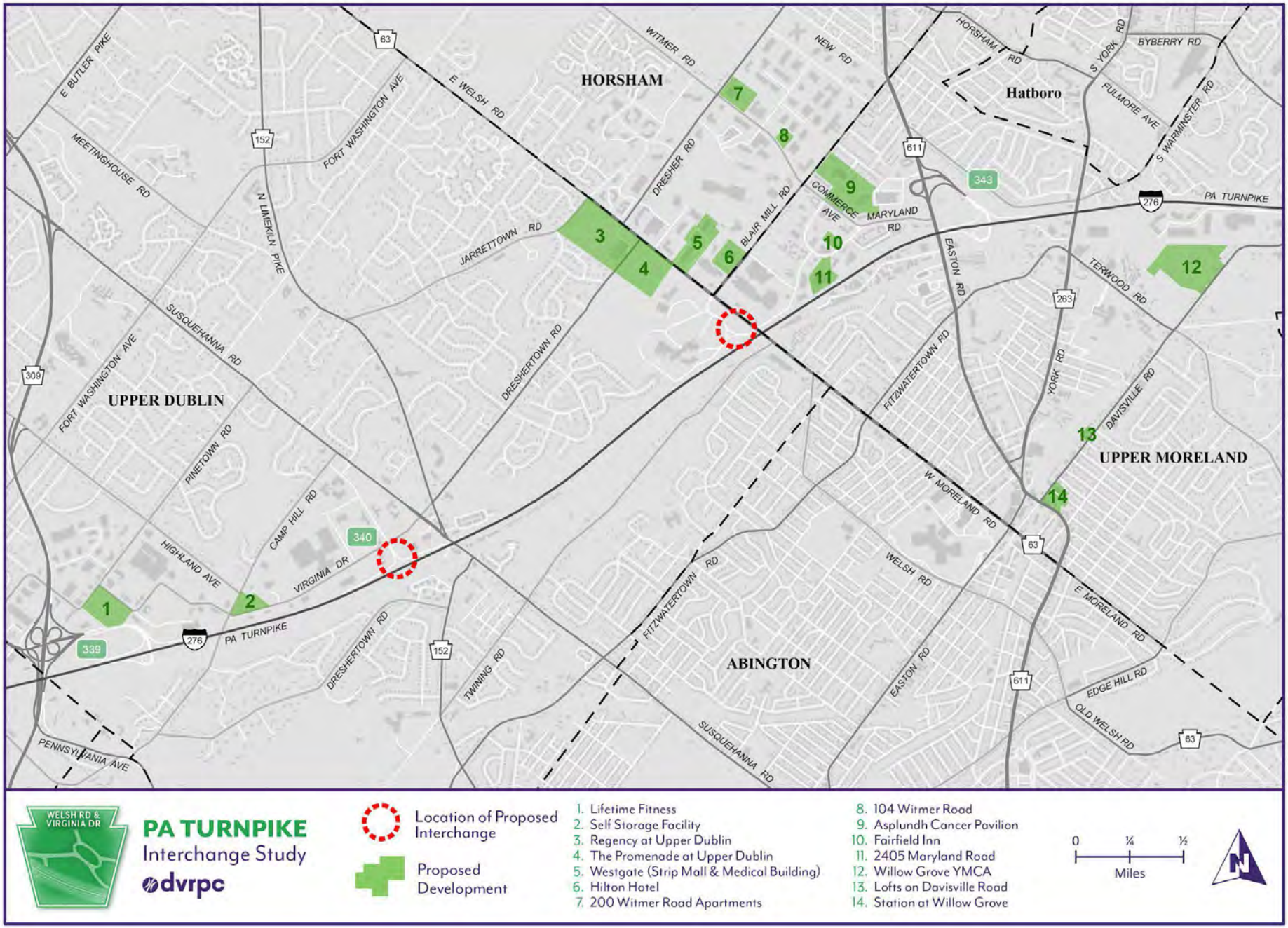
No Build Transportation Projects

Regional Projects

- Cashless tolling
- PA 611 ITS improvements and multimodal upgrades from Cheltenham Avenue to County Line Road
- Regional Rail station enhancement
  - **Hatboro**
  - **Willow Grove**
- I-276 and Lafayette Street / Ridge Avenue new interchange
- I-95 / I-276 partial interchange
- Widen I-476 PA Turnpike Northeast Extension from Lansdale to Quakertown
- I-276 / PA 611 Willow Grove interchange ramp modifications
- Fort Washington interchange “zip ramp”

Local Projects

- New traffic signals
  - **Dresher Road & Extended Stay America**
  - **Dresher Road & Business Center Drive**
  - **Dreshertown Road & Sycamore Street**
- Crossing upgrade and roadway widening south of Dresher Road & Witmer Road
- Extension of eastbound through lane on Welsh Road from west of Jarrettown Road to Dresher Road
- Channelized right-turn lane on Welsh Road at its intersection with Dreshertown Road



WELSH RD & VIRGINIA DR

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Location of Proposed Interchange

Proposed Development

1. Lifetime Fitness
2. Self Storage Facility
3. Regency at Upper Dublin
4. The Promenade at Upper Dublin
5. Westgate (Strip Mall & Medical Building)
6. Hilton Hotel
7. 200 Witmer Road Apartments
8. 104 Witmer Road
9. Asplundh Cancer Pavilion
10. Fairfield Inn
11. 2405 Maryland Road
12. Willow Grove YMCA
13. Lofts on Davisville Road
14. Station at Willow Grove

0 ¼ ½
Miles

N

No Build (2045)

- 2045 conditions **without** proposed interchanges
- Traffic volumes are based on DVRPC's 2045 long-range forecast which accounts for expected growth
  - **population (18%)**
  - **households (19%)**
- **employment (11%)**
- Includes regional and local projects
  - **transportation projects expected to be completed by 2045**
  - **planned developments in the study area.**

AM Peak Hour:

Network demand:

25,000 vehicles

Average delay per vehicle:

3.8 minutes

PM Peak Hour:

Network demand:

29,200 vehicles

Average delay per vehicle:

4.4 minutes

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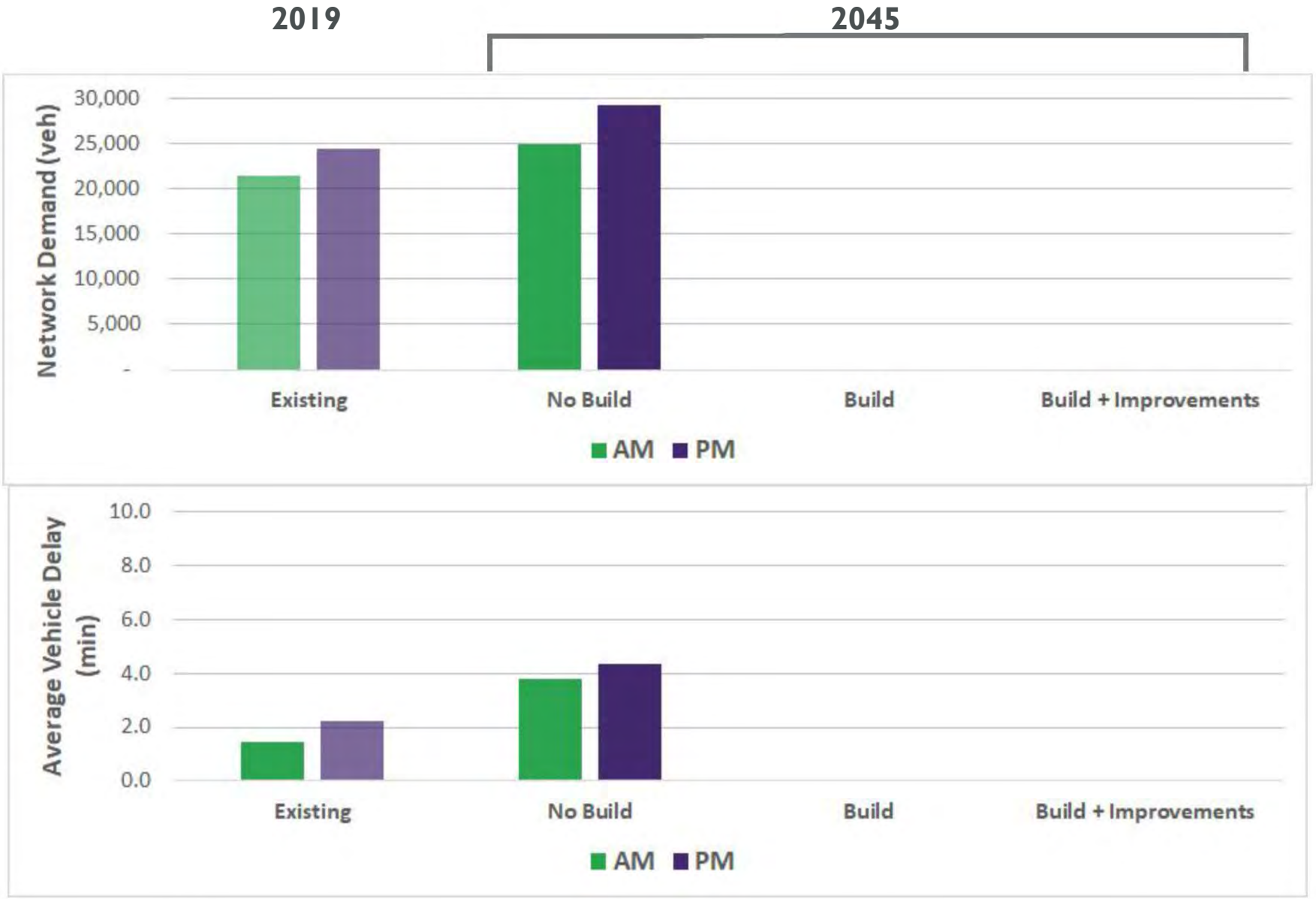
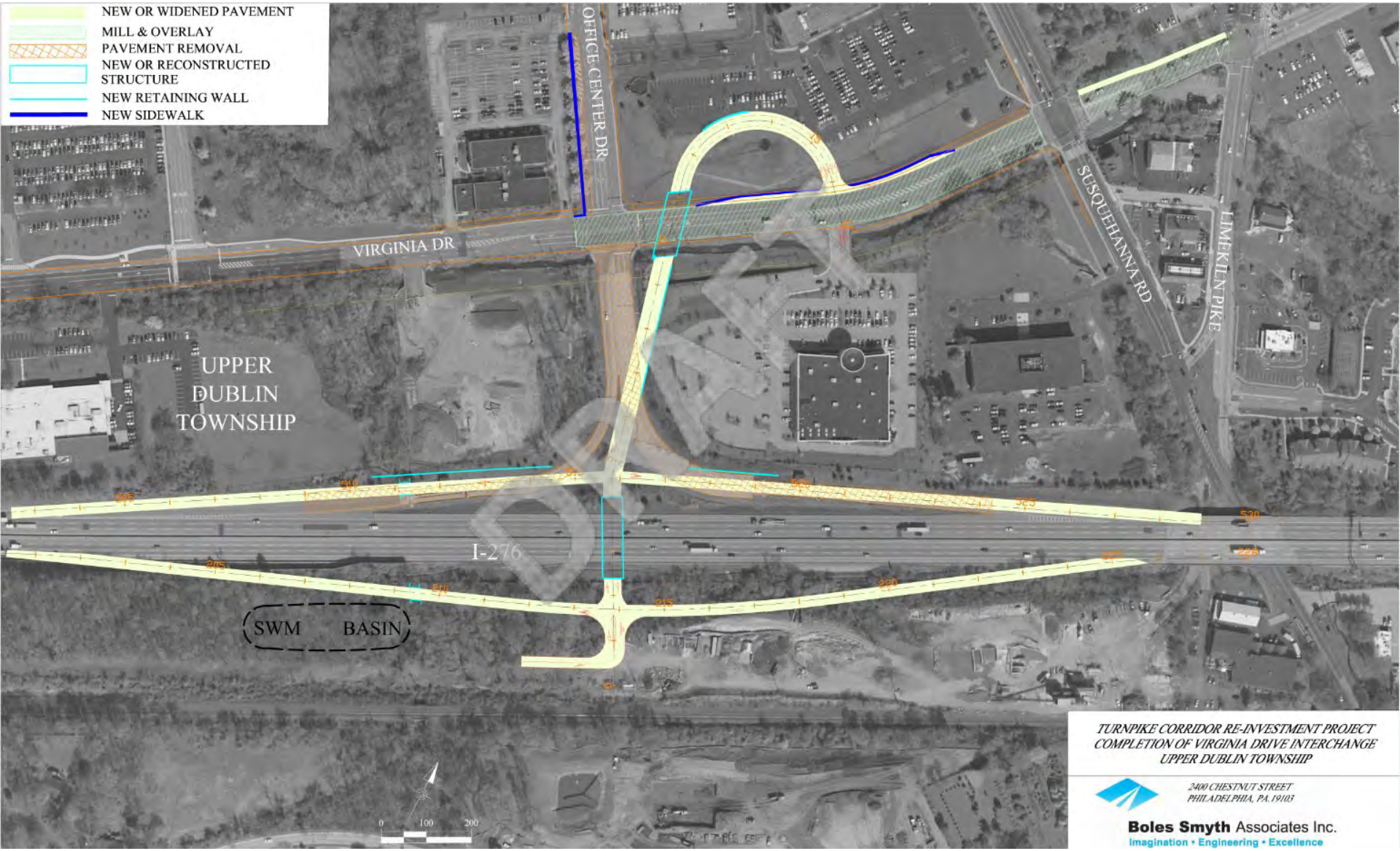


dvrpc | *Scenario Comparison*



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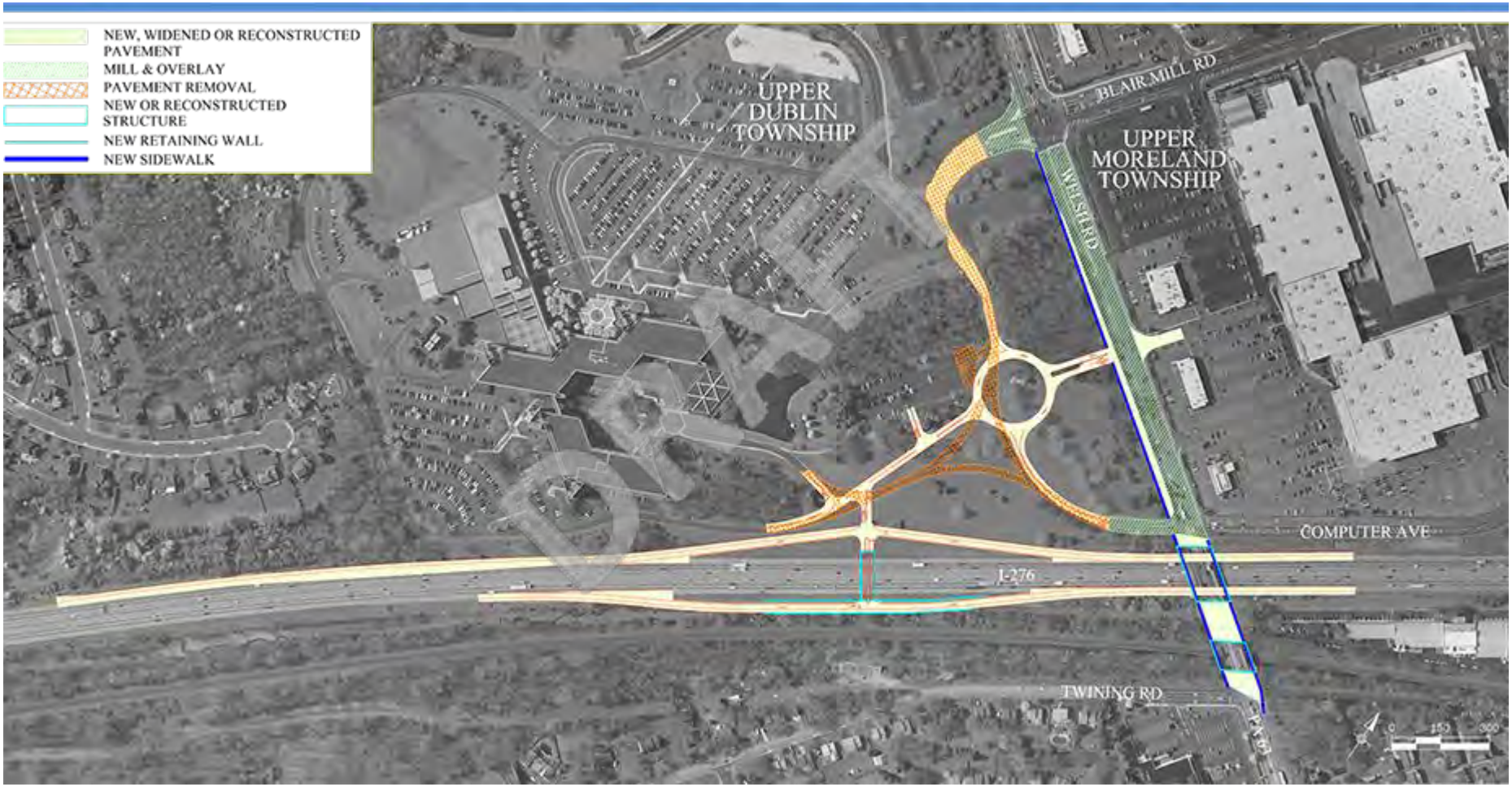
Virginia Drive Interchange Concept



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Welsh Road Interchange Concept

Build (2045)

- Includes the same transportation projects, planned developments, and growth projections as the No Build scenario.
- In addition, it includes the **proposed new interchanges** at Virginia Drive and Welsh Road.
- **Does not** include any additional improvements to the network.

AM Peak Hour:

Network demand:

23,900 vehicles

Average delay per vehicle:

5.4 minutes

PM Peak Hour:

Network demand:

28,900 vehicles

Average delay per vehicle:

8.8 minutes

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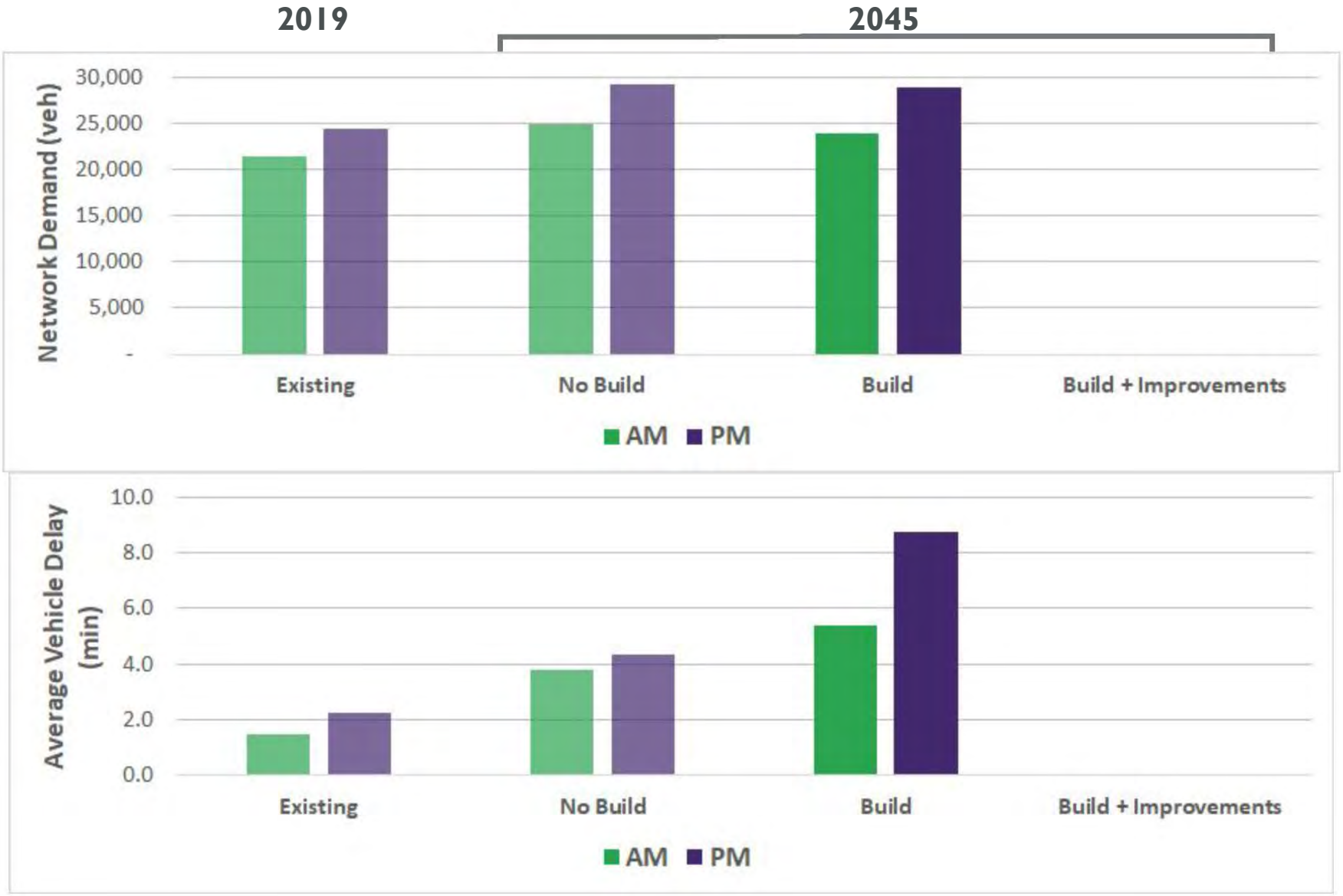
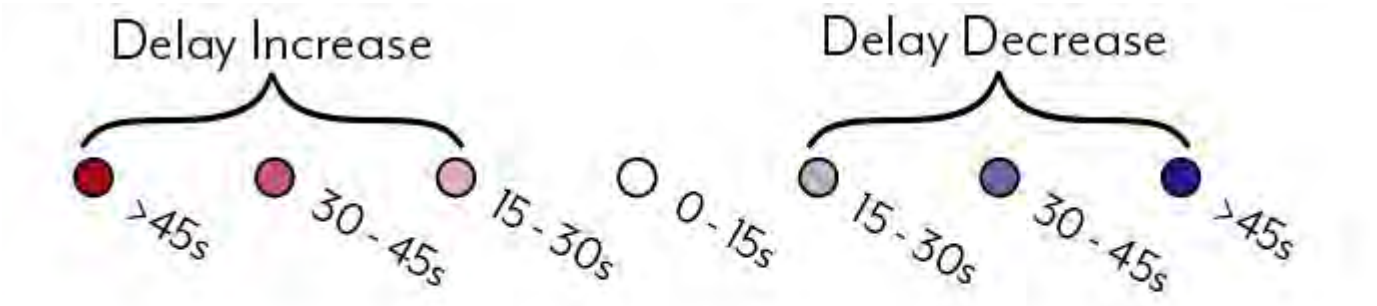


dvrpc | *Scenario Comparison*

Intersection Delay Change

Change in delay, in seconds from No Build to Build Scenario for each intersection



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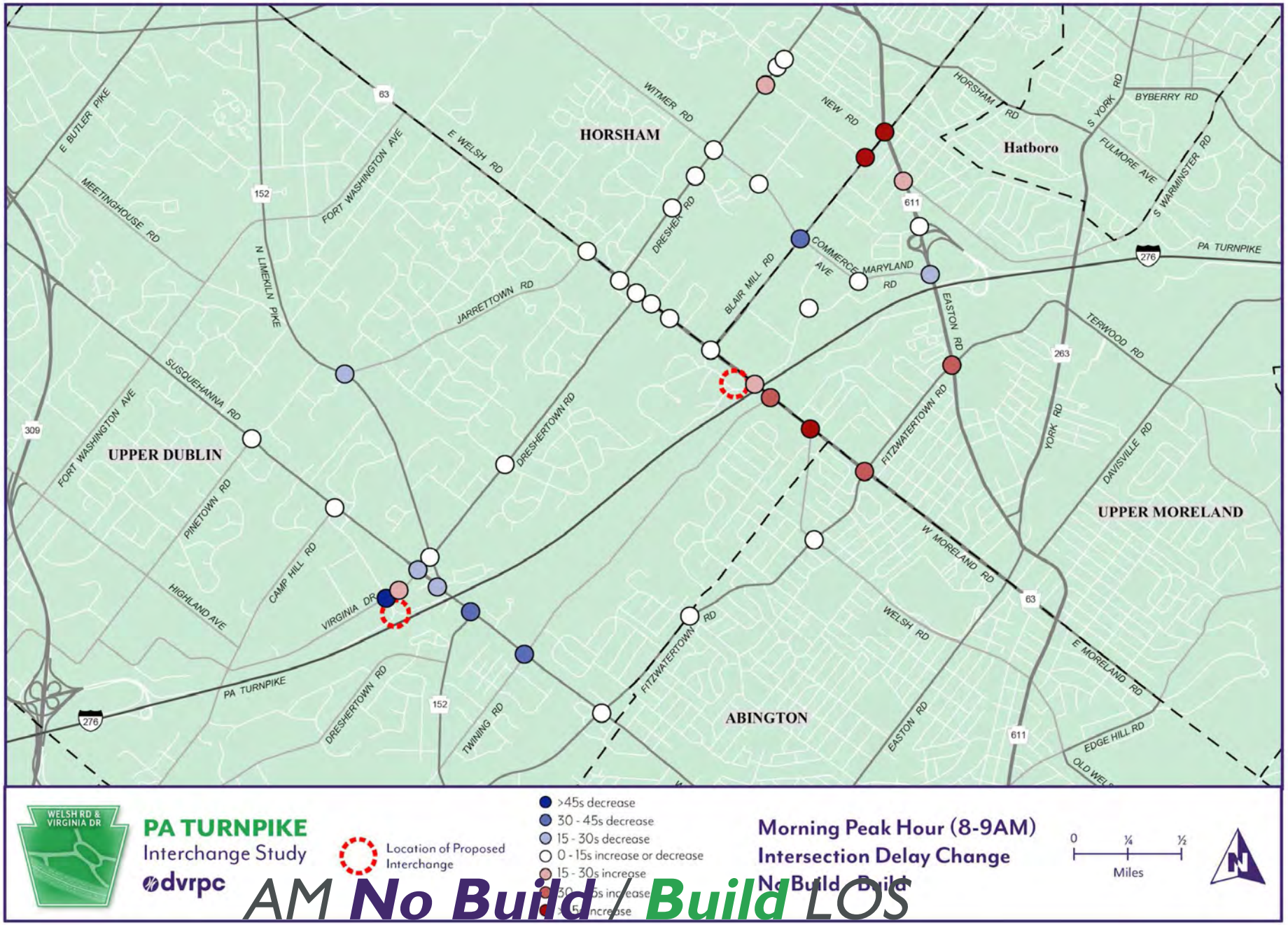

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Location of Proposed Interchange

- >45s decrease
- 30 - 45s decrease
- 15 - 30s decrease
- 0 - 15s increase or decrease
- 15 - 30s increase
- 30 - 45s increase
- >45s increase

Morning Peak Hour (8-9AM)
Intersection Delay Change
No Build - Build

0 ¼ ½ Miles

AM No Build / Build LOS

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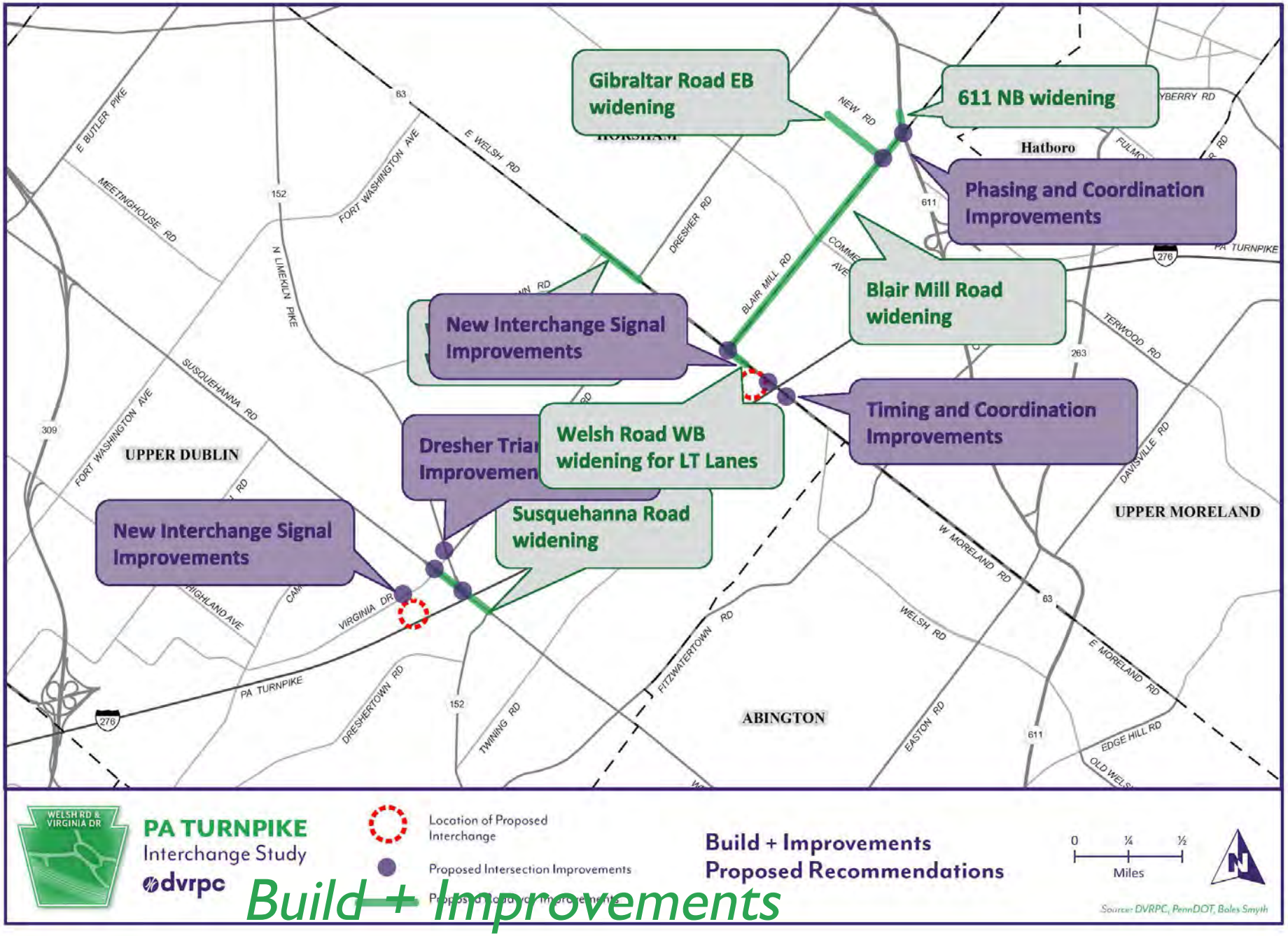
Location of Proposed Interchange

- >45s decrease
- 30 - 45s decrease
- 15 - 30s decrease
- 0 - 15s increase or decrease
- 15 - 30s increase
- 30 - 45s increase
- >45s increase

Evening Peak Hour (5-6PM)
Intersection Delay Change
No Build - Build

0 ¼ ½
Miles

PM No Build / Build LOS



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Location of Proposed Interchange
Proposed Intersection Improvements
Proposed Roadway Improvements

Build + Improvements
Proposed Recommendations

0 ¼ ½
Miles

Source: DVRPC, PennDOT, Bales Smyth

Build + Improvements

Build + Improvements (2045)

- Includes recommended changes to the local roadway network to mitigate local impacts of the proposed interchanges in the Build scenario.
  - **Roadway widening**
  - **Added turning lanes**
  - **Signal improvements**
    - phasing
    - timing
    - coordination

AM Peak Hour:

Network demand:

23,900 vehicles

Average delay per vehicle:

2.4 minutes

PM Peak Hour:

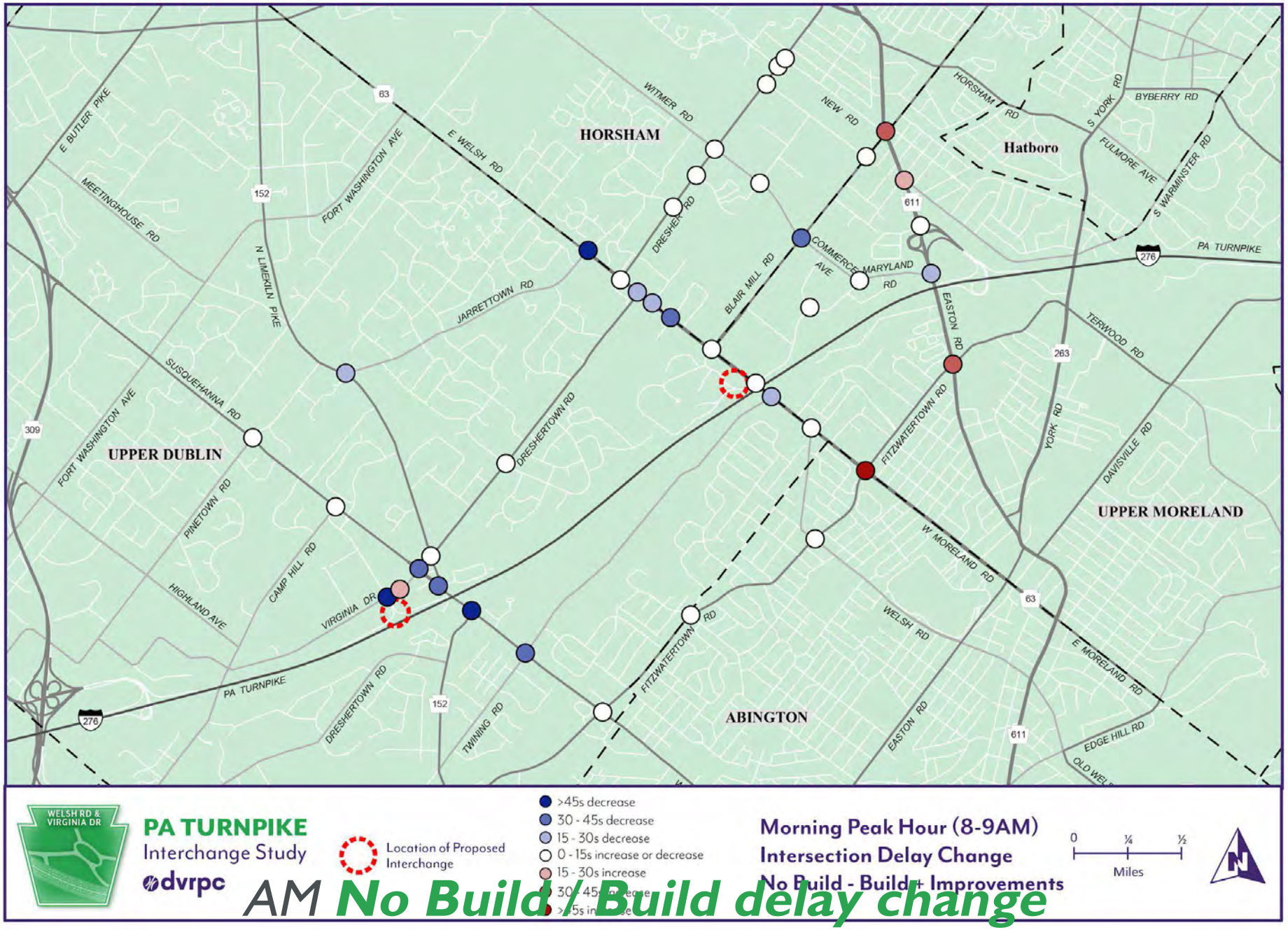
Network demand:

28,900 vehicles

Average delay per vehicle:

5.2 minutes

dvrpc



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Location of Proposed Interchange

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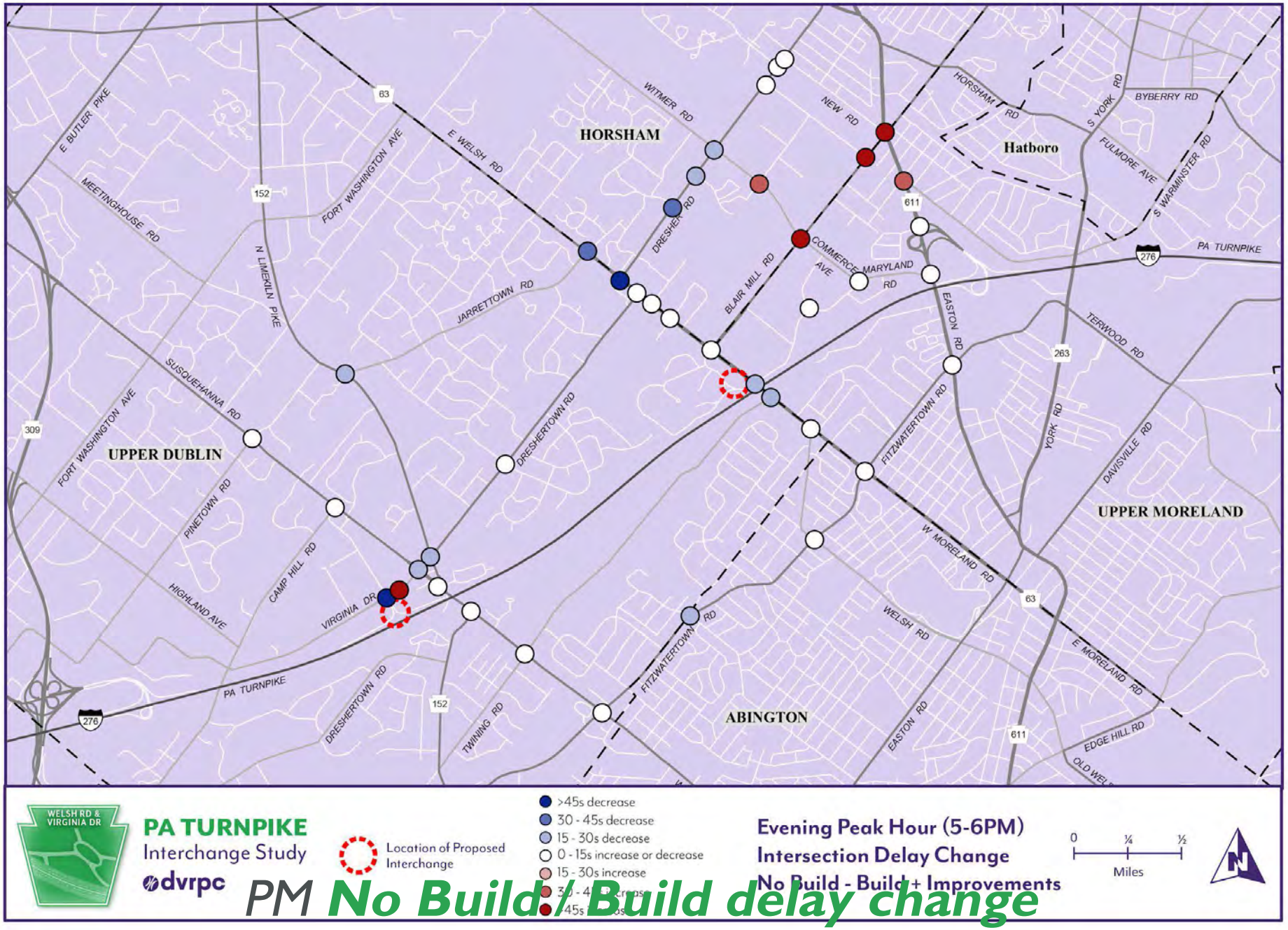
- 15 - 30s increase
- 30 - 45s increase
- >45s increase

Morning Peak Hour (8-9AM)
Intersection Delay Change
No Build - Build + Improvements

0 ¼ ½ Miles

AM No Build / Build delay change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dvrpc
Location of Proposed Interchange
>45s decrease
30 - 45s decrease
15 - 30s decrease
0 - 15s increase or decrease
15 - 30s increase
Evening Peak Hour (5-6PM)
Intersection Delay Change
No Build - Build + Improvements
0
¼
½
Miles
PM No Build / Build delay change
HORSHAM
Hatboro
UPPER DUBLIN
ABINGTON
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E BUTLER PIKE
MEETINGHOUSE RD
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NEW RD
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S YORK RD
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63
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2019 2045

dvrpc | *Scenario Comparison*

Q&A Session

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Visit the PA Turnpike Interchange Study web page: www.dvrpc.org/Corridors/PATurnpike

Next Steps

Matthew Edmond - MCPC

Thank You!

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