Effect of DelDOT Projects on Lewes Area Travel Patterns

Presentation to Lewes City Council
July 1, 2019

DelDOT

Agenda

- Study purpose
- Study area: tonight's focus
- DelDOT capital projects
- Anticipated land use changes
- Traffic forecast model process and inputs
- Forecast scenarios
- Anticipated changes in travel patterns
- Conclusions

Study purpose

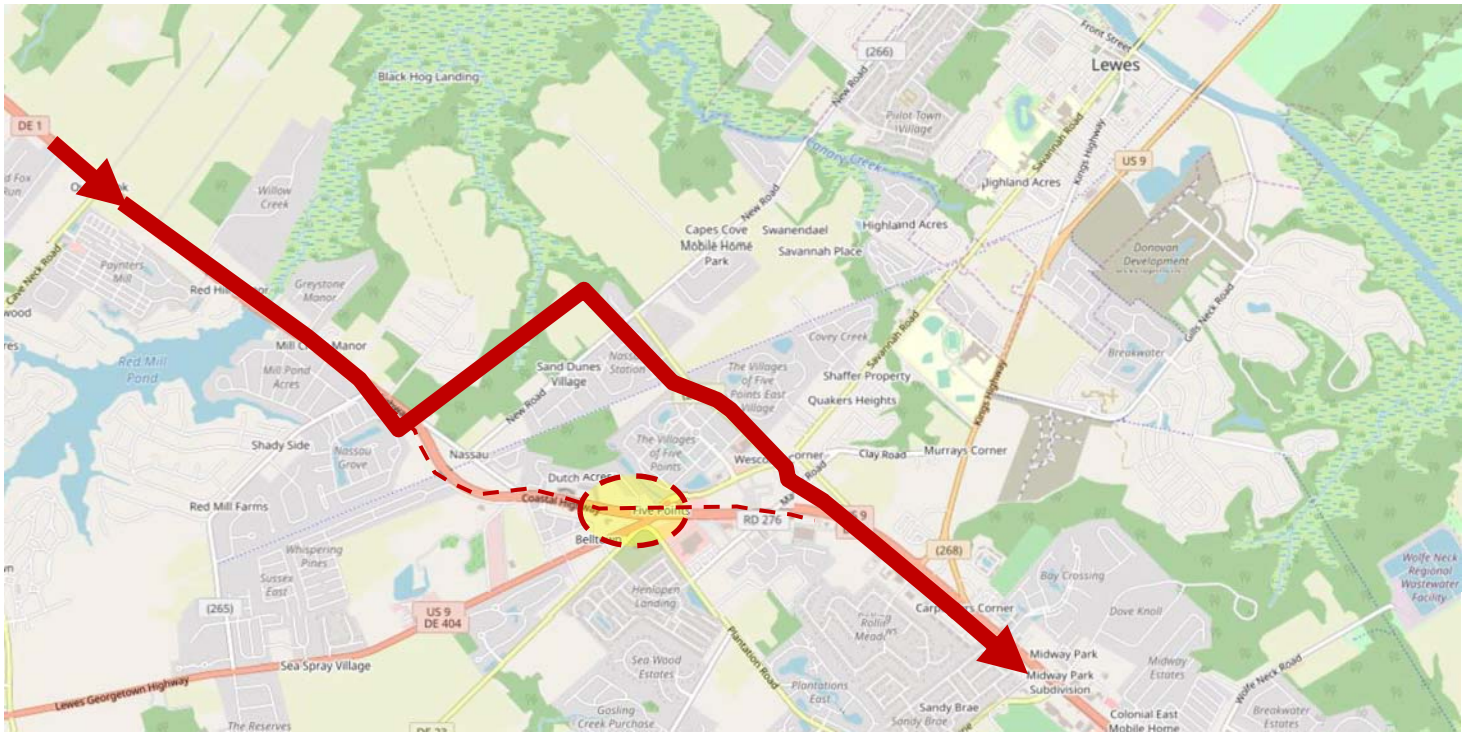
Determine effect of DelDOT capital projects on:

- Local and regional travel patterns
- Traffic volumes on New Road
- Traffic volumes on Old Orchard Road
- Traffic volumes on other roadways in the Lewes area

The City of Lewes asked specific questions about whether DelDOT projects will create a “bypass” around Five Points, diverting traffic to New Road and, by extension, Fourth Street and Pilottown Road.

Concern #1

Southbound Route 1 traffic could use the off-ramp at the new Route 1 grade separation, along with New Road and relocated Old Orchard Road, to bypass the Five Points intersection through Wescoats Corner

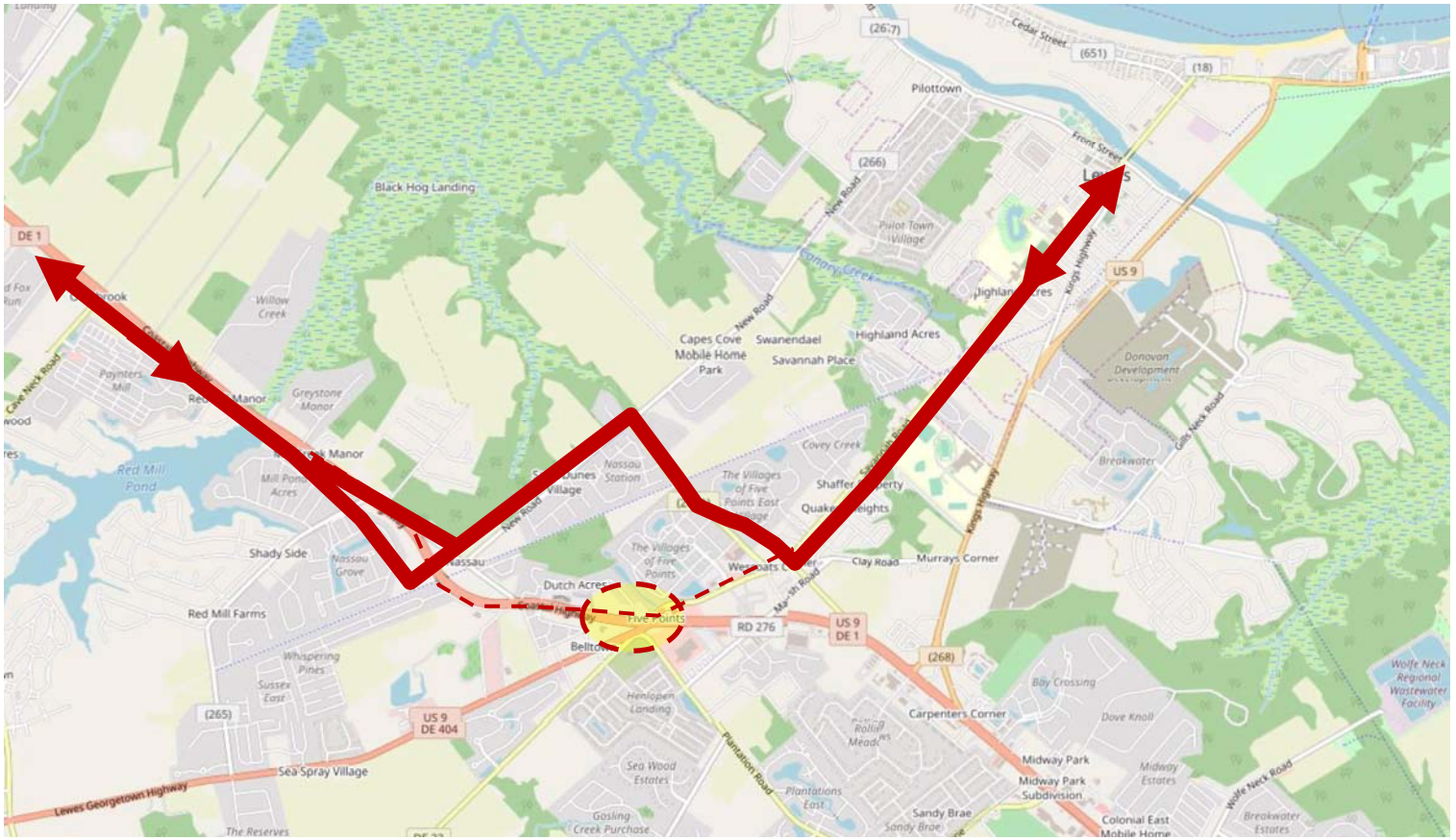


Concern #2

Northbound Route 1 traffic could use Wescoats Road and relocated Old Orchard Road to bypass the Five Points intersection via New Road

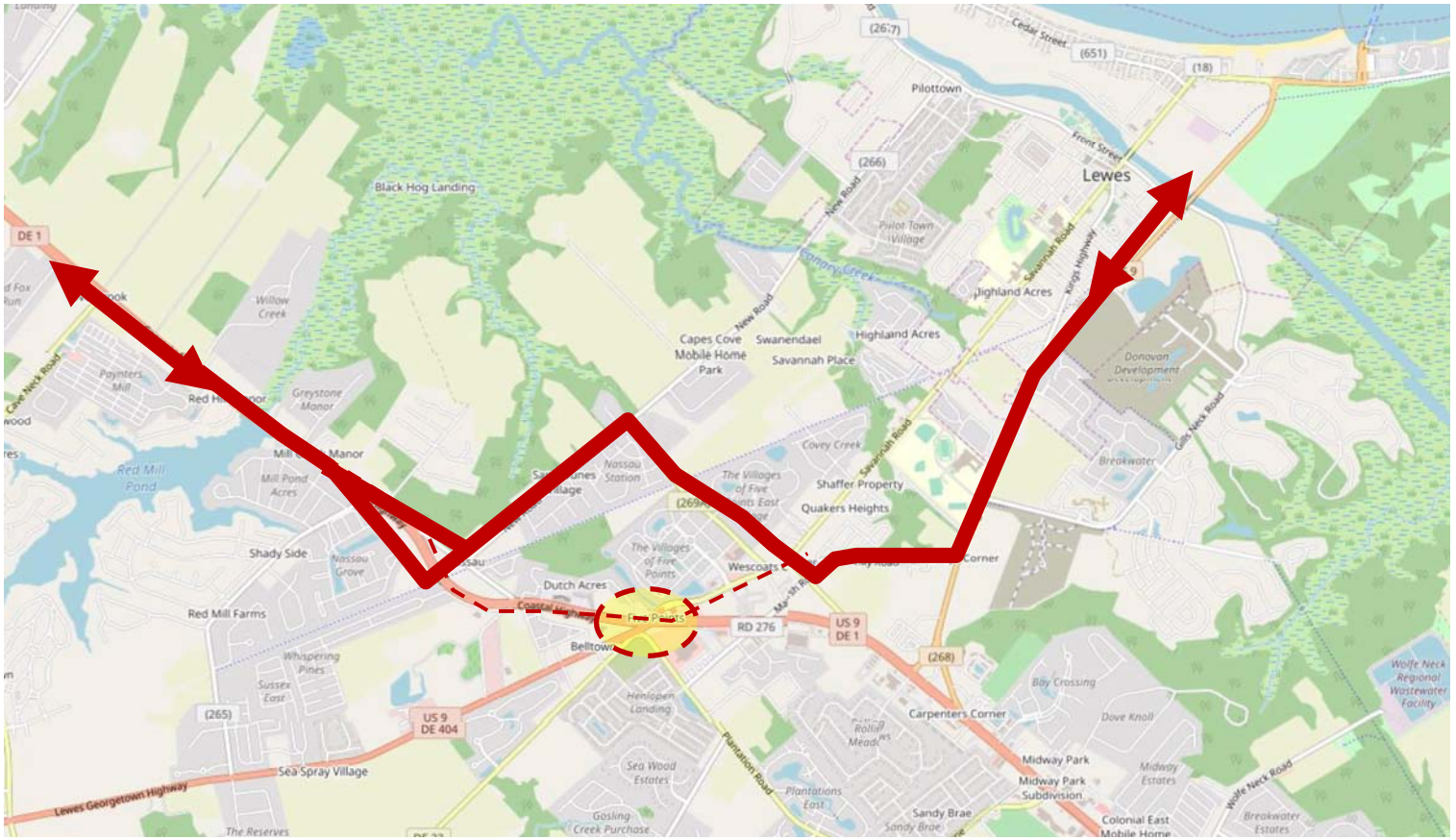
Concern #3

Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation, along with Old Orchard Road to reach Savannah Road and Lewes



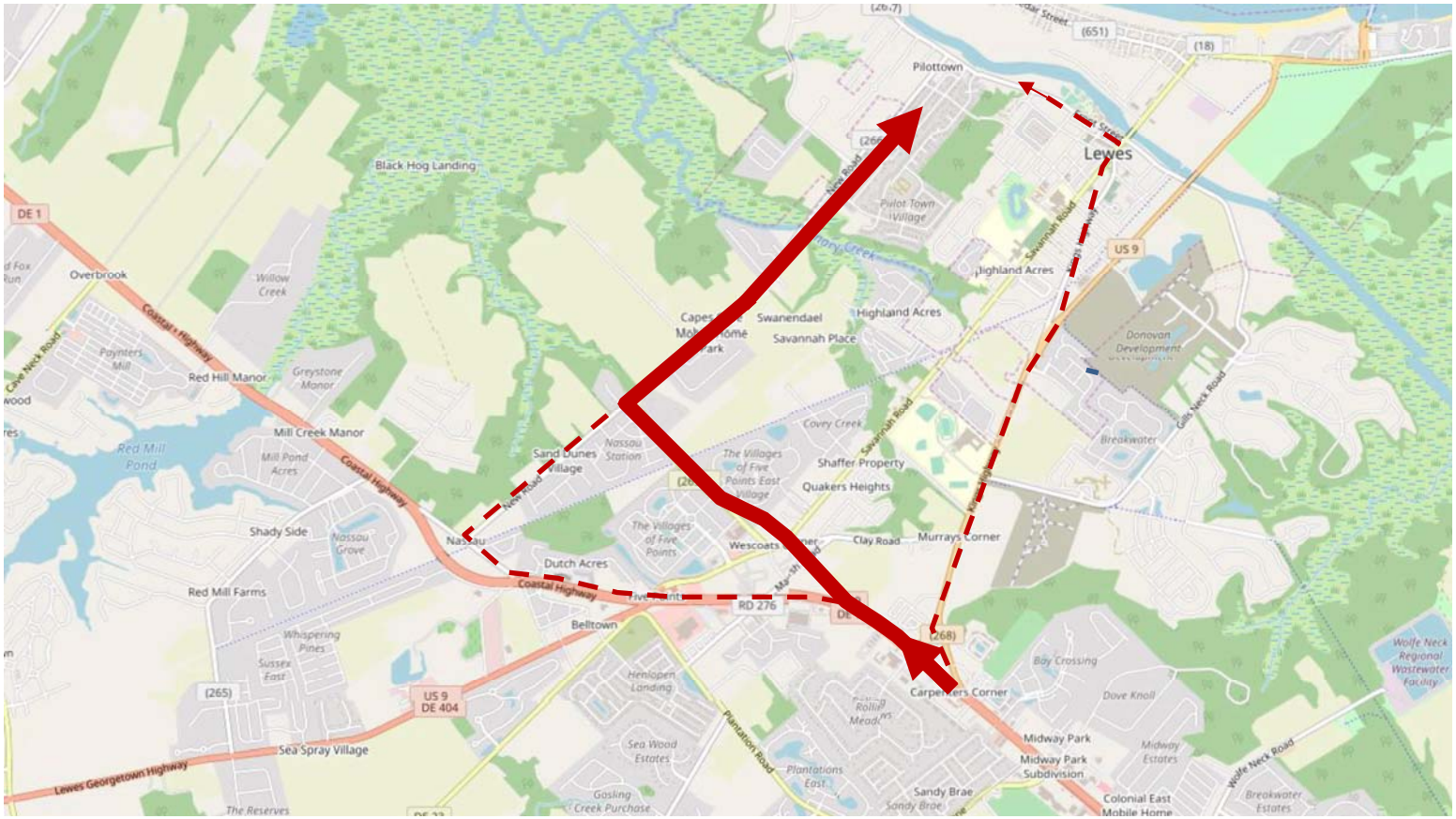
Concern #4

Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation, Old Orchard Road, Wescoats Road and Clay Road to reach Kings Highway



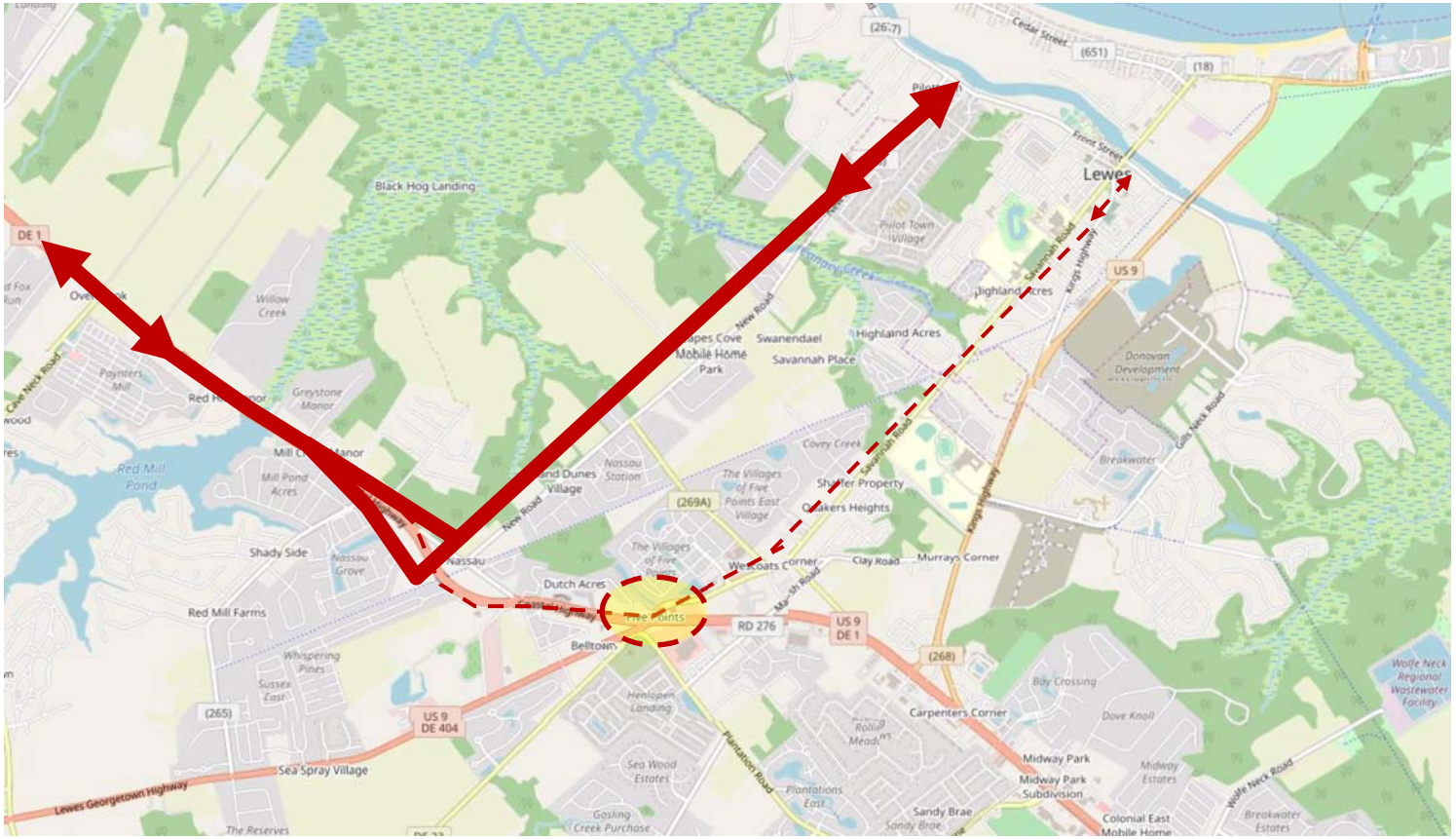
Concern #5

More northbound traffic destined to the eastern part of New Road may use Wescoats Road and Old Orchard Road instead of staying on Route 1 to Nassau Road or using Kings Highway through Lewes



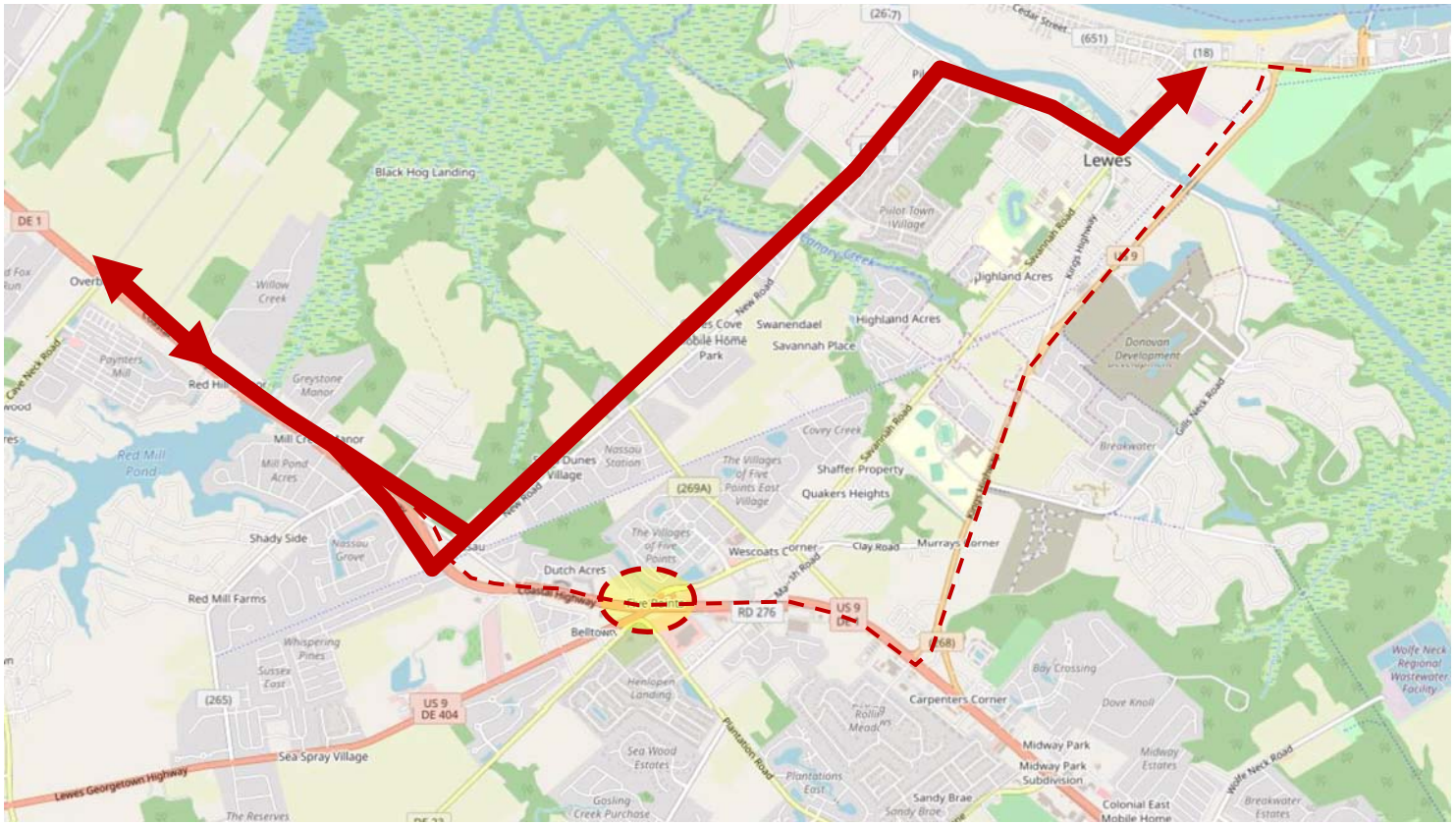
Concern #6

Route 1 traffic to and from the north could use the new Route 1 grade separation and New Road to reach Lewes

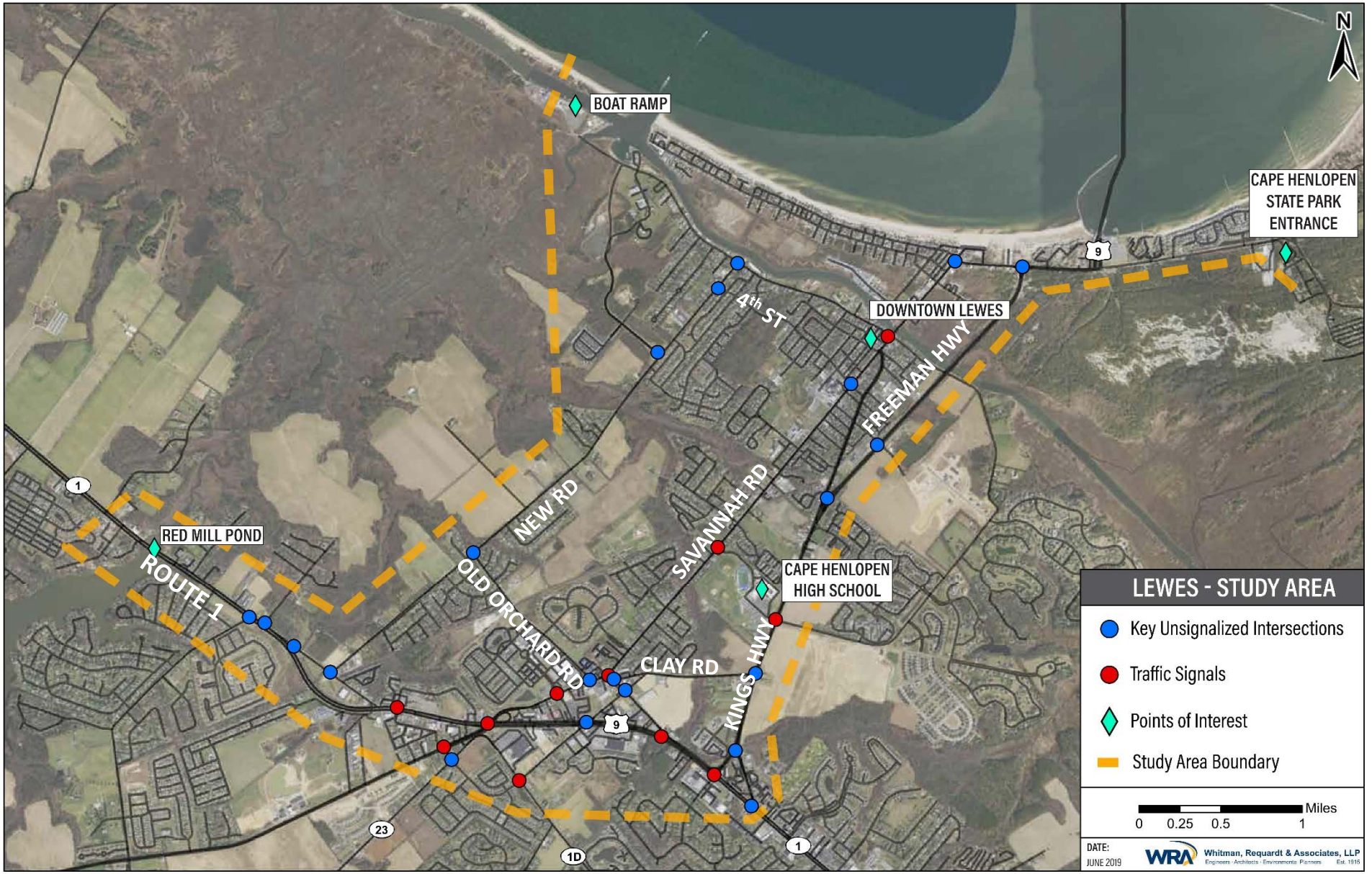


Concern #7

Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation and New Road to reach the Lewes-Cape May Ferry and Cape Henlopen State Park



Study area


N
BOAT RAMP
CAPE HENLOPEN STATE PARK ENTRANCE
DOWNTOWN LEWES
4th ST
FREEMAN HWY
NEW RD
SAVANNAH RD
RED MILL POND
ROUTE 1
OLD ORCHARD RD
CAPE HENLOPEN HIGH SCHOOL
CLAY RD
KINGS HWY
1
9
23
1D
LEWES - STUDY AREA
Key Unsignalized Intersections
Traffic Signals
Points of Interest
Study Area Boundary
Miles
0 0.25 0.5 1
DATE:
JUNE 2019
WRA
Whitman, Requardt & Associates, LLP
Engineers · Architects · Environmental Planners
Est. 1915

DelDOT capital projects

- Two projects programmed for construction are considered in this analysis
  - Realignment of Old Orchard Road at Wescoats Corner
  - SR 1, Minos Conaway Road Grade Separated Intersection

DelDOT capital projects

- Realignment of Old Orchard Road at Wescoats Corner
  - Safety project to realign Old Orchard Road to intersect Savannah Road at the Wescoats Road traffic signal
  - Planned when the Villages of Five Points was originally built
  - In design stage
  - Construction anticipated for 2022

Realignment of Old Orchard Road

T201609601 – REALIGNMENT OF OLD ORCHARD RD AT WESCOATS CORNER
DELAWARE DEPARTMENT OF TRANSPORTATION

Conceptual Design
MAY 2018

DelDOT capital projects

- SR 1, Minos Conaway Road Grade Separated Intersection
  - Safety project to grade-separate left turns to/from Route 1
  - In design stage
  - Public workshop this summer or fall
  - Construction anticipated beginning in 2023

SR 1, Minos Conaway Road

DelDOT capital projects

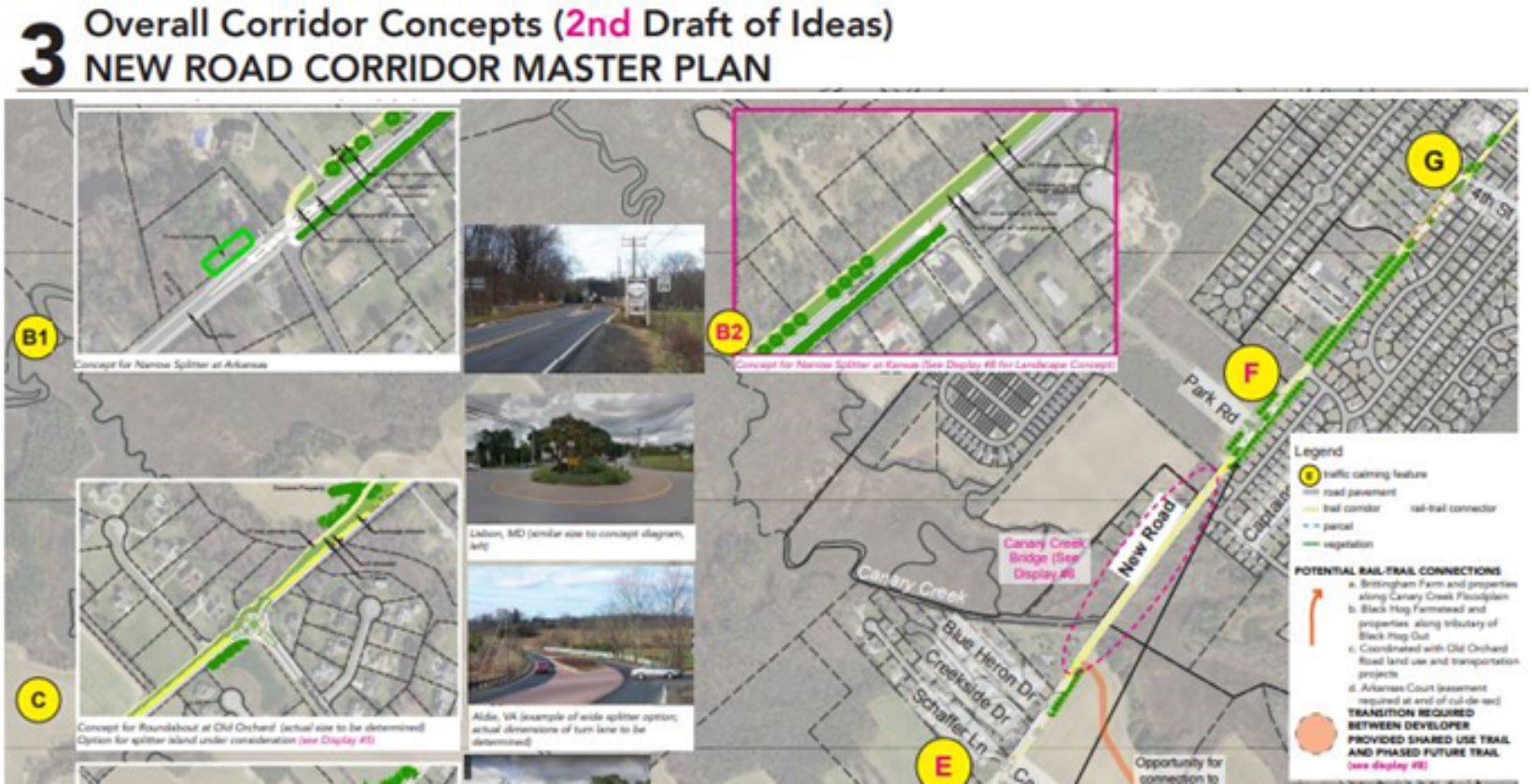
- US 9, Kings Highway, Dartmouth Drive to Freeman Highway
  - Additional capacity improvements, sidewalks and multi-use paths, intersection improvements
  - Design will begin by 2022
  - Right-of-way acquisition is funded for 2025
  - Exact scope and construction date not determined

New Road bridge over Canary Creek

- Part of “state of good repair” line in the Capital Transportation Program
- Replaces bridge over Canary Creek and raises approach roadway above flood elevation
- Construction to follow after most work is done on Old Orchard Road
- No anticipated effect on travel patterns after construction

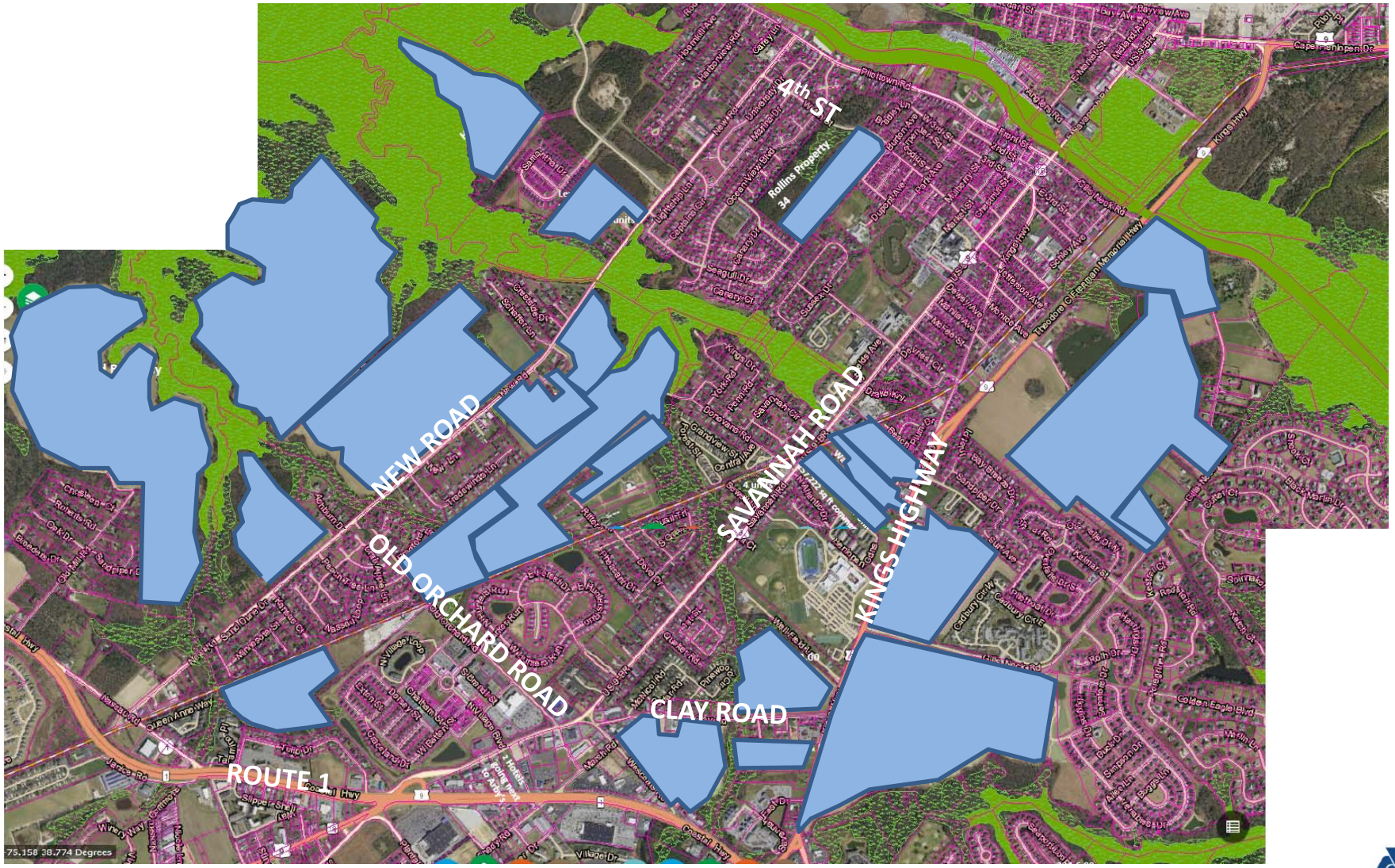
New Road Master Plan

- Will provide improvement recommendations from Nassau Road to Pilottown Road
- These improvements will be informed by the analysis we'll discuss today



Study area land use

Planned and potential development areas



Development in the study area

Existing development

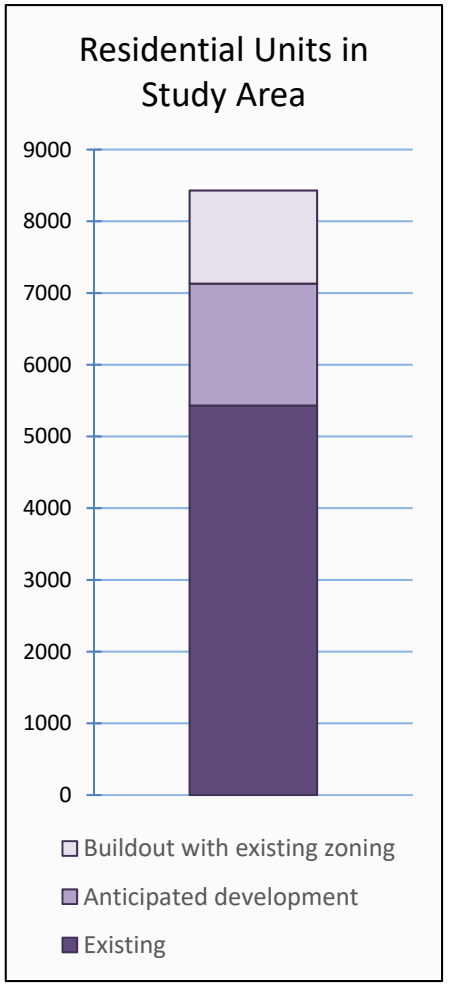
- 5,430 residential units
- Significant commercial space (data not available)

Anticipated development

- 1,700 residential units
- 400,000 square feet of commercial space

Buildout under existing zoning

- Additional 1,300 residential units

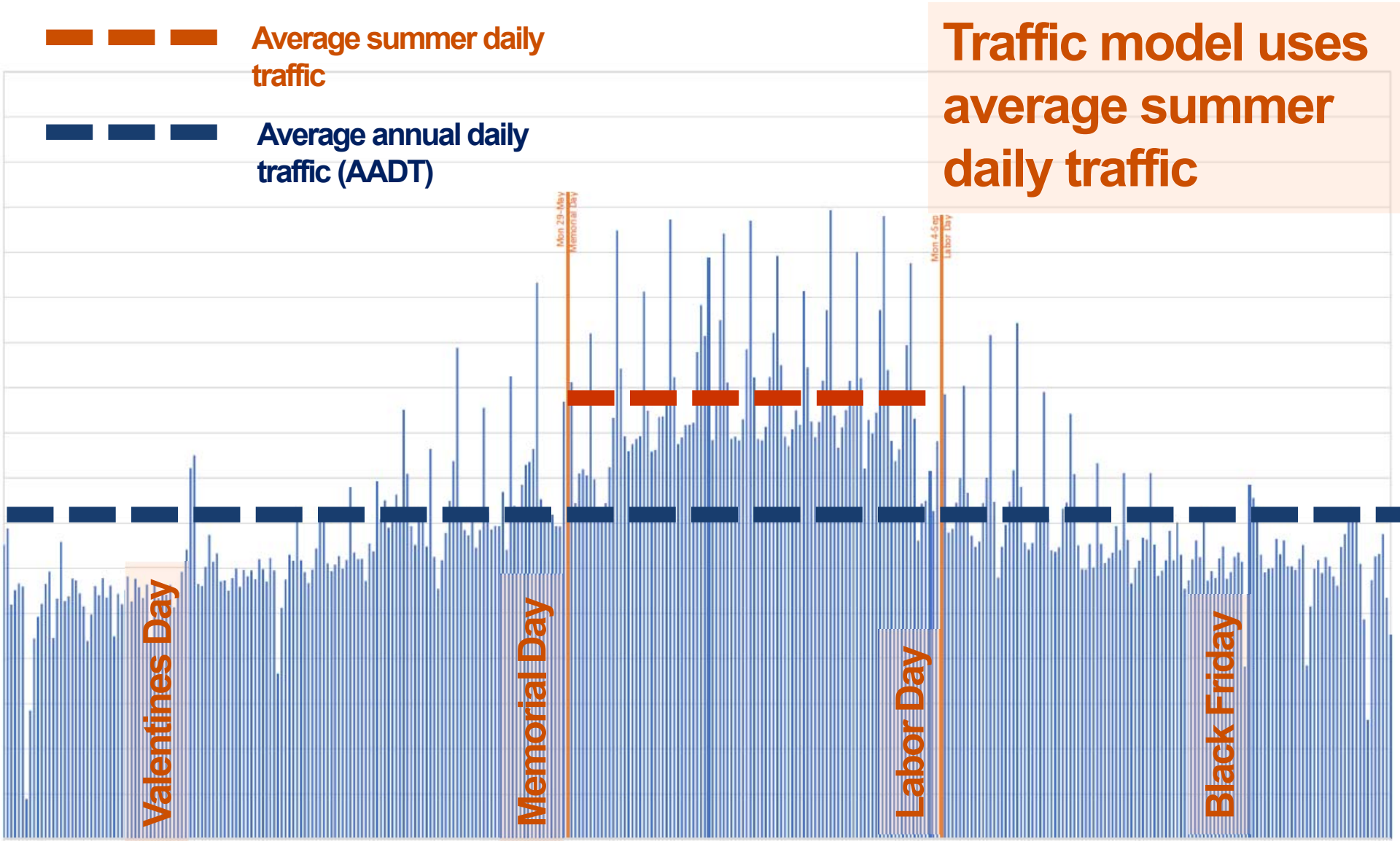


Traffic modeling

- Estimating future conditions based on:
  - The most advanced tools
  - The best available data
- Because we're estimating what might happen in the future, bear in mind that this is an imprecise process
  - Look for general trends, not specific numbers
- Average summer daily traffic
  - All days in June, July, and August
  - Includes both weekdays and weekends

Northbound Route 1 daily traffic at Route 9

illustrating each day in 2017



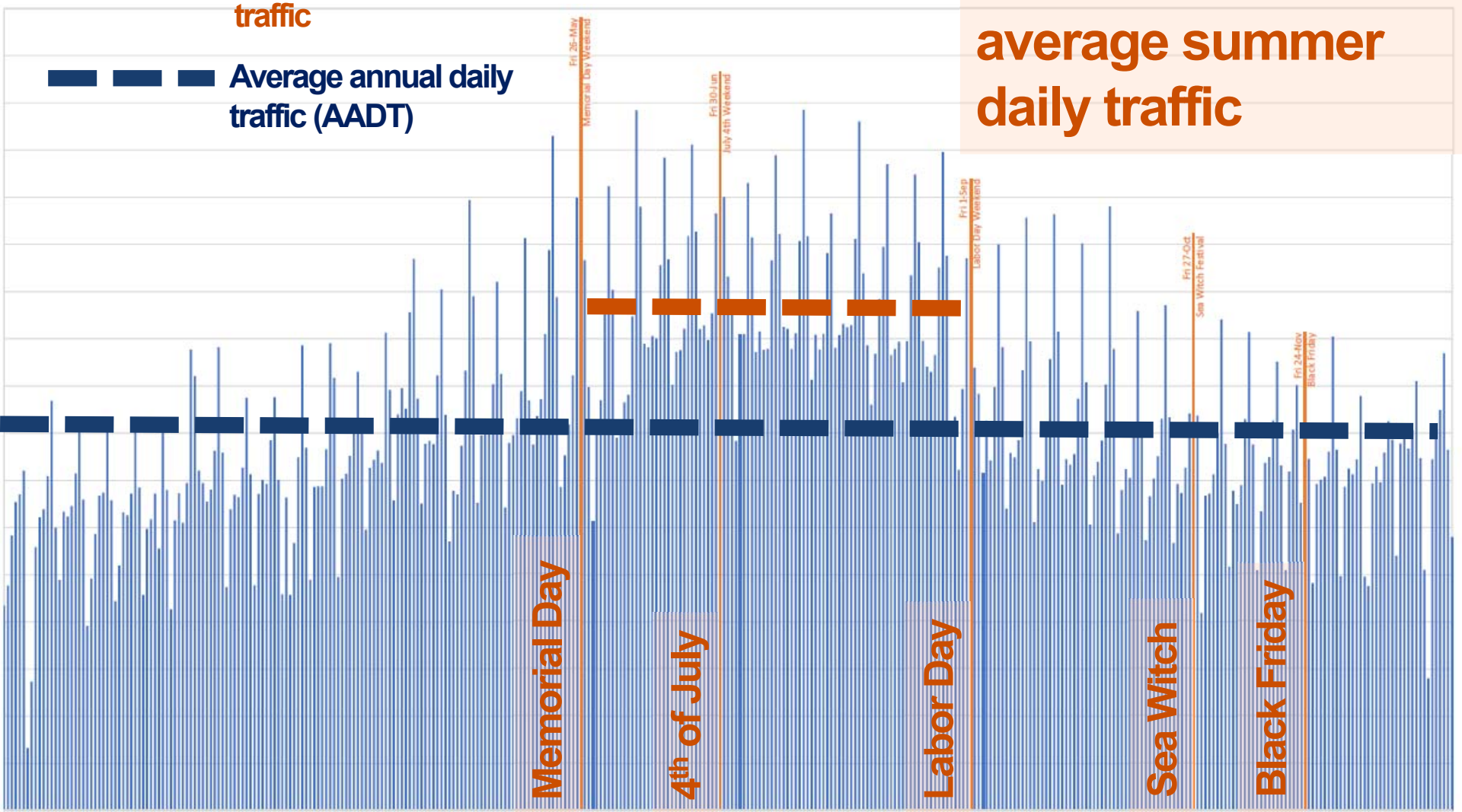
Southbound Route 1 daily traffic at Route 9

illustrating each day in 2017

Average summer daily traffic

Average annual daily traffic (AADT)

Traffic model uses average summer daily traffic



Traffic modeling

- Traffic model forecasts represent approximately the 35th highest day of the year

- 90% of days in the year will have lower daily traffic

Traffic modeling

Traffic impact studies and traffic modeling are different

- Traffic impact studies are the established standard for understanding the impact of an individual development
- Traffic modeling considers the combined impact of many developments and other changes over time

Traffic modeling

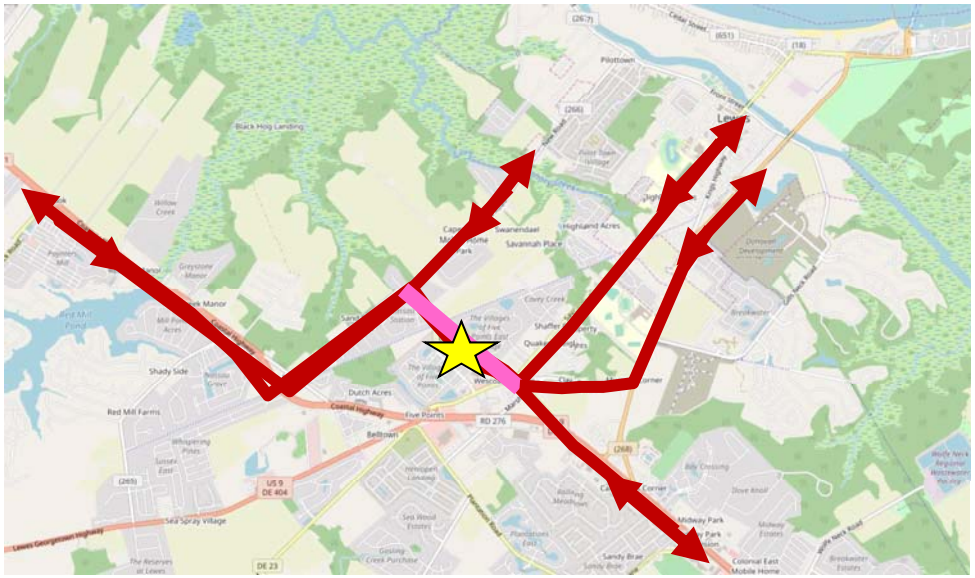
To compare the effects of capital projects, keep the land use the same:

- Scenario 1
  - Land Use: Base year plus anticipated development
  - Road Network: Existing
- Scenario 2
  - Land Use: Base year plus anticipated development
  - Road Network: Existing plus two projects:
    - Realignment of Old Orchard Road
    - SR 1/Minos Conaway Road

Compare 1 to 2

Results

- Concerns 1- 5 all involve the potential for traffic increases on Old Orchard Road.
- The expected combined effects of the Old Orchard Road and SR 1/Minos Conaway Road projects on Old Orchard Road are described on the following slides.

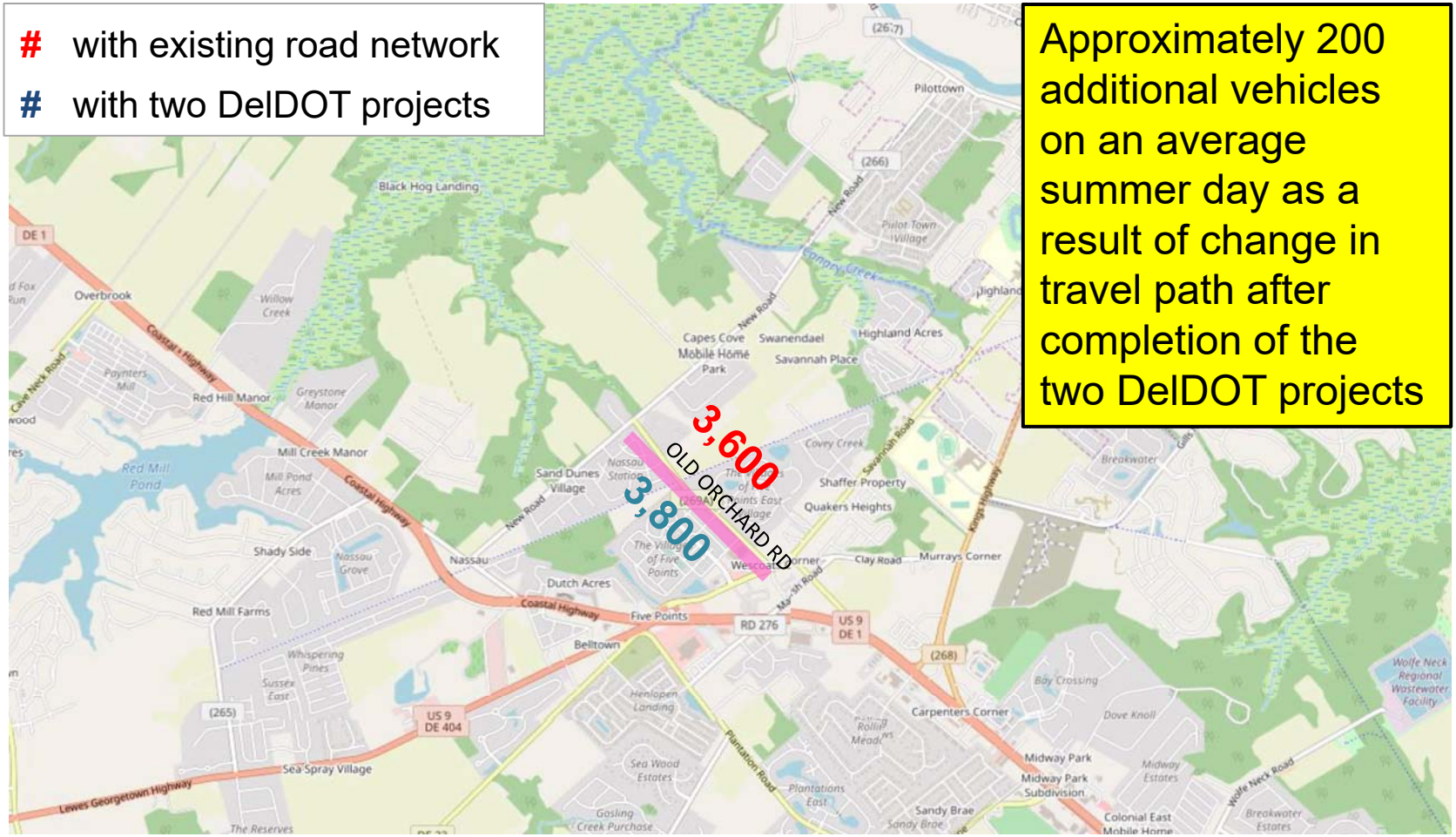


Average summer daily traffic volume on Old Orchard Road

with and without DelDOT projects

with existing road network

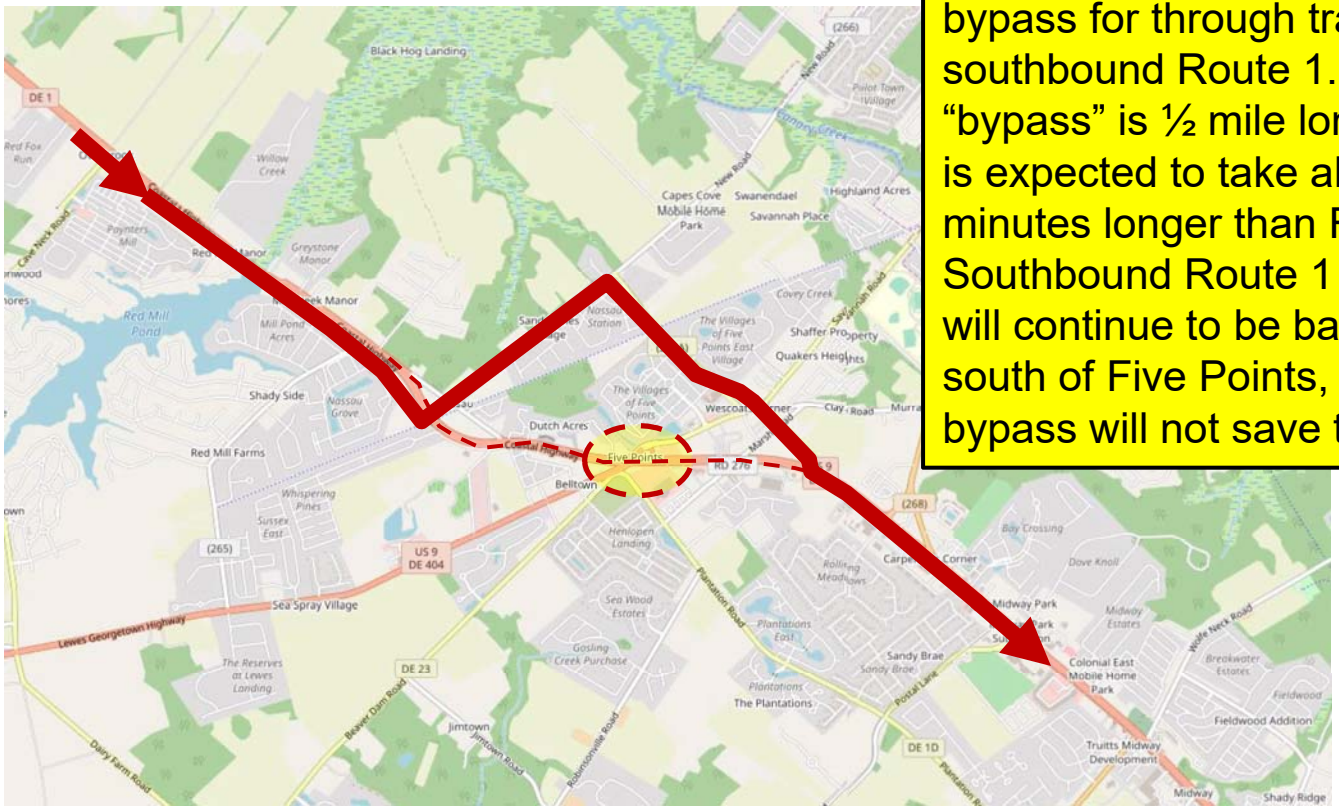
with two DelDOT projects



Approximately 200 additional vehicles on an average summer day as a result of change in travel path after completion of the two DelDOT projects

Results

Concern #1: Southbound Route 1 traffic could use the off-ramp at the new Route 1 grade separation, along with New Road and relocated Old Orchard Road, to bypass the Five Points intersection through Wescoats Corner

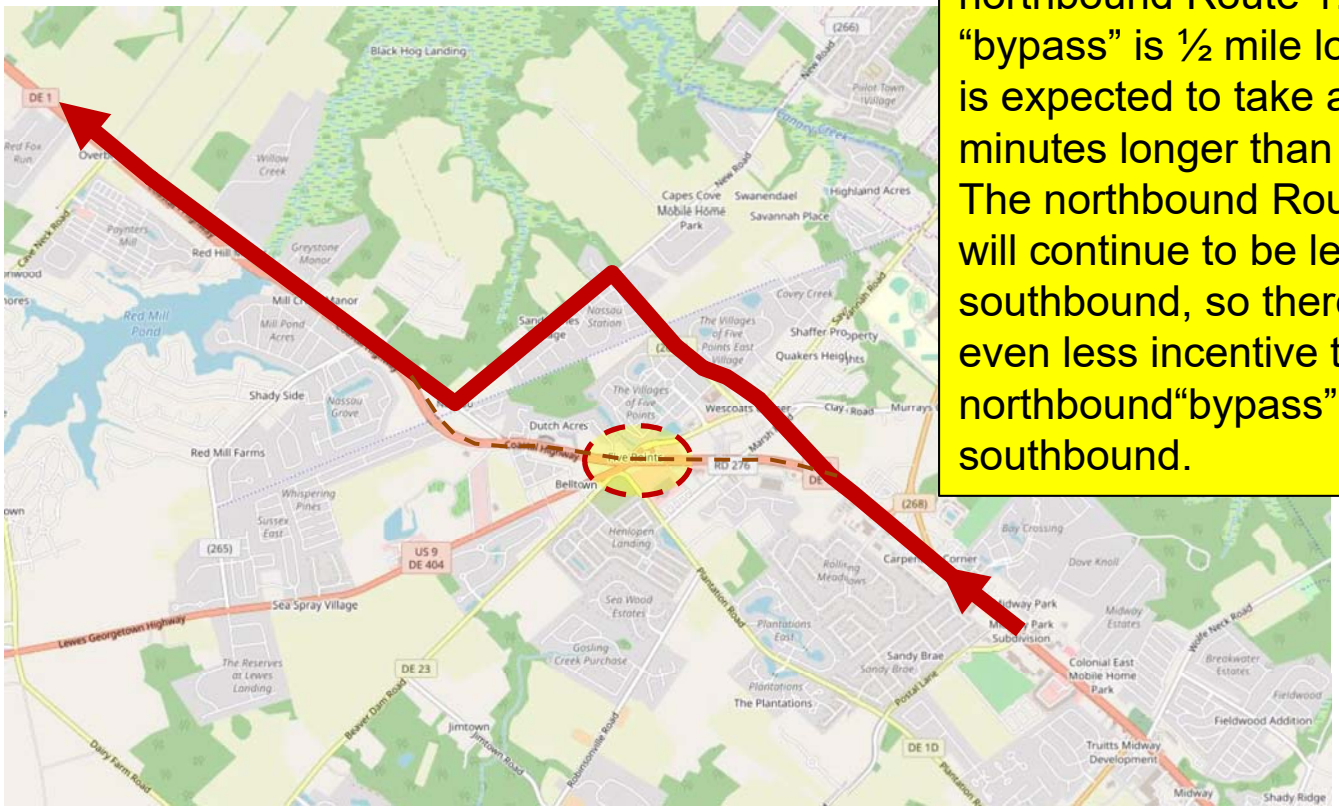


Minimal traffic is expected to use Wescoats Corner as a bypass for through traffic on southbound Route 1. The “bypass” is ½ mile longer and is expected to take about 2½ minutes longer than Route 1. Southbound Route 1 traffic will continue to be backed up south of Five Points, so a bypass will not save time.

Results

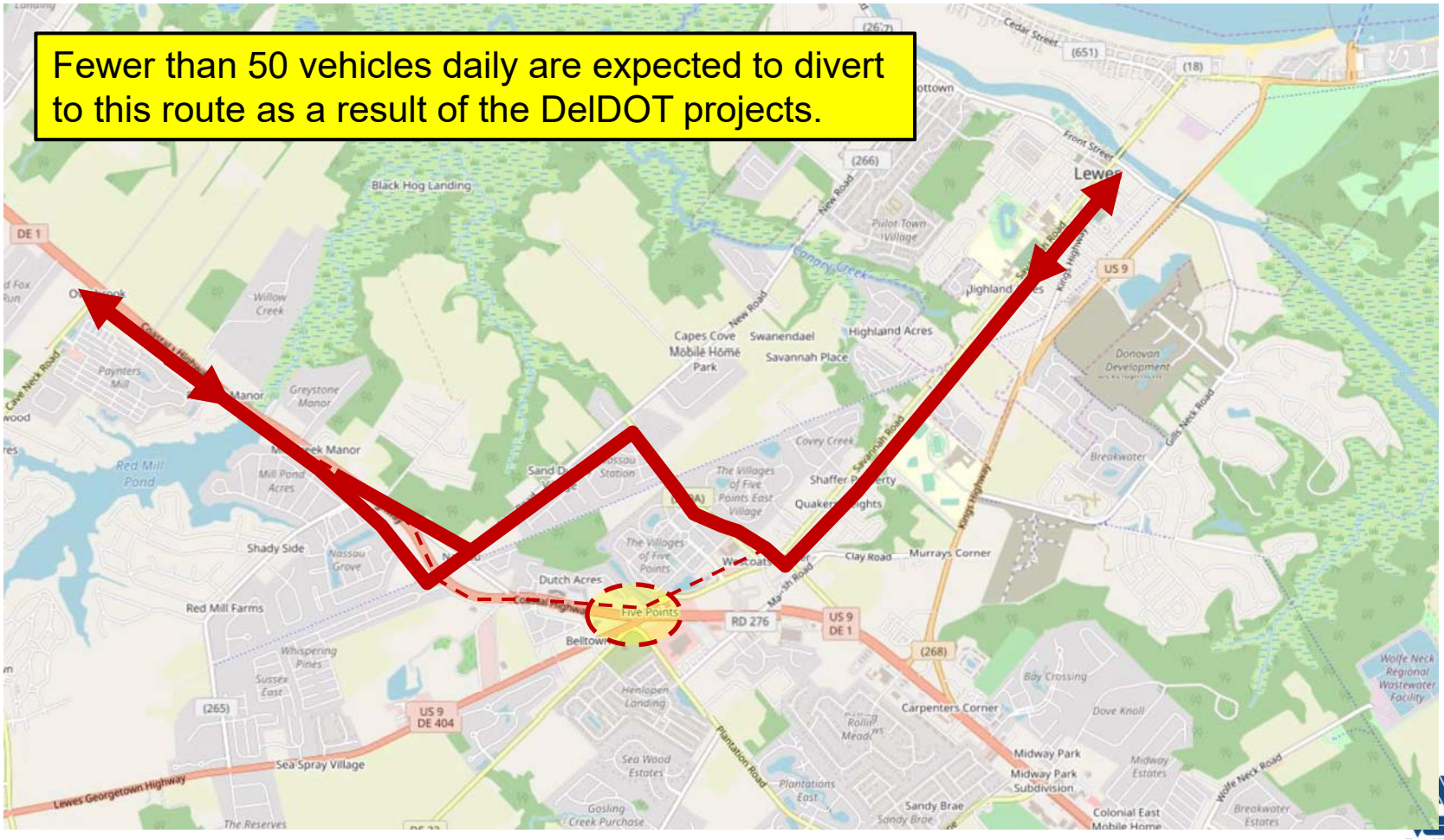
Concern #2: Northbound Route 1 traffic could use Wescoats Road and relocated Old Orchard Road to bypass the Five Points intersection via New Road

Minimal traffic is expected to use Wescoats Corner as a bypass for through traffic on northbound Route 1. The “bypass” is ½ mile longer and is expected to take about 3 minutes longer than Route 1. The northbound Route 1 delay will continue to be less than southbound, so there will be even less incentive to use the northbound“bypass” than southbound.



Results

Concern #3: Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation, along with Old Orchard Road, to reach Savannah Road and Lewes



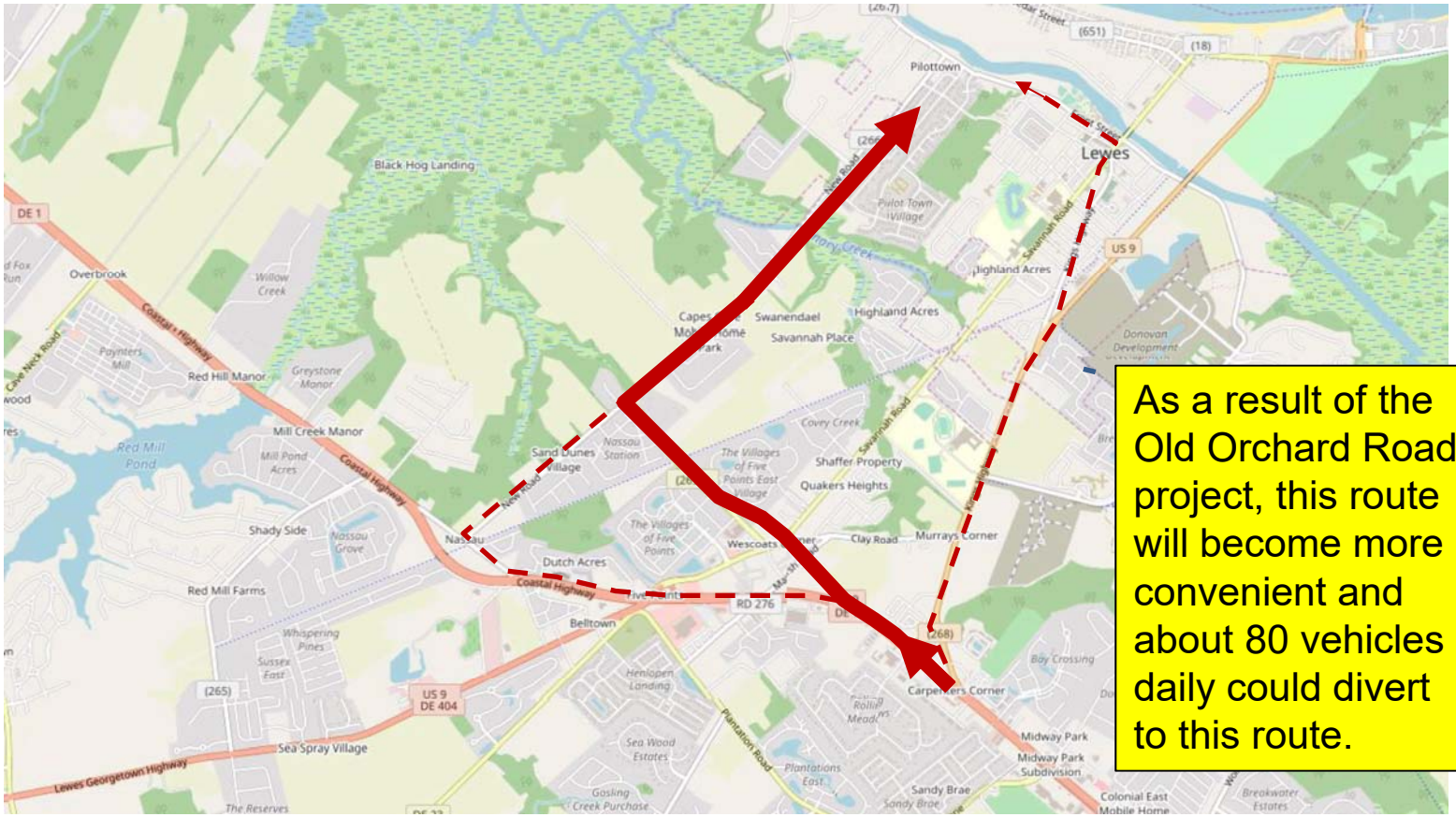
Results

Concern #4 Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation, Old Orchard Road, Wescoats Road and Clay Road to reach Kings Highway

As a result of the two DelDOT projects, approximately 20 additional vehicles daily are expected to take this route.

Results

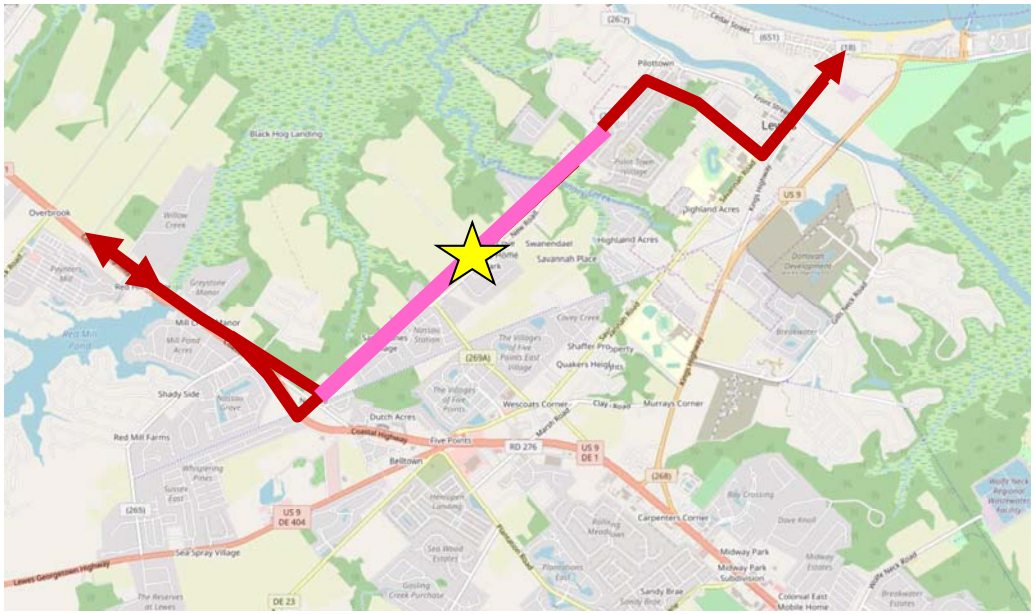
Concern #5 More northbound traffic destined to the eastern part of New Road may use Wescoats Road and Old Orchard Road instead of staying on Route 1 to Nassau Road or using Kings Highway through Lewes



As a result of the Old Orchard Road project, this route will become more convenient and about 80 vehicles daily could divert to this route.

Results

- Concerns 6 and 7 involve the potential for traffic increases on New Road.
- The expected combined effects of the Old Orchard Road and SR 1/Minos Conaway Road projects on New Road are described on the following slides.



Who uses New Road now

- Local residents
- Others going to destinations best reached via New Road (e.g. western portion of Lewes, UD, boat ramp)

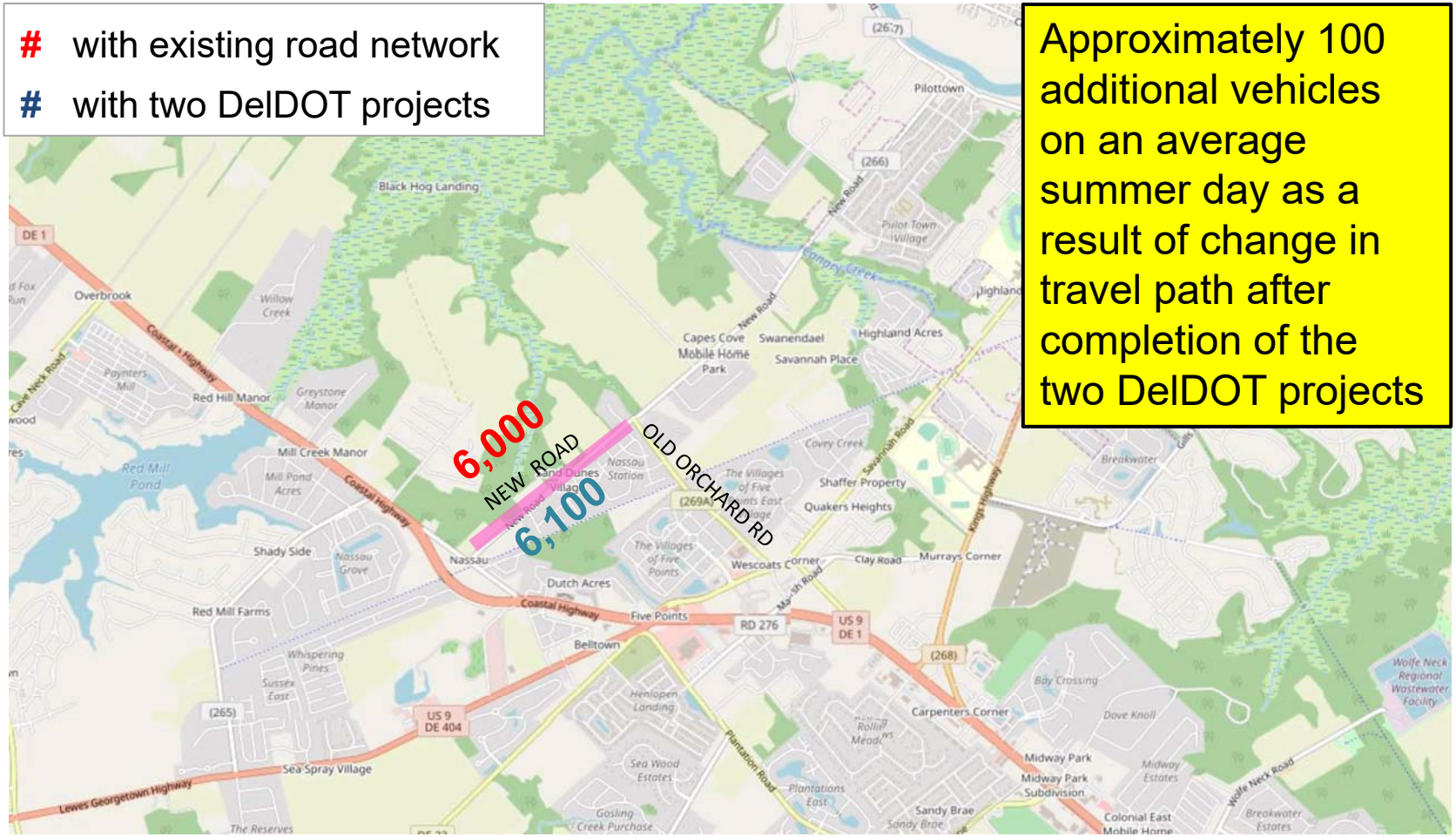
In counts taken on a summer Saturday in 2013, peak hour volume turning left into Nassau Road was over half the volume turning left into Savannah Road. The model is consistent with this pattern.

Average summer daily traffic volume on New Road west of Old Orchard Road

with and without DelDOT projects

with existing road network

with two DelDOT projects



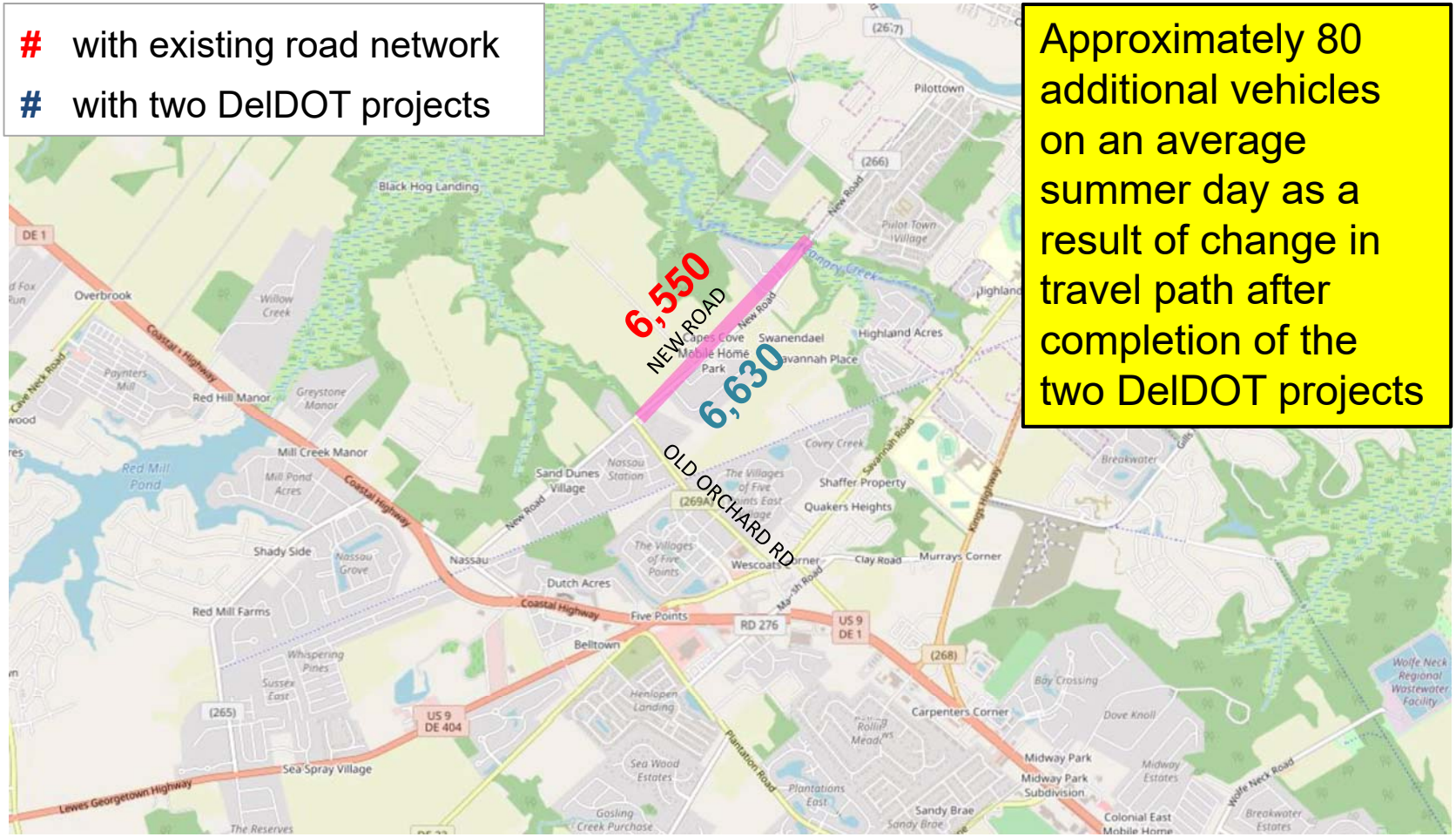
Approximately 100 additional vehicles on an average summer day as a result of change in travel path after completion of the two DelDOT projects

Average summer daily traffic volume on New Road east of Old Orchard Road

with and without DelDOT projects

with existing road network

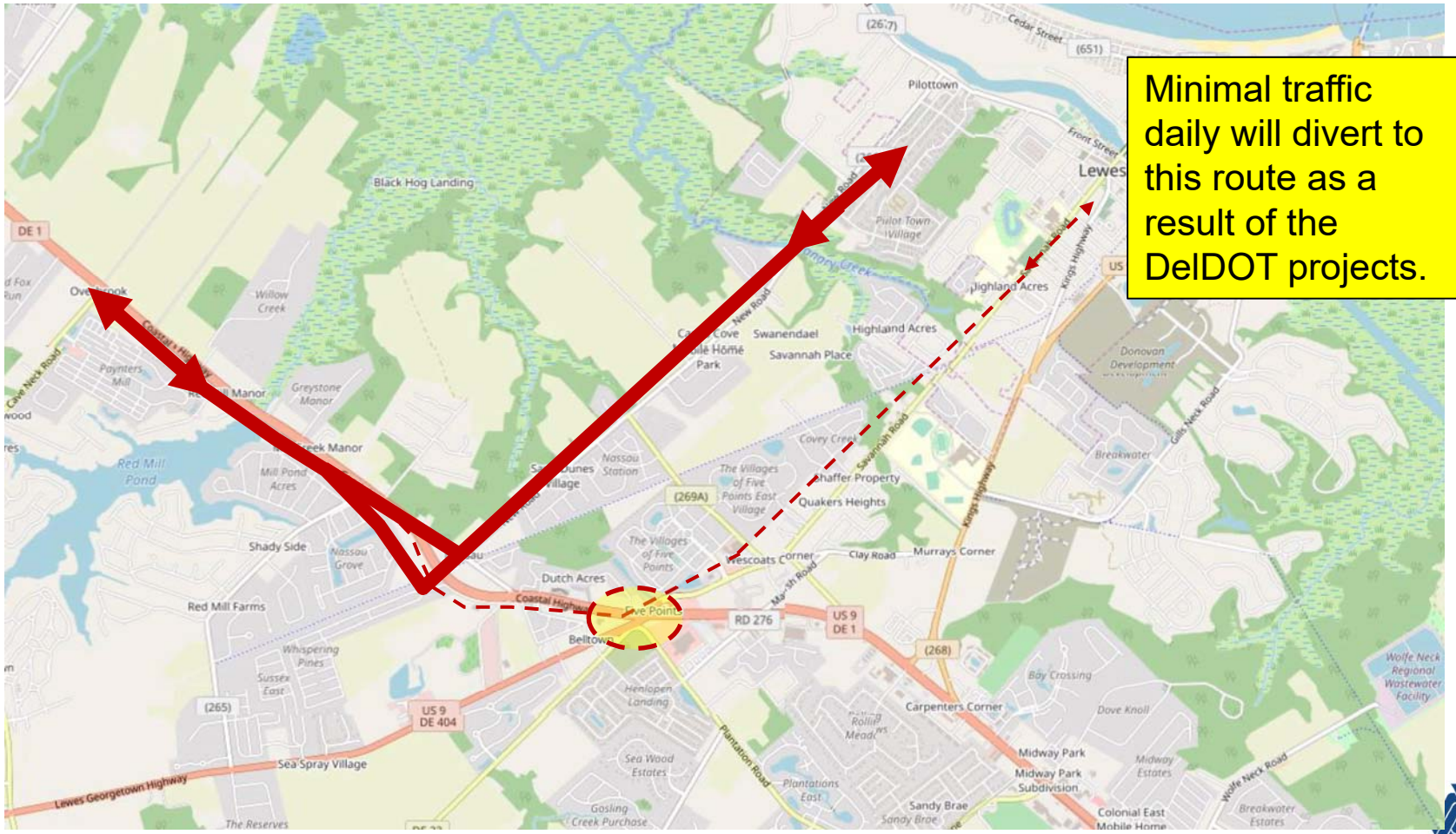
with two DelDOT projects



Approximately 80 additional vehicles on an average summer day as a result of change in travel path after completion of the two DelDOT projects

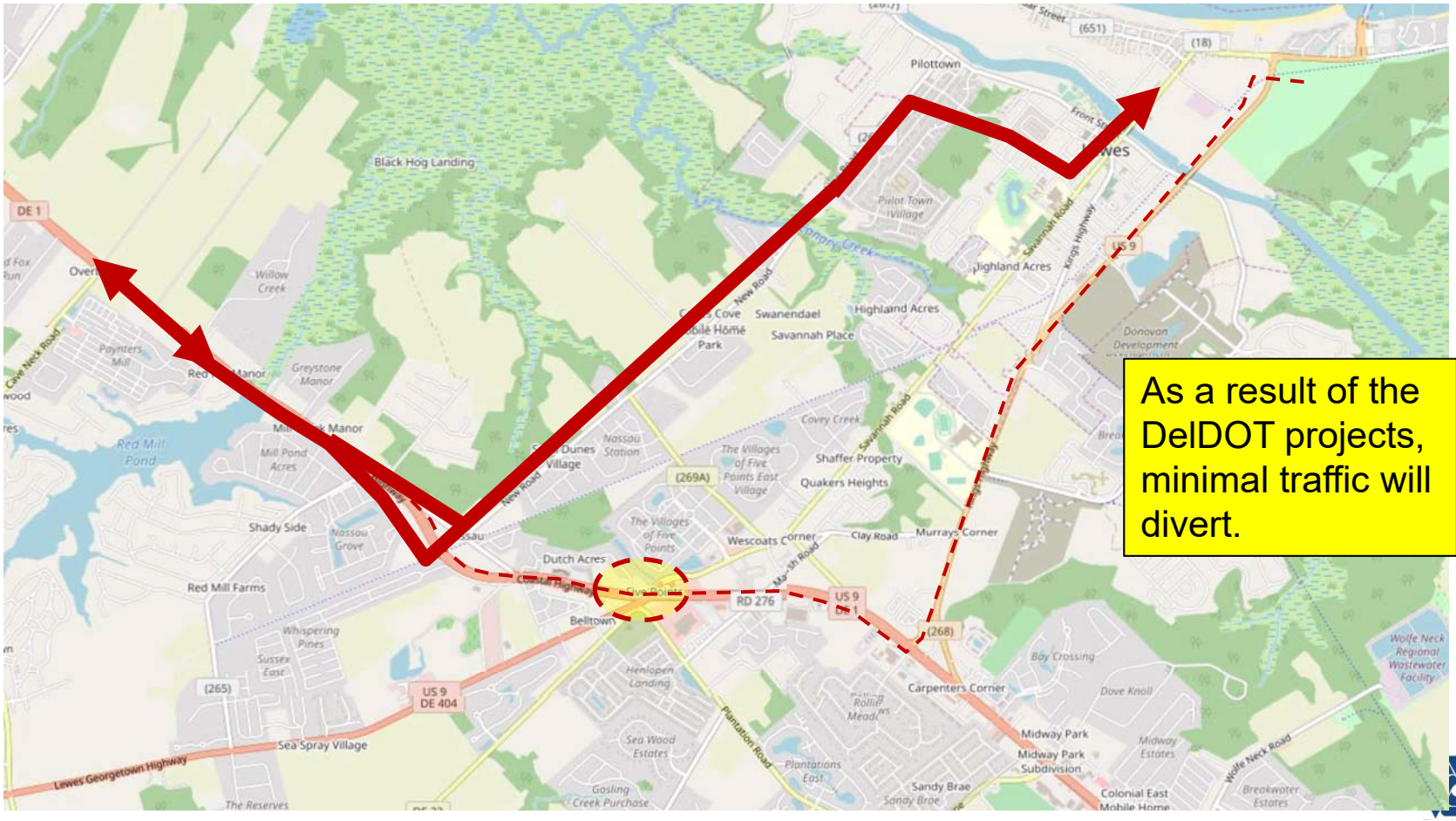
Results

Concern #6 Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation and New Road to reach downtown Lewes



Results

Concern #7 Route 1 traffic to and from the north could use the ramps at the new Route 1 grade separation and New Road to reach the Lewes-Cape May Ferry and Cape Henlopen State Park



Conclusions

- Building the realignment of Old Orchard Road and the SR 1/Minos Conaway Road grade separation will divert a small amount of traffic to nearby roads:
  - About 200 vehicles daily on Old Orchard Road (an increase of 5.5%)
  - About 100 vehicles daily on New Road between Nassau Road and Old Orchard Road (an increase of 1.7%)
  - About 80 vehicles daily on New Road east of Old Orchard Road (an increase of 1.2%)
- Anticipated diversions are local traffic, not through traffic