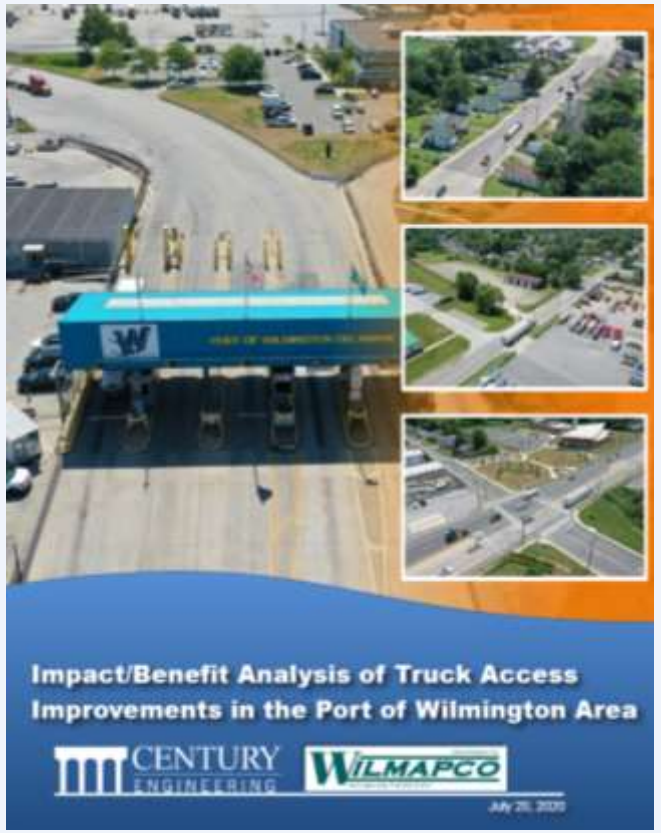
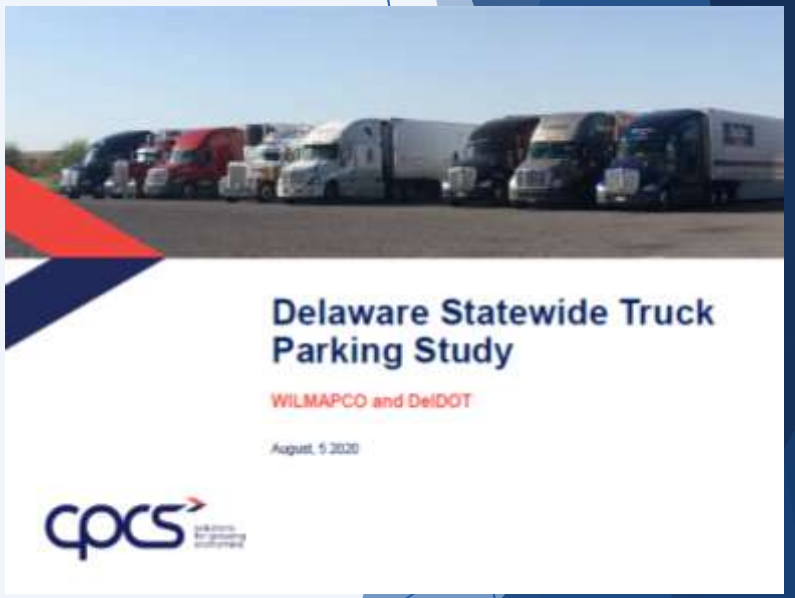
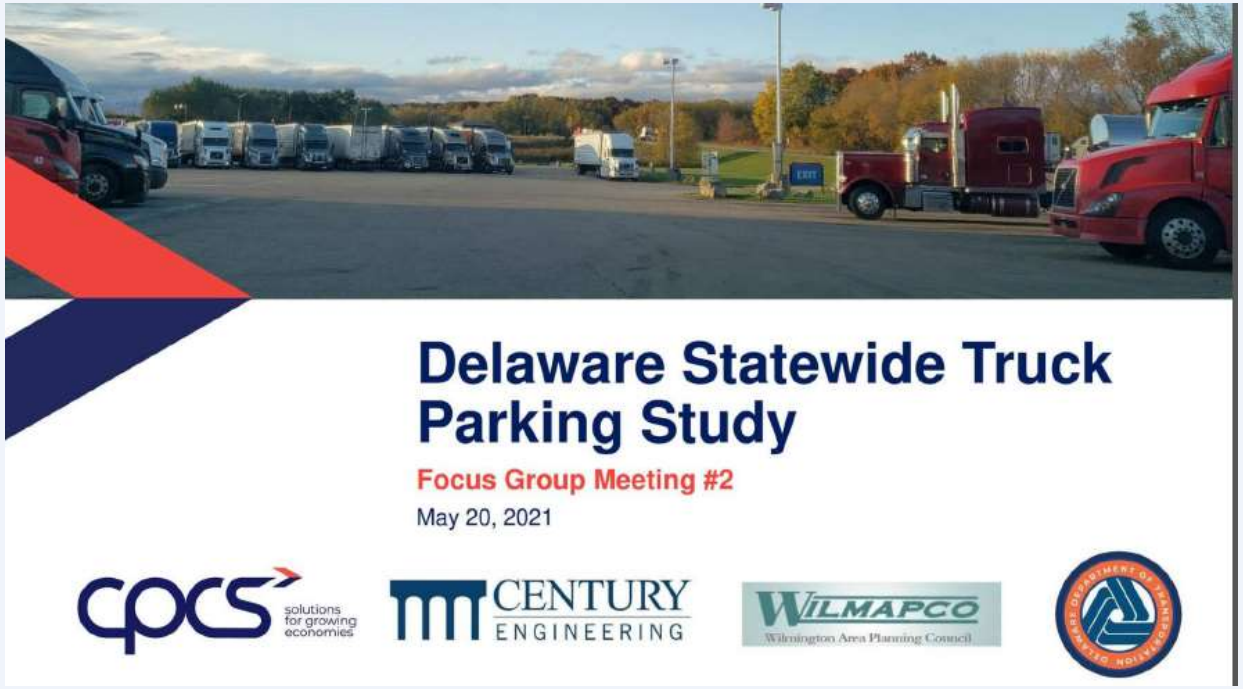
Freight Planning Studies Update



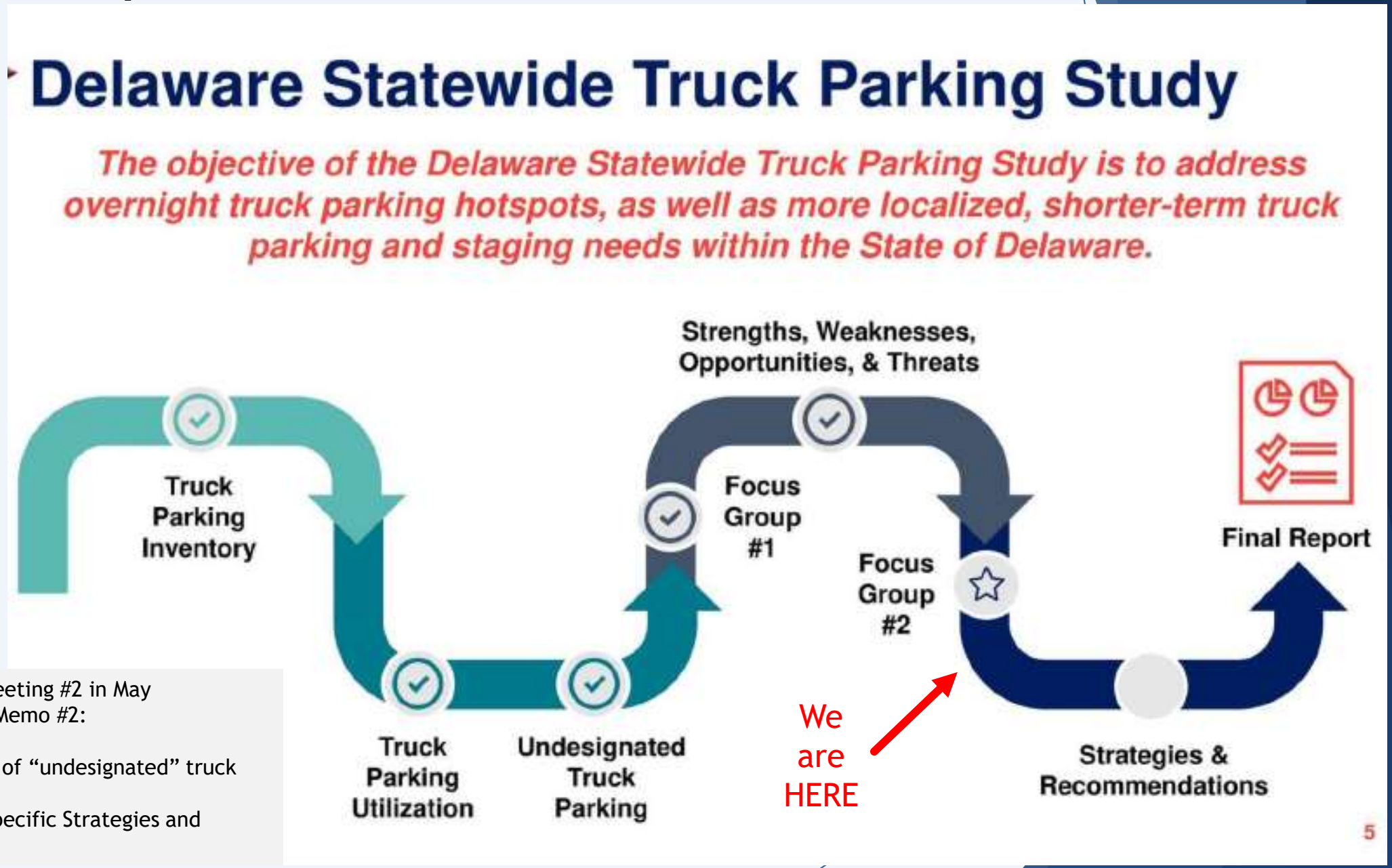


WILMAPCO PAC
June 2021

#1: Delaware Statewide Truck Parking Study



Progress Update

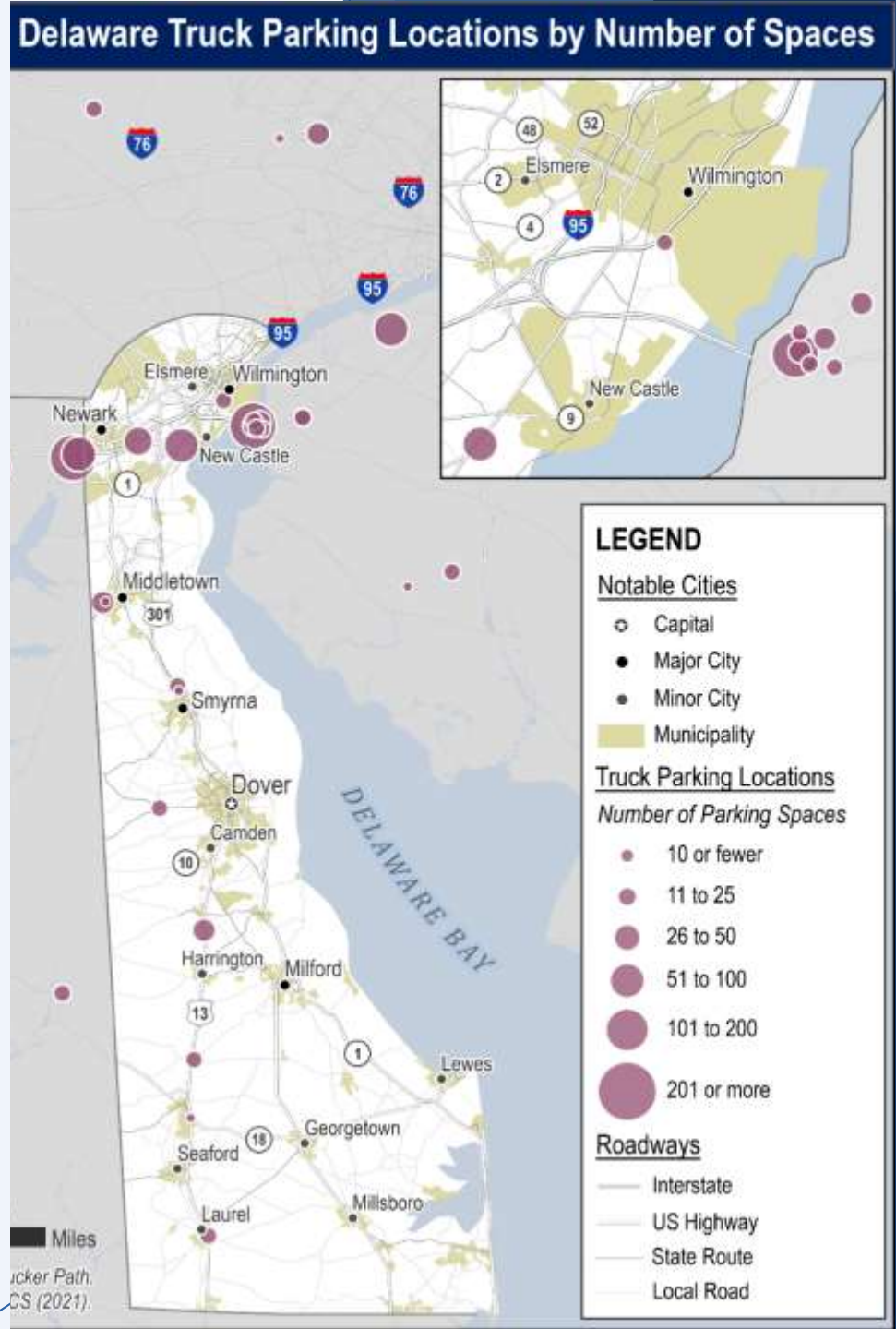


- Held Focus Group Meeting #2 in May
- Produced Technical Memo #2: SWOT Analysis (May)
- Developed locations of “undesignated” truck parking clusters
- Developing region-specific Strategies and Recommendations

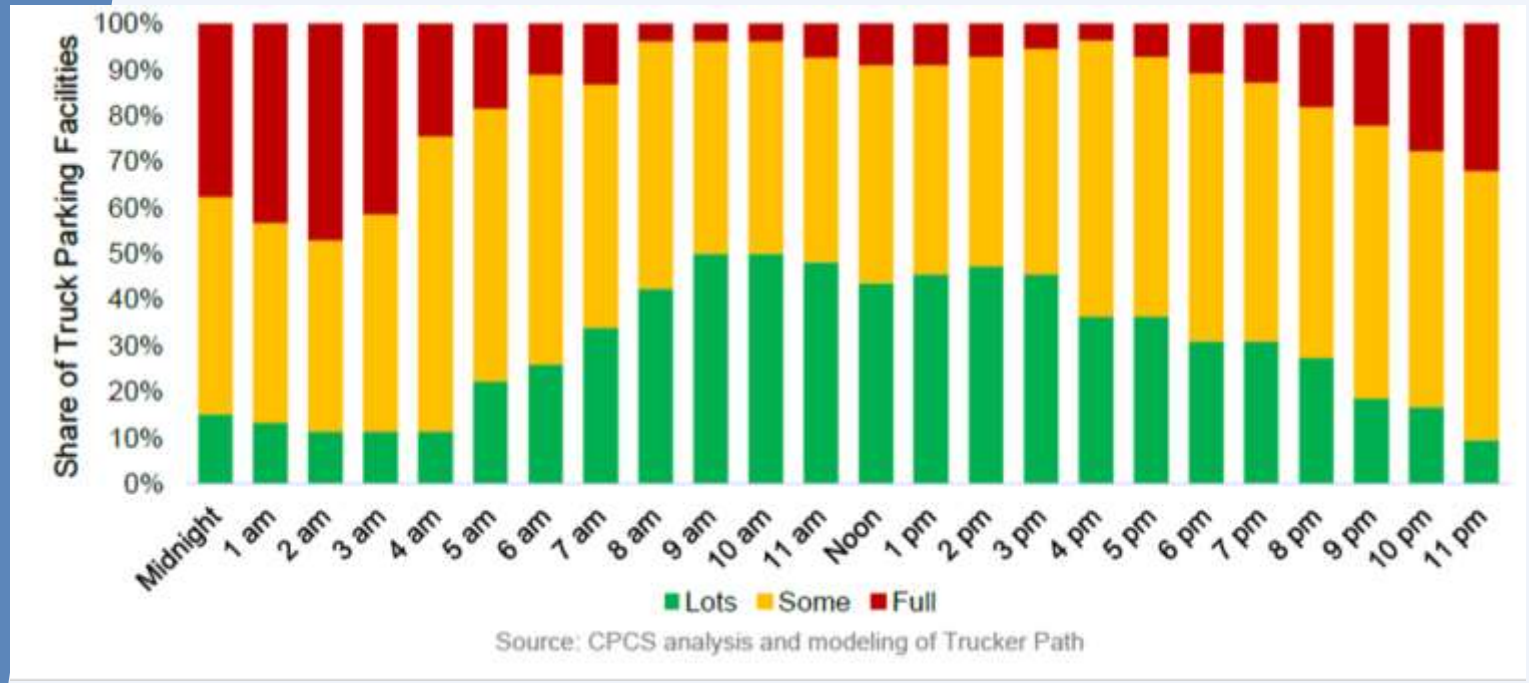
Existing Truck Parking

Title	Public/ Private	Validated Parking Spaces	State	Overnight Parking Authorized (DE Only)
Wawa	Private	3	DE	No
Smyrna Rest Area	Public	24	DE	Yes
Biden Welcome Center	Public	52	DE	Yes
Royal Farms	Private	5	DE	No
Royal Farms	Private	10	DE	No
Royal Farms	Private	15	DE	No
Royal Farms	Private	5	DE	No
Christiana Truck Stop	Private	24	DE	Yes
Oasis Travel Plaza	Private	20	DE	Yes
Shore Stop #288 - BP (paid parking)	Private	28	DE	Yes
301 Plaza	Private	42	DE	Yes
$ Parking Delaware Truck Plaza	Private	109	DE	Yes

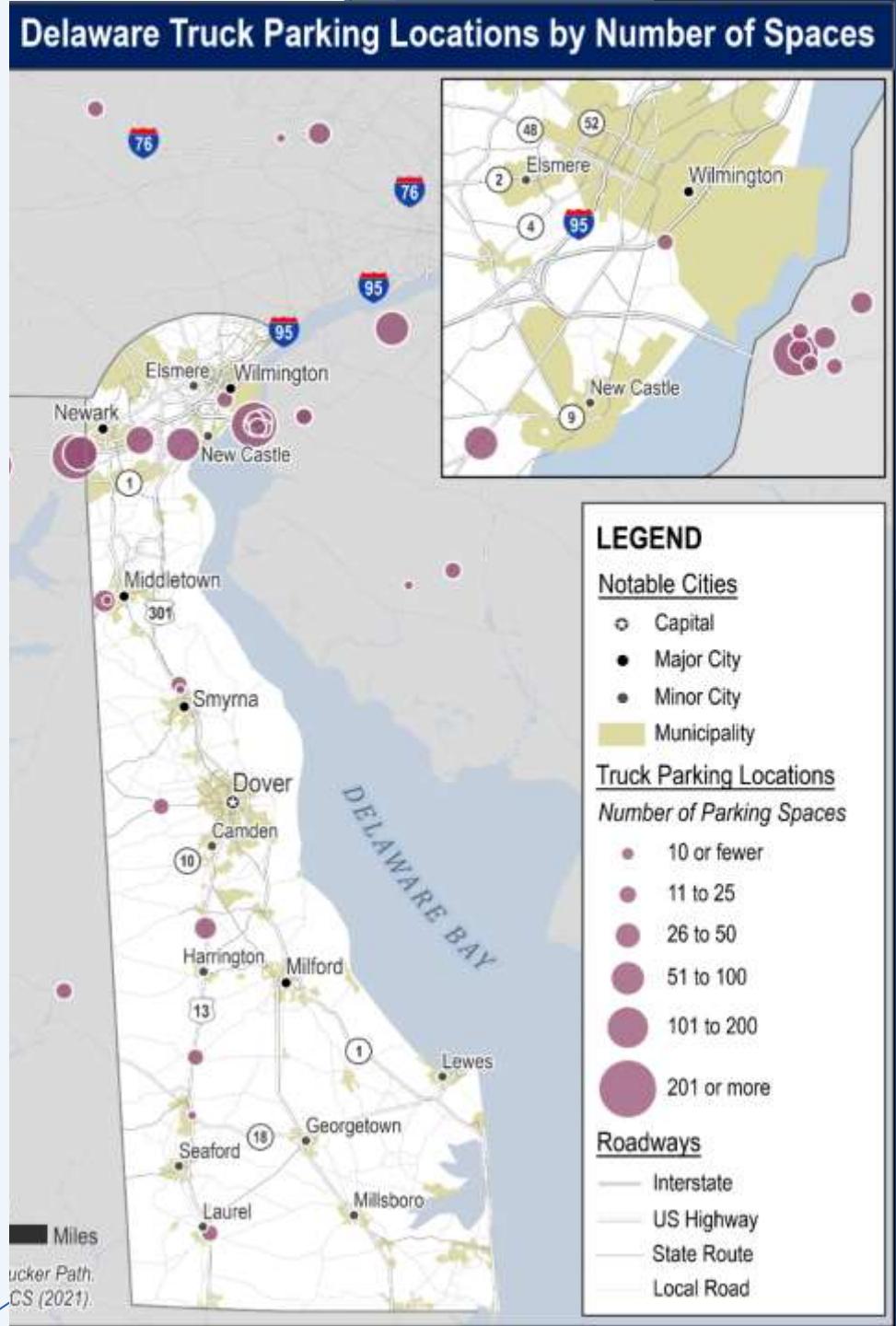
- 374 spaces (I-95 & 279 exit); 403 spaces (NJ – Deepwater)

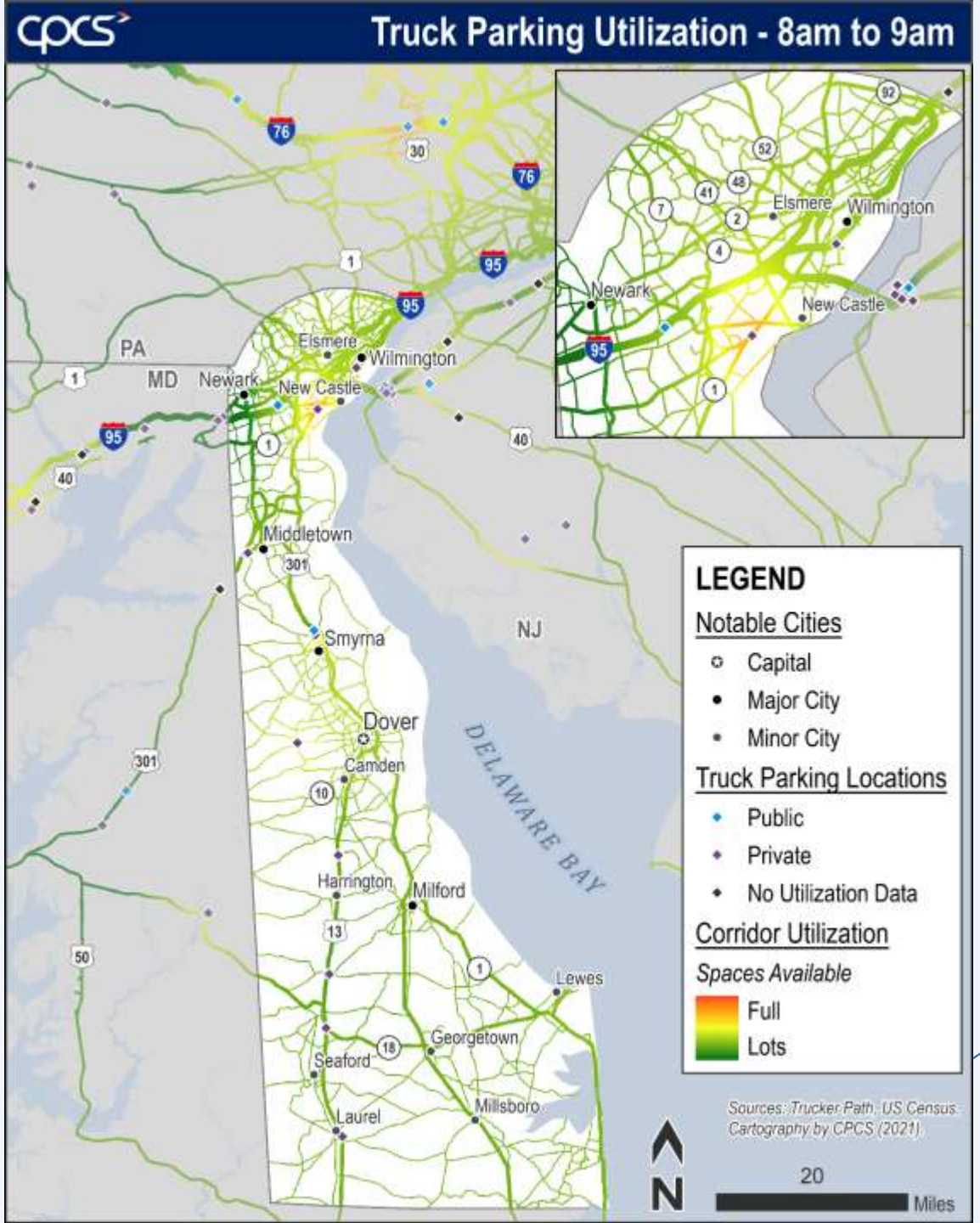


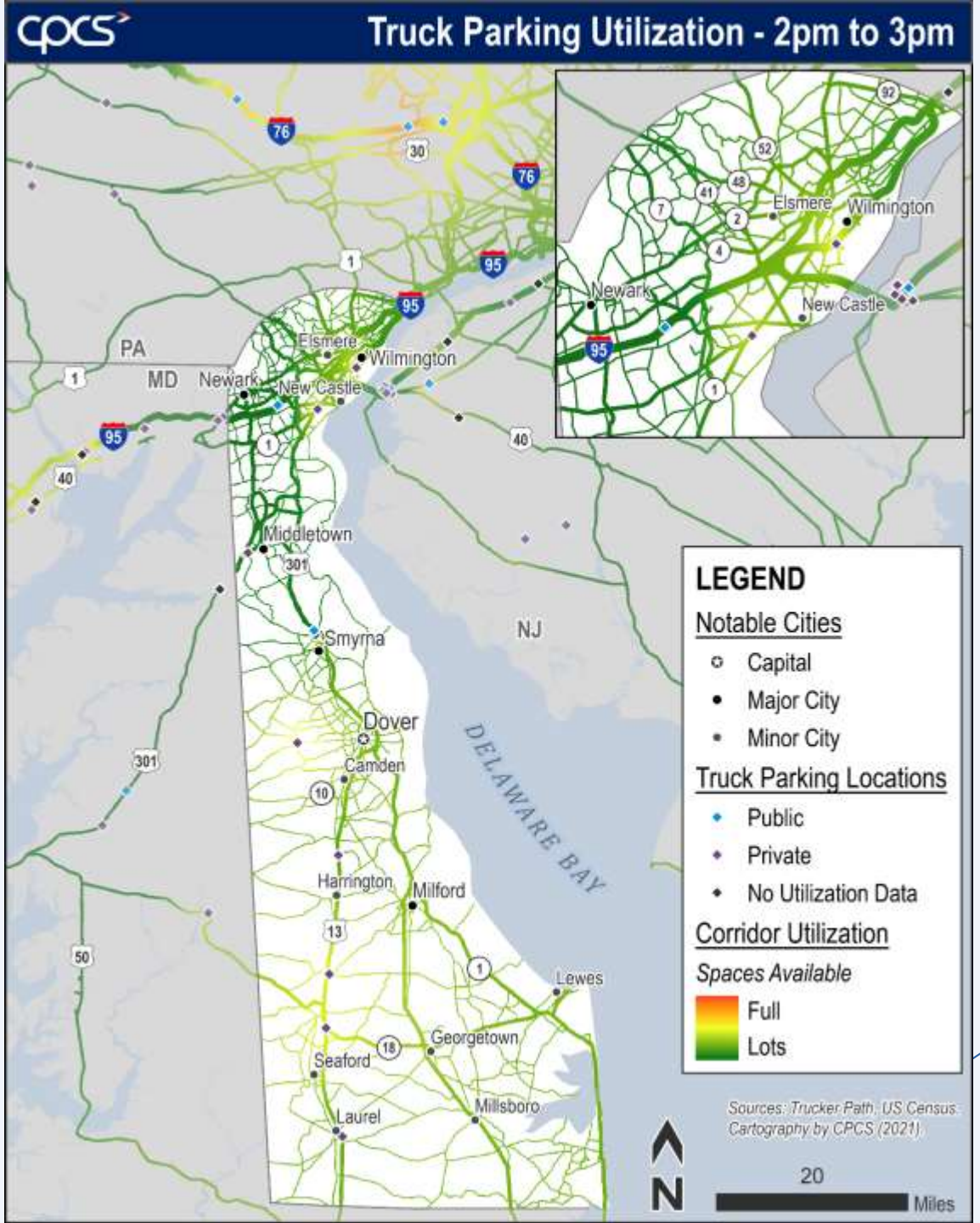
Statewide Truck Parking Utilization



- **Morning (8 am to 9 am):** Low utilization throughout most of the state, except for the New Castle area
- **Afternoon (2 pm to 3 pm):** lowest utilization levels of the day.
- **Evening (8 pm to 9 pm):** Higher utilization levels statewide, with truck parking particularly constrained near Seaford and west of Dover.
- **Early morning (2 am to 3 am):** Truck parking facilities statewide experience their highest utilization levels of the day, as truck parking availability is significantly constrained, especially in northern Delaware near I-95 and urban areas.




cpcs
Truck Parking Utilization - 8am to 9am
PA
MD
NJ
Newark
New Castle
Elsmere
Wilmington
Middletown
Smyrna
Dover
Camden
Harrington
Milford
Lewes
Georgetown
Seaford
Laurel
Millsboro
DELAWARE BAY
LEGEND
Notable Cities
Capital
Major City
Minor City
Truck Parking Locations
Public
Private
No Utilization Data
Corridor Utilization
Spaces Available
Full
Lots
Sources: Trucker Path, US Census
Cartography by CPCS (2021)
N
20
Miles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Truck Parking Utilization - 2pm to 3pm
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Wilmington
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Smyrna
Dover
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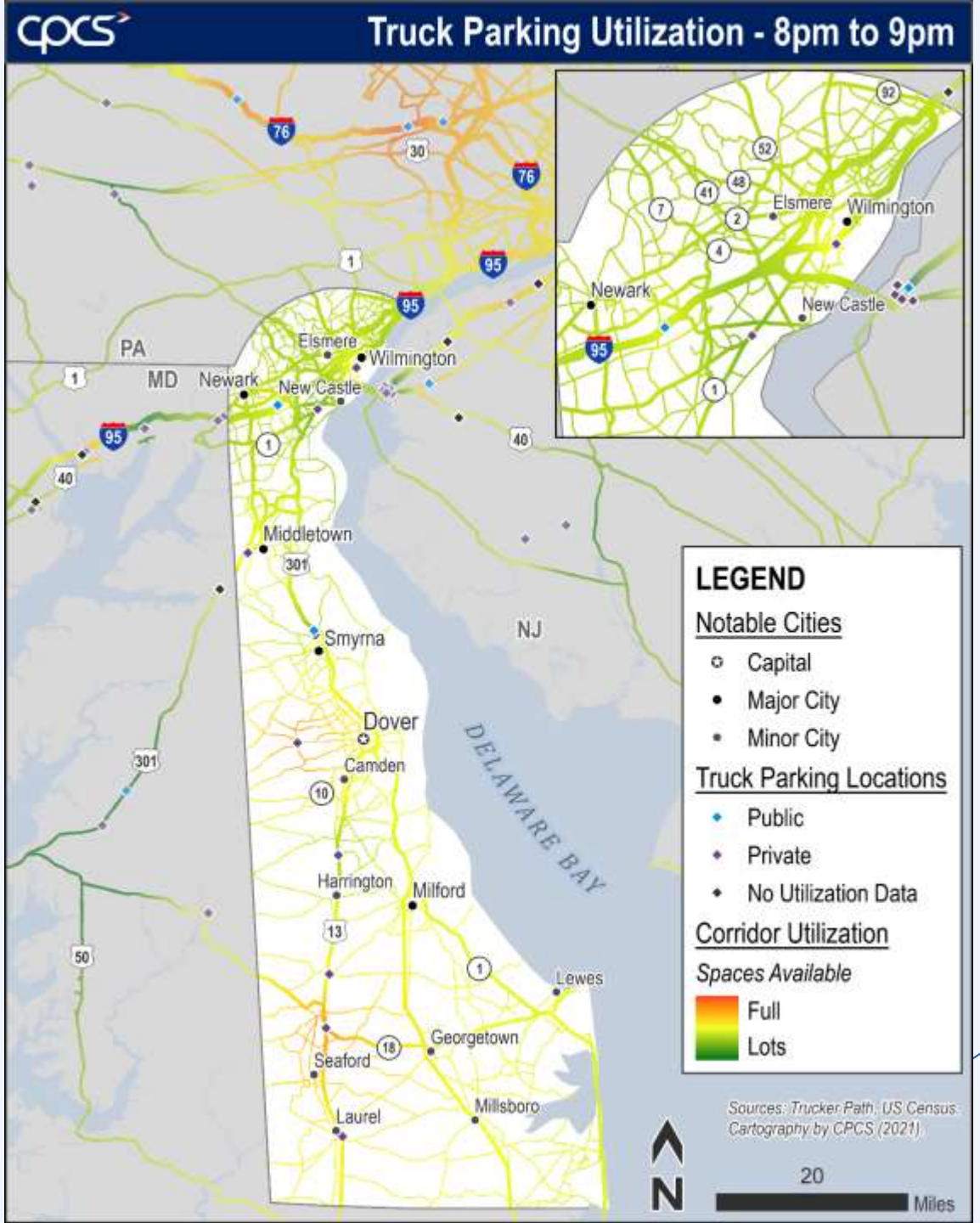
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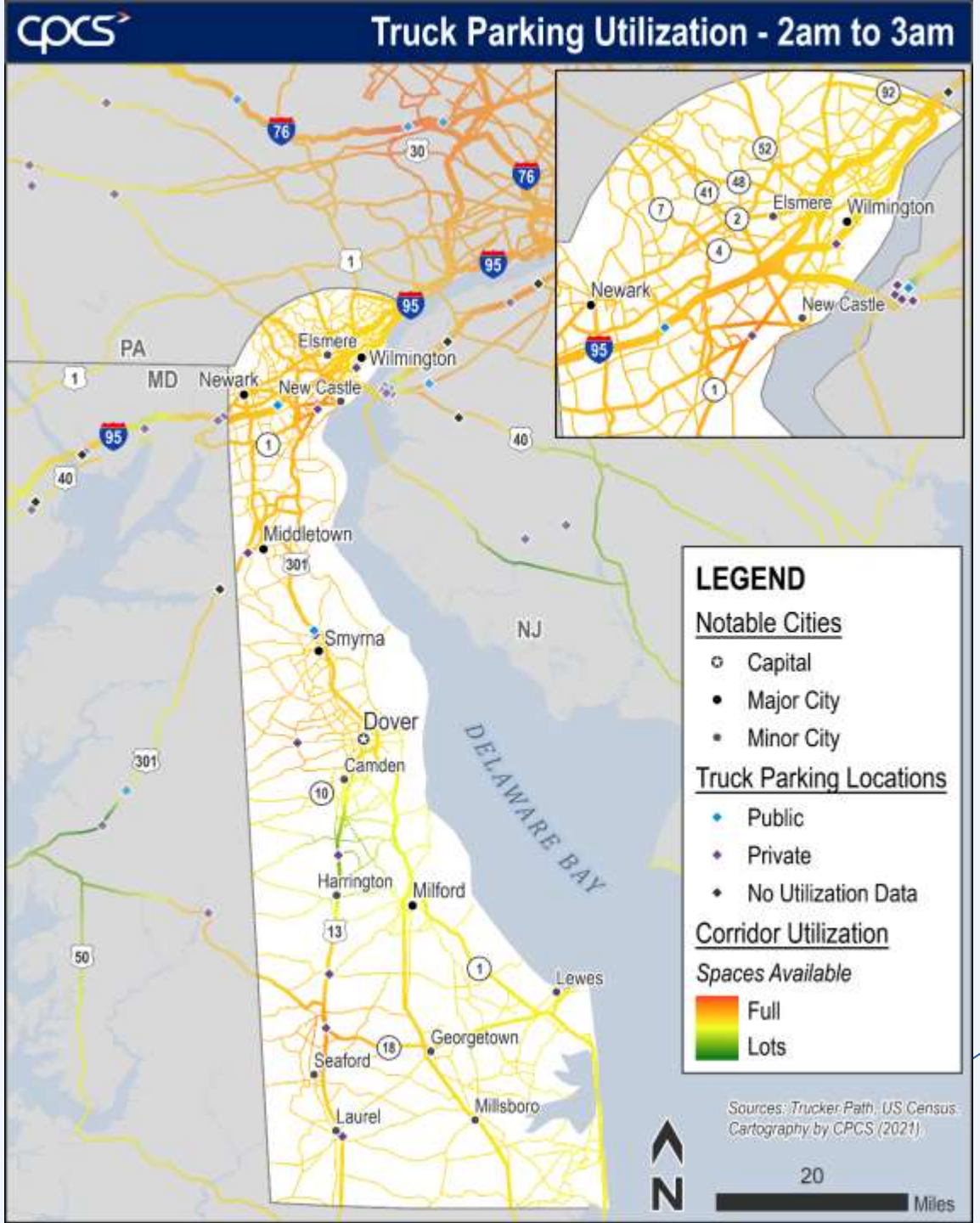
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Spaces Available
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Sources: Trucker Path, US Census
Cartography by CPCS (2021)
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Miles

Undesignated Truck Parking

- Indicator of drivers having difficulty finding truck parking and they are nearing the end of their HOS.

- Undesignated truck parking serves as the most noticeable indication of a truck parking issue and has negative impacts on the economy, safety, infrastructure, and quality of life.

- Analysis of over 17 million truck GPS waypoints during the 12 weeks in 2019 of INRIX data analyzed (February 3-23, May 5-25, August 4-24, October 6-26). These waypoint data are, in essence, markers that trucks leave when traveling from their origin to their destination.

- Identified when trucks stopped for more than 30 minutes. Approximately 119,700 stops were identified

Figure 18: Undesignated Truck Parking Cluster Near Mountainaire Farms

Figure 19: Undesignated Truck Parking Cluster at Edgemoor

Source: CPCS Analysis of INRIX data; Google Maps, ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data © 2021 Google

Figure 14: Undesignated Truck Parking Cluster on SR 1/Puncheon Run Connector On/Off Ramps

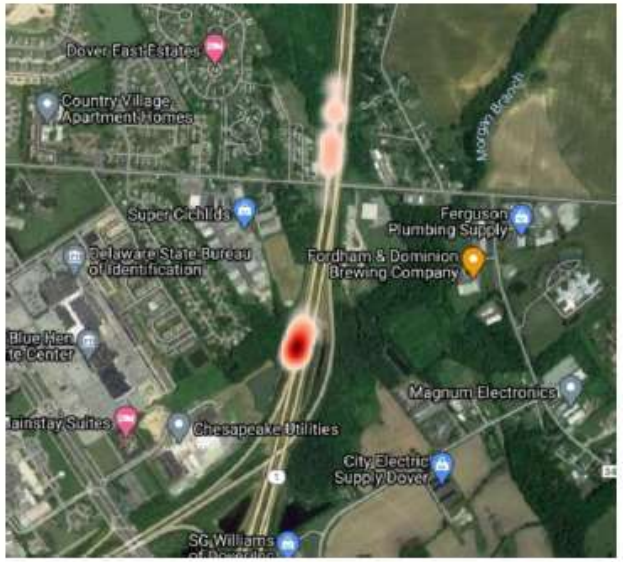


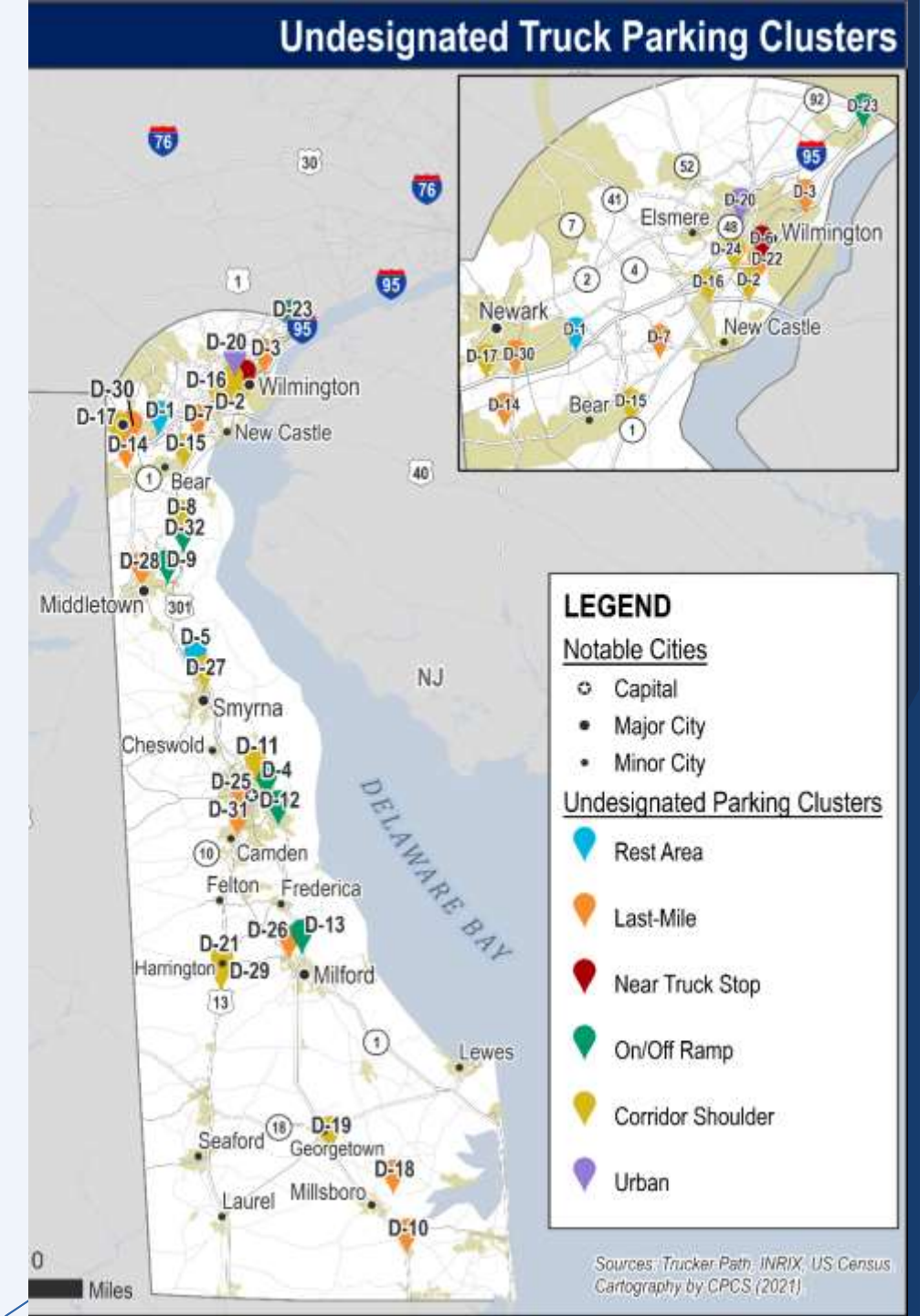
Figure 15: Undesignated Truck Parking Cluster on SR 1/SR 299 On/Off Ramps

Source: CPCS Analysis of INRIX data; Google Maps, ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data © 2021 Google

Undesignated Truck Parking

32 identified undesignated truck parking clusters in Delaware, classified by type:

- **Rest Area:** Occurring in areas outside of defined parking spaces at public rest areas, such as on/off ramps and areas designated for passenger vehicles.
- **On/Off Ramp:** Occurring on interstate and other highway on/off ramp shoulders.
- **Shoulder:** Occurring on interstate and other highway corridor shoulders.
- **Last-Mile:** Occurring on local roadways in both industrial and non-industrial areas, particularly on last-mile connectors leading to freight generators.
- **Near Truck Stop:** Occurring near private truck stops, but not on-site.
- **Urban:** Occurring in urban areas. This is often sporadic, and it is difficult to differentiate deliveries from undesignated truck parking due to limited space for trucks to park in concentrated numbers in urban areas.



Undesignated Truck Parking

Key question:
Why are truck stopping where they are???

Figure 26: Indicators to Identify Reason for Truck Parking

	Long HOS Break	Staging
Stop Duration	Over 7 hours	Often no more than a few hours
Location	Any, may seek amenities	Near origin/destination
Period of Day	Overnight	Business day

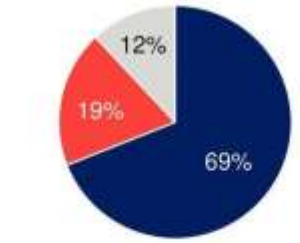
GIS data for each location:

- **Total Count of Undesignated Stops: Total Duration of Undesignated Stops (Hours):**
- **Median Stop Duration (Hours)**
- **Average Stop Duration (Hours):.**
- **Percent of Stops under 3 Hours:.**
- **Percent of Stops 3-8 Hours:.**
- **Percent of Stops over 8 Hours:.**
- **Period of Day with Highest Number of Undesignated Stops**

Undesignated Truck Parking: Port of Wilmington

Example: Staging

Type: Last-mile
Total count of undesignated stops: 42
Median stop duration: 1.7 hours
Average stop duration: 3.2 hours
Period of the day with the highest number of undesignated stops: Morning (6 am – noon), Afternoon (noon – 6 pm)



■ < 3 hours ■ 3-8 hours ■ > 8 hours

Source: CPCS Analysis of INRIX data; Google Maps, ©2021 Landsat / Copernicus, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data © 2021 Google

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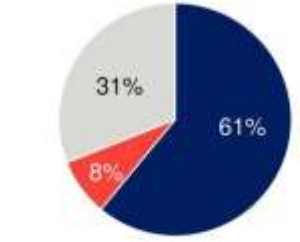
Undesignated Truck Parking: Biden Welcome Center

Example: Long HOS Break

Type: Rest Area
Total count of undesignated stops: 388
Median stop duration: 1.1 hours
Average stop duration: 4.3 hours
Period of the day with the highest number of undesignated stops: Overnight (midnight – 6 am)



■ < 3 hours ■ 3-8 hours ■ > 8 hours

Source: CPCS Analysis of INRIX data; Google Maps, ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency; Map data © 2021 Google, with CPCS polygons overlaid based on analysis of Trucker Path Data

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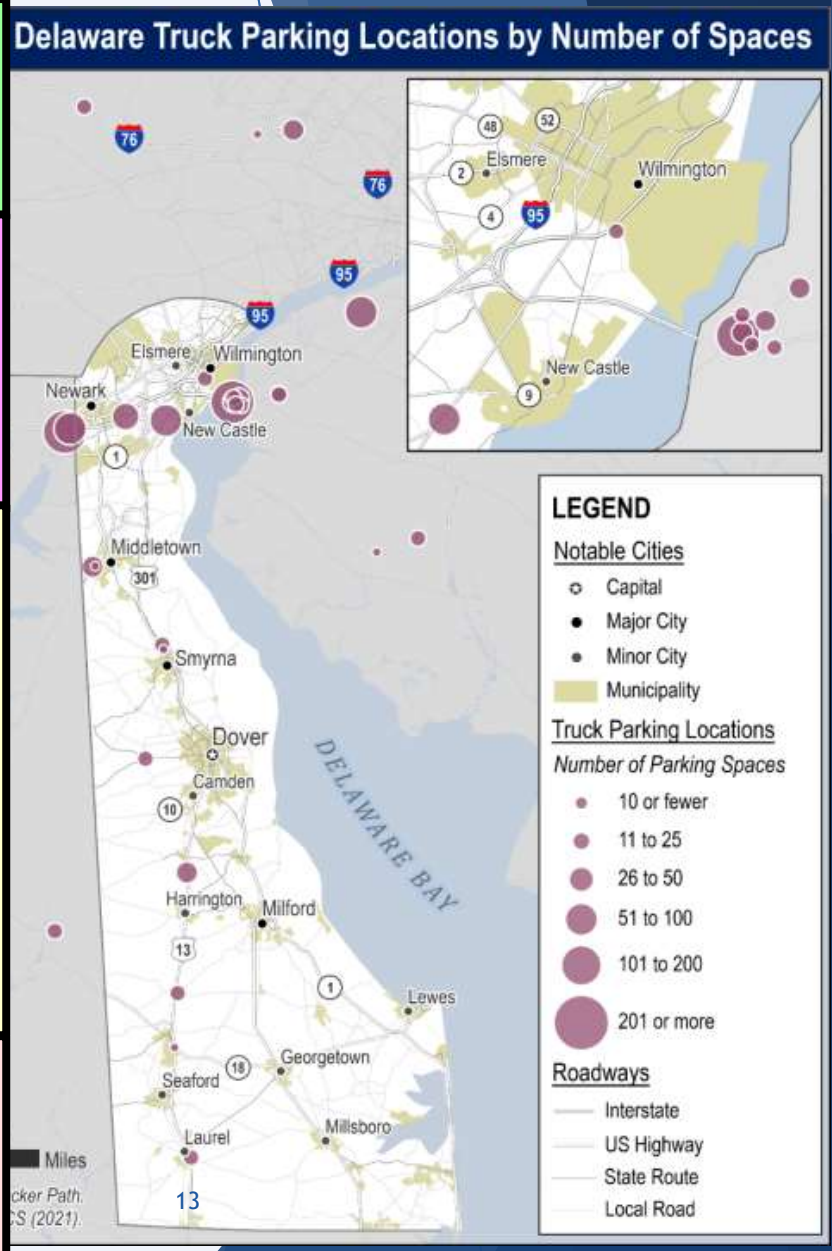
Truck Parking – SWOT Analysis

Strengths
- Truck parking utilization is not at its full capacity at all facilities in the state, even during peak hours. Utilization remains low in many areas during non-peak hours.
- Relatively low counts of undesignated stops at several clusters compared to other regions
- Use of PPP (Biden Center)

Weaknesses
- Absence of truck parking locations in southeast Delaware.
- Limited overnight truck parking locations in central and southern Delaware (Kent and Sussex Counties)
- Select private facilities do not allow overnight truck parking.
- Insufficient space for staging near Port of Wilmington and Edgemoor.
- High utilization of truck parking facilities during peak hours in urban areas
- Undesignated parking clusters at and near public rest areas and along key freight corridors

Opportunities
- Integrate truck parking into statewide and local planning to actively prepare for and mitigate against increasing freight development, truck traffic, and associated demand for parking.
- Explore truck parking capacity expansion near undesignated parking clusters, particularly where vacant lots and/or state-owned land have been identified nearby.
- In areas with limited existing overnight parking (in Kent and Sussex Counties), explore new locations for truck parking facility development, such as through a public-private partnership.
- Collaborate with local agencies and freight-reliant industries (e.g. manufacturing, warehousing) to promote the availability of designated truck parking near new freight-generating developments.
- Coordinate truck parking planning and signage at state borders with neighboring state DOTs.
- Collaborate with the trucking industry to provide truck parking facility updates, promote the use of underutilized facilities, and gather information on truck parking needs and issues in Delaware and the surrounding region.

Threats
- Increasing goods movement, driven by the growth of freight-reliant industries and potential port expansion.
- Need for expanded access to truck parking and staging in urban areas “Not In My Backyard” (NIMBY) community concerns about idling, noise and air emissions, and real and perceived safety hazards pose a challenge to the expansion of truck parking.
- Lack of truck parking-dedicated funding.
- Lack of clear public and private roles to address truck parking issues.



Truck Parking: Solutions & Strategies

3 Key Categories

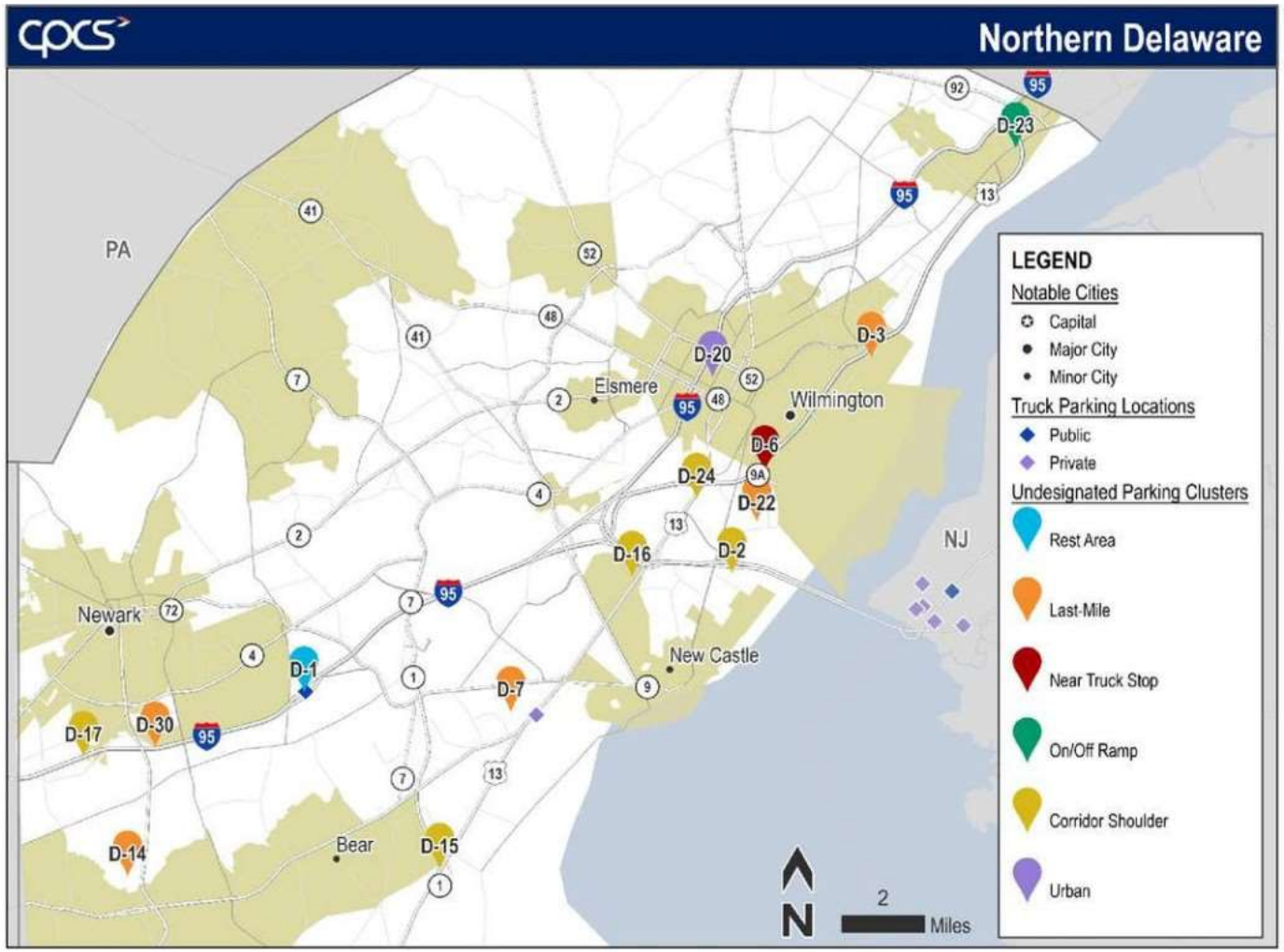
Capacity Expansion	Investment in projects to increase the number of truck parking spaces at a specific location.
Information & Technology	Investments in projects to increase access to information and technology, often at specific locations, in order to advance truck parking.
Policies & Programs	Institutional changes that promote the inclusion of truck parking in governance and investment decision-making

Region: Northern Delaware

Existing Conditions

Undesignated Truck Parking:

- Along I-95
  - At Biden Welcome Center
  - Along corridor & on/off-ramp shoulders
- In the Wilmington and New Castle areas, which includes:
  - Wilmington Urban Area
  - Along I-495 and I-295 corridor & on/off ramp shoulders
  - Last-mile parking near the Port of Wilmington and Edgemoor



Region: Northern Delaware

Draft Solutions & Strategies

Leverage existing state-owned facilities and land for truck parking

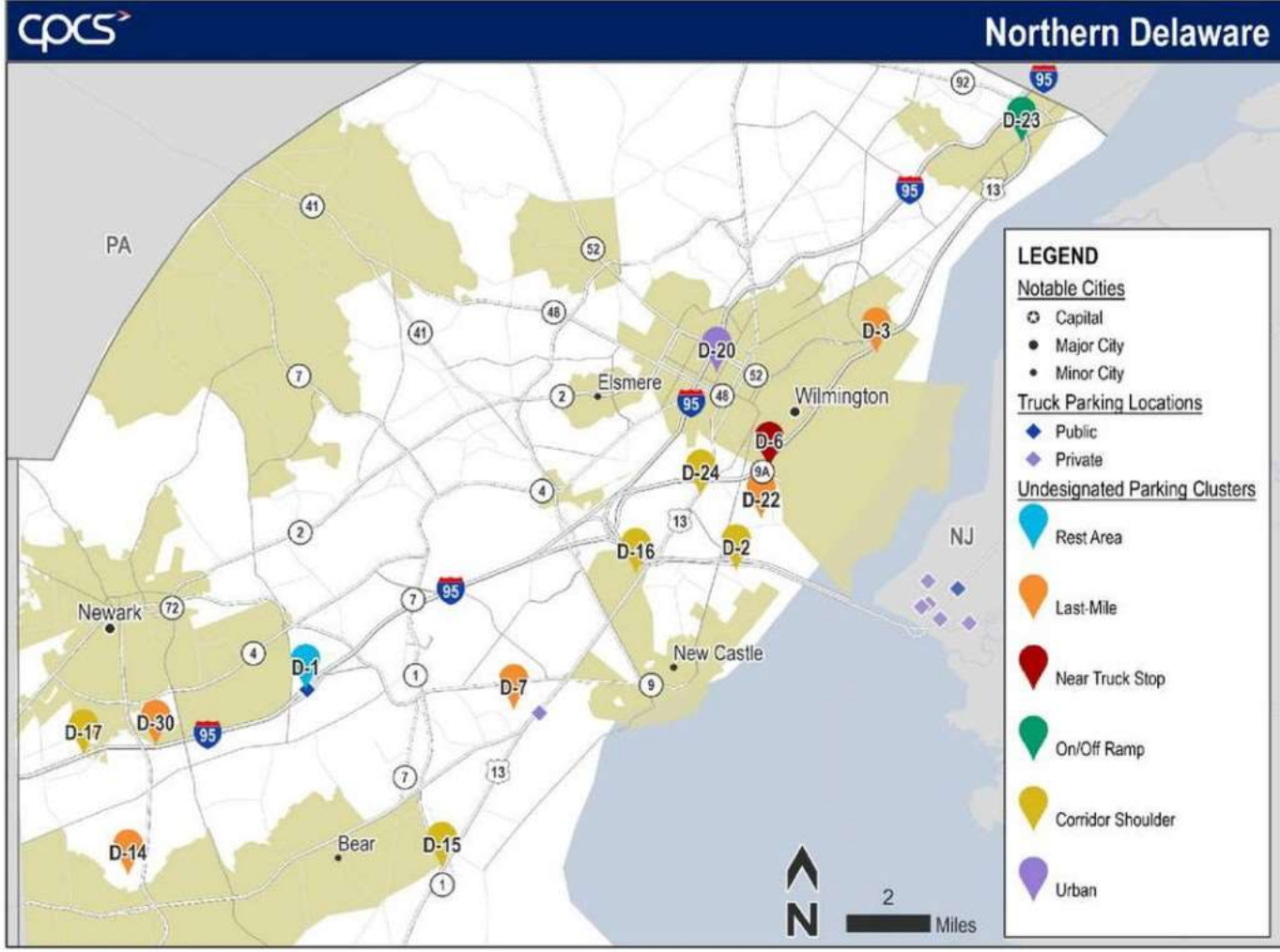
- Ex: Park & Rides

Coordinate with neighboring states

- Ex: Provide signage about truck parking locations across state borders (on I-95 in MD, I-295 in NJ)
- Ex: Grants for I-95 corridor truck parking projects

Coordinate with local agencies to implement land use requirements for staging at new freight facilities

- Ex: At the proposed port expansion in Edgemoor
- Ex: At new developments in the Port of Wilmington area



- Regional-specific solutions and strategies available for whole State in Working Paper #2

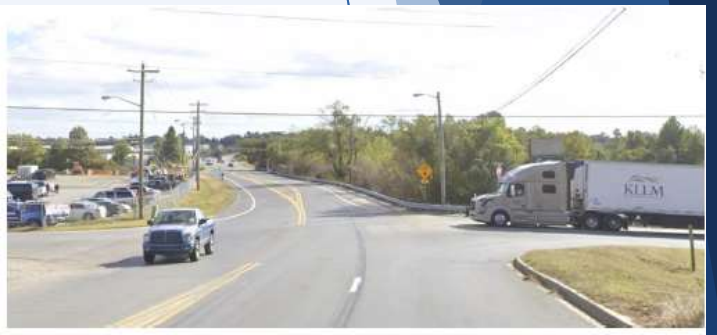
Next Steps

- Developing region-specific Strategies and Recommendations
- Draft Report in July
- Adoption in September

#2: Delaware Statewide First/Final Mile Freight Network Development

What is the freight first- and final-mile?

- Roadways that link truck trip origins or destinations with mainline routes of travel such as interstates or major regional highways.
- Provide businesses with access to major highways, ports, airports, and intermodal terminals
- First and final-mile shipments are estimated to account for about 28 percent of total freight delivery prices, primarily due to inefficient connections to hubs or pickup and delivery points.[2]



Project Objective:

- Where are Delaware's first/final mile connections?
- What are the connections' needs and issues?
- How can WILMAPCO and DelDOT address those needs and issues?

2 Best Practices for Optimizing Last Mile Delivery, Descartes Knowledge Center, 2020.

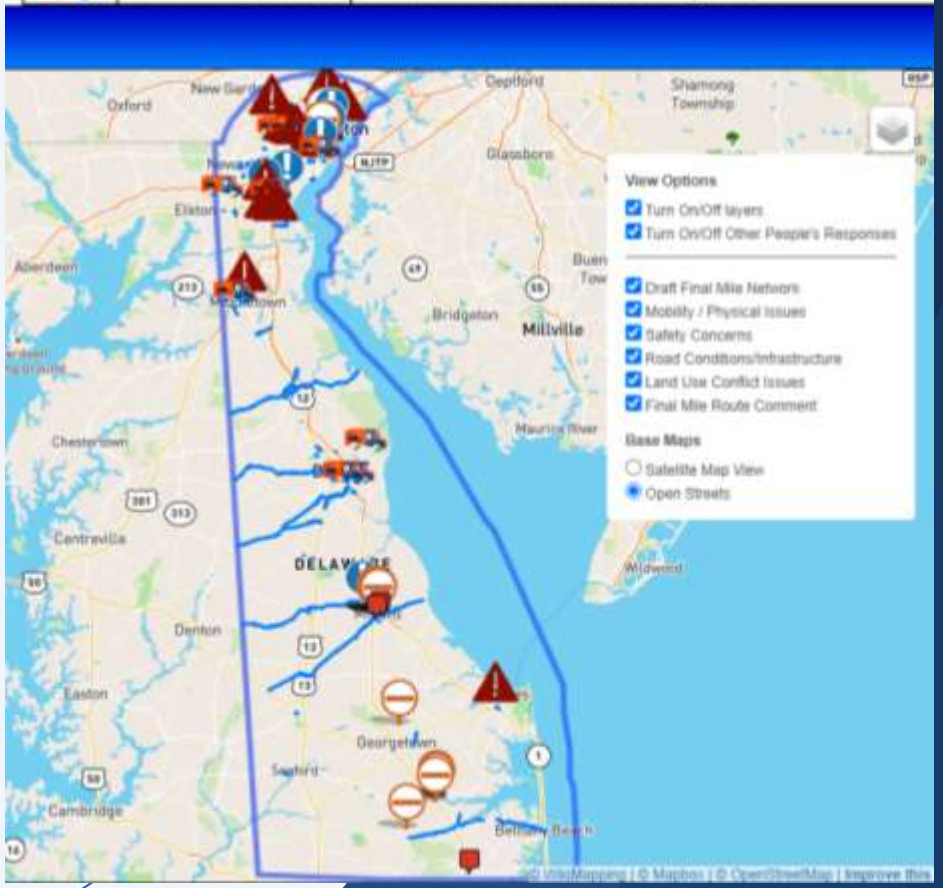
Recent Outreach Activity / Stakeholder Feedback

- Two focus group meetings have been held (January & June)
- Shared initial network designation
- Two broad groups of stakeholders: (1) public agencies and industry stakeholders, and (2) the general public.
- 120 entries in Wikimap

Figure 2: Wikimapping Application Feedback Summary

	Stakeholder Group	
	Industry and Public Agency	General Public
Comments Received	67	60
Substance of Comments		
Network Corrections or Additions	42	7
Land Use Mentions	20	13
Mobility Mentions	2	31
Safety Mentions	3	11
Condition Mentions	1	1

Category	Examples
Mobility	Tight turns, poor geometry, congestion
Safety	Speeding, sight lines, frequent crashes and bike/ped conflicts
Road Conditions	Poor pavement, bridge conditions
Land Use Conflicts	Noise/air quality issues, residential and community conflicts (i.e. schools, parks, etc..)
Final Mile Network	Comments on Draft Route designations



Where are Delaware's first/final mile connections?

- Revised based on stakeholder feedback
- GIS file generated with numerous attributes

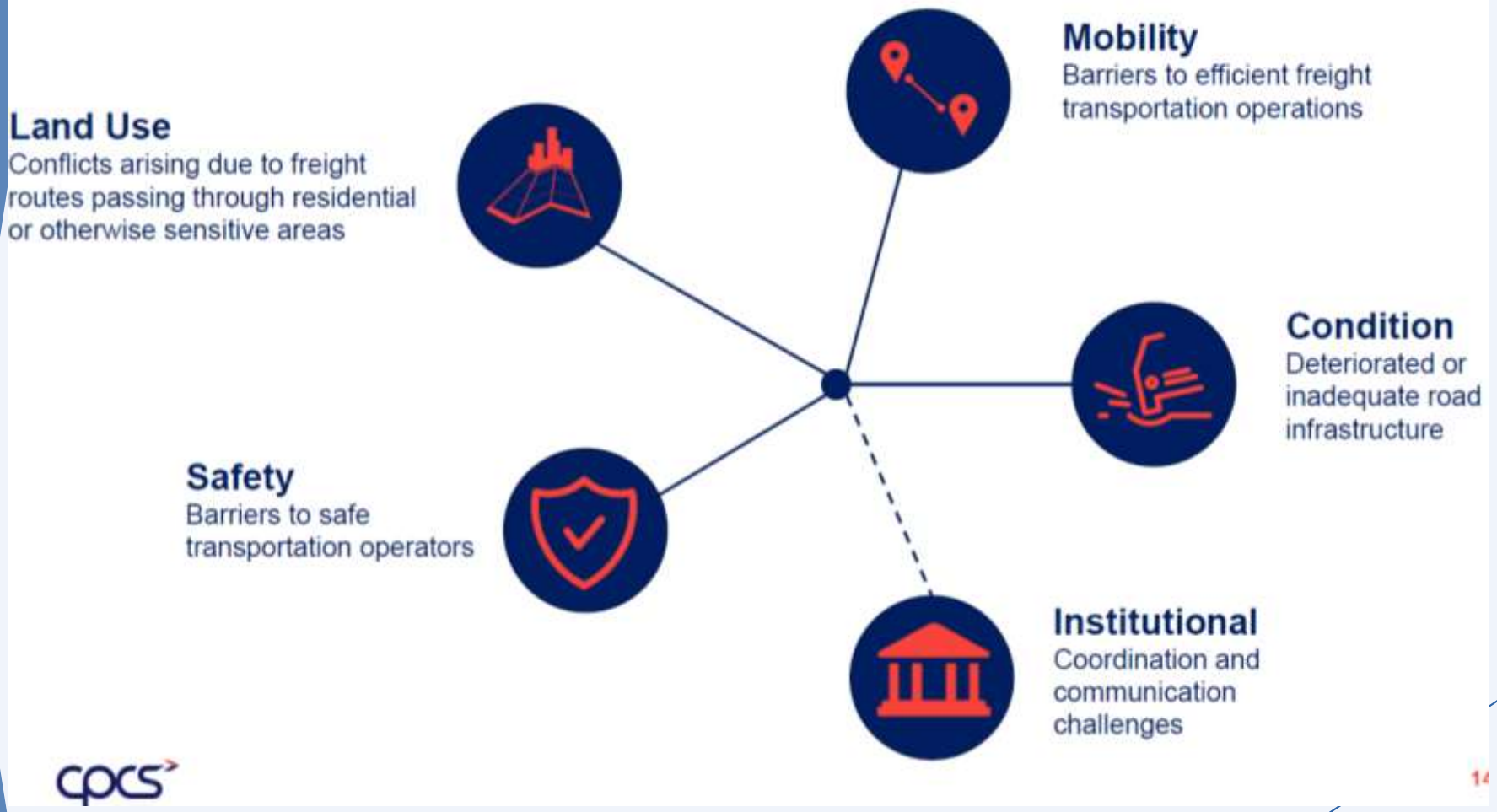
Key sources of data used in the initial identification process were:

- Delaware Road Network shapefiles
- Delaware Freight Hierarchy shapefiles (2017)
- Zoning and land use shapefiles from each of Delaware's three counties
- Reference USA records of business locations
- Google Maps satellite imagery
- Google Street View street-level imagery
- ESRI Network Analyst road network files

What are the connections' needs and issues?

- Revised based on stakeholder feedback
- GIS file generated with numerous attributes

Needs & Issues: Areas of Focus



What are the connections' needs and issues?

Data Analysis

- Data collected for each segment
- "living" dataset
- Help determine possible improvements

- 26 different datasets collected for performance screening process

- 53 attributes describing performance or context were mapped to each relevant segment

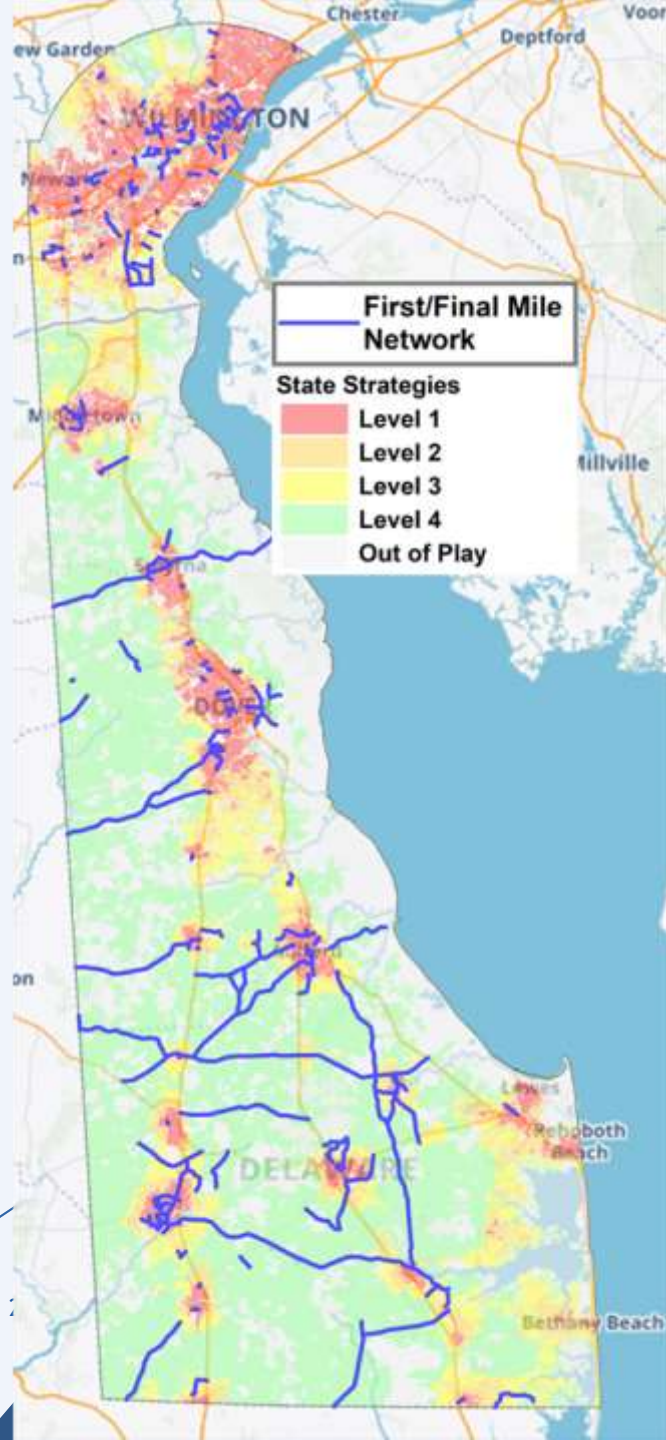
Category	Information	Potential Source
Highway Infrastructure Characteristics	Pavement Condition	DelDOT, FHWA
	Functional classification	
	Travelway Width	
	Number of Lanes	
	Bike Routes	
	Sidewalks	
	Shoulder Width	
	Intersection Design	
	Drainage or Flooding Prevention Systems	
	Sight Distances	
	Bridge Clearances	
	Warning Devices	
	Segment Length	
	Speed Limits	
Social Characteristics/ Impacts	Population density	Census Bureau, US EPA, State of Delaware Mobile Source Emissions Inventory, Cabinet Committee on State Planning Land Use Database, Delaware State Police Accident Reports
	Employment by Industry	
	Rural/Urban Designation	
	Land Use Strategies	
	Emission Impacts (Pollution, Noise)	
	Truck-involved crash history	
Rail Infrastructure	Road-Rail Crossing Characteristics (Alignment, Warning Devices, Number of Trains, Crossing Ownership, Accidents)	Federal Railroad Administration Crossing Inventory and Safety Information Database
	Blocked Crossing	
Other Information	Truck Volumes	DelDOT, FHWA, Freight Analysis Framework, Census Bureau County Business Patterns
	Truck Parking Shortage	
	Infrastructure Maintenance Costs	
	Truck Operating Costs	
	Congestion Cost	
	Supply Chain Characteristics	
	Programmed Freight Projects	

Source: CPCS review of relevant documents/reports.

What are the connections' needs and issues?

General Findings:

- Delaware's urban first/final mile road connections appear to be concentrated in areas with relatively low population density.
- 45% of Delaware's First/Final Mile connections are in Level 4 is OSPC designations
- Delaware's first/final mile connections are concentrated slightly more in communities that are relatively lower income & shares of minority populations.
- Relatively small portion (26 miles) of Delaware's first/final-mile network are at risk of temporary or permanent closure due to near-term sea level rise.
- Bridge height and weight restrictions do not create substantial barriers for freight mobility in Delaware.
- 9% of first/final mile connections have between 0 and 1 feet of shoulder



Full analysis results can be found in Working Paper #2, Appendix A

How can WILMAPCO / DelDOT address those needs and issues?

A Strategic Lens on Freight Conflicts

How can we think about balancing freight with other community needs?

- **Policymakers and agencies must carefully balance a range of competing interests** when conflicts emerge and make decisions in the best interest of all their constituents.
  - In such a context, absolutes are rarely helpful or productive.
- **Freight facilities may not be able to operate on a competitive commercial basis** with heavy restrictions and impedances
  - Over time, such facilities may relocate out-of-state, taking employment, GDP and tax revenues
- **On the other hand, a community's full economic potential and maximum quality of life may not be achieved due to freight conflicts**
  - Quality of life can deteriorate due to freight impacts such as noise, traffic, and safety
- **A strategic framework like the PMA Framework can help provide some situational guidance and hint at solutions**

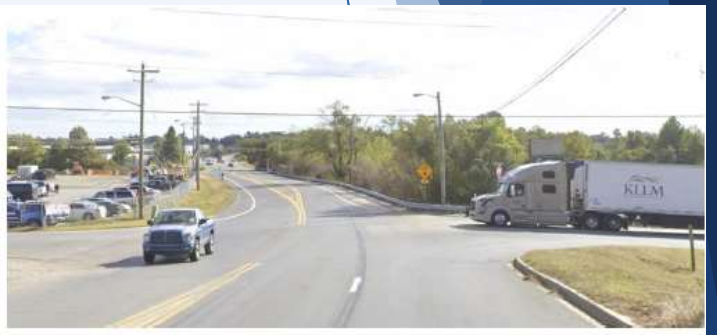
How can WILMAPCO / DelDOT address those needs and issues?

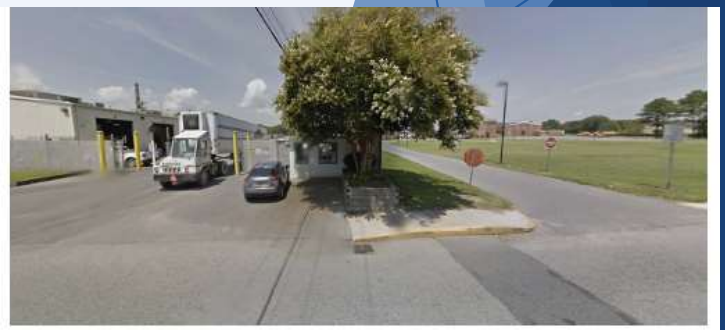
"PMA" Framework: Protect-Manage-Accommodate

	Protect	Manage	Accommodate
Definition	Protect freight industries from unreasonable conflicts	Manage conflicts in tactical and targeted ways	Accommodate freight needs to prevent major issues
Context	Areas where freight industries are dominant; Freight facilities of high strategic importance	Areas where freight and non-freight industries are both significant uses	Areas where non-freight industries and residential communities are dominant
Examples	Freight clusters; Ports, airports, intermodal terminals	Mixed-use areas; Freight clusters transitioning to mixed use	Central business districts; "Stranded" freight facilities (legacy facilities enveloped by communities)
Examples of Approaches	• Separate uses where possible; • Prioritize support for competitiveness and productivity within industrial areas, which in turn drive wider economic prosperity; • Reasonably accommodate non- freight needs, ensure safety and mobility	• Balance freight and non-freight needs; • Strive to identify tactical, targeted, and creative solutions rather than merely striving for compromise between competing stakeholders; • Communications and information sharing to build balanced perspectives	• Recognize that non-freight needs may take top precedence in these areas; • Accommodate freight needs as reasonable to ensure everyone's safety and mobility is considered
Considerations	May require considerable advance planning to fully realize	Freight industries may impose externalities and also contribute to employment in the same communities	Beneficiaries of safe and efficient freight also include homes, restaurants and businesses

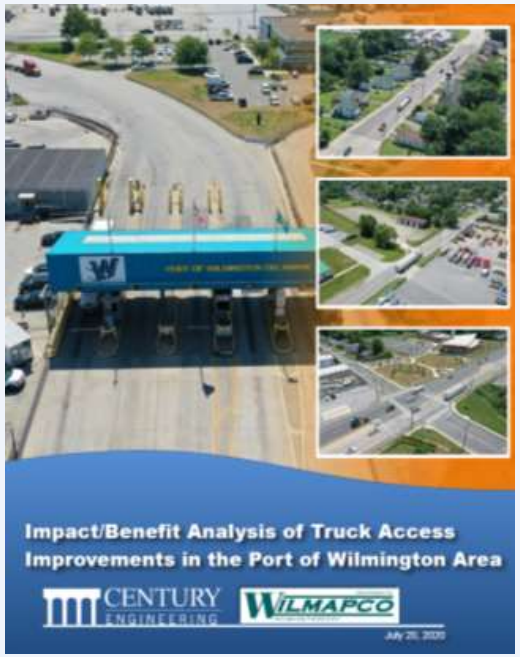
Remaining Project Work

- Ground-truthing analysis results – Site Visit
- Draft and final report documents
- Summary of prior Working Papers
- Deeper dive on select first/final mile problems or solutions of interest
- Proof of concept prioritization exercise
- Delivery of finalized first/final mile network dataset





Project #3: Impacts/Benefits analysis of Truck Access Improvements around the Port of Wilmington Area



Recent Activities

- Public Workshop held on March 24th
  53 registered for event

- Modeling efforts currently underway

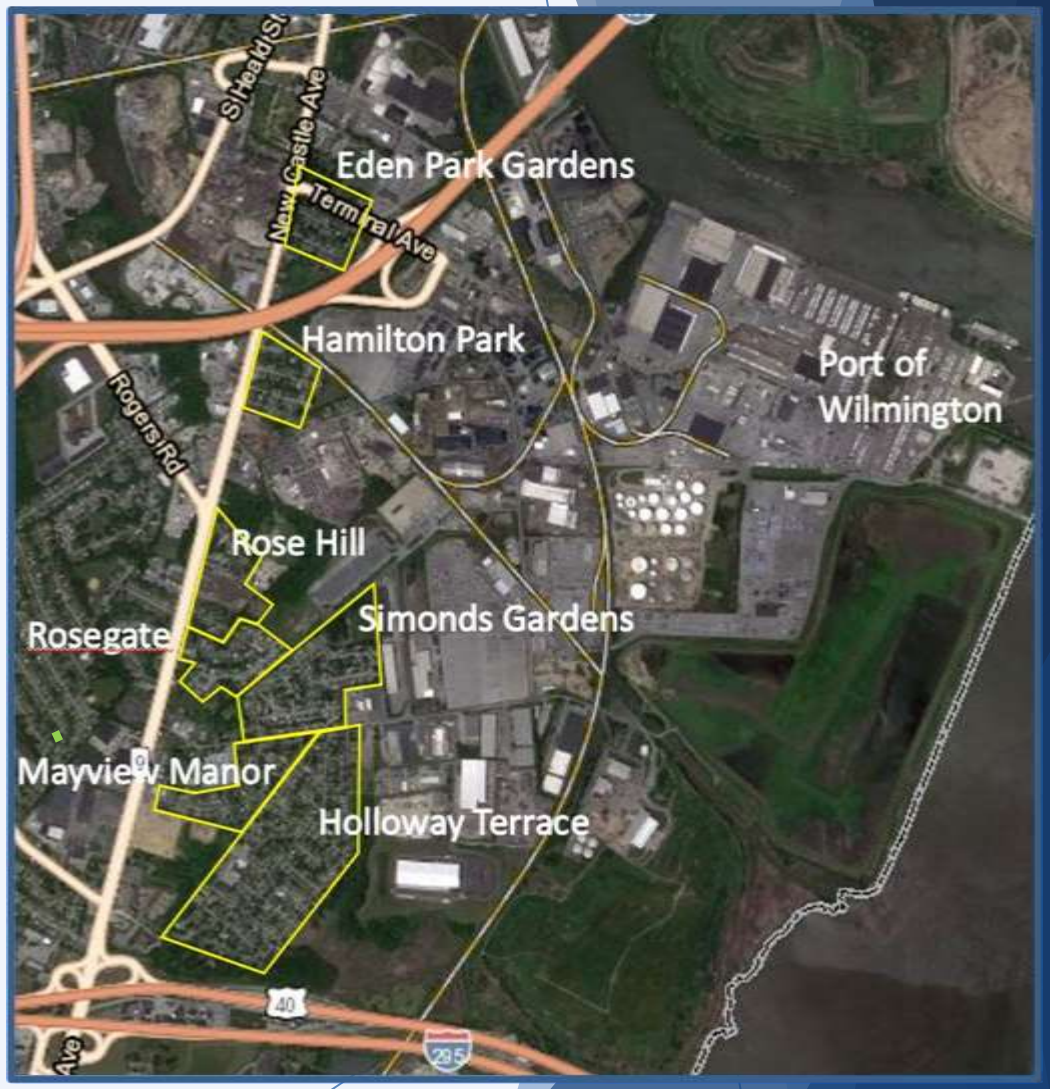
Project Objective:

- Evaluate and provide further analysis possible improvements in and around the Port of Wilmington area from SR 9 Corridor Master Plan and other plans/studies

- Serve as the technical analysis to analyze these ideas with a land use and transportation model-based approach.

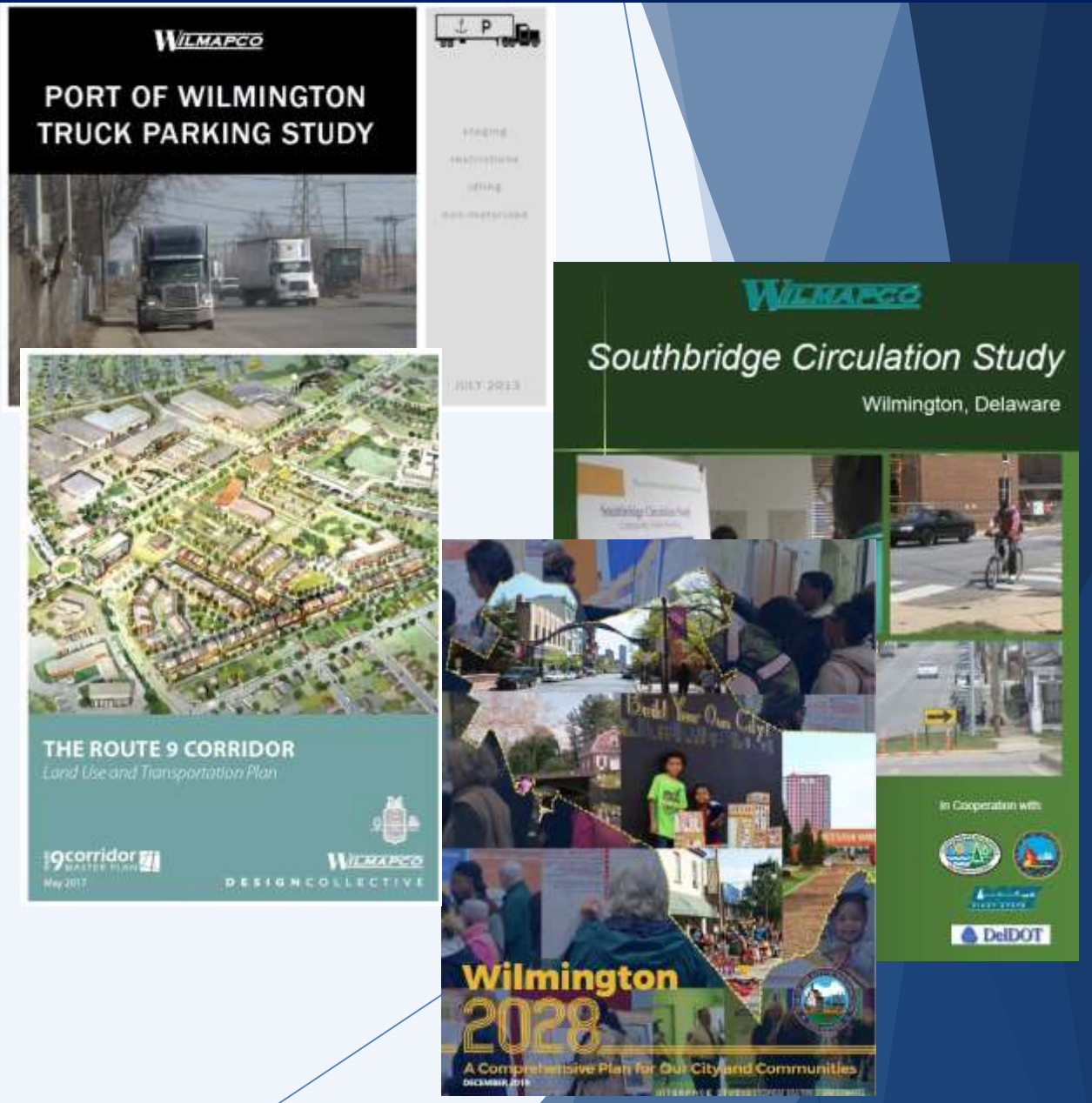
- Capture “what-if” scenarios for which improvement(s) work best

- Provide cost estimates & short/long term and low/high-cost options



Alternatives

- **3 main Alternatives drawn from previous studies**
- **General consensus to evaluate them further**



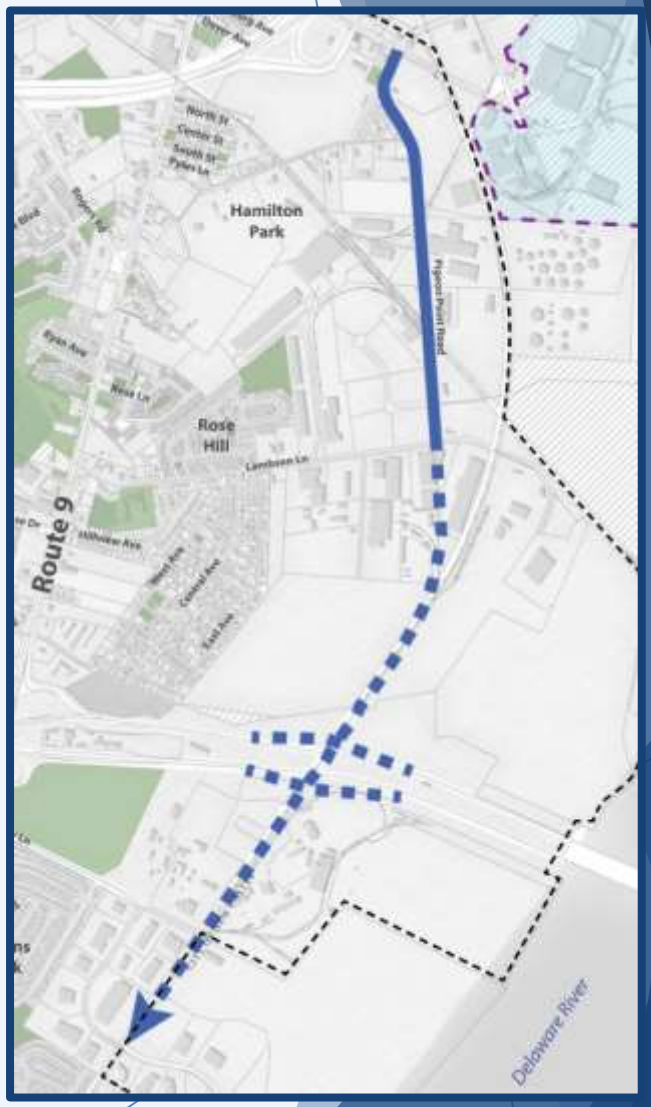
Other Feedback:

- Reduce impact to community members. We have some land adjacent to residential areas that should be downzoned or buffers built to protect communities.
- Police better enforce existing laws.
- We should have more fines and signs.
- Move the industrial businesses

Alternatives

Pigeon Point Road Extended

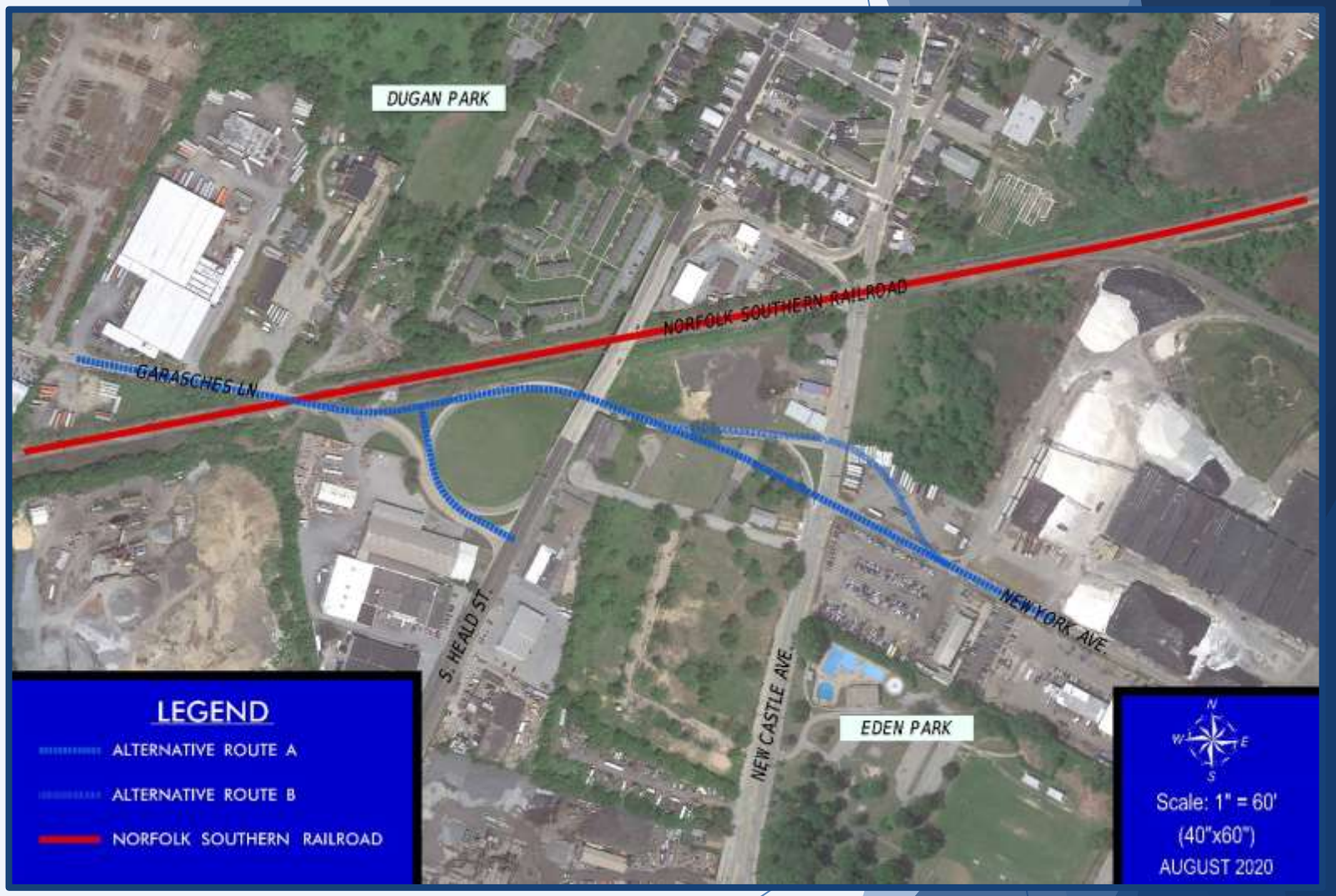
- **Possible Benefits**
  - Alternate Access to the Port Area
  - Direct Connection to I-295
  - Diverts Trips From Terminal Ave and Route 9
  - Links Industrial Areas to the South of I-295
  - Increased Development Potential
- Possible Impacts
  - Environmental
  - Utility and Railroad
  - DRBA Coordination



Alternatives

Garasches Lane

- Direct Connection Between City of Wilmington Industrial Area and Port Area
- Potential Access to Heald Street
- Potential to Divert Trips from Southbridge
- Links Industrial Areas on Both Sides of Route 9
- Opportunities with Current DelDOT Bridge Project



Alternatives

Pyles Lane

- State Relocation of Residential Properties
- Possible Connection to Route 9
- Diverts Trips from Terminal Ave
- Adds Additional Truck Access Point to Route 9 Corridor

Schedule

Advisory Committee Meeting
February 15, 2021

Public Workshop
March 24, 2021

Complete Analysis of Alternatives
Spring 2021

Advisory Committee Meeting
July 2021

Public Workshop
August 2021

Questions?

Project Pages:

Impacts/Benefits analysis of Truck Access
http://www.wilmapco.org/port_analysis

Delaware Truck Parking Study
http://wilmapco.org/truckparking

Delaware First/Final Mile
http://www.wilmapco.org/finalmile

2022 Statewide Freight Plan underway

http://freight.deldot.gov

WILMAPCO
Wilmington Area Planning Council