



2022 Delaware State Freight Plan

APPENDICES

December 2022



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APPENDIX A:

Federal Freight Planning Requirements by Code

A. APPENDIX A: Federal Freight Planning Requirements by Code

Federal Freight Policy Goals	
49 U.S.C. §70101(b)	National Multimodal Freight Policy
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title49-section70101&num=0&edition=prelim 	
49 U.S.C. §70102	National Freight Strategic Plan / National Freight Policy Strategic Goals
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title49-section70102&num=0&edition=prelim https://www.transportation.gov/freight/NFSP 	
23 U.S.C. §167(b)	National Highway Freight Program Goals
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title23-section167&num=0&edition=prelim 	
State Freight Planning Requirements	
49 U.S.C. §70202(b)	Plan Content Requirements for State Freight Plans
49 U.S.C. §70202(f)	Commercial Motor Vehicle Parking Facilities Assessments
<ul style="list-style-type: none"> http://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title49-section70202&num=0&edition=prelim 	
Highway Freight Network Details	
23 U.S.C. §167(e)	Eligibility Criteria for Critical Rural Freight Corridors
23 U.S.C. §167(f)	Eligibility Criteria for Critical Urban Freight Corridors
23 U.S.C. §167(h)	Use of Apportioned National Highway Freight Program Funds
23 U.S.C. §167(h)(5)	Eligibility Criteria for National Highway Freight Program Funds
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title23-section167&num=0&edition=prelim https://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/delaware.htm 	
Multimodal Freight Network Details	
49 U.S.C. §70103(b)	Designation of National Multimodal Freight Network
49 U.S.C. §70103(b)(4)(B)	Eligibility Criteria for Critical Rural Freight Facilities and Corridors
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title49-section70103&num=0&edition=prelim https://www.transportation.gov/administrations/office-policy/interim-national-multimodal-freight-network https://maps.dot.gov/BTS/Interim_NMFN/ 	
State / Multi-State Collaboration	
49 U.S.C. §70201	State Freight Advisory Committees
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title49-section70201&num=0&edition=prelim 	
49 U.S.C. §70204	Multi-State Freight Corridor Planning
<ul style="list-style-type: none"> https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title49-section70204&num=0&edition=prelim 	





APPENDIX B:

Delaware Freight Collaboration (2020-2022)

B. APPENDIX B: Delaware Freight Collaboration (2020-2022)

In addition to monthly Delmarva Freight Working Group Meetings and Delaware Freight Plan Technical Working Group Meetings, other collaborative freight discussions and information-sharing opportunities that were leveraged to help inform updates to the 2022 Delaware State Freight Plan included:

2020 Delmarva Freight Summit (June 5, 2020)

- Delaware Statewide Truck Parking Study
- Kent County East/West Truck Freight Route Feasibility Study
- Harrington Intermodal Terminal Feasibility Study

2020 Delmarva #FreightFriday Podcasts / First State Insights

<https://soundcloud.com/first-state-insights/sets/delmarva-freightfriday>

- Logistics: There and Back Again
- Spotlighting Mountaineer Logistics
- Advancing Supply Chain Integration
- Logistics Tech in the Wild
- Mapping Logistics Technology
- Shortline Rail on Delmarva
- Insider Coverage on Freight and Supply Chain Trends
- Targeting Distribution & Logistics for Economic Development in Central Delaware
- Reporting on Logistics Trends
- Dot Foods in Delaware
- Getting Perdue Farms' Products to Market
- Warehouse Space Needs and Market Trends
- Making Sense of Maritime Shipping

2021 Delmarva Freight Summit (June 16, 2021)

- **2022 Delaware Freight Plan Updates – Introduction, Resources, and Initial Input**
- Freight Trends and Pressures
- Delaware Freight SWOT Analysis
- Delaware Freight Areas of Concern / Areas of Opportunity Discussion

2021 Delmarva Winter Freight Meeting (December 7, 2021)

- **2022 Delaware Freight Plan Updates – Needs and Opportunities Polling**
- Logistic Tech – From Private to Public
- Public Freight and Logistics Tech – DelDOT Real-Time Data and Truck Parking Info Systems
- Public Freight and Logistics Tech – MDOT Truck Parking Initiatives

2022 Delmarva Freight Summit (June 10, 2022)

- **2022 Delaware Freight Plan Updates – Update and Action Plan (project/strategy) Preview**
- Freight Funding Opportunities through MARAD
- Short- and Long-Term Perspectives on Trucking




2022 Delaware Freight Plan Public Open House (September 12, 2022)

- New Castle County Open House
- Kent County Open House
- Sussex County Open House

For the Public Open House sessions, review opportunities were held concurrently at three separate locations in each of Delaware's three counties (see details per **Exhibit B-1**). The draft plan was posted to DelDOT's website for review in advance of the outreach efforts, and open house preparations included Spanish translation of the Public Open House Notice and the Draft Executive Summary. Comments received via email or in person throughout the review process are documented in **Exhibit B-2**.

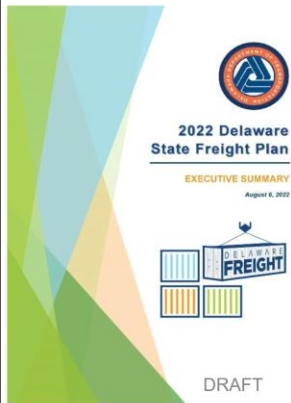
Exhibit B-1: Public Open House Notice



Delaware Department of Transportation
Nicole Majeski
Secretary

DRAFT 2022 Delaware Freight Plan

Notice of Public Open House



DRAFT

The Delaware Department of Transportation (DelDOT) will be presenting the Draft 2022 Delaware Freight Plan update prior to submitting for Federal approval.

The public is invited to join us **Monday, September 12, 2022 at 3:00 p.m. to review the document and provide public comment.**

This event will be conducted at three (3) locations, one in each county:

- **DelDOT Canal District, Thousand Acre Marsh Conference Room**
250 Bear-Christiana Road
Bear, DE 19701
- **DelDOT Administrative Building Delaware Room (south Entrance)**
800 S. Bay Road
Dover, DE 19903
- **Town of Georgetown, Town Hall,**
39 The Circle
Georgetown, DE 19947

Questions, comments or written material can be submitted by September 12, 2022 to:
Attn: Freight Project Manager, DelDOT Planning, PO Box 778, Dover, DE, 19903 or by contacting DelDOT Community Relations at 1-800-652-5600 (in DE) or 302-760-2080, also via email dotpr@delaware.gov.

Persons requiring accommodations, such as an interpreter for hearing/speech or assistance with the English language, should contact: Delaware Department of Transportation, Office of Community Relations by mail to P.O. Box 778, Dover, DE 19903, or call 302-760-2080 or email to dotpr@delaware.gov, one week prior to the meeting.

PUBLIC NOTICE



Exhibit B-2: Public Review Comments

ID	Public Comment and Related DelDOT Perspective
1	<p>8/31/22 Public Comment: Is Lindbergh Avenue and MacArthur Drive included in the Freight Plan for getting the industrial freight traffic off our tiny streets and onto the currently non-existent connector from Sears Boulevard that has been under study?</p>
	<p>DelDOT Perspective: <i>The Freight Plan incorporates analysis that was included in the 2021 Newport Area Master Plan, which included an extension of Crowell Road to Sears Boulevard to give trucks access to those businesses without routing through predominantly residential areas. To follow more closely on related progress, please visit the plan page http://www.wilmapco.org/newport-transportation-plan/.</i></p>
2	<p>8/31/22 Public Comment: Since no one who moved into their houses here (Lindbergh Avenue and MacArthur Drive) prior to January 2013 or after that date was aware they were in the "first/final mile" of Twinco/Highline's never ending and increasing freight traffic and because our properties are listed as being residential, fixing our decade old problem needs to be at the top of the list to get done. IF no fix is coming soon, our property taxes should be drastically reduced due to our industrial freight situation, at least until the connector becomes a reality.</p>
	<p>DelDOT Perspective: <i>DelDOT and the MPOs cannot control much of the warehouse expansion/development, as it is a land use function of the City/County. The purpose of the First/Final Mile Network Study was not meant to "designate" specific freight routes for specific developments; rather, that study aimed to identify those road segments that are essentially functioning today as a first/final mile connection based on traffic patterns and land use that have evolved over time, with the intent of identifying details to support ongoing planning. The study identifies potential routes and issues, and inventories the mobility, safety, and other conditions that each location has to (hopefully) work towards to implement a Protect/Manage/Accommodate framework (as described in the Freight Plan) to address conflicts between goods movement and community needs.</i></p>
3	<p>8/31/22 Public Comment: I still feel Delaware doesn't need more warehouses...translate that to more 18-wheelers polluting our already suspect air quality with their diesel fumes and damaging our roads (my new air quality monitor often registers at or above the Marcus Hook monitor!). And more warehouse jobs mean more workers...translate into overcrowding our already crowded state plus more older cars...translate to more traffic bottlenecks than currently at rush hours plus again more pollution. Delaware is a small state thus our need for more jobs isn't as great as much larger states. We HAVE jobs but no one wants them and our unemployment rate is low. Getting residents off assistance and into jobs is worth looking into? Or at least all those that are begging for money at many intersections daily...</p>
	<p>DelDOT Perspective: <i>DelDOT and the MPOs do not control much of the warehouse expansion/development, as it is a land use function of the City/County; and it is often associated with broader industry and economic development needs (see, for example, the 2020-21 Kent County Target Industry Study Update, https://www.choosecentraldelaware.com/clientuploads/KEP_Final_Report_Target_Industry_Study_2020-21_FINAL_3-7-22.pdf). Related to truck impacts, the purpose of the First/Final Mile Network Study was not meant to "designate" specific freight routes for specific developments; rather, that study aimed to identify those road segments that are essentially functioning today as a first/final mile connection based on traffic patterns and land use that have evolved over time, with the intent of identifying details to support ongoing planning. The study identifies potential routes and issues, and inventories the mobility, safety, and other conditions that each location has to (hopefully) work towards to implement a Protect/Manage/Accommodate framework (as described in the Freight Plan) to address conflicts between goods movement and community needs.</i></p>



ID	Public Comment and Related DelDOT Perspective
4	<p>9/6/22 Public Comment (<i>Follow-up to Comment ID 1 and ID 2</i>): I'm aware of the ongoing research into the extension of Sears Blvd to Crowell Road, although I'm not holding my breath that it will even eventually materialize yet alone soon. It's been almost a decade since residents here started complaining but that went nowhere. Highline Warren/Twinco should absolutely not be allowed to increase their throughput (translate that into more trucks here!) until that connection is completed.</p> <p>I was particularly disheartened that the WILMAPCO Report (D. 1.) lists the connector as a mid/long term project costing ~\$500,000. It's been a problem since January 2013...are ~10 years not already "long-term" enough? Plus it only references Pleasant Hills Park and Denn Place...no mention of Silview where Lindbergh Ave (my street) has the majority of truck traffic issues. I've been told that there is a total of \$600,000 set aside between DelDOT and our political representatives' budgets for this project. Why can't this be fast tracked now?</p>
	<p>DelDOT Perspective: <i>The Delaware Statewide Freight Plan is a statewide document and may not directly address all ongoing localized project details and related project funding/programming updates. Rather, the focus of the Freight Plan is more related to high-level statewide goals, policies, strategies, and requirements in alignment with federal freight planning requirements, as well as programmatic project/funding recommendations specific to National Highway Freight Program (NHFP) funds. In the case of the connection referenced here, the Freight Plan incorporates analysis that was included in the 2021 Newport Area Master Plan, which included an extension of Crowell Road to Sears Boulevard to give trucks access to those businesses without routing through predominantly residential areas. To follow more closely on related progress, please visit the plan page http://www.wilmapco.org/newport-transportation-plan/.</i></p>
5	<p>9/6/22 Public Comment (<i>Follow-up to Comment ID 3</i>): As for the increasing warehouse situation, I can only guess that maybe those responsible for approvals don't travel on the main truck routes at rush hour (maybe don't even live in Delaware?) or they would realize just how detrimental that new volume of 18-wheelers are/will be to the future quality of life for the Delawareans who do live on or near those truck routes (i.e., I-95, Rt. 1, Rt. 141, Rt. 52, Rt. 40, Rt. 4, Rt. 2, Rt. 7, Rt. 13, Rt. 202, just to name the busiest).</p>
	<p>DelDOT Perspective: <i>Content throughout the Freight Plan attempts to identify and balance the needs of all users, reflected from the outset in its recognition of five overarching goals that span safety and security; economic vitality; freight connectivity, accessibility, and mobility; system management, operations, and maintenance; and resilience, sustainability, and environmental stewardship.</i></p>
6	<p>9/12/22 Public Comment: Has the project list in Chapter 5 been prioritized?</p>
	<p>DelDOT Perspective: <i>As documented in the freight plan (Section 5.2 and Appendix I), projects on DelDOT's CTP were assessed through a "screening" process to help determine their potential freight relevance in comparison to key freight criteria and IJJA freight emphasis areas. The screening details are intended for information only and do <u>not</u> result in a list of ranked or prioritized projects; rather, they are intended to be used/referenced on an ongoing basis as part of broader planning/programming efforts beyond the freight plan. Such follow-up would be part of ongoing tasks referenced in the freight action plan (See Exhibit 6-5 and 6-6, Tasks 3, 4, and 6).</i></p> <p><i>The only "programmatic" element otherwise currently included in the freight plan is the anticipated allocation of National Highway Freight Program funds in compliance with federal requirements (See Appendix L).</i></p>

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APPENDIX C:

Delaware Details on the National Highway Freight Network

C. APPENDIX C: Delaware Details on the National Highway Freight Network

C.1 Delaware's Primary Highway Freight System (PHFS) Routes

Route No.	Start Point	End Point	Length (mi)
I-295	I-95	DE / NJ Line	6.94
I-495	I-95	I-95	10.79
I-95	MD / DE Line	DE / PA Line	23.12
PHFS Subtotal			40.85

Source: FHWA, https://ops.fhwa.dot.gov/Freight/infrastructure/ismt/state_maps/states/delaware.htm

C.2 Delaware's PHFS Intermodal Connectors

Facility ID	Facility Name	Facility Description	Length (mi)
DE2P	Port of Wilmington	Terminal Ave (Port to I-495)	0.49
PHFS Intermodal Connectors Subtotal			0.49
PHFS Total			41.34

Source: FHWA, https://ops.fhwa.dot.gov/Freight/infrastructure/ismt/state_maps/states/delaware.htm

C.3 Delaware's Non-PHFS Interstates

Not applicable; all interstate segments within Delaware are included on the PHFS.



C.4 Delaware's Critical Urban Freight Corridor (CUFC) Segments

ID	County	Route No.	Start Point	End Point	Length	Criteria ¹
1	New Castle	US 202	DE/PA Line	I-95 Interchange	5.09	K
2	New Castle	US 13	I-495 Interchange	I-295 Interchange	1.81	I, J
3	New Castle	US 40	I-295 Interchange	SR 896	11.16	K, I
4	New Castle	DE 896	I-95 Interchange	Churchtown Rd. / Boyd's Corner Intersection	10.46	J, K
5	New Castle	SR 1 (Segment A)	I-95 Interchange	US 13 Overpass (Urban boundary)	4.77	H, K
6	New Castle	SR 1 (Segment B)	Former Gov. Lea Rd. Crossover	Lorewood Grove Rd. (Exit 148)	4.12	H, K
7	Kent	SR 1 (Segment C)	Paddock Rd. Overpass	S. Smyrna Exit (Ex. 114)	2.82	H, K
8	Kent	SR 1 (Segment D)	Twin Willows Rd. Overpass	Leipsic River Crossing	0.82	H, K
9	Kent	SR 1 (Segment E)	Emergency Access Ramp	Dyke Branch Rd.	1.62	H, K
10	Kent	SR 1 (Segment F)	Exit 104 Ramps	0.35 mi. S. of Leipsic Rd. Overpass	1.70	H, K
11	Kent	SR 1 (Segment G)	White Oak Rd. Overpass	SR 9 Interchange (Exit 91)	5.90	H, K
12	Kent	SR 1 (Segment H)	Mulberrie Point Rd.	SR 12 Interchange	2.45	H, K
13	Kent	US 13 (Segment A)	Puncheon Run (Exit 97)	Longacre Dr.	6.43	H, K
14	Kent	US 13 (Segment B)	N. of Barnie Jenkins Rd.	S. of Killens Pond Rd.	5.52	H, K
15	Sussex	US 13 (Segment C)	Cannon Rd.	N. of Delmarva RV Center	4.66	H, K
16	Sussex	US 13 (Segment D)	Airport Rd.	Boyce Rd.	2.23	H, K
17	Sussex	US 13 (Segment E)	N. of Discount Land Rd.	Kurtz Rd.	0.66	H, K
18	Sussex	US 13 (Segment F)	Sycamore Rd	Laurel Rd.	0.74	H, K
19	Sussex	US 13 (Segment G)	Near US 13 Dragway	DE/MD Line	0.93	H, K
20	Sussex	US 9	US 13	0.41 miles East of US 13	0.41	K
Total CUFC Mileage =					74.30	

¹ CUFC Criteria Legend:

- H:** Connects an intermodal facility to the PHFS, the Interstate System, or an intermodal freight facility
- I:** Located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement
- J:** Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land
- K:** Corridor that is important to the movement of freight within the region, as determined by the MPO or the State



C.5 Delaware's Critical Rural Freight Corridor (CRFC) Segments

ID	County	Route No.	Start Point	End Point	Length	Criteria ¹
21	New Castle	SR 1 (Segment I)	US 13 Overpass (Urban boundary)	Former Gov. Lea Rd. Crossover	1.45	F, G
22	New Castle	SR 1 (Segment J)	Lorewood Rd.	Paddock Rd.	17.76	F, G
23	New Castle	DE 896	Churchtown Rd. / Boyd's Corner Intersection	SR 1 Interchange (Exit 142)	3.72	F, G
24	Kent	SR 1 (Segment K)	S. Smyrna Exit (Ex. 114)	Twin Willows Rd. Overpass	2.38	F, G
25	Kent	SR 1 (Segment L)	Leipscic River Crossing	Emergency Access Ramp	1.33	F, G
26	Kent	SR 1 (Segment M)	Dyke Branch Rd.	Exit 104 Ramps	0.37	F, G
27	Kent	SR 1 (Segment N)	0.35 mi. S. of Leipscic Rd. Overpass	White Oak Rd. Overpass	1.27	F, G
28	Kent	SR 1 (Segment O)	SR 9 Interchange (Exit 91)	Mulberrie Point Rd.	4.07	F, G
29	Kent/Sussex	SR 1 (Segment P)	SR 12 Interchange	US 9, Lewes	26.07	F, G
30	Kent	US 13 (Segment H)	Longacre Dr.	N. of Barnie Jenkins Rd.	1.38	F, G
31	Kent	US 13 (Segment I)	S. of Killens Pond Rd.	Cannon Rd.	19.72	F, G
32	Sussex	US 13 (Segment J)	N. of Delmarva RV Center	Airport Rd.	0.81	F, G
33	Sussex	US 13 (Segment K)	Boyce Rd.	N. of Discount Land Rd.	1.00	F, G
34	Sussex	US 13 (Segment L)	Kurtz Rd.	Sycamore Rd	0.30	F, G
35	Sussex	US 13 (Segment M)	Laurel Rd.	Near US 13 Dragway	5.95	F, G
36	Sussex	US 9	0.41 miles East of US 13	SR 1, Lewes	24.59	D, G
37	Kent/Sussex	US 113	SR 1/ US 113 Split	DE/MD Line	37.29	D, G
Total CRFC Mileage =					149.46	

¹ CRFC Criteria Legend:

- A:** Rural principal arterial roadway with a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks
- B:** Provides access to energy exploration, development, installation, or production areas
- C:** Connects the PHFS or the Interstate System to facilities that handle more than: 50,000 20-foot equivalent units per year; or 500,000 tons per year of bulk commodities
- D:** Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility
- E:** Connect to an international port of entry
- F:** Provides access to significant air, rail, water, or other freight facilities
- G:** Corridor that is vital to improving the efficient movement of freight of importance to the economy of the State.





APPENDIX D:

Delaware Freight Emphasis Areas (IIJA-Based)

D. APPENDIX D: Delaware Freight Emphasis Areas (IIJA-Based)

Freight planning as a whole can be a unique and challenging endeavor as it involves or influences so many different topics, programs, resources, stakeholders, and countless other details. Examples of this diversity include many of the federally required freight emphasis areas that must be addressed within a state freight plan, including an expansion of these requirements under the 2021 Infrastructure Investment and Jobs Act (IIJA) as detailed in the introduction of this freight plan. Though far from all-inclusive, this Appendix to the 2022 Delaware State Freight Plan compiles additional details (beyond any summary highlights included within the main body of the freight) for several of the IIJA-based freight emphasis areas that provide insight into the following:

- Section D.1 – Technology and Operations
- Section D.2 – Asset Preservation and Improvement
- Section D.3 – Freight Congestion
- Section D.4 – Truck Parking
- Section D.5 – Supply Chains
- Section D.6 – Commercial Ports
- Section D.7 – Multistate Coordination
- Section D.8 – E-commerce
- Section D.9 – Military Freight
- Section D.10 – Freight Resilience and Environmental Impacts

D.1 Technology and Operations

DeIDOT Integrated Transportation Management Program:

<https://deldot.gov/Programs/itms/index.shtml>.

An emphasis on technology and operations is reflected within the Delaware State Freight Plan's key strategies, notably as part of the state's goals pertaining to systems management and operations (see **Chapter 6.2.4**). Many of the freight-relevant technology systems operate with support through DeIDOT's Transportation Management Center (TMC), as part of the state's Integrated Transportation Management System (ITMS) and related programs, or in coordination with other agencies.



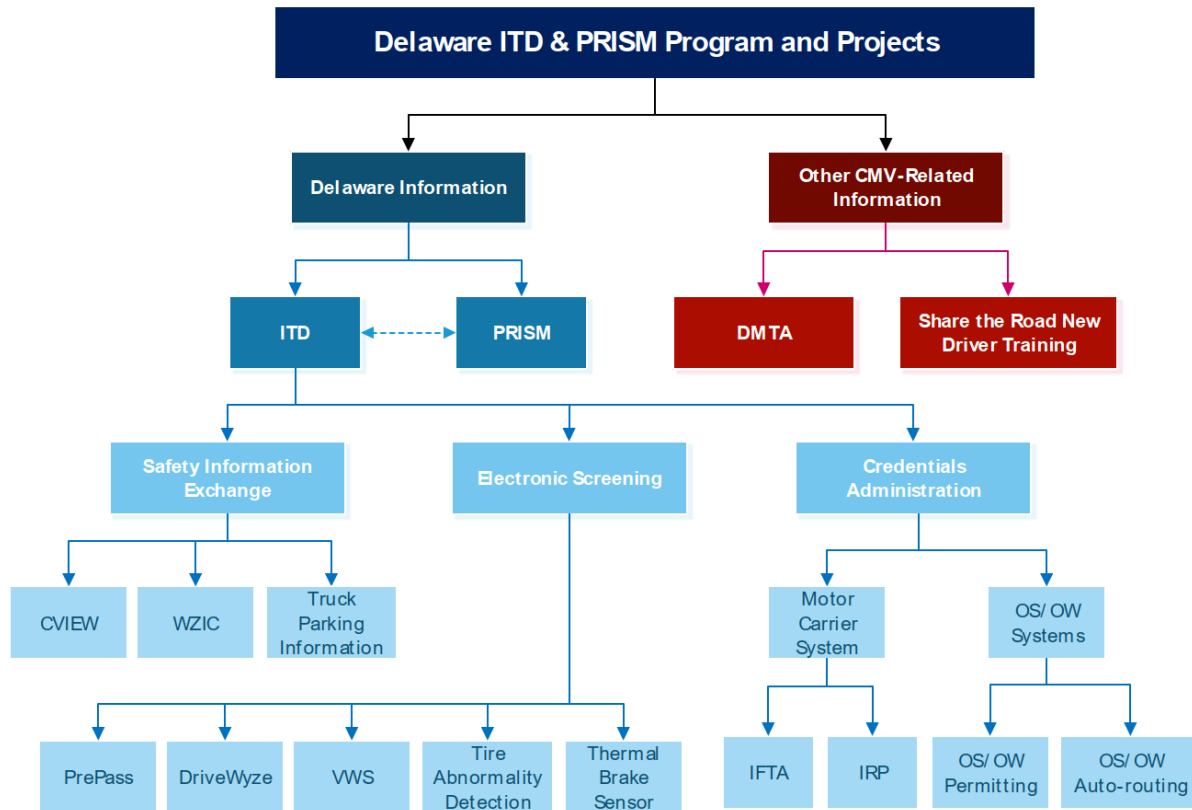
D.1.1 Delaware ITD-PRISM Program

Detail Report: <https://deldot.gov/Programs/ITD-PRISM/pdfs/DE-ITD-PRISM.pdf>.

DeIDOT Commercial Motor Vehicle Portal: <https://deldot.gov/Programs/ITD-PRISM/index.shtml>.

DeIDOT operates the Innovative Technology Deployment (ITD) Program¹ and Performance Registration and Information Systems (PRISM) Program as mechanisms through which the Federal Motor Carrier Safety Administration (FMCSA) provides federal funding to deploy a variety of projects that support interstate and intrastate commercial motor vehicle (CMV) operations. ITD provides funding for CMV credentials administration; electronic screening of CMVs for size, weight, safety, and credential information; and the real-time exchange of vehicle and driver safety information to support safety inspections and enforcement of CMV regulations. PRISM provides states with a mechanism to identify and immobilize motor carriers with serious safety deficiencies and hold them accountable through registration and law enforcement sanctions.

Exhibit D-1: Delaware ITD & PRISM Organization



Source: DeIDOT, <https://deldot.gov/Programs/ITD-PRISM/pdfs/DE-ITD-PRISM.pdf>.

¹ Started in 2006 as the Commercial Vehicle Information Systems and Networks (CVISN) Program, CVISN was renamed to ITD in 2015 with the passage of the FAST Act.



D.1.2 Electronic Screening Systems

Electronic screening entails deploying technology to identify and electronically screen commercial vehicles at mainline speeds. As part of DelDOT's ITD-PRISM program efforts, Delaware's current and planned electronic screening (E-screening) systems include subscriber-based systems, virtual weigh stations, automatic brake sensor thermal inspection systems, and tire abnormality detection systems.

Subscriber-Based E-Screening Systems: The Delaware Electronic Screening Deployment project includes the *PrePass*² transponder-based system at one site and the *Drivewyze*³ geo-fence/mobile device-based system at seven sites (**Exhibit D-2**). These E-screening systems use technology to screen commercial vehicles in motion. Motor carriers can enroll in the program if the carrier and vehicle meet safety and credentialing requirements. Once enrolled, commercial vehicles can use the e-screening sites to bypass fixed weigh stations. The sites pre-screen registered vehicles for compliance with size and weight regulations and tell drivers to bypass or continue to the weigh station. A transponder and dynamic message signs (DMS) or in-cab devices communicate information to the driver. An overheight detector and weigh-in-motion (WIM) system assess if the vehicle meets size and weight requirements.

Virtual Weigh Station (VWS) Deployment: Delaware VWS systems include three deployed, one portable, and one planned site (**Exhibit D-2**). VWS technology is typically deployed along diversion routes that trucks might use to avoid tolls or weigh stations. It allows the state to implement cost-effective truck route monitoring with targeted enforcement. The sites typically include WIM technology, overheight detection, cameras to capture images of the vehicle, license plate and USDOT number, and wireless communication devices. The sites send the collected data to officers located in fixed weigh stations or patrol vehicles who can intercept violators based on screening of vehicle size, weight, credentials, and safety information. A VWS site can be developed for a fraction of the cost of a fixed facility, providing greater coverage and flexibility for enforcement officers. The wider enforcement coverage promotes better compliance with size, weight, credential, and safety regulations. Delaware systems

Exhibit D-2: Delaware Electronic Screening and Virtual Weigh Station Sites

Route	Site	System(s) or Status
E-Screening Systems		
US 301	Middletown US 301 NB	Drivewyze and PrePass
I-95	Delaware Toll Plaza I-95 NB	Drivewyze
I-295/I-95	Delaware Turnpike Inspection Point, I-295/I-95 SB	Drivewyze
SR 7	Limestone Inspection, SR 7 NB	Drivewyze
SR 7	Limestone Inspection, SR 7 SB	Drivewyze
US 41	Newport Gap Pike Inspection, US 41 SB	Drivewyze
Terminal Ave	Terminal Avenue Inspection Point	Drivewyze
VWS Systems		
US 13	US 13 NB approaching weigh station	Deployed
SR 1	SR 1 NB approaching Exit 119	Deployed
Warwick Rd	Warwick Road EB	Deployed
--	Portable VWS System	Portable trailer can be deployed statewide
US 301	US 301 NB at Maryland-Delaware state line	Planned

² PrePass® / PrePass Safety Alliance (formerly HELP, Inc.), <https://prepass.com/>.

³ Drivewyze, <https://drivewyze.com/>.



Automated Brake Sensor Thermal Inspection System: Delaware plans to install thermal inspection systems on the approach ramps to weigh stations on US 13 and US 301. These systems automatically screen CMVs for unsafe equipment without human intervention by capturing thermal images of each wheel set for every axle as the vehicle passes through the system. The system scans the images and flags vehicles that have potentially faulty equipment based on the heat signatures of the thermal images. This information is then sent to officials at the scale house who can direct vehicles to an area for further inspection.

Tire Abnormality Detection System: A tire abnormality detection systems (TADS) electronically screens tires of CMVs to identify underinflated, missing, mismatched, or flat tires at ramp to highway speeds. Anomalous or flat tires decrease a driver's directional control, increasing the risk of an accident. They also reduce the useful life of the tires and impact fuel economy. In the case of missing or mismatched tires (old and new in dual set), the vehicle loading can become imbalanced, also increasing the risk of an accident. Tire and brake failures are the number one equipment failures involved in CMV crashes nationwide. This innovative system can screen CMVs for anomalous tires to prevent crashes before they occur.

D.1.3 Truck Parking Information System

An element within DelDOT's ITD-PRISM program that focuses on enhanced safety information sharing includes the testing and implementation of a truck parking information system. This system provides CMV drivers with information on available truck parking along major routes in Delaware and neighboring states. The information is provided in real-time and in-cab to the truck drivers in a safe and non-intrusive manner. The information is collected from DelDOT and parking authorities around the state. With truck parking information, CMV drivers can plan to rest along their routes, in accordance with federal requirements. As of 2022, a pilot system has been developed at Delaware's Smyrna rest area, using cameras and in-pavement "puck" sensors to determine parking space availability. A corresponding webpage is being developed to track available spaces in parking lots, areas, and subareas; and a system demonstration is planned for the end of 2022. These technologies reflect ongoing implementation efforts that mesh with specific recommendations from the 2021 Delaware Statewide Truck Parking Study to explore information and technology projects where there are opportunities to address truck parking issues by providing timely and accurate truck parking information.

D.1.4 Work Zone Incident Communication System

DelDOT WZIC System: <https://deldot.gov/Programs/WZIC/index.shtml>.

Another element of DelDOT's ITD-PRISM program and a continuation of efforts from a prior (2017) feasibility study, DelDOT continues to explore the conceptual development of a Work Zone Incident Communication (WZIC) system to enhance the state's ability to communicate work zone restrictions to CMV drivers. The communication includes notifications of closures, adverse roadway conditions, safety alerts, and security concerns that will be provided via existing in-cab devices/systems in a safe and non-intrusive manner. The notifications will be sent with sufficient advanced notice to enable rerouting around the incident or slowing down to a safe speed approaching the area of concern. The system will collect information from DelDOT, cooperating agencies and companies in the private sector. As of 2022, ongoing work on the WZIC program includes development of the Trucker Portal and related requirements, as well as coordination of preferred data sets from sources such as Drivewyze, PrePass, and INRIX.



D.1.5 Share the Road New Driver Training Program

VTTI Sharing the Road Program: <https://cmvroadsharing.org/>.

In support of other technology and operations programs and to help the state's goal of reducing motor vehicle fatalities, DelDOT has also implemented a supplemental driver education program developed by the Virginia Tech Transportation Institute (VTTI) that promotes safe driving practices among teen drivers and the general driving population while interacting with CMVs. This program includes a hands-on truck experience developed by VTTI at Delaware schools, which demonstrates proper procedures for sharing the road with trucks and other heavy vehicles, along with the danger areas around these heavy vehicles. It also provides website resources through VTTI that incorporate video clips of real-world driving events captured during VTTI naturalistic driving studies.

D.1.6 DeIDOT Oversize/Overweight Permit System

Delaware OS/OW Permit System: <https://deldot.gov/osow/application/>.

DeIDOT's ITD-PRISM program efforts also include an emphasis on expanded electronic credentialing systems. Current efforts focus on Delaware's Oversize/Overweight (OS/OW) Hauling Permit System Software Upgrade and Common Look and Feel (CLF) Enhancement Project, and the OS/OW Automatic Routing System Project.

OS/OW Hauling Permit System Software Upgrade and CLF Enhancements: This project updates the DeIDOT's system to be more accessible and secure. The system software is being upgraded to a new version of JAVA and Delaware's Information Technology (IT) CLF standard. The CLF standard improves the user experience and enables access to the system through different platforms such as tablets and smartphones. The upgraded system also provides enhanced security against cyber-threats.

OS/OW Automatic Routing System: This system generates routes for commercial vehicles along permitted routes. Motor Carriers can enter start and end locations into the OS/OW Auto Routing System to generate a safe route using the auto-routing system. The system ensures the safety of the traveling public and the integrity of public streets, bridges, and infrastructure statewide. Data input by DeIDOT personnel and Commercial Vehicle Operations personnel is used to evaluate the routing options.

D.1.7 Dilemma Zone (DZ) System

Dilemma Zone System Details: <https://deldot.gov/Programs/itms/index.shtml?dc=projects>.

A dilemma zone (DZ) is the area just before a traffic signal where approaching vehicles may not be able to safely slow down to stop before a red signal, but also may not be able to keep driving to make it through an intersection safely before the signal turns red. Driver-decisions in the DZ during a traffic signal change interval play a significant role in affecting road safety at signalized intersections – more so, potentially, for CMVs with heavy freight loads that require greater time/distance to stop completely. To improve safety at strategic locations, Delaware is deploying a system that uses high-definition radar sensors that can detect if a vehicle may be entering a DZ, and that automatically extend the signal green time while also turning on a flasher sign ahead of the intersection to warn approaching drivers. DeIDOT's initial DZ system was installed in February 2019 at the US 113 / SR 16 intersection in Ellendale. Future installations are planned in Smyrna along DeIDOT's US 13 emerging technology testbed.



D.1.8 Connected and Automated Vehicles

DeIDOT CAV website: <https://deldot.gov/Programs/autonomous-vehicles/index.shtml>.

Connected and Automated Vehicles (CAV) utilize technology to communicate with other vehicles, connected devices, and the transportation system. DeIDOT maintains a CAV Advisory Council tasked with developing recommendations for innovative tools and strategies that can be used to prepare Delaware's transportation network for CAV. Potential CAV subject areas are related to promoting economic development; technology, security, and privacy; transportation network infrastructure; and impact on public and highway safety.

D.1.9 Transportation Operations Management Plan

DeIDOT TOMP Resources: <https://deldot.gov/Programs/itms/index.shtml?dc=tomp>.

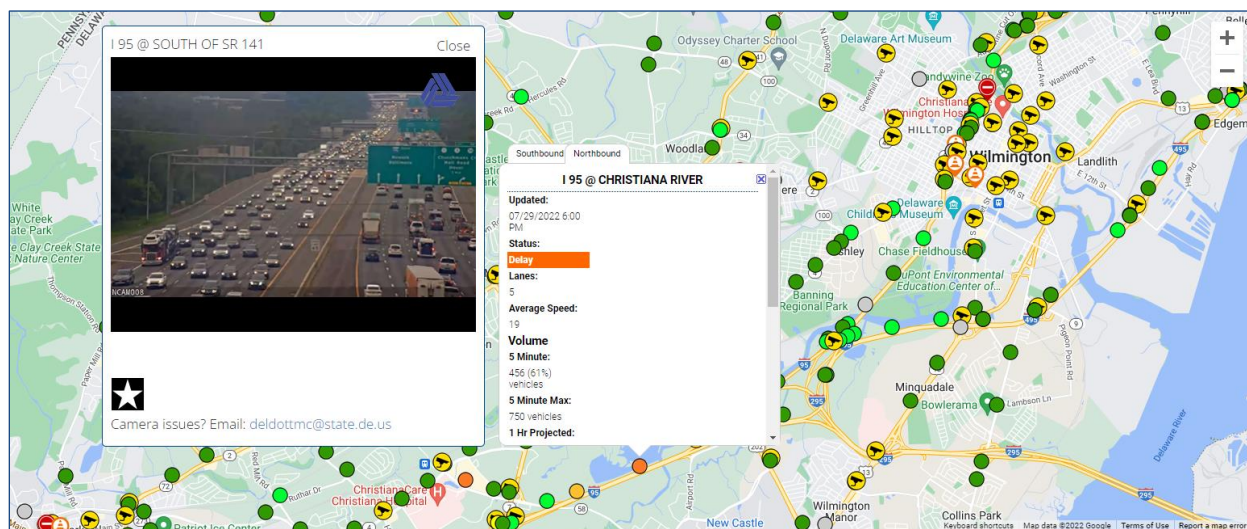
The Transportation Operations Management Plan (TOMP) is Delaware's comprehensive, consistent statewide approach that uses ITMS data to understand traffic mobility across the state. This understanding is essential for DeIDOT to ensure the state's transportation system supports safe, reliable, and multimodal travel to make Delaware a better place to live and conduct business.

D.1.10 Real-Time Traffic Data

DeIDOT Interactive Map: <https://deldot.gov/map/index.shtml>.

From a real-time data technology perspective, much of the information that DeIDOT gathers for transportation systems management is shared with the public. DeIDOT provides incident and travel advisory information throughout the state as part of an interactive travel map (**Exhibit D-3**) with access to data layers such as live traffic cameras, travel times, weather advisories, water-on-road warnings, snow advisories, and more. Maps are available online and via mobile device apps.

Exhibit D-3: DeIDOT Interactive Map Sample



D.1.11 Other Technology Systems

Other technology and operations systems that support the applications above and other resources throughout DelDOT with benefits for both CMV traffic and general travel include details related to:

- All electronic tolling (AET) initiatives
- Traffic responsive signalization (TRS) via advanced software control and periodic retiming
- ITMS radar traffic detector systems (Wavetronix) for volume, speed, delay, and classification
- ITMS Bluetooth data collection systems for travel time, speed, and travel pattern data

DMTA Congestion Newsletters

In addition to state advisories and data available through DelDOT resources, the **Delaware Motor Transport Association (DMTA)** (<https://delawaretrucking.org/>) also supports public/private information sharing by providing newsletters and subscriber alerts directly to trucking and logistics professionals to alert them to road closures, congestion conditions, construction advisories, safety issues, and more.

D.2 Asset Preservation and Improvement

D.2.1 Bridge Conditions

Based on FHWA's National Bridge Inventory (NBI), Delaware's transportation network in 2022 includes a total of 872 bridges with 341 located along the NHS.⁴ Tracking and managing bridge conditions is an important element of the National Highway Performance Program (NHPP) and related Transportation Performance Management (TPM) requirements that include a focus on bridge conditions on the NHS.⁵ Maintaining Delaware's bridges in a state-of-good repair, particularly along the NHS, supports several broad transportation goals, including direct benefits for freight traffic and economic vitality. DelDOT regularly manages bridge condition reporting and related target comparisons through their TPM reporting processes to track the percentage of bridges on the NHS in poor or good conditions. Based on trend data and measurements, NHS bridge conditions in Delaware are generally improving and meeting or exceeding the current TPM targets (**Exhibit D-4** and **Exhibit D-5**).

D.2.2 Pavement Conditions

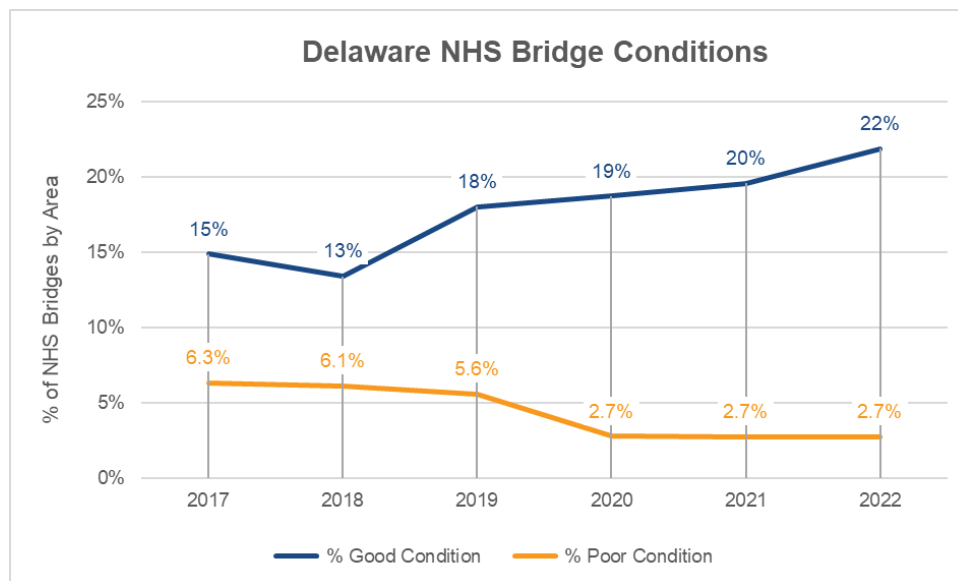
Similar to the requirements for bridge conditions, DelDOT is also required to regularly manage pavement conditions reporting and related target comparisons through their TPM reporting processes. Based on FHWA TPM requirements, pavement conditions track the percentage of the interstate system and, separately, the non-interstate NHS having pavement in poor or good conditions. Based on trend data and measurements, interstate pavement conditions in Delaware are generally improving and meeting or exceeding the TPM targets (**Exhibit D-6**). Non-interstate NHS pavements in poor condition are also generally improving and meeting or exceeding the TPM targets; however, the most recent (2021) measurement of non-interstate NHS pavements in good condition are slightly below the desired 50% target. Ongoing investments through DelDOT's overall transportation planning and programming resources will continue to address improvements throughout the state as needed.

⁴ FHWA, National Bridge Inventory, <https://www.fhwa.dot.gov/bridge/nbi/condition.cfm>.

⁵ See FHWA TPM Rulemakings: Pavement and Bridge Condition Performance Measures Final Rule, 2017, <https://www.fhwa.dot.gov/tpm/rule.cfm>.



Exhibit D-4: Delaware NHS Bridge Conditions per FHWA National Bridge Inventory



Data Source: FHWA, National Bridge Inventory, <https://www.fhwa.dot.gov/bridge/nbi/condition.cfm>.

Exhibit D-5: Delaware NHS Bridge Conditions and Targets per DelDOT Reporting

Bridge Condition	Base Year (2017)	2018 (Measured)	2019 (2-year Target)	2021 (4-year Target)
GOOD	17.0%	25.7%	15.0%	15.0%
POOR	1.0%	1.8%	5.0%	5.0%

Data Source: DelDOT, Transportation Solutions Division

Exhibit D-6: Delaware Pavement Conditions (2017-2021)

Pavement Condition	Base Year (2017)	2019 (Measured)	2019 (2-year Target)	2020 (Measured)	2021 (Measured)	2021 (4-year Target)
Interstate Pavements						
GOOD	54.7%	55.6%	-	61.8%	60.7%	50.0%
POOR	0.8%	0.2%	-	0.6%	0.3%	2.0%
Non-Interstate NHS Pavements						
GOOD	59.7%	55.5%	50.0%	55.9%	42.4%	50.0%
POOR	1.2%	1.1%	2.0%	1.1%	0.8%	2.0%

Data Source: DelDOT, Transportation Solutions Division



D.2.3 First/Final Mile Network Shoulders

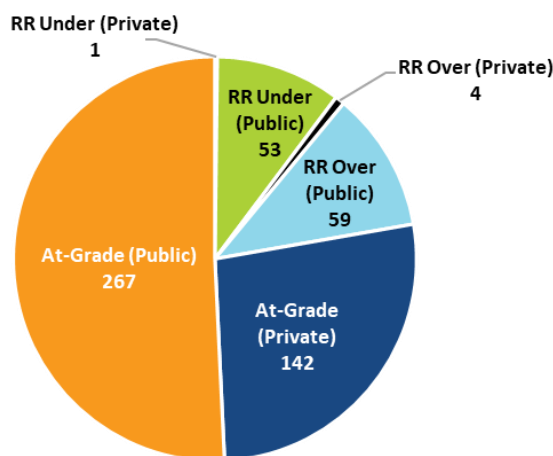
Beyond the federally required TPM details for bridges and pavements, data is available within Delaware to potentially explore conditions along the state's First/Final Mile Network. Specifically, the presence of shoulders along first/final mile connections can provide a notable benefit for general truck travel and safety for CMV's that must use specific routes to access their freight pick-up or delivery sites. Based on data compilations available through WILMAPCO, nearly 9% of Delaware's first/final mile connections have existing shoulder widths of up to 1', while 70% has shoulders of 4' or greater. Such details may be referenced to support first/final mile network improvements (e.g., to identify potential areas for shoulder widening) as part of ongoing state, regional, and local freight planning efforts throughout Delaware.

D.2.4 Highway-Rail Crossings

The Federal Railroad Administration (FRA) crossing inventory identifies 526 highway-rail crossings within Delaware (**Exhibit D-7**).⁶ Of these crossings, 142 (27%) are located along Class I rail lines, and 384 (73%) are located along Class III rail lines. Most crossings are publicly owned (72%), and most crossings also occur at-grade (78%) as opposed to grade-separated railroad over or under passes. Over half of the state's highway-rail crossings are located in New Castle County (272 or 52%), followed by Sussex County (180 or 34%), and Kent County (74 or 14%).

As noted in Chapters 4 and 5 of the Delaware State Freight Plan, highway-rail crossing locations are reflected among the state's broader freight planning needs, and annual improvement opportunities are available and managed (contingent on program resources) as part of DelDOT's Highway-Rail Grade Crossing Safety Program (HRGX) or other project funding opportunities.

Exhibit D-7: Delaware Highway-Rail Crossing Inventory



⁶ Federal Railroad Administration, Safety Data and Reporting – Crossing and Inventory Data, including data compiled for Delaware, <https://railroads.dot.gov/safety-data/crossing-and-inventory-data/crossing-inventory-dashboards-data-downloads>.



D.2.5 Roadway Deterioration due to Heavy Vehicles/Cargo

Federal freight planning requirements specifically note that freight plans must include a description of improvements that may be required to reduce or impede deterioration along roadways on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate roadway conditions. DelDOT generally views this requirement as being captured or managed as part of broader bridge and pavement condition tracking (per Sections D.2.1 and D.2.2), in which conditions are generally improving and meeting or exceeding targets. At this time, no route deterioration has been identified that is specifically or exclusively attributable to heavy vehicles related to mining, agricultural, energy cargo/equipment, or timber.

Beyond the major freight network routes, the most likely areas to be impacted by potential roadway deterioration due to heavy vehicles will more often relate to the state's first/final mile freight network. Identifying specific needs and locations where future targeted improvements may be required will, therefore, involve ongoing collaboration with the state's MPOs, municipalities, and local planning partners. Avenues and resources through which this collaboration can occur overlap several elements discussed throughout this plan, including the following:

- DelDOT support through annual Municipal Freight Planning efforts to assist towns with determining routes that are appropriate for heavy vehicles.
- Identifying and compiling needs through usage of Delaware's Freight Planning Considerations Checklist (see **Section 6.2.2** and **Exhibit 6-4**).
- Coordination with system management, operations, and maintenance strategies, including specific emphasis on freight infrastructure maintenance (see **Section 6.2.4**).
- Coordination with shoulder improvements along first/final mile network routes (see **Section D.2.3**).
- Coordination with agricultural industry partners and commercial port partners via the Delmarva Freight Working Group, Delmarva Freight Summits, or similar opportunities (see **Section 1.2**)
- Reference to areas where energy cargo/equipment are likely to occur based on Delaware's Power Generating sites (see **Exhibit 3.10**) and energy resources (see **Section D.10.3** and **Exhibit D-25**).



D.3 Freight Congestion

D.3.1 Truck Bottlenecks

As part of federal TPM reporting requirements and 23 U.S.C. § 150(e)(4), states must identify and describe the ways in which they are addressing congestion at freight bottlenecks. States and their planning partners are required to build a foundation for truck freight bottleneck reporting that combines data analysis, qualitative information, professional expertise, and stakeholder engagement.⁷

Delaware's statewide truck bottleneck identification and analyses are prepared and tracked independent of the freight plan. Delaware's process considers a range of quantitative details that include:

- Travel Reliability (based on volume-to-capacity and related level-of-service estimates for the average weekday AM peak, weekday PM peak, and summer peak)
- Daily Truck Traffic Volume (based on FHWA classes 5-7, and classes 8 and above)
- Daily Truck Traffic Percentage
- Daily Truck Trip Generation (based on zone estimates using employment details)
- Type of Route (based on NHFN, NHS, and other state-specific elements)
- Crash Impacts (based on intersection safety details or rankings)

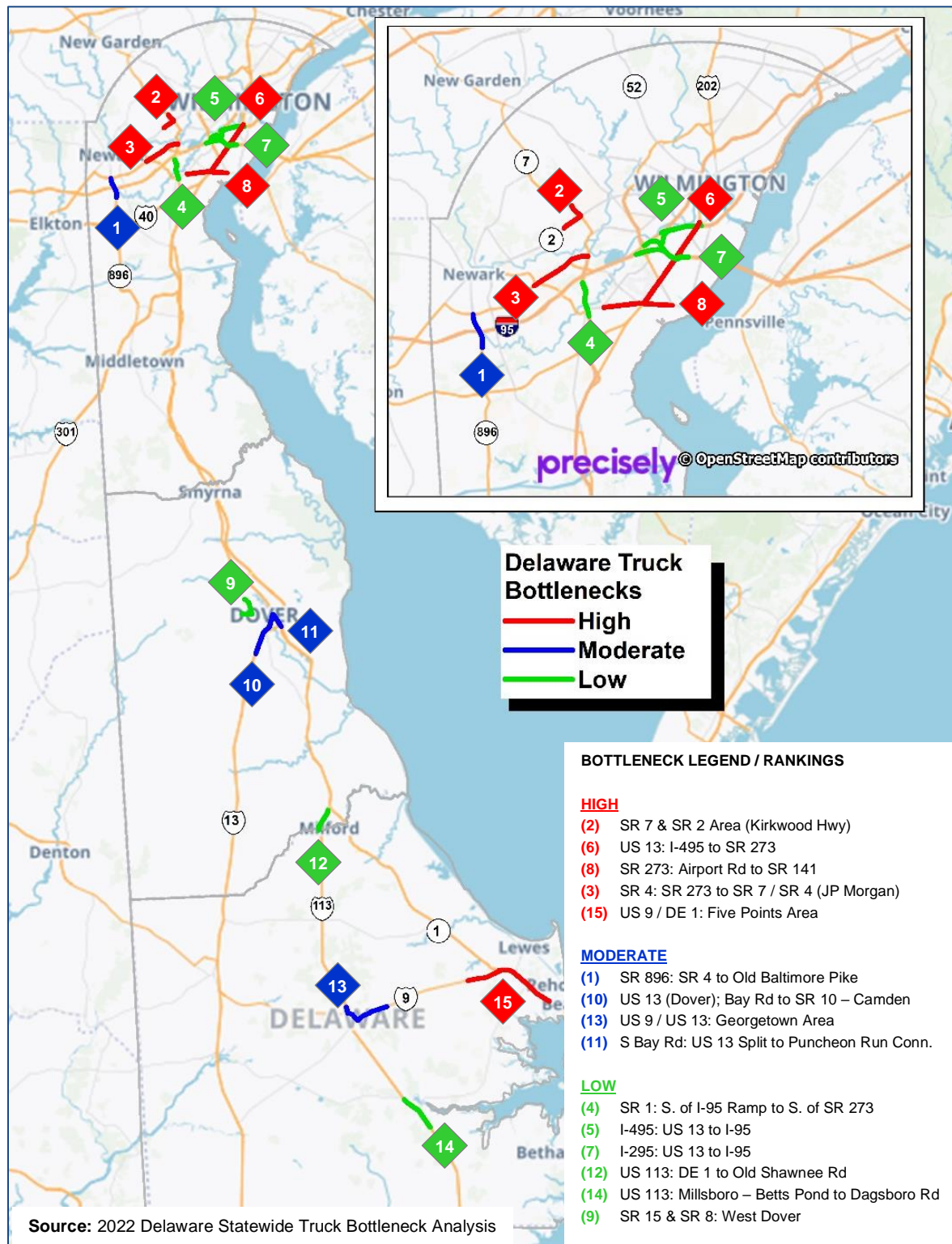
Specific details for the criteria listed above and a summary of Delaware's Statewide Truck Bottleneck Analysis is reported separately in **Appendix F** of this freight plan. These analyses were used to identify and rank (high-moderate-low) Delaware's top 15 truck bottlenecks as summarized in **Exhibit D-8**.

In addition to the identified truck bottleneck locations, this freight plan also provides a summary comparison of planned projects that overlap the state's top 15 truck bottlenecks. This comparison provides a means to help support project planning/programming decisions and track the potential improvements that will address congestion at the bottleneck locations. Potential truck bottleneck improvement projects are reported separately in **Appendix G** of this freight plan.

⁷ FHWA, Truck Freight Bottleneck Reporting Guidebook, July 2018, <https://www.fhwa.dot.gov/tpm/guidance/hop18070.pdf>.



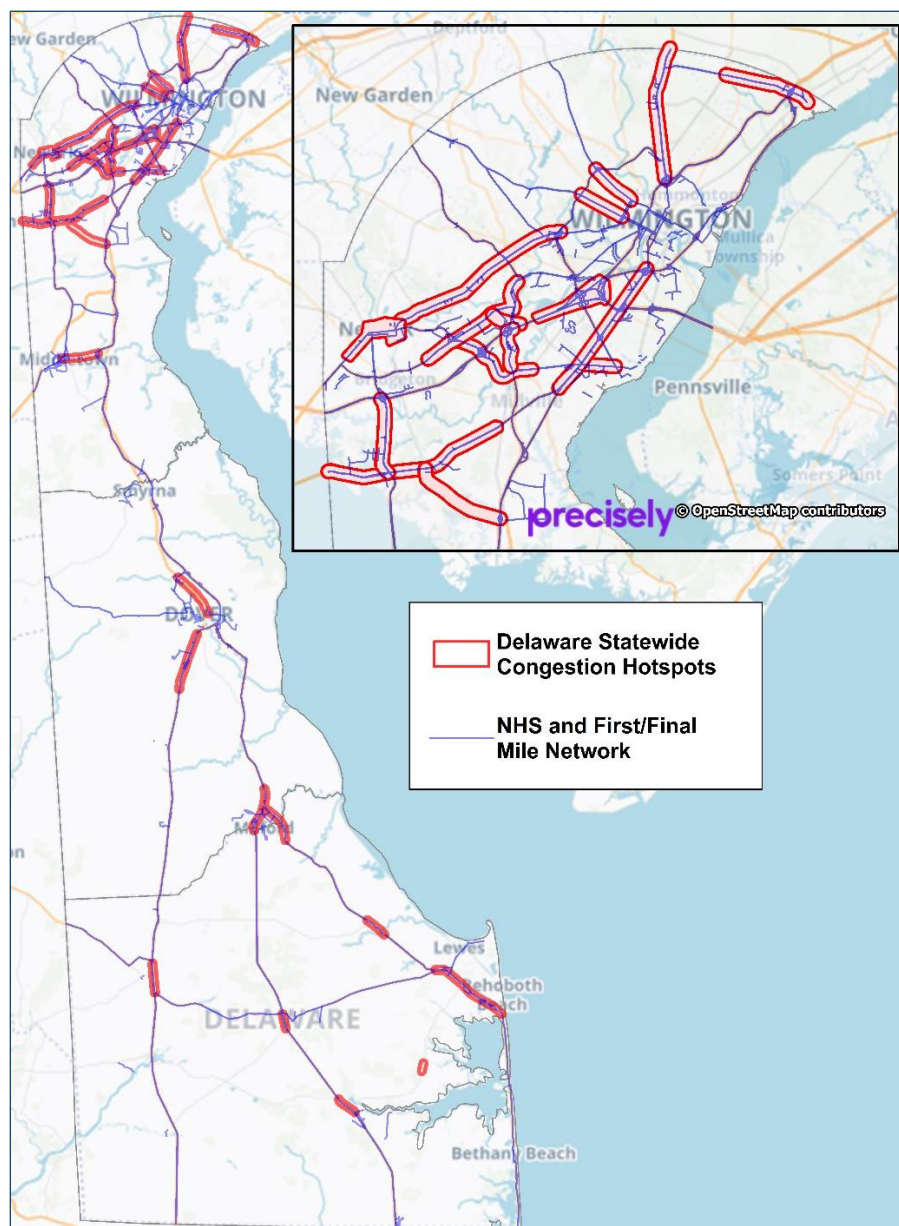
Exhibit D-8: Delaware Top 15 Truck Bottlenecks



D.3.2 Background Traffic Bottlenecks

In addition to the state's top truck bottlenecks identified in the previous section, general background traffic congestion along any route used by CMVs can impact overall freight transportation efficiency. As part of DelDOT's broader congestion management efforts, Transportation Operations Management Plans (TOMPs) are issued and updated by DelDOT for each of Delaware's three counties on a rotating basis. Data analysis conducted as part of the TOMPs focuses on travel time reliability (TTR) and traffic volume measures to assess the frequency and severity of congestion at multiple times during the day and throughout the various seasonal changes. These analyses support the identification of statewide congestion hotspots throughout Delaware that may also be referenced as needed in support of ongoing freight planning efforts and broader transportation planning/programming support (Exhibit D-9).

Exhibit D-9: Delaware Statewide Congestion Hotspots



D.3.3 Truck Travel Time Reliability

Predictable travel time is an important element for facilitating consistent, efficient, and cost-effective goods movement. Tracking and managing travel reliability for trucks and for general travel along the interstate and the non-interstate NHS is included among federal TPM reporting requirements.⁸

TTTR: For trucks specifically, required measures include the Truck Travel Time Reliability (TTTR) index. The TTTR index generally represents the 95th percentile truck travel time divided by the 50th percentile truck travel time, calculated for individual roadway segments and five designated time periods. The maximum TTTR reflects final system performance where a higher TTTR index value indicates worse (less reliable) operations.

LOTTR: For general travel on the interstate and non-interstate NHS, required measures are assessed in terms of the Level of Travel Time Reliability (LOTTR). The LOTTR is defined as the ratio of longer (80th percentile) travel times to normal (50th percentile) travel times in 15-minute intervals during all time periods from 6:00 AM to 8:00 PM. The final LOTTR measures reflect the percent of person-miles traveled on the network that are considered reliable where a higher LOTTR value indicates better (more reliable) operations.

Reliability data were included as part of the truck bottleneck analyses described previously in **Section D.3.1** of this appendix and in **Appendix F**. From a broader perspective as part of DelDOT's TPM reporting processes, summary trends and targets for truck reliability (based on TTTR index) and general travel reliability (based on LOTTR) are summarized in **Exhibit D-10**, **Exhibit D-11**, and **Exhibit D-12**. Based on these trend data and measurements (and not accounting for potential anomalies in the 2020-2021 timeframe), reliability conditions for truck traffic and general traffic were degrading slightly (i.e., becoming "less" reliable); however, all results still generally meet or exceed target expectations. It should be noted that this degradation was "expected" and intentionally planned for in previous target setting efforts, as it is primarily attributable to the influence of scheduled construction activities along I-95 and their related impact on travel reliability. Pending completion of the interstate improvements and future TPM reporting data updates, measured trends without the influence of major interstate work will be reassessed.

For the 2020-2021 timeframe, specifically, it is difficult to assess realistic long-term trends as the data shows substantial improvements in reliability that are almost certainly attributable to the influence of the COVID-19 pandemic and related decreases in overall traffic demand and volumes. As the impact of the pandemic (on travel) continues to decrease, and as travel conditions continue to "return to normal" or simply evolve (e.g., due to any residual or long-term effect of remote work activity on commuter travel schedules), future travel reliability data updates and/or target resetting will continue to be monitored.

⁸ See FHWA TPM Rulemakings: System Performance/Freight/CMAQ Performance Measures Final Rule, 2017, <https://www.fhwa.dot.gov/tpm/rule.cfm>.



Exhibit D-10: Delaware Travel Reliability for Trucks (TTTR Index based)

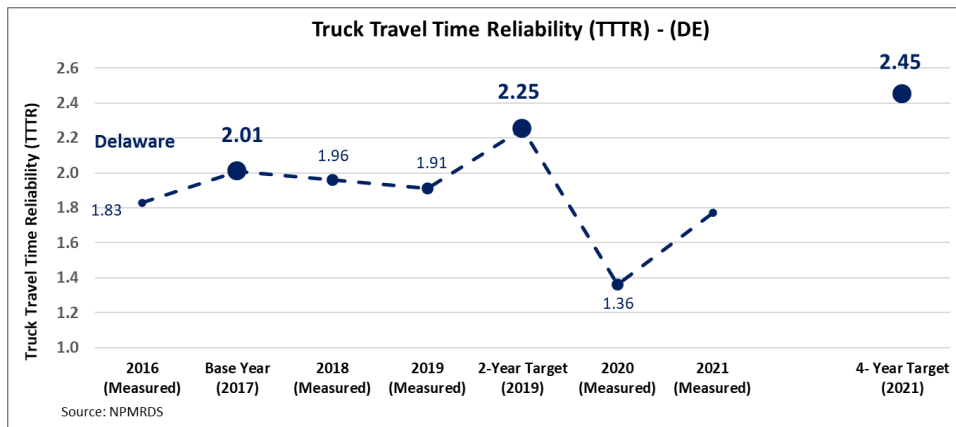


Exhibit D-11: Delaware Travel Reliability for Interstates (LOTTR based)

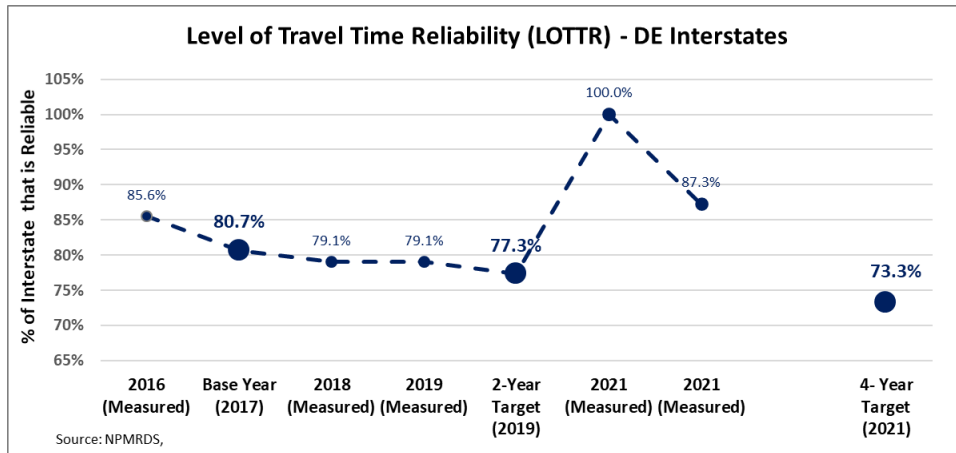
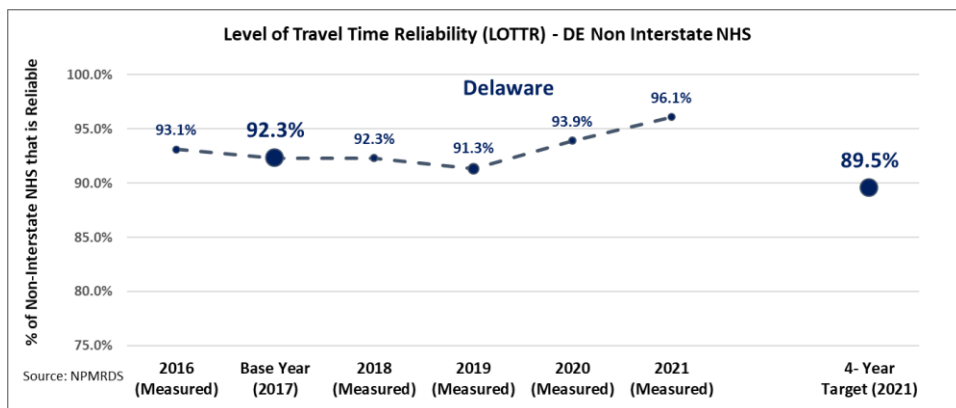


Exhibit D-12: Delaware Travel Reliability for Non-Interstate NHS (LOTTR based)



D.4 Truck Parking

2021 Delaware Statewide Truck Parking Study:

http://www.wilmapco.org/freight/DE_Truck_Parking_Final.pdf.

DelDOT and its MPO planning partners completed the Delaware Statewide Truck Parking Study in 2021. The main objective of the study was to address overnight parking hotspots as well as more localized, shorter-term truck parking and truck staging needs within Delaware. An additional study focus was regular engagement with the local trucking community to help validate future strategies and recommendations. Using several new data collection resources and detailed time-of-day and location-based data, truck parking patterns were captured to develop a comprehensive picture of truck parking conditions throughout Delaware.

IIJA Commercial Motor Vehicle Parking Facilities Assessments

Introduced by the Infrastructure Investment and Jobs Act (IIJA) in 2021 as a new requirement for state freight plans, each state that receives funding under 23 U.S.C. §167, in consultation with relevant state motor carrier safety personnel, shall conduct an assessment of:

1. the capability of the state, together with the private sector in the state, to provide adequate parking facilities and rest facilities for commercial motor vehicles engaged in interstate transportation;
2. the volume of commercial motor vehicle traffic in the state; and
3. whether there exist any areas within the state with a shortage of adequate commercial motor vehicle parking facilities, including an analysis of the underlying causes of such a shortage.

D.4.1 Existing Truck Parking Demand

Based on findings from the truck parking study, the existing demand for truck parking exceeds the available supply of truck parking along key freight routes, near freight generating facilities, and surrounding urban areas in Delaware. As a result, trucks park in undesignated locations at the state's existing rest areas, along corridor and last-mile shoulders, and on last-mile roads, which poses negative impacts to Delaware's economy, safety, infrastructure, and quality of life. Overall conditions are fueled by a variety of truck parking issues and challenges in Delaware (Exhibit D-13).

Exhibit D-13: Truck Parking Issues and Challenges ⁹

	High Truck Parking Utilization in Urban Areas		Presence of Undesignated Truck Parking		Insufficient and/or Lack of Truck Parking Capacity
	Existing Barriers to Facility Access		Increasing Goods Movement		Limited and Expensive Land in Urban Areas
	Negative Public Perceptions of Truck Parking		Lack of Funding Dedicated to Truck Parking		Lack of Clear Public and Private Roles to Address Truck Parking Issues

⁹ Delaware Truck Parking Study, 2021, http://www.wilmapco.org/freight/DE_Truck_Parking_Final.pdf.

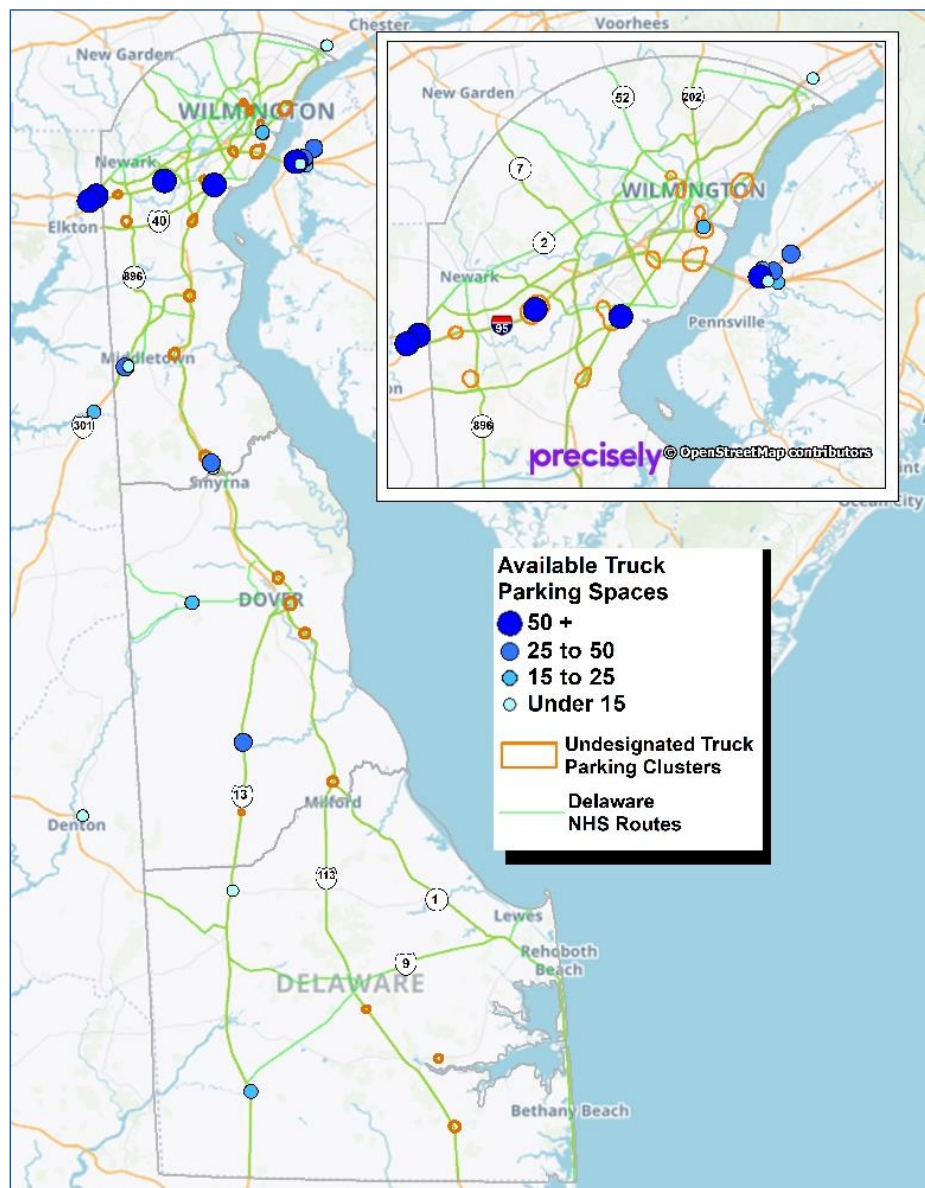


D.4.2 Existing Truck Parking Inventory

An inventory of truck parking locations and spaces, space utilization by time of day, and undesignated parking provide an understanding of the state's existing truck parking conditions (Exhibit D-14). The inventory and utilization of truck parking provide insights into the state's truck parking supply and demand, while the presence of undesignated parking signals an imbalance between truck parking supply and demand.

Delaware has 12 truck parking locations that offer a total of 337 truck parking spaces. Among these, there are 10 private locations (261 total spaces) and 2 public locations (76 total spaces). The public locations include the Smyrna Rest Area and the Biden Welcome Center, the latter of which is publicly owned, but privately operated.

Exhibit D-14: Truck Parking Locations



Utilization at the state's truck parking facilities is highest during the early morning hours, peaking from 2:00 AM to 3:00 AM, especially in urban areas. While utilization is high at select facilities, notably in urban locations, many of Delaware's truck parking facilities do not reach full capacity, even during peak hours. Utilization also remains low in many areas of the state during the non-peak hours of the late morning and afternoon. However, those locations in Delaware that do experience high truck parking utilization also experience higher concentrations of undesigned parking.

There are 32 undesigned truck parking clusters in Delaware, with concentrations of undesigned truck parking highest along key freight routes, near existing public rest areas, near freight generating facilities, and in urban areas.

D.4.3 Truck Parking Opportunities for Delaware

While there is no silver bullet solution for truck parking, there are a range of solutions available to advance truck parking in Delaware. Solutions include statewide policies and programs, as well as location-specific projects.

Policies and Programs focus on institutional changes that promote the inclusion of truck parking into governance and investment decisions. While policies and programs may not directly target a specific location, they are instead part of an overarching strategy that can set the foundation for DelDOT and local partners to advance truck parking on a systematic basis and in decision-making. Overall policy and program opportunities for truck parking in Delaware that focus on institutional changes to promote the inclusion of truck parking into governance, planning, and investment decisions include the following:

- **Champion:** Identify a point of contact, or “champion” for truck parking within DelDOT.
- **Funding:** Secure funding for truck parking projects.
- **Capital Planning:** Integrate truck parking into capital project planning and development.
- **Multistate Coordination:** Coordinate truck parking information and efforts with neighboring states.
- **Land Use Coordination:** Partner with local land use agencies to update local land use regulations to support additional parking capacity on-site at freight generators.
- **Outreach:** Launch a public education campaign to share information about truck parking with local agencies and the public.
- **Industry Coordination:** Work with trucking industry to exchange information about truck parking issues and solutions.

From a project planning perspective, the truck parking study also developed a Truck Parking Project Toolkit (**Exhibit D-15**), which provides a range of available solutions to target location-specific truck parking needs or issues. This toolkit includes the identification of specific opportunities to apply these projects to truck parking issue areas in Delaware. Refer to the 2021 Delaware Statewide Truck Parking Study directly for additional detail on project opportunities.



Exhibit D-15: Delaware Truck Parking Projects – Toolkit and Location-Specific Opportunities ¹⁰

Type	Capacity Expansion Projects					Info & Technology Projects	
Project Toolkit	Expand truck parking capacity at existing public rest areas.	Leverage existing state-owned facilities and land for new truck parking capacity.	Develop protected roadside truck parking along corridor shoulders.	Incentivize private development of new or expanded truck parking capacity.	Promote truck parking at private parking lots during non-peak periods.	Provide signage with information about truck parking locations.	Monitor and provide new technologies related to truck parking.
Location-Specific Opportunities for Delaware	At Smyrna Rest Area	At suitable intersections for truck parking (e.g., on freight corridor, near food and fuel) through P3	Along I-95 as part of existing Newark toll plaza upgrades	At Edgemoor	At Dover Downs Hotel & Casino and/or Dover International Speedway	Across state borders: on I-95 near Maryland and Pennsylvania borders and on I-295 near New Jersey border	
		Along SR 1 as part of existing Biddle's Corner and Dover toll plaza upgrades	Near the Port of Wilmington				
		As part of existing capital planning projects (e.g., on SR 1, East Camden Bypass)	In the Dover area	At Smyrna Rest Area			
		At Tybouts Corner and Route 273 Park and Rides					
		At US 13 weigh station					
		Build extra-wide shoulders along last-mile roads at Edgemoor					

¹⁰ Delaware Truck Parking Study, 2021, http://www.wilmapco.org/freight/DE_Truck_Parking_Final.pdf.



D.5 Supply Chains

D.5.1 Detailed Supply Chain Studies

Recent global events have highlighted how sensitive our goods movement supply chains are to disruption. One area in which Delaware can continue to make progress is gaining a better understanding of how key businesses rely on the transportation system to gather their raw materials, produce goods, and ship their final products to customers. Two of the state's largest industries were previously reviewed via detailed supply chain analyses just before the 2015 release of the FAST Act, including the Delaware Agricultural Supply Chain Analysis and the Delaware Chemicals Manufacturing Supply Chain Study. Reference findings from these prior supply chain studies still provide relevant insights to help support broader planning efforts (see highlight boxes for each study on the following page).

Both of these prior studies provided a “deep-dive” into industry specific supply chain details that go beyond the broader level of planning typically available within the context of an overall statewide freight plan. Such details can include a review of potential strengths, weaknesses, opportunities, and threats (SWOT) that explore a variety of perspectives. Those perspectives may uncover critical supply chain characteristics, raw material sources and related transportation links, intermediate processes or transportation connections, supply chain sub-components and supporting industries, critical market trends and logistics practices, or other needs and opportunities. Such details provide a potentially valuable source of insight to help further support decision-making by the state's transportation planners, forecasters, land use experts, economic development agencies, or other interested organizations, all connected to an ultimate goal of enhancing local, state, regional, and national economic interests.

As listed among the freight strategies and implementation tasks detailed in Chapter 6 of this freight plan, future “deep-dive” supply chain studies that are being considered to continue to grow Delaware's knowledge based potentially include the following industries:

- Freight Intensive Sector (FIS) industry clusters
- Pharmaceuticals
- E-commerce
- Renewable energy
- Coal and petroleum products

D.5.2 Delaware Import/Export Flows

Supply chain insights should leverage a variety of data sources and potentially include a review of critical import/export flows as part of the analysis. As summarized in Chapter 2 of this freight plan, Delaware foreign import/export trade in 2020 amounted to more than 9 million tons of freight worth \$11.8 billion (FAF5). Leading trade partners by FAF5 region include Rest of Americas (e.g., South and Central America), Europe, Southwest and Central Asia (e.g., Saudi Arabia, India), and Canada. As future supply chain analyses are considered, insights from tools such as FAF5 (e.g., import/export flows as highlighted in **Exhibit D-16** and **Exhibit D-17**) may be used to look more closely at specific commodities, foreign-domestic connection/transfer points, truck or multimodal connectivity and accessibility needs within Delaware, specific cargo capacity or handling needs for multimodal infrastructure within Delaware, or other factors as the supply chain studies are developed.



Delaware Agricultural Supply Chain Analysis

This study reviewed agricultural market trends, transportation system and management issues, and overall supply chain insights for the region, with sample findings as follows:

- Much of the corn and soybean crops grown in Delaware are used to feed chickens, not people; requiring imports from the U.S. Midwest to make up an annual deficit of 120 million bushels (or 5,900 rail carloads).
- Eggs for the poultry industry are kept separately (in case of avian flu outbreak) in North Carolina and trucked to the Delmarva region once they hatch.
- Nutrients and minerals, such as calcium, for feed are imported from Pennsylvania.
- Processed poultry moves primarily to adjacent regions in the Midwest (30%), northeast (60%), and Mid-Atlantic (10%), with a small amount to Puerto Rico.
- Rail service was identified as one of the most important issues for the poultry industry to supply feed, and railroad congestion in Maryland could delay shipments of Delaware rail traffic.
- Highway travel was generally reasonable, but summer beach traffic causes major issues, such as congestion on SR 8, SR 24, SR 26, and SR 404, and for regional just-in-time shipments to New York City.

Source: IHS, Delmarva Agriculture Supply Chain Analysis (presentation to WILMAPCO), January 2015.

Delaware Chemicals Manufacturing Supply Chain Study

This study reviewed Delaware's chemicals manufacturing supply chain based on macroeconomic trends, chemical industry analyses, a review of regional transportation assets and Delmarva goods movement, and potential economic opportunities and policy perspectives, with sample findings as follows:

- The study explored inbound/outbound supply chains at each of Delaware's 12 chemical plants, as well as the influence of potential changes due to oil and gas development in the Marcellus shale play.
- Increased pipeline capacity (e.g., Mariner East) to supply feedstock materials, coupled with manufacturing and port facility investment, is necessary to create a more competitive regional economic environment.
- Modest growth opportunities include an emphasis on high-value, low-weight specialty chemicals, plastics, and pharmaceuticals.
- Policies emphasized a range of multimodal transportation options to support future economic opportunities, including reduced highway congestion, improved truck access to major seaports (Wilmington, Baltimore) and regional airports (Philadelphia, Baltimore), efficient rail access to seaports and to the lower Delmarva peninsula, dredging maintenance (45+ feet) for the Delaware River/Bay, and joint marketing with DVRPC.
- Potential challenges to chemicals manufacturing expansion go beyond transportation policy and potentially involve high energy costs, workforce constraints, Coastal Zone Management regulations, and other tax and regulatory issues.

Source: IHS, Delmarva Chemicals Manufacturing Supply Chain Study (presentation to WILMAPCO), November 2013.



Exhibit D-16: Delaware Import Flows (2020 FAF5)

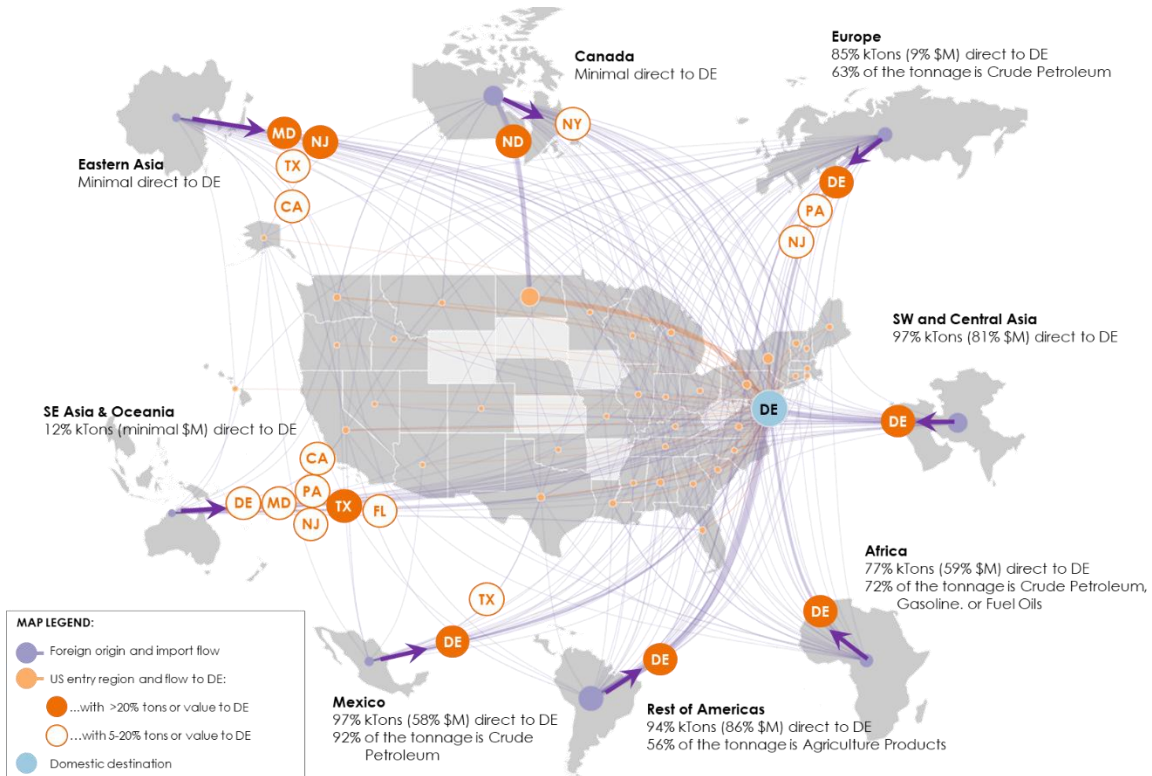
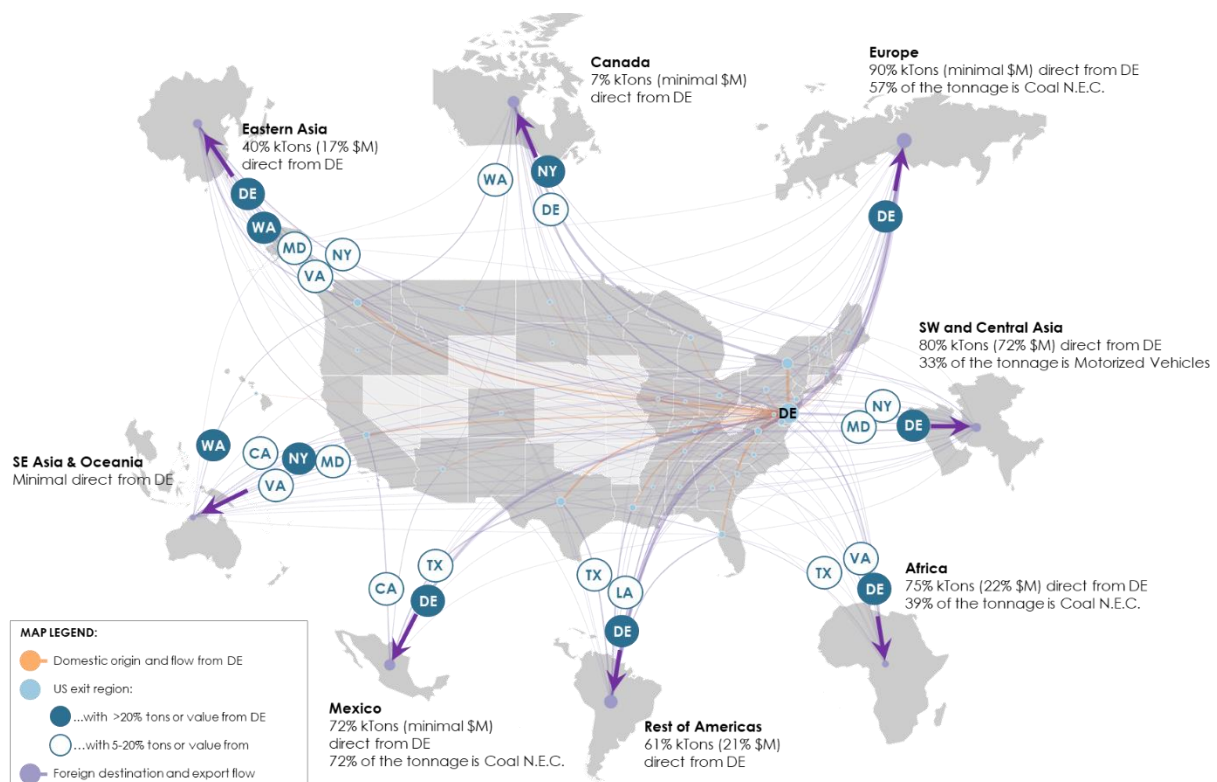


Exhibit D-17: Delaware Export Flows (2020 FAF5)



D.6 Commercial Ports

Commercial port activity and related facilities in Delaware are summarized in the main body of the Delaware State Freight Plan (refer to **Chapter 3.4**), which included highlights for:

- **Port of Wilmington:** handling nationally significant movements of produce and juices, 200,000 TEUs annually through their perishables terminal, 1 million tons of liquid petroleum products annually at their petroleum jetty on the Christina River, automobile and RoRo services, a wide variety of breakbulk and bulk cargo capabilities, livestock exports, and a popular gateway for specialty project cargo and wind energy shipments.¹¹
- **Port of New Castle (Delaware City):** handling 9.2 million tons of cargo in 2019, with 94% as crude petroleum or related products such as fuel oils, gasoline, kerosene, lube oils, greases, solvents, and asphalt.¹²
- **M-95 Marine Highway:** with water route connectivity from Delaware to broader elements of MARAD's Marine Highway system, including access along the Atlantic Coast and connections to most major ports and other inland waterway systems along the east coast.¹³
- **Delaware River/Bay System:** offering connections between the Atlantic Ocean, the Port of Wilmington, and the other major regional port facilities, including the Philadelphia and South Jersey areas. Access via the Delaware River/Bay system also allows for ship/barge connections east of the Dover area to support localized pipeline and supply connections used for fuel storage at Dover Air Force Base.
- **Chesapeake & Delaware Canal:** offering connections between the Delaware River/Bay System and Port of Baltimore along a 46-mile canal maintained by USACE Philadelphia District.
- **Nanticoke River:** offering access through Maryland into Sussex County, Delaware, at Seaford, and carrying more than 1.2 million tons of sand, gravel, fertilizers, and agricultural products (2019 USACE data). This connection also relates directly to interests in exploring a new Seaford Barge-to-Rail Intermodal Terminal as highlighted in **Chapter 5** of this plan.
- **Wicomico River:** offering access to the river-based Port of Salisbury, Maryland, just seven miles from Delaware's southern border, and carrying more than 1.0 million tons of gasoline, fuel oils, sand, gravel, and agricultural products (2019 USACE data). This connection also relates directly to recent feasibility studies that focus on developing a multi-user river port facility in Salisbury as highlighted in **Chapter 1** of this plan.¹⁴
- **Other Eastern Shore (MD) Waterways:** including navigable stretches of water along the Pocomoke, Choptank, and Tred Avon rivers, each carrying roughly 100,000 tons per year of sand, gravel, or other periodic shipments (2019 USACE data).

¹¹ GT Wilmington, Cargo Portfolio, <https://www.portofwilmington.com/cargo-portfolio.html>.

¹² USACE, <https://ndc.ops.usace.army.mil/wcsc/webpub/#/report-landing/year/2019/region/1/location/299>.

¹³ USDOT Maritime Administration, <https://www.maritime.dot.gov/grants/marine-highways/marine-highway>.

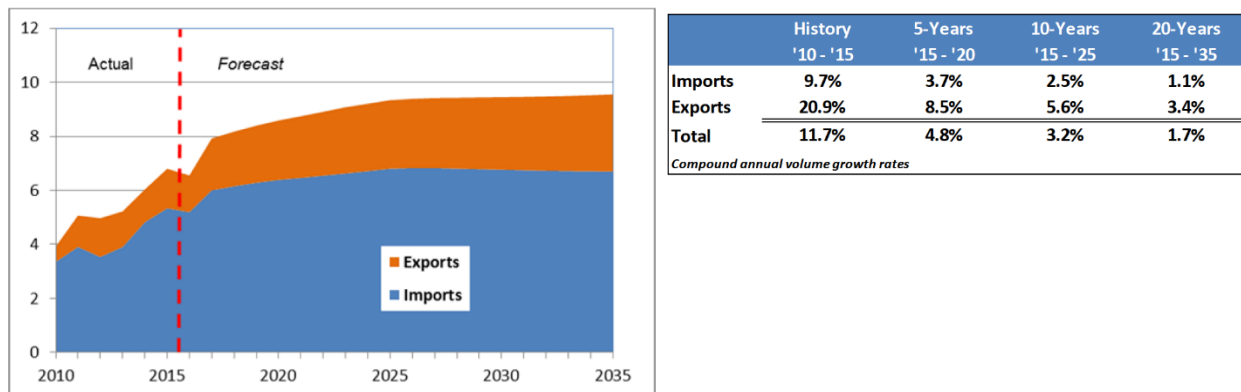
¹⁴ CPCS, https://www.swmpo.org/files/ugd/5c05e2_5a20a26e43f34c24b91295fdd78865dc.pdf.



From the above list, one of the most significant impacts relative to Delaware freight and goods movement opportunities will include GT USA Wilmington's planned expansion of the Port of Wilmington with construction of new 1.2 million TEU container facility at the former DuPont (Chemours) Edgemoor industrial site. This expansion reflects an ongoing realization of port improvements that were previously planned as part of the Port's 2016 Strategic Master Plan (see Port project details in **Appendix H**, notably for the ALT 4 Edgemoor site). The site tentatively reflects a \$500 million investment with a goal of being operational by 2025, which is in addition to the \$118 million that has been spent to upgrade the Port since GT USA Wilmington signed a 50-year management deal in September 2018.¹⁵

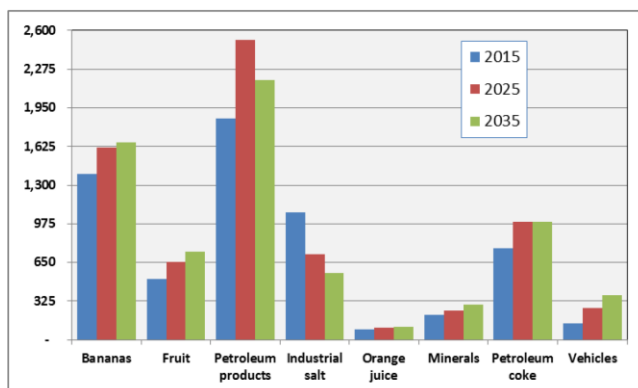
Based on the 2016 strategic plan, positive overall growth is expected to continue at the Port (**Exhibit D-18** and **Exhibit D-19**). Ongoing investments at the Port of Wilmington and the container facility expansion at the Edgemoor site will help to maintain the Port in a state of good repair while also supporting the future growth. Effective planning for dredge material management sites, multimodal rail/port connectivity and efficiencies, truck access and circulation enhancements, and truck parking opportunities as referenced throughout this freight plan will also help to support ongoing growth and future opportunities.

Exhibit D-18: Port of Wilmington Projected Trade Forecast (in million short tons and growth rates)



Source: 2016 Diamond State Port Corporation Strategic Master Plan, based on AECOM/R.K. Johns projections.

Exhibit D-19: Port of Wilmington Key Commodity Volume Projections (in kTons)



Source: 2016 Diamond State Port Corporation Strategic Master Plan, based on AECOM/R.K. Johns projections.

¹⁵ Thompson, Tad, The Produce News, "GT USA Wilmington continues massive port expansion", June 28, 2021, <https://theproductnews.com/deleware-ports/gt-usa-wilmington-continues-massive-port-expansion>.



D.7 Multistate Coordination

It is important to note from a regional perspective that DelDOT actively works with their adjacent state and regional/MPO planning partners as part of an overall collaborative/cooperative approach to freight planning in general (see **Chapter 1.2** of this freight plan), including specific coordination for the freight network designation process. Examples include discussions with MDOT regarding urban corridor recommendations in Cecil County, Maryland; and with the Delaware Valley Regional Planning Commission (DVRPC) regarding urban corridor interests north into Pennsylvania. Such efforts are anticipated to continue as part of broader, ongoing freight planning efforts.

Multi-State Freight Mobility Compact Opportunities

As noted previously in this plan under the discussion of Freight Stakeholders and Partnerships (**Section 1.2**) and in direct relation to State Freight Planning Collaboration (**Section 4.0**), Delaware values and directly participates in frequent multi-state freight planning discussions with Maryland, Virginia, Pennsylvania, surrounding MPOs, TETC, and others. These efforts help to support a broader regional perspective, leverage and share knowledge and experiences, keep pace with evolving freight industry topics, and ultimately help to ensure the smooth transfer of goods between states.

At this time, however, Delaware is not party to any formal multi-state freight compacts as defined by **49 U.S.C §70204**. As collaborative freight planning efforts continue, potential opportunities that could hold regional significance beyond Delaware and that could benefit from additional multi-state coordination and/or the consideration of future multi-state freight mobility compacts include the following (with details as further discussed in the remainder of this appendix):

- Freight network continuity initiatives
- Chesapeake Connector and Susquehanna River Bridge replacement
- Delaware Senate Resolution 10 recommendations
- I-95 widening (through Cecil County, MD)
- Nanticoke River and Seaford Barge-Rail Opportunities

Broader coordination and/or multi-state freight mobility compact opportunities (per 49 U.S.C. §70204) include the following:

- **Freight Network Continuity Initiatives:** It is anticipated that formal freight network designations will continue to be refined as part of broader ongoing freight planning efforts – at a minimum, to assign the additional CUFC/CRFC mileage allotments that were expanded in Delaware under the IIJA. As part of these efforts and considering that adjoining states may also be undertaking the same exercise in the near future, multistate discussions may be beneficial to identify potential needs and opportunities to ensure freight network continuity across state lines.

For reference as this coordination occurs, an initial list of potential freight network continuity issues for key routes crossing between Delaware, Pennsylvania, and Maryland has been summarized in **Exhibit D-20**.



Exhibit D-20: Delaware Freight Network Continuity with Pennsylvania and Maryland ¹⁶

Delaware Area	DE Route / Freight Network		PA Route / Freight Network		Continuity Issue?
north of Wilmington	DE 491	FFM	PA 491	-	FFM
north of Wilmington	US 202	CUFC	US 202	Other	NHFN
north of Wilmington	DE 52	Other	PA 52	Other	-
north of Hockessin	DE 41	Other	PA 41	Other	-
north of Hockessin	DE 7	Other	SR 3013	-	Other
Delaware Area	DE Route / Freight Network		MD Route / Freight Network		Continuity Issue?
west of Newark	DE 2	Other	MD 279	CUFC	NHFN
west of Glasgow	US 40	Other	US 40	Other	-
west of Middletown	US 301	Other	US 301	CRFC	NHFN
west of Smyrna	DE 6	FFM	MD 291	-	FFM
west of Dover	DE 44 / 300	Other	MD 300	-	Other
west of Dover	DE 11	FFM	MD 302	-	FFM
west of Dover	DE 8	Other	MD 454	-	Other
west of Dover	DE 10	FFM	MD 287	-	FFM
west of Harrington	DE 14	FFM	MD 317	-	FFM
west of Greenwood	DE 16	FFM	MD 16	Other	FFM
west of Bridgeville	DE 404	Other	MD 404	Other	-
west of Bridgeville	DE 18	-	MD 318	Other	Other
west of Seaford	DE 20	-	MD 392	Other	Other
west of Laurel	DE 24	-	MD 348	Other	Other
west of Delmar	N Spring Hill Rd	FFM	MD 426	-	FFM
south of Delmar	US 13	CUFC	US 13	-	NHFN
south of Gumboro	DE 54	FFM	MD 353	-	FFM
south of Selbyville	US 113	CRFC	US 113	Other	NHFN
east of Selbyville	Hudson Rd	FFM	MD 367	-	FFM

Table Notes:

- “Other” Freight Network in Delaware implies “Remaining NHS Routes (not on the NHFN)”
- “Other” Freight Network in Pennsylvania implies “Other Principal Arterial NHS Routes (not on the NHFN)”
- “Other” Freight Network in Maryland implies “Significant Freight Route (not on the NHFN)”
- “FFM” implies “First/Final Mile Freight Network”

¹⁶ Based on reviews of current freight network designations in Delaware (<https://mangomap.com/wilmapco/maps/120164/delaware-freight-plan-existing-network?preview=true#>), Maryland (<https://www.arcgis.com/home/webmap/viewer.html?webmap=ac60558928a5460a87e5f60c4347538b&extent=-79.0114,37.984,-74.9547,39.7524>), and Pennsylvania.



- **Chesapeake Connector and Susquehanna River Bridge Replacement:** Ongoing multistate discussions may be beneficial to focus on potential rail improvement needs and related plans, projects, or future opportunities to alleviate rail bottlenecks along the Amtrak Northeast Corridor (NEC) between the Bacon and Prince Interlockings. This section of the NEC includes a 6.3 mile two-track section between Perryville, Maryland and North East, Maryland. This section of track is one of the few remaining two-track segments along this heavily traveled rail corridor that is generally three or more tracks. Delays along this corridor impact freight rail access in general, including access to/from Delaware (e.g., for NS travel between Pennsylvania to Delaware).
- **Delaware Senate Resolution 10 Recommendations:** As noted in the prior (2017) Delaware Freight Plan, Delaware Senate Resolution 10 (April 25, 2017) encompassed a high-profile special committee effort to study truck traffic and community concerns along Delaware SR 41, SR 48, and SR 7 in New Castle County. The results of that effort include a series of recommendations and potential feasibility studies for constructing a bypass between US 1 and I-95, a passenger and freight rail spur parallel to SR 41, and SR 896 corridor improvements and an alternate/parallel route to encourage trucks use I-95 to SR 869. These studies have been included in the list of Delaware's long-term freight planning tasks; however, given the size, scope, and bi-state nature of these studies, commencement of future work will likely require explicit direct from the General Assembly, and a formal recommendation from a bi-state (Delaware/Pennsylvania) working group.
- **I-95 Widening (Cecil County, MD):** Given its role as a significant interstate freight corridor, any maintenance, capacity, and/or congestion improvement projects along the overall I-95 corridor would inevitably support enhanced freight access to/from Delaware.
- **Nanticoke River and Seaford Barge-Rail Opportunities:** As noted in other sections of this freight plan, interests have been expressed in exploring/developing a potential Barge-to-Rail Intermodal Terminal in Seaford, Delaware. This effort would require coordination not just with Delmarva Central Railroad (DCR), but also the Delmarva Water Transport Committee, USACE, and applicable Maryland/MDOT organizations to conduct a broader assessment of multistate (Maryland/Delaware) dredging needs along the Nanticoke River to support efficient and ongoing access to a new terminal.



D.8 E-Commerce

Modern supply chains, particularly for an increasing volume of e-commerce activity, rely on complex networks of warehouses and distribution centers to support the efficient, fast, and affordable movement of freight. However, their operations and corresponding truck traffic generation can also have negative impacts on adjacent land uses. As part of broader planning processes throughout Delaware, added consideration for freight-related development should be explored.

A key element to supporting a proactive approach to balance freight needs and community impacts is the completion of the 2021 *Delaware First/Final Mile Freight Network Development Study*, as summarized in **Chapter 3.2.2** of this plan. Components from that study have been directly referenced and/or incorporated into the proposed strategies and implementation tasks detailed in **Chapter 6** of this Delaware State Freight Plan. These elements are reflected in freight planning strategies targeting freight land use preservation, freight and community impact planning, public outreach and education, and community planning considerations, among others. They are also specifically reflected in the Protect-Manage-Accommodate (PMA) Framework and the Planning Considerations Checklist for Freight Facilities and Truck Routes that are summarized in **Chapter 6.2.2**. Collectively these tools illustrate proactive considerations that community planners may need to anticipate when freight facility development is undertaken or when reviewing land use plans that have a freight component, notably including those related to e-commerce.

From an e-commerce perspective, Delaware continues to see significant expansion of e-commerce and warehousing related activities. A recent Delaware Public Media article¹⁷ highlighted a continued increase in warehouses and fulfillment centers with current or planned facility examples including:

- 3M SF Amazon facility at the former GM Boxwood Road auto plant in Newport
- Amazon expansion in Seaford
- 2M SF distribution space in Delaware City
- Building expansion at a newly constructed business center in Smyrna
- 3.3M SF of potential logistics space off SR 301 north of Middletown
- Up to 300,000 SF of new warehousing on the south side of Dover

E-commerce Impacts in Delaware

Broad based concerns due to e-commerce expansion in Delaware typically include the impact of truck traffic on local roads and communities, viewsheds and building screening, conflicts with other community activities, and impacts on urban goods delivery that may be influenced by curbside parking and loading restrictions, local truck routes, delivery timeframes, or local land use and ordinance requirements.

While such expansion helps to support first/final mile distribution needs, public demand for expedient goods delivery, and opportunities for job growth and economic development, it can also introduce significant community conflicts. A recent Delaware specific example includes community pushback against a planned warehouse complex in Middletown.¹⁸ Proactive land use planning, first/final mile network planning, and ongoing agency, industry, and public coordination will remain critical to balancing e-commerce needs and opportunities with potential community concerns.

¹⁷ Hurdle, Jon, Delaware Public Media, "Logistics booms in Delaware as companies meet strong demand from ecommerce," September 17, 2021, <https://www.delawarepublic.org/business/2021-09-17/logistics-booms-in-delaware-as-companies-meet-strong-demand-from-ecommerce>.

¹⁸ Megginson, Charlie, Delaware Live, "Middletown residents fight to stop warehouse construction," April 13, 2022, <https://delawarelive.com/middletown-residents-fight-to-stop-warehouse-construction/>.



E-commerce and the Future?

A wide variety of sources and organizations are tracking, predicting, and planning for the ever-evolving impacts of e-commerce activities on freight, deliveries, and communities. As evidence that states, MPOs, and local jurisdictions must continue to stay abreast of changes and trends, a sampling of potential e-commerce influences – reported here from just one of many sources (summarized from a Wall Street Journal article per the source details below) – includes the following:

- “By 2030, the number of delivery vehicles in the world’s 100 largest cities will balloon by more than a third from 2019, to 7.2 million.... That means more carbon emissions, more traffic congestion and – despite the rise of near-instant deliveries – probably more unhappiness in city life.”
- “Tech companies, retailers and real-estate firms working on ways to alleviate the strain of constant delivery on urban environments envision an alternate scenario: skies filled with zipping delivery drones and floating dirigible warehouses, streets and sidewalks teeming with as many robots as people, familiar storefronts serving as automated stockrooms for online fulfillment. ”
- “The vehicle that pulls up is an autonomously driven vehicle. The unpacking is done with vision technology and robotic equipment. The movement of equipment to automated storage and retrieval systems is done via mobile robots.”
- “Pebble, an urban-mobility technology project from Google, is pitching municipal governments on a system to manage curbside loading areas.... The hope is that if those [types of systems] become prevalent, that cities are able to get more out of their loading zones and really manage them in such a way that they’re able to turn over a super high volume there and avoid things like double parking and stopping in bike lanes.”
- “Urban centers with tall buildings and little open space for landings pose challenges for [delivery] drones. But major retailers in the U.S. are already preparing, writing drone-usage rights for rooftops and other areas into new leases...”
- “Prime Air, a service in development at Amazon, is planning drone deliveries in cities across the U.S., with the goal of getting goods to doorsteps within 30 minutes of an order.”
- “Proponents of autonomous vehicles and mobile service robots are betting that existing roads and highways will give them a jump start on delivery long before drones take off at scale.”

Source: Parker, Will, The Wall Street Journal, “Delivery Town: How Your Online Order Will Change Your City”, https://www.wsj.com/articles/drones-robots-warehouses-how-your-online-order-will-change-the-city-11649338872?st=6940c70pel624c2&reflink=desktopwebshare_permalink.



D.9 Military Freight

Military installations in the state of Delaware include:

- **Dover Air Force Base (DAFB)** – 436th Airlift Wing and Air Force Reserve 512th Airlift Wing
- **Air National Guard** – 166th Airlift Wing at Wilmington ILG (New Castle) Airport
- **Army Reserve** – 11 units in 3 facilities (Dover, Newark, Lewes)
- **Army National Guard** – 34 units in 4 facilities (Wilmington, Newark, Dover, Georgetown)

From a freight perspective, DAFB in Dover, Kent County, has a significant presence as the “Department of Defense’s largest aerial port” (see callout box below). DAFB is directly linked to the U.S. DOD’s Strategic Highway Network (STRAHNET), with is a federal system of public highways that provide access, continuity, and emergency transportation of personnel and equipment for defense purposes. STRAHNET connections include access in Dover via SR 10 to SR 1 to/from the north, and US 13 to/from the south (**Exhibit D-21**). These connections link with broader portions of the STRAHNET that include the I-95, I-295, and I-495 interstate routes through New Castle County, as connection to US 301 near Biddles Corner.

The Strategic Rail Corridor Network (STRACNET) also passes through New Castle County in Delaware (**Exhibit D-21**). Similar to the STRAHNET, the STRACNET is a federally designated network of interconnected and continuous rail lines that links defense installations and provides for the U.S. DOD’s rail transportation needs for defense purposes, notably including access for heavy and tracked vehicles to seaports of embarkation.

Exhibit D-21: Delaware Strategic Defense Network Routes (STRAHNET-STRACNET)



Dover Air Force Base (DAFB)

DAFB is home to the Department of Defense's largest aerial port and approximately 11,000 Airmen and joint service members, civilians and families. Its personnel are responsible for global airlift aboard assigned C-5M Super Galaxy and C-17 Globemaster III aircraft. Additionally, the 436th Airlift Wing hosts key partners, such as the Air Force Reserve's 512th Airlift Wing, Air Force Mortuary Affairs Operations (AFMAO), the Armed Forces Medical Examiner System (AFMES) and the Joint Personal Effects Depot (JPED), jointly responsible for the dignified return of fallen American service members.

Source: Dover Air Force Base, <https://www.dover.af.mil/>.

Beyond the existing military installations and formal STRAHNET and STRACNET connections in Delaware, additional military freight issues may also encompass the topics listed below.

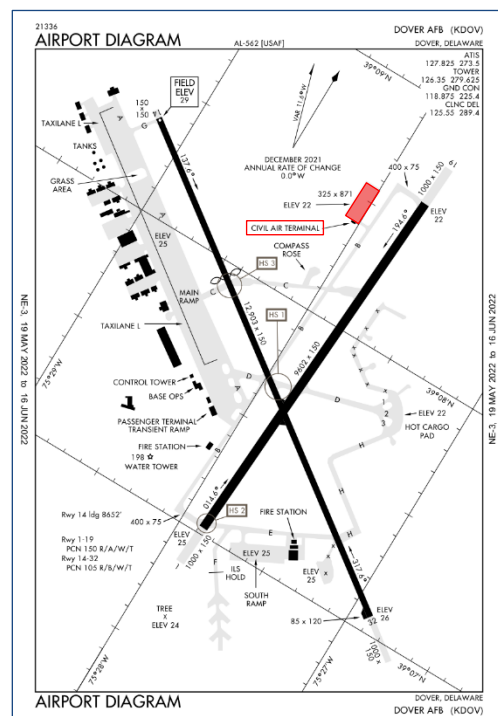
STRAHNET Refinement: Essentially all components of the STRAHNET and STRACNET routes overlap other portions of the state's freight network (as defined in Chapter 3). As such, prioritization of freight needs and opportunities along this network will benefit both general freight and military freight simultaneously. However, a closer review of the formal STRAHNET reveals that the federal maps may require updating to align consistently with the current roadway network/connections in Delaware. Specifically, the current alignment and more recently constructed sections of US 301 near its junctions with SR 896 and SR 1 may not be accurately reflected on the federal NHS and STRAHNET mapping. FHWA Division and FTA regional offices encourage MPOs and state DOTs to coordinate with representatives from DOD in the transportation planning and project programming process on infrastructure and connectivity needs for STRAHNET routes and other public roads that connect to DOD facilities. To this end, a procedural implementation task to refine the formal NHS and STRAHNET mapping has been incorporated into the action planning elements in **Chapter 6** of this freight plan.

Aviation Fuel and DAFB Pipeline Access: As noted under the discussions of the Delaware River/Bay system in Section D.6 of this appendix, and as highlighted on pipeline mapping in Chapter 3.6, a small section of localized pipeline and supply connections east of DAFB allows for ship/barge connections to support fuel delivery and storage at the base.

Future Rail Connectivity/Feasibility: Delaware's current rail network in the Dover area includes north-south access via the Delmarva Central Railroad Company (DCR)'s Delmarva Sub lines. These lines are generally located on the west side of Dover (west of US 13) and currently do not provide connections or access to the east side of SR 1. Though no specific plans to provide future rail access/connections to DAFB have been recorded, stakeholder/agency comments during the development of the state freight plan raised a question as to whether such connections would be beneficial (e.g., for heavy equipment deliveries) or feasible. Further discussion would be required to determine if long-term interests or feasibility considerations would merit such efforts.

Joint Use Agreements: DAFB's Civil Air Terminal (CAT), envisioned as the future Central Delaware Aviation Complex (CDAC), is of special freight interest. Considering the base's heavy airlift mission and military cargo requirements, its longest runway length at 12,903 feet (**Exhibit D-22**)¹⁹ is designed to handle all types of aircraft, from the biggest aircraft landings to the smallest. Currently, however, civilian operations at DAFB are limited due to prior clearance admissions; although they can still take place under a Joint Use Agreement (JUA), and active negotiations for a new JUA are ongoing.

*Exhibit D-22: DAFB Civil Air Terminal*¹⁹



¹⁹ Aircraft Owners and Pilots Association, (KDOV) Dover Air Force Base Airport, updated as of May 19, 2022, <https://www.aopa.org/destinations/airports/KDOV/details>.

The JUA is an agreement between the U.S. DOD and DelDOT that authorizes DelDOT's use of DAFB's runways for civil operations from/to the Dover CAT / future CDAC. The agreement allows for most civilian operations (general aviation aircraft, air cargo, charter flights, etc.) with the exception of student-pilot training. The current JUA expires on 12/18/2022, and DelDOT is actively engaged with the DOD to negotiate a new agreement. Updated terms in the draft JUA tentatively include:

- A 50-year agreement term (previously 25 years)
- Increase in civilian aircraft operations (an operation is either a take-off or a landing), including a daily increase from 37 to 150 operations, and an annual increase from 13,500 to 25,000 operations.
- Removal of the prior permission requirement allowing for the CAT / future CDAC to be designated by the FAA as part of the National Plan of Integrated Airport Systems in the future
- An updated fee structure based on percentage of usage and fair share of maintenance costs

Business Park Development: In addition to pursuing broader/ongoing air cargo opportunities through DAFB based on JUA discussions and CAT / future CDAC operations, the City of Dover has also made major investments in the nearby Garrison Oak Business and Technology Center (Garrison Oak). These investments reflect significant efforts by both the City of Dover and Kent County to realize the full economic potential of the future CDAC at DAFB. Completion of the 2021 Dover Air Cargo Freight Access Study (noted in **Chapter 1** of this freight plan) identified potential roadway network improvements to facilitate access to SR 1 and support the continued growth of both Garrison Oak and the CDAC at DAFB.



D.10 Freight Resilience and Environmental Impacts

DeIDOT's Division of Transportation Resiliency and Sustainability leads a mission to provide the citizens of Delaware with the most resilient and sustainable transportation infrastructure through effective project planning, design, construction, and maintenance along with the incorporation of innovative solutions such as alternative energy and electrification of the state's infrastructure to address the challenges associated with climate change.²⁰ Key initiatives within the state include a focus on:

- Impacts of Climate Change and Sea Level Rise – with initiatives pertaining to design, construction, and maintenance; drainage; and a flood matrix.
- Electrification of Infrastructure and Fleet – with initiatives pertaining to EV charging and electric buses and fleet.
- Use of Alternative Energy – with initiatives pertaining to solar energy, propane conversion, and exploring hydrogen.
- Quality of Life – with initiatives pertaining to the Keep DE Litter Free program and pollinators.

Freight Resilience Planning in the Face of Climate-Related Disruption

As DeIDOT and their MPO freight planning partners continue to advance their freight resilience planning efforts, the agencies will also review and potentially draw from current best practices related to this evolving topic. Among potential best practice resources, FHWA released a *State of the Practice Scan: Freight Resilience Planning in the Face of Climate-Related Disruption* (June 2022). This resource confirms that there are two major components in freight resilience planning, including (1) planning infrastructure investments to mitigate the effects of extreme weather and natural disasters, and (2) planning for emergency operations and responses needed to keep freight moving during extreme weather events or natural disasters. The resource summarizes gaps and potential improvement actions in freight resilience planning that generally relate to:

- Defining goals for freight network resilience outcomes.
- Collaborating with stakeholders within and beyond planning jurisdictions.
- Leveraging data and information related to planning breakdowns during disaster response.
- Operationalizing resilience concepts, including methods for identifying “freight resilience projects” and forecasting the anticipated benefits to the network.

As public sector freight planning continues to mature at the state and local levels, better and more wide-spread resilience practices will help to improve the system. FHWA has clear opportunities to provide direct technical assistance, education, and tools to its partners to help advance the state of practice in freight resilience planning and contribute to this development over the next several years.

Source: FHWA, https://www.planning.dot.gov/documents/Freight_Resiliency_State_of_Practice_Scan_FINAL.pdf.



²⁰ DeIDOT, Division of Transportation Resiliency and Sustainability, <https://deldot.gov/Programs/trs/>.



D.10.1 Climate Change and Sea Level Rise

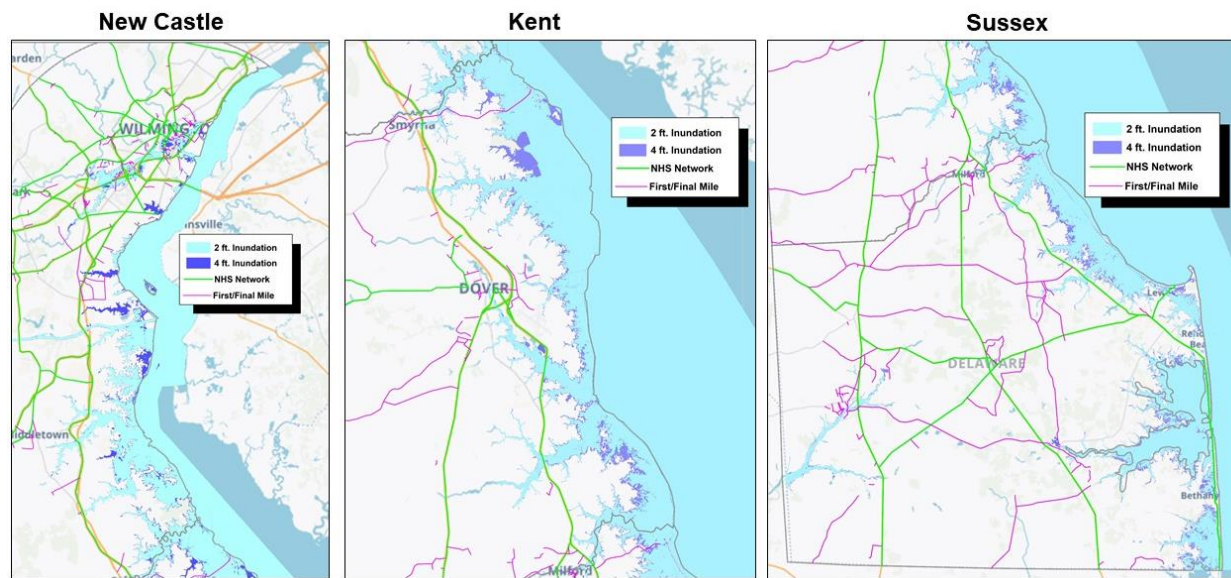
Sea-Level Rise (SLR) is one of the most significant consequences of climate change. Delaware is especially vulnerable to the effects of SLR due to its flat topography, low mean elevation, and significant community development and infrastructure investments along the coast. Rates of relative SLR measured at tide gauges in and around Delaware are approximately twice the rate of global mean SLR²¹ experiencing already over a one foot on SLR since 1900²². Due to the low-lying topography of the state (lowest state in the nation), creating resilient infrastructure in the face of roadway flooding becomes a challenge. DelDOT has been and continues to be challenged by the effects of SLR and frequently flooded roadways because of severe weather events.



While sea level rise may be a significant concern for Delaware, it fortunately appears to be of limited relevance to the state's first/final mile freight network. Assessments show that less than 1 percent of the identified first/final mile network mileage was likely to be inundated with up to 3' of SLR (Exhibit D-23). The at-risk connections were primarily concentrated in coastal New Castle County, and a relatively small portion of the network is at risk of temporary or permanent closure due to near-term SLR. While the total miles remain somewhat limited, they still carry with them an economic impact. Reviewing the most recent model Traffic Analysis Zone (TAZ) data, nearly 7,000 jobs (4,900 in Freight Intensive Sector industries) would be impacted by a 3' SLR scenario.

²¹ The Delaware Geological Survey, University of Delaware, <https://www.dgs.udel.edu/projects/determination-future-sea-level-rise-planning-scenarios-delaware>.

²² Delaware's Climate Action Plan, <https://documents.dnrec.delaware.gov/energy/Documents/Climate/Plan/Delaware-Climate-Action-Plan-2021.pdf>

Exhibit D-23: Freight Network and Sea Level Rise Comparison²³

Impact	1' SLR	2' SLR	3' SLR
First Final Mile Impacts (miles)	4.8 miles	9.6 miles	12.0 miles
First Final Mile Impacts (%)	0.01%	0.02%	0.03%

Determination of Future Sea-Level Rise Planning Scenarios for Delaware

The State of Delaware has had future SLR scenarios (projecting SLR out to year 2100) in place since 2009 to use in long-term planning activities. Those scenarios were integrated into many town and county plans and formed the basis of the Delaware Sea-Level Rise Vulnerability Assessment and Adaptation reports, the Delaware Climate Impact Assessment, and Executive Order 41: Preparing Delaware for Emerging Climate Impacts and Seizing Economic Opportunities from Reducing Emissions, which specifically mentions the periodic update of the SLR planning scenarios.

The new SLR planning scenarios recommended in the report correspond to increases of mean sea level in Delaware by the year 2100 of 1.53 m / 5.02 ft (High scenarios), 0.99 m / 3.25 ft (Intermediate scenario), and 0.52 m / 1.71 ft (Low scenario.)

As the project is still active and study information continues to evolve, updates may be reviewed at <https://www.dgs.udel.edu/projects/determination-future-sea-level-rise-planning-scenarios-delaware>.

²³ CPCS analysis of WILMAPCO data.

D.10.2 Electric Vehicle Technology

Delaware is one of several states referred to as a “Section 177 state,” meaning that it is adopting California’s Zero Emission Vehicle (ZEV) regulations in some form. This includes a dedicated ZEV program to provide more options for electric vehicle (EV) purchases, reported in a recent Delaware.gov news article as follows:

Managed by the Delaware Department of Natural Resources and Environmental Control (DNREC), the ZEV program is designed to accelerate the commercialization of battery-electric, plug-in hybrid and fuel cell electric vehicles. The regulations mandate that a certain percentage of the vehicles delivered for sale in a state are ZEV vehicles. Manufacturers receive credits for each delivered vehicle based on the type of vehicle, range and other factors. Each year, manufacturers must meet a ZEV credit amount that is based on average annual sales. In states already in the program, the automobile industry has successfully met the required percentage.²⁴

While the ZEV program essentially focuses on passenger vehicles, it provides opportunities and the potential for expanded EV infrastructure that may also lead to shared interests or opportunities in expanding or explore future freight-relevant EV technologies. As EV conditions evolve, broader ongoing freight planning efforts should also explore freight-relevant EV technologies that may be tested, added, or expanded within the state (e.g., truck stop electrification, EV truck technologies, EV equipment applications within port/airport operations, etc.). As noted in Chapter 5.3.2 of this freight plan and in the details of Appendix J, formula funding and competitive grant opportunities under the IIJA resources may be available to support advancements of EV technology.

²⁴ Delaware News, <https://news.delaware.gov/2022/03/03/delaware-to-adopt-zero-emission-vehicle-regulation/>.



D.10.3 Energy Usage

Energy usage and related Freight Intensive Sector industries tend to directly affect the freight transportation system and/or freight industry needs. Key factors may include truck, rail, seaport, barge, or pipeline delivery of energy-related raw materials and resources; heavy construction and equipment needs related to energy production sources and utilities; or, in the case of alternative energy source, specialty cargo handling needs for components such as wind turbine blades, solar panels, and large generators. Because the energy sector can also be significantly affected by external forces related to raw materials, environmental policies, global supply chains, and other driving forces, it may be important to have a broader understanding of the state's overall energy usage trends and related details to provide a frame of reference for broader ongoing freight planning discussions. To that end, details in the exhibits below attempt to provide a snapshot of Delaware's current energy consumption profile (**Exhibit D-24**), energy sources (**Exhibit D-25**), and net electricity generation by source (**Exhibit D-26**).

*Exhibit D-24: Delaware Energy Consumption Profile*²⁵

Energy Production and Consumption	Delaware produces less energy than any other state, and although it is the nation's third-lowest energy consumer, in 2019 Delaware used almost 75 times more energy than it produced.
Net Electricity Generation	In 2020, natural gas fueled 92% of Delaware's in-state utility-scale electricity generation, up from 51% in 2010, while the state's coal-fired generation fell from 46% to 2% during the same period.
Household Energy Consumption	About 42% of Delaware households rely on natural gas for home heating, 35% use electricity, about 10% use fuel oil or kerosene, and 10% use propane.
Renewable Energy	Delaware's renewable portfolio standard requires that renewable energy sources generate 40% of electricity retail sales in the state by 2035, with at least 10% coming from solar energy.
Industrial Energy Consumption	In 2019 and 2020, Delaware's industrial sector was the state's largest natural gas-consuming sector, surpassing the electric power sector, which had been the largest for most of the past decade.

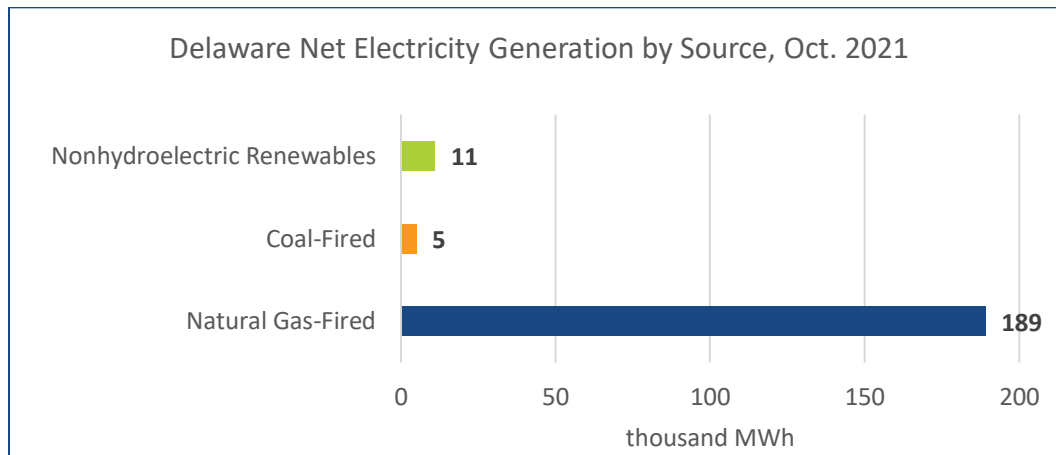
²⁵ EIA, Delaware Profile Analysis, <https://www.eia.gov/state/analysis.php?sid=DE>



Exhibit D-25: Delaware Energy Sources²⁶

Energy Source	Active Production?	Profile
Petroleum	No	The Port of Wilmington contains a bulk storage terminal for petroleum, which handles diesel fuel, heating oil, and other forms of oil. Petroleum provides the largest share of the energy consumed in Delaware, accounting for about two-fifths of the state's total energy use. The transportation sector is the state's largest petroleum consumer and accounts for 70% of the petroleum used in Delaware, and half of that is used as motor gasoline.
Natural Gas	No	All of Delaware's natural gas supplies arrive by interstate pipeline from Pennsylvania. In 2019, natural gas use in the industrial sector surpassed the amount used by the electric power sector for the first time since 2010. In 2020, the industrial sector, which includes chemical manufacturing and food processing, accounted for nearly two-fifths of the state's natural gas consumption.
Electricity	Yes	Natural gas fuels most of Delaware's generation of electricity. The use of natural gas-fired power plants to Delaware's utility-scale (1 megawatt or larger) electricity (natural gas to electricity conversion) net generation increased dramatically from 50% in 2010 to more than 90% in 2020. In-state generation typically supplies much less electricity than is used by Delaware consumers.
Renewable Energy (Solar, Biomass, and Wind)	Yes	Solar energy and biomass generate most of the renewable electricity in Delaware. Together, they contributed more than 2% of the state's net generation from utility-scale facilities in 2020. The state has almost a dozen utility-scale solar facilities that use solar photovoltaic (PV) technologies, the largest of which has a generating capacity of 12 megawatts. These utility-scale solar facilities are found throughout the state. Delaware has low onshore wind energy potential; therefore, it is limited to offshore. The one onshore windmill is in Lewes.
Coal	No	The small amount that is consumed arrives by rail from Pennsylvania and then is delivered to the electric power sector. In 2020, the state's one remaining coal-fired power plant, the Indian River Generating Station, consumed all the coal used for electricity generation in Delaware. The plant is infrequently used and scheduled to close in 2022.

²⁶ Ibid.

Exhibit D-26: Delaware Net Electricity Generation by Source (2021) ²⁷

As noted at the beginning of this section, the use of alternative energy and initiatives pertaining to solar energy, propane conversion, and exploring hydrogen are included among efforts within DelDOT's Division of Transportation Resiliency and Sustainability. Additionally, the Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Climate, Coastal and Energy, uses an integrated approach of applied science, education, policy development, and incentives to address Delaware's climate, energy, and coastal challenges. Ongoing coordination between DelDOT, DNREC, the state's freight planning efforts via the Delmarva Freight Working Group, and key public/private partners involved with the energy sector, to include the Port of Wilmington, rail operators, and energy related FIS industry sector representatives should occur as needed to stay abreast of evolving energy trends, needs, and opportunities, and their influence on freight transportation system planning.

D.10.4 Equity and Quality of Life

Equity and Quality of Life issues related to freight transportation system planning often relate to freight's general impact on communities, including historically disadvantaged communities. These impacts may relate to noise, emissions, truck traffic, and other factors that are often more prevalent along first/final mile freight routes. As noted in Chapter 3.2.2 of this freight plan, many such issues were assessed in detail as part of Delaware's First/Final Mile Freight Network study in 2021, including focus areas related to land use, mobility, infrastructure conditions, institutional challenges, and safety. Subsequently, many of the freight goals, values, and strategies summarized in Chapter 6 of the freight plan look to balancing freight needs while protecting Delaware's communities.

At a broader level and in conjunction with many of the latest federal planning policies and funding resources expanded under the IIJA, notable efforts are being made to lessen the negative impacts of transportation, climate change, and other factors on historically disadvantaged, or environmental justice (EJ), communities. Such efforts are directly reflected in the recent Justice40 initiative (see callout box on the following page).

²⁷ EIA, State Energy Data System.



Justice40 Initiative

Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad, created the government-wide Justice40 initiative on January 27, 2021. This initiative aims to deliver 40% of the overall benefits of federal investments in climate and clean energy, including sustainable transportation, to disadvantaged communities.

As of May 2022, efforts under this initiative have included the development and beta-testing of a Climate and Economic Justice Screening Tool (CEJST) by the White Council on Environmental Quality (ECQ), development of an interim definition to identify disadvantaged communities for Justice40-covered programs, and a list of funding opportunities that are actively using this definition.

As Justice40 and its implementation continue to evolve, updates may be reviewed at <https://www.transportation.gov/equity-Justice40>.

With the Justice40 initiative and other EJ concerns in mind, direct consideration of EJ community impacts was accounted for in the freight plan's efforts related to freight candidate project screening. Specifically, these efforts account for areas of minority/low-income populations, and (from an air quality perspective) the presence of particulate matter for diesel emissions, including approach details as listed below.

Demographic Index: To assess project sites or impact areas in relation to the Delaware's minority/low-income populations, EPA's EJSCREEN tool was used. EJSCREEN is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators.²⁸ Demographic Index is a combination of two factors, which are low-income and people of color.

- The low-income demographic indicator is described as the percent of a block group's population in households where the household income is less than or equal to twice the federal "poverty level."
- The "people of color" demographic indicator is described as the percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial.

More details on demographic indicators can be found at: <https://www.epa.gov/ejscreen/overview-demographic-indicators-ejscreen>. The top percentiles of demographic index from the entirety of Delaware are used to track areas effected in the minority/low-income populations (**Exhibit D-27**).

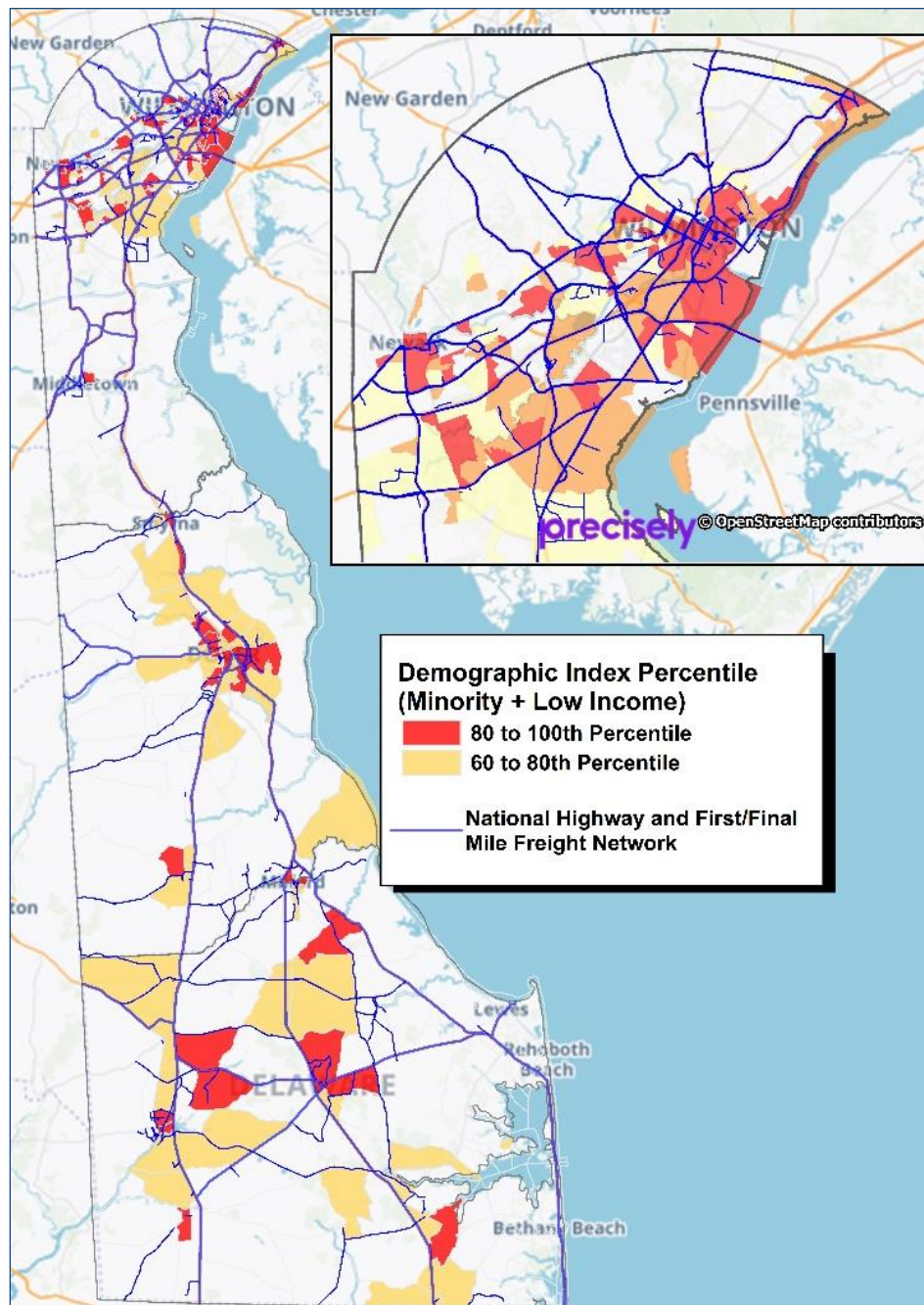
Diesel Particulate Matter: Using the EJSCREEN data sources, areas within the state that score in the highest percentile of emissions for diesel particulate matter were mapped (**Exhibit D-28**). The bulk of the higher concentrations fall along the I-95 corridor and around the City of Dover. Delaware produces higher than average emissions, especially from Particulate Matter from diesel emissions.

Additional details for how these factors were applied to the candidate freight project screening efforts are included in **Chapter 5.2** and **Appendix I** of this freight plan.

²⁸ EPA, <https://www.epa.gov/ejscreen>

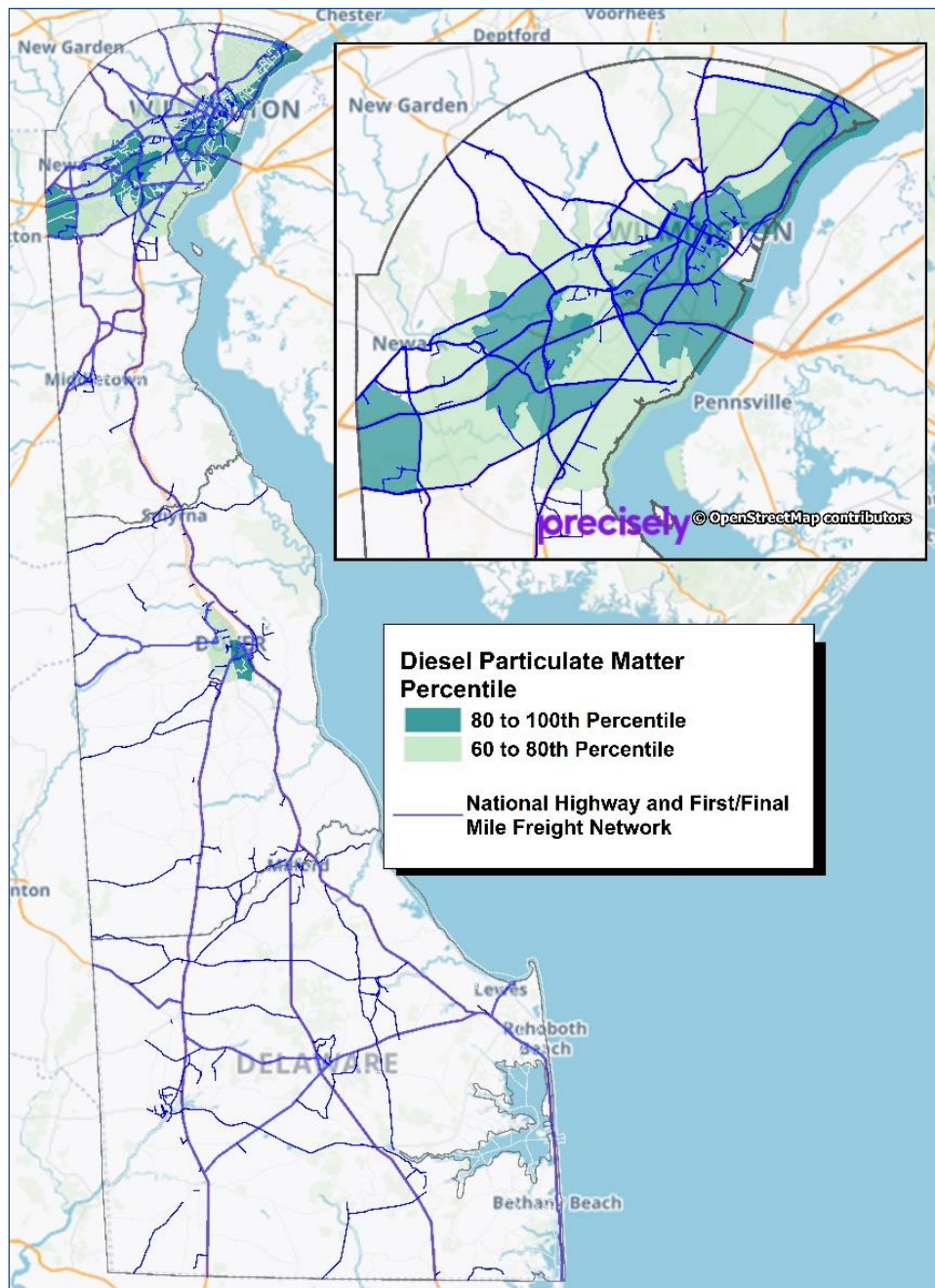


Exhibit D-27: Demographic Index Percentile of Delaware



Source: WILMAPCO analysis and mapping of EPA EJSCREEN data.

Exhibit D-28: Diesel Particulate Matter Percentile



Source: WILMAPCO analysis and mapping of EPA EJSCREEN data.

D.10.5 Wildlife Habitat Protection

Relative to wildlife habitat protection, the natural environment is an important part of Delaware. Multiple laws and regulations require that actions with a Federal nexus (i.e., funds or permits) consider the level of impact projects have on the natural environment. These laws include the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), the Endangered Species Act (ESA), and the Fish and Wildlife Coordination Act (FWCA), as well specific freight planning requirements under 49 U.S.C. §70202(b) to minimize the impacts of freight movement on wildlife habitat loss.

DelDOT Environmental Stewardship Section

The Environmental Stewardship Section at DelDOT works to achieve the Department's goal of minimizing the environmental impacts on the state's transportation system. The section ensures that DelDOT projects and maintenance activities account for and take actions that protect, restore, and enhance the natural and cultural environment. Major areas of responsibility include:

- Project reviews for compliance with the National Environmental Policy Act (NEPA)
- Environmental Assessment (EA) and Environmental Impact Statement (EIS) level project support
- Programmatic Agreement support for Categorical Exclusion (CE) determinations
- Archaeology and historic preservation support
- Natural environment protection and mitigation
- Pollinator programs

Additional details and specific programs/focus areas may be reviewed at:

<https://deldot.gov/environmental/index.shtml>.

DelDOT works to avoid and minimize impacts to wetlands and waters of the United States, state-regulated tidal wetlands, rare, threatened and endangered species, trees, and Essential Fish Habitat – among other things. DelDOT's Environmental Stewardship Section coordinates with project managers during project development to ensure a balance between natural resource and transportation needs. When balancing is not feasible due to safety, cost, constructability, or other factors, mitigation to offset impacts is necessary.

DelDOT is also committed to performing work where feasible within the state system to benefit pollinators. DelDOT's Maintenance & Operations department oversees the Enhancing Delaware Highways program, which has piloted several adaptive management strategies. One example includes the creation of Dove's Nest as Delaware's first-ever pollinator mitigation site. The meadow was part of required mitigation for the US 301 project in New Castle County and was planted with native wildflowers that bloom across the growing season to ensure that pollinators have a food source all year long, as well as Milkweed to provide breeding habitat for the monarch butterfly.



Source: DelDOT, <https://deldot.gov/environmental/pollinators/index.shtml>



APPENDIX E:

Delaware Freight Scenario Planning Summary

E. APPENDIX E: Delaware Freight Scenario Planning Summary

Freight scenario planning efforts and related insights are summarized below to provide a different set of perspectives that may be referenced to support long-term planning discussions and decision-making as part of ongoing freight planning in Delaware. These efforts identify and explore unknown future conditions that could change based on factors well beyond the state's control. Such insights can help to focus limited resources onto projects or strategies that may provide greater benefit across a variety of future conditions; or they may simply yield ideas for the state to proactively consider in the event that expected trends suddenly shift, requiring a potential "course adjustment" in freight plans or priorities.

E.1 2015 Model-Based Scenario Review

The 2015 Delmarva Freight Plan evaluated six scenarios to explore the potential impacts of future economic and infrastructure changes. These scenarios included variations in population and employment growth, as well as assumptions for multimodal freight transportation links that were added or removed from the future freight network. This exercise was primarily a quantitative, model-driven effort to determine how the varying assumptions would influence future conditions, measured in terms of the resulting mode splits, travel times, truck operating costs, and truck congestion (both at the system-level and for major freight corridors across the Delmarva Peninsula) for each scenario.

The specific growth and network assumptions from the 2015 scenario planning efforts would likely change if repeated today. However, the broader sensitivities or impacts identified for each scenario may still provide relevant insights, contingent on how growth and infrastructure across the Delmarva Peninsula change over time. Those results are detailed in Chapter 7 of the 2015 Delmarva Freight Plan, and they notably helped to identify specific freight corridors that could be exceptionally sensitive to, or impacted by, certain future trends if they come to fruition. Therefore, the potential sensitivities by corridor (**Exhibit E1**) may still be considered valid for ongoing, long-term planning.

Exhibit E1: Corridor Sensitivities based on 2015 Economic Infrastructure Scenario Assessments

Corridor sensitivity or impacts if future scenarios notably involve:	I-95	US 301	US 13 US 113 DE 1	US 202 DE 41	DE 404 US 9	US 50 (Maryland)
Accelerated growth	✓	✓	✓			✓
Loss of multimodal freight options					✓	✓
Warehousing and development shifts	✓					
Alternate routing and system redundancy		✓	✓			
Tourism and freight conflicts			✓		✓	✓
Community and freight access conflicts	✓	✓		✓	✓	
Multi-jurisdictional cooperation/influences	✓			✓	✓	
Oversize or special freight movements	✓		✓			
Technology advancements	✓	✓	✓			

Source: WRA, et. al., for DelDOT, *Delmarva Freight Plan: The Delaware Freight Plan with Regional Coordination*, as compiled from Chapter 7.4 – Corridor Perspectives (Exhibit 7.12), May 2015, <https://deldot.gov/Business/freight/index.shtml?dc=general>.



E.2 2022 Qualitative Scenario Review

In lieu of duplicating the 2015 scenario explorations that focused on specific economic and infrastructure assumptions, the 2022 Delaware Freight Plan proposes a qualitative assessment of three possible futures and their influence on potential freight projects, strategies, or programs that may become more or less relevant in terms of Delaware's ability to prepare for and respond to unknown or evolving conditions. This approach is primarily framed around discussions between DelDOT, Delaware's MPOs, and other freight stakeholders in a way that accounts for the latest freight trends/topics and related areas of concern or opportunity that were identified earlier in the plan. Scenarios were crafted as follows:

1. *Description* – summarize what happens in the alternative future.
2. *Driving Forces* – identify the major external factors that push the future in that direction.
3. *Freight Implications* – identify freight impacts, changes, or other trends if that future occurs.
4. *Action Plan Possibilities* – highlight options to manage, mitigate, or leverage freight implications.
5. *Project Implications* – compare findings to project screening criteria to highlight “key” criteria.

Within this approach, three future scenarios were considered (as detailed on the following pages) with a focus on “**Growth**” (Exhibit E2), “**Technology**” (Exhibit E3), and “**Resilience**” (Exhibit E4). These perspectives yield a variety of potential freight actions, many of which may be reflected in broader project/strategy implementation efforts covered elsewhere throughout the plan. Using these insights, and consistent with other implementation planning efforts, the scenario findings were collectively compared to the various project screening criteria from Section 5 of the plan. Based on this comparison (Exhibit E5), it was determined that regardless of which alternate future may or may not come to fruition, projects that align favorably with enhancements in the following three categories could provide notable benefits:

- **NHFN** – Projects located on, or providing benefits to, the NHFN could support freight activity under all scenarios. Benefits may include overall enhancements for truck access and multimodal connectivity in the Growth Scenario; broader technology adoption and related opportunities in the Technology Scenario; or emergency response access in the Resilience Scenario.
- **First/Final Mile Network** – Projects along a designated first/final mile network route, or providing direct access to one, could also support freight activity under all scenarios. Benefits may relate to e-commerce traffic in the Growth Scenario; leveraging new package delivery technologies in the Technology Scenario; or mitigation of freight access issues in the Resilience Scenario.
- **EJ Community** – Projects located in areas with high concentrations of minority and/or low-income populations could likewise support (or manage) freight activity under all scenarios. Benefits may include reduction of freight and community conflicts under the Growth Scenario; enhancements to deliveries and community access under the Technology Scenario; or protection of vulnerable infrastructure serving EJ areas, either to overcome flood/hazard impacts or for the purposes of emergency response/access, under the Resilience Scenario.

In addition to projects that align favorably with the above categories, projects or strategies that would also support freight activity under at least two of three scenarios (per Exhibit E5) would include those that yield air quality benefits in EJ areas (screening criteria #10), mitigate SLR impacts (screening criteria #11), or serve broader regional needs (screening criteria #13). While not intended to be prescriptive or limiting, such insights may provide a different set of perspectives to consider when balancing competing project/strategy interests, limited funding resources, or other prioritization issues.



Exhibit E2: Delaware Freight Scenario #1 – “Growth”






	GROWTH SCENARIO <i>Rapid, widespread, and more-than-anticipated population and employment growth spread throughout Delaware, including a continued expansion of the state’s tourism and recreational draw.</i>
	Driving Forces
	<ul style="list-style-type: none"> • Faster/higher growth and expansion in Delaware’s population, employment, and tourism. • Corresponding increase in general traffic demands, as well as truck traffic. • Corresponding increase in general freight demands for all manner of goods and materials.
	Freight Implications
	<p><i>Construction</i> – High demand for construction materials for housing and business expansion.</p> <p><i>Energy</i> – More overall energy usage with an increasing need to add or expand options.</p> <p><i>E-Commerce</i> – More demand for goods, which also aggravates first/final mile impacts.</p> <p><i>Waste</i> – Increase with higher population, as well as e-commerce packaging waste.</p> <p><i>Congestion</i> – Increase in truck bottleneck issues and peak season tourism/freight conflicts.</p> <p><i>Quality of Life</i> – Increase in fuel, emissions, first/final mile impacts, and community conflicts.</p> <p><i>Truck Operations</i> – Increase in truck parking demands, driver needs, enforcement needs.</p>
	Action Plan Possibilities
	<p><i>Supply Chains</i> – Explore detailed supply chain analyses relevant to e-commerce, green energy, construction resources, or Delaware’s high-growth commodities.</p> <p><i>E-Commerce</i> – Enhance planning and policies affecting first/final mile truck access, truck routing, or opportunities for distribution and/or local consolidation centers.</p> <p><i>Multimodal Freight</i> – Preserve/expand multimodal freight options and connectivity to move materials off-highway via short line rail, port and barge access, or air cargo.</p> <p><i>Specialty Cargo</i> – Proactively manage specialty cargo capacity and capability (e.g., handling, permitting, response planning) for notable energy cargoes such as wind turbine blades, generators, solar panels, pipeline infrastructure, or similar.</p> <p><i>Congestion</i> – Prioritize bottleneck mitigation, and focus on overall improvements to truck routing, travel reliability, and seasonal congestion planning.</p> <p><i>Truck Operations</i> – Focus on first/final mile network improvements, truck parking priorities, and partnerships for driver recruitment, educations, and/or retention.</p>

Exhibit E3: Delaware Freight Scenario #2 – “Technology”

	<h3>TECHNOLOGY SCENARIO</h3> <p><i>Innovative and potentially disruptive advances in technology alter the way the freight transportation system operates, forcing agencies, stakeholders, policies, and regulations to adapt to evolving trends, needs, and opportunities.</i></p>
	<h3>Driving Forces</h3>
	<ul style="list-style-type: none"> • Widespread adoption of truck-relevant connected and automated vehicle (CAV) systems. • Rapid expansion in electric vehicle (EV) technologies and truck applications. • Ongoing evolution of supporting technologies for tolling, enforcement, permitting, or similar. • Expanded use of package delivery technologies via drones and autonomous robot systems.
	<h3>Freight Implications</h3>
<p><i>Tech Upgrades –</i></p>	<p>New technology equipment (and related investment) to support tolling, enforcement, permitting, or similar system and infrastructure upgrades.</p>
<p><i>Data Management –</i></p>	<p>Evolving requirements for data collection, management, or cybersecurity systems, as well as new types of data to track.</p>
<p><i>Policies & Regs –</i></p>	<p>State/local legislation revisions to keep pace with technology.</p>
<p><i>Pilot Programs –</i></p>	<p>New demand for pilot programs for truck platooning, drones, or robot systems.</p>
<p><i>Partnerships –</i></p>	<p>Change in focus on public/private partnerships, technical disciplines, or staff knowledge needed for effective collaboration and technology implementation.</p>
<p><i>Freight Operations –</i></p>	<p>Potential to leverage technologies to enhance safety, enforcement, efficiency, first/final mile impacts, parking management, curb usage, or similar.</p>
	<h3>Action Plan Possibilities</h3>
<p><i>Policies & Regs –</i></p>	<p>Review/refine applicable legislation relevant to technology systems.</p>
<p><i>Pilot Programs –</i></p>	<p>Explore opportunities and partnerships for technology focused pilot programs.</p>
<p><i>Truck Parking –</i></p>	<p>Continue to review, refine, and expand real-time truck parking info systems.</p>
<p><i>Mapping Systems –</i></p>	<p>Upgrade mapping systems with respect to new potential needs for CAV corridors, parking technology, or drone routing and ground systems.</p>
<p><i>IT Systems –</i></p>	<p>Expand IT resources, cybersecurity capability, and related systems.</p>
<p><i>Communications –</i></p>	<p>Expand and improve communications technology to support CAV or similar.</p>
<p><i>Education –</i></p>	<p>Explore diverse partnerships to enhance awareness and training on technology topics for agency staff and for public outreach/education.</p>

Exhibit E4: Delaware Freight Scenario #3 – “Resilience”

	<h2>RESILIENCE SCENARIO</h2> <p><i>This scenario focuses on significant external forces due to climate change risks or other global disruptions that could affect broad portions of the state’s multimodal freight transportation systems and/or supply chain interests.</i></p>
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	<h2>Driving Forces</h2>
<ul style="list-style-type: none"> • Climate induced sea-level rise and related infrastructure impacts. • Increased frequency or severity of extreme weather impacts and natural disasters. • Global supply chain disruptions due to foreign conflicts, pandemics, or similar scale events. 	
	<h2>Freight Implications</h2>
<p><i>Flood Impacts</i> – Direct inundation of freight infrastructure (highway, rail, port, first/final mile).</p> <p><i>Detour Impacts</i> – Temporary roadway closures, detours, and truck re-routing/re-scheduling.</p> <p><i>Emergency Access</i> – Need for emergency freight access to support disaster response/recovery.</p> <p><i>Construction Needs</i> – Spike in demand for construction materials for disaster response/recovery.</p> <p><i>Site Development</i> – Influence on site-specific economic development potential.</p> <p><i>Mode Shifts</i> – Change between freight modes (truck, port, rail) if supply chains shift.</p> <p><i>Trade Impacts</i> – Supply chain shortages, delays, or cost spikes due to foreign trade impacts.</p>	
	<h2>Action Plan Possibilities</h2>
<p><i>Vulnerability Study</i> – Update and leverage the findings of freight-relevant vulnerability assessments, including system resilience planning for improvements or redundancy.</p> <p><i>Multimodal Access</i> – Preserve and expand multimodal freight options and connectivity with a focus on port access, rail corridors, truck routing options, or contingency planning.</p> <p><i>Response Tech</i> – Leverage freight technologies, real-time information systems, communications systems, cybersecurity, or similar to support emergency response.</p> <p><i>Emissions Tech</i> – Leverage freight technologies and potential pilot program opportunities with the potential to reduce emissions and improve air/noise quality.</p> <p><i>Preparedness</i> – Continue proactive planning and preparedness via organizations such as the Delaware Emergency Management Agency (DEMA), and through best practice resources such as FHWA’s <i>State of the Practice Scan: Freight Resilience Planning in the Face of Climate-Related Disruption</i> (June 2022)</p> <p><i>STRAHNET</i> – Update STRAHNET routing to ensure proper access to/from DAFB.</p> <p><i>First/Final Mile</i> – Work with land use agencies to account for final mile networks in plan reviews.</p> <p><i>Rail Properties</i> – Advance efforts to identify, preserve, and expand rail accessible property.</p> <p><i>Energy Assets</i> – Review energy production assets and any related freight connection needs.</p> <p><i>FIS Supply Chains</i> – Explore origin-destination details, network/mode connections, and foreign/domestic trade linkages for Freight Intensive Sectors (FIS) and supply chains.</p>	

Exhibit E5: Project Screening Criteria Relevance by Freight Scenario

Project Screening Criteria		Growth Scenario	Technology Scenario	Resilience Scenario
2	NHFN	●	●	●
3	STRAHNET	-	-	●
4	TOMP Congestion	●	-	-
5	DE Truck Bottleneck	●	-	-
6	First/Final Mile Network	●	●	●
7	DE State Strategies	●	-	-
9	EJ Community	●	●	●
10	EJ Air Quality	●	●	-
11	SLR	●	-	●
13	Regional Impact	-	●	●

Legend:

● = Projects that favor the indicated criteria may provide more direct benefits under the marked scenarios.

Note: Project screening criteria that focus generally on project readiness, type, eligibility, cost, etc., (i.e., Criteria #1, 8, 12, 14, and 15 per details in Section 5 of the plan) are not shown in the table above, as they would not yield any distinguishing insights that vary across the three scenarios being considered.



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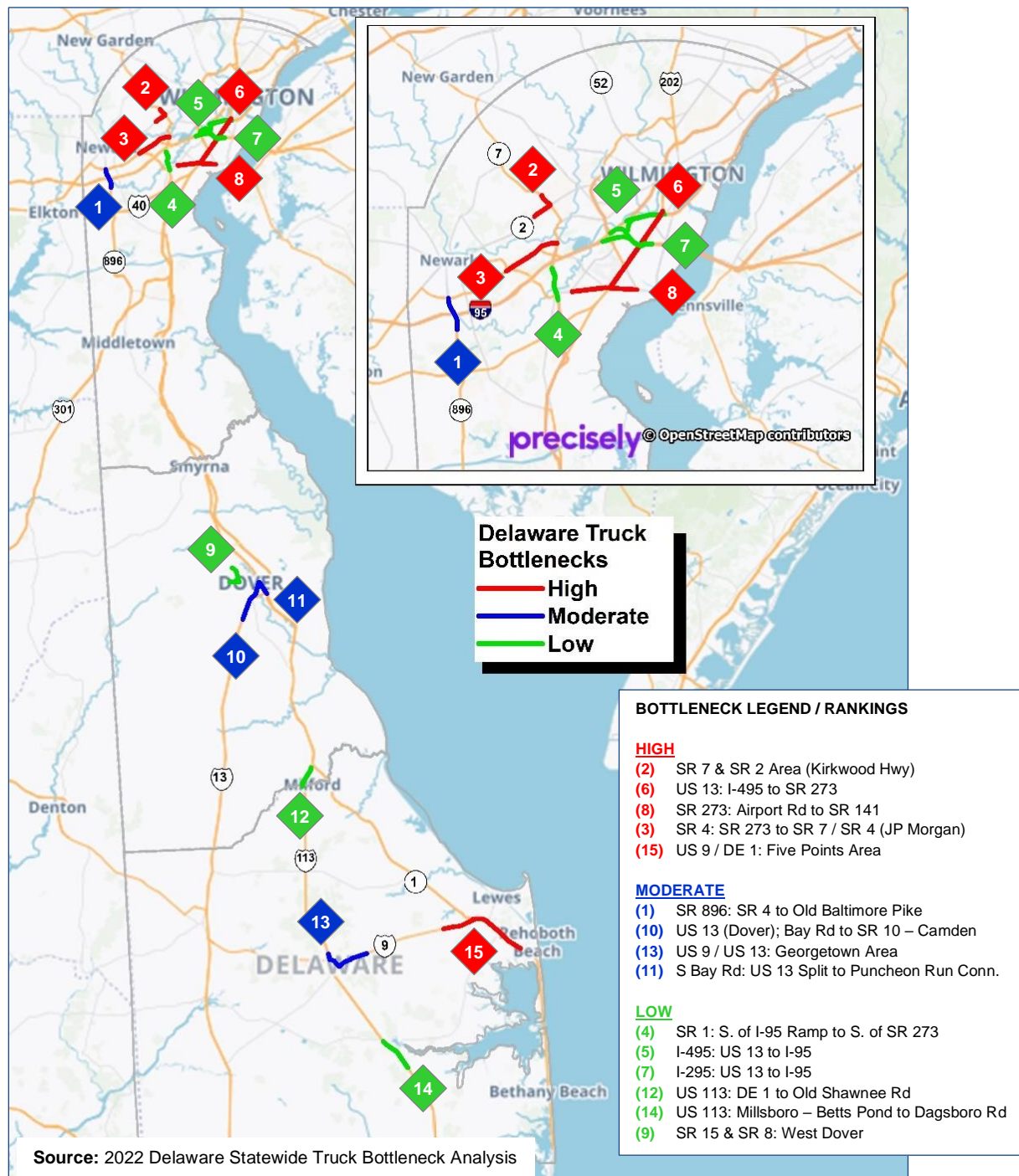
APPENDIX F:

Delaware Truck Bottleneck Analysis Details

F. APPENDIX F: Delaware Truck Bottleneck Analysis Details

The following data tables and maps reflect a partial summary of key details and findings pertinent to Delaware's Statewide Truck Bottleneck Analysis. This effort is otherwise prepared and tracked independent of the Delaware Freight Plan. For complete/additional details regarding the Truck Bottleneck Analyses, refer to broader updates through DeIDOT and WILMAPCO resources.

Exhibit F-1: Delaware Truck Bottlenecks



DRAFT DE Freight Bottlenecks (Sept. 2018)

Truck Bottleneck Analysis - Data Summary

	Corridor	NAME	County	Length	Hourly Capacity per Lane	Total Capacity All Lanes	Total AADT	Unit Truck AADT	Combination Truck AADT	AM Peak Reliability	PM Peak Reliability	Summer Peak Reliability	AM Peak Reliability	PM Peak Reliability	Summer Peak Reliability	Hourly Capacity
High	2	SR 7 & SR 2 Area (Kirkwood Hwy)	NCC	3.14	1,134	4,536	36,891	3,110	1,074	2.80	2.81	2.93	LOS F	LOS F	LOS F	3,000-6,000 VPH
	6	US 13: I-495 to SR 273	NCC	8.96	1,260	6,978	47,849	2,673	930	2.17	2.38	2.27	LOS E	LOS E	LOS E	6,000-10,000 VPH
	8	SR 273: Airport Rd to SR 141	NCC	6.21	1,287	3,708	25,936	1,450	501	3.32	4.02	3.89	LOS F	LOS F	LOS F	3,000-6,000 VPH
	3	SR 4: SR 273 to SR7/SR 4 (JP Morgan)	NCC	5.64	1,218	4,872	26,227	1,457	497	2.15	3.02	2.14	LOS E	LOS F	LOS E	3,000-6,000 VPH
	15	US 9/DE 1: Five Points Area	Sussex	14.85	1,038	3,805	44,537	2,382	798	1.85	2.20	3.37	LOS D	LOS E	LOS F	3,000-6,000 VPH
Moderate	1	SR 896: SR 4 to Old Baltimore Pike	NCC	3.20	1,176	4,704	43,208	2,415	835	1.97	2.17	1.77	LOS D	LOS E	LOS D	3,000-6,000 VPH
	10	US 13 (Dover): Bay Rd to SR 10 - Camden	Kent	6.76	1,252	5,007	43,151	2,412	834	1.63	2.04	1.92	LOS D	LOS E	LOS D	3,000-6,000 VPH
	13	US 9/US 13: Georgetown Area	Sussex	7.10	1,134	3,240	20,137	1,012	377	1.96	2.13	2.14	LOS D	LOS E	LOS E	3,000-6,000 VPH
	11	S. Bay Rd.: US 13 Split to Puncheon Run Connector	Kent	2.19	1,021	4,084	26,835	1,341	433	2.05	2.19	2.02	LOS E	LOS E	LOS E	3,000-6,000 VPH
Low	4	SR 1: S. of I-95 Ramps to S. of SR 273	NCC	3.17	2,200	8,800	70,811	4,543	2,648	1.30	2.17	1.46	LOS C+	LOS E	LOS C+	6,000-10,000 VPH
	5	I-495: US 13 to I-95	NCC	3.88	2,200	13,200	39,622	1,910	2,049	1.17	2.18	1.53	LOS C+	LOS E	LOS D	10,000+ VPH
	7	I-295: US 13 to I-95	NCC	4.87	2,200	9,900	90,274	5,133	5,589	1.22	1.27	1.65	LOS C+	LOS C+	LOS D	6,000-10,000 VPH
	12	US 113: DE 1 to Old Shawnee Rd	Kent	3.47	1,499	5,994	29,317	1,639	567	1.90	2.12	2.15	LOS D	LOS E	LOS E	3,000-6,000 VPH
	14	US 113: Millsboro Area - Betts Pond to Dagsboro Rd	Sussex	5.94	1,296	5,184	26,748	1,575	967	1.67	1.72	2.43	LOS D	LOS D	LOS E	3,000-6,000 VPH
	9	SR 15 & SR 8: West Dover	Kent	4.25	964	2,949	22,409	1,150	384	2.09	2.45	2.01	LOS E	LOS E	LOS E	3,000-6,000 VPH

83.62 = Total Corridor Bottleneck Mileage

DRAFT DE Freight Bottlenecks (Sept. 2018)

Truck Bottleneck Analysis - Data Summary

	Corridor	NAME	Truck_AADT	Truck Percentage	Primary Freight Route?	Delmarva Freight Study Corridor?	Local Truck Impact (Avg. Daily Trips)	Crash Imapct (Intersections)
High	2	SR 7 & SR 2 Area (Kirkwood Hwy)	5,000 +	11% and Above	Other NHS		563	1 top 20%
	6	US 13: I-495 to SR 273	2,500 to 5,000	7% to 9%	Crit. Urban	Metro	653	4 top 20%
	8	SR 273: Airport Rd to SR 141	2,500 to 5,000	7% to 9%	Other NHS		658	2 top 20%
	3	SR 4: SR 273 to SR7/SR 4 (JP Morgan)	1,000 to 2,500	7% to 9%	Other NHS		480	3 top 20%
	15	US 9/DE 1: Five Points Area	2,500 to 5,000	7% to 9%	Crit. Rural (Partial), Other NHS	Lewes/Coastal	276	2 top 20%
Moderate	1	SR 896: SR 4 to Old Baltimore Pike	2,500 to 5,000	7% to 9%	Crit. Urban (Partial), Other NHS	Metro	335	4 top 20%
	10	US 13 (Dover): Bay Rd to SR 10 - Camden	2,500 to 5,000	7% to 9%	Crit. Urban (Partial), Other NHS	Coastal	306	2 top 20%
	13	US 9/US 13: Georgetown Area	2,500 to 5,000	9% to 11%	Crit. Rural	Lewes/Coastal	235	1 top 20%
	11	S. Bay Rd.: US 13 Split to Puncheon Run Connector	1,000 to 2,500	7% to 9%	Other NHS	Coastal	298	0
Low	4	SR 1: S. of I-95 Ramps to S. of SR 273	5,000 +	9% to 11%	Crit. Urban	Coastal	N/A	N/A
	5	I-495: US 13 to I-95	2,500 to 5,000	9% to 11%	PHFS (Interstate)	Metro	N/A	N/A
	7	I-295: US 13 to I-95	5,000 +	11% and Above	PHFS (Interstate)	Metro	N/A	N/A
	12	US 113: DE 1 to Old Shawnee Rd	1,000 to 2,500	7% to 9%	Crit. Rural	Coastal	226	1 top 20%
	14	US 113: Millsboro Area - Betts Pond to Dagsboro Rd	2,500 to 5,000	9% to 11%	Crit. Rural	Coastal	252	1 top 20%
	9	SR 15 & SR 8: West Dover	1,000 to 2,500	7% to 9%	Other NHS		243	1 top 20%





DRAFT DE Freight Bottlenecks (Sept. 2018)

Truck Bottleneck Analysis - Scoring Summary

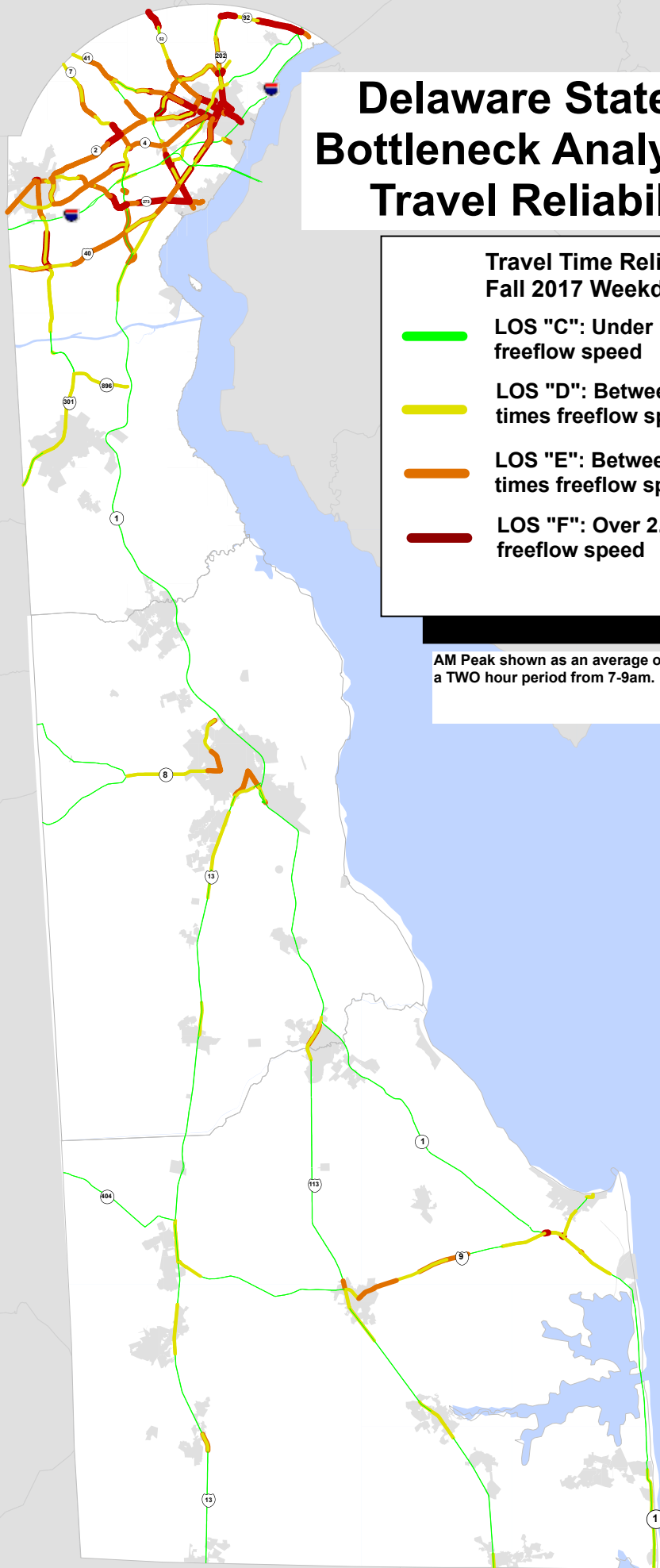
	ID	Location	AM TT Score	PM TT Score	Summer TT Score	TRK VOL Score	TRK PCT Score	TRK Gen Score	Route Type Score	Crash Impact Score	TOT_Score	Rank
High	2	SR 7 & SR 2 Area (Kirkwood Hwy)	3	3	3	3	3	3	0	1	2.375	High
	6	US 13: I-495 to SR 273	2	2	2	2	2	3	2	3	2.250	High
	8	SR 273: Airport Rd to SR 141	3	3	3	2	1	3	0	2	2.125	High
	3	SR 4: SR 273 to SR7/SR 4 (JP Morgan)	2	3	2	1	1	3	0	3	1.875	High
	15	US 9/DE 1: Five Points Area	1	2	3	2	1	2	2	2	1.875	High
Moderate	1	SR 896: SR 4 to Old Baltimore Pike	1	2	1	2	1	2	2	3	1.750	Moderate
	10	US 13 (Dover): Bay Rd to SR 10 - Camden	1	2	1	2	1	2	2	2	1.625	Moderate
	13	US 9/US 13: Georgetown Area	1	2	2	1	1	2	3	1	1.625	Moderate
	11	S. Bay Rd.: US 13 Split to Puncheon Run Connector	2	2	2	1	1	2	1	0	1.571	Moderate
Low	4	SR 1: S. of I-95 Ramps to S. of SR 273	0	2	0	3	2	N/A	2	N/A	1.500	Low
	5	I-495: US 13 to I-95	0	2	1	2	2	N/A	2	N/A	1.500	Low
	7	I-295: US 13 to I-95	0	0	1	3	3	N/A	2	N/A	1.500	Low
	12	US 113: DE 1 to Old Shawnee Rd	1	2	2	1	1	2	2	1	1.500	Low
	14	US 113: Millsboro Area - Betts Pond to Dagsboro Rd	1	1	2	1	2	2	2	1	1.500	Low
	9	SR 15 & SR 8: West Dover	2	2	2	1	1	2	0	1	1.375	Low

Delaware Statewide Truck Bottleneck Analysis: AM Peak Travel Reliability (7-9am)

Travel Time Reliability:
Fall 2017 Weekdays





-  LOS "C": Under 1.5 times freeflow speed
-  LOS "D": Between 1.5 and 2 times freeflow speed
-  LOS "E": Between 2 and 2.5 times freeflow speed
-  LOS "F": Over 2.5 times freeflow speed

AM Peak shown as an average of travel time reliability from a TWO hour period from 7-9am.



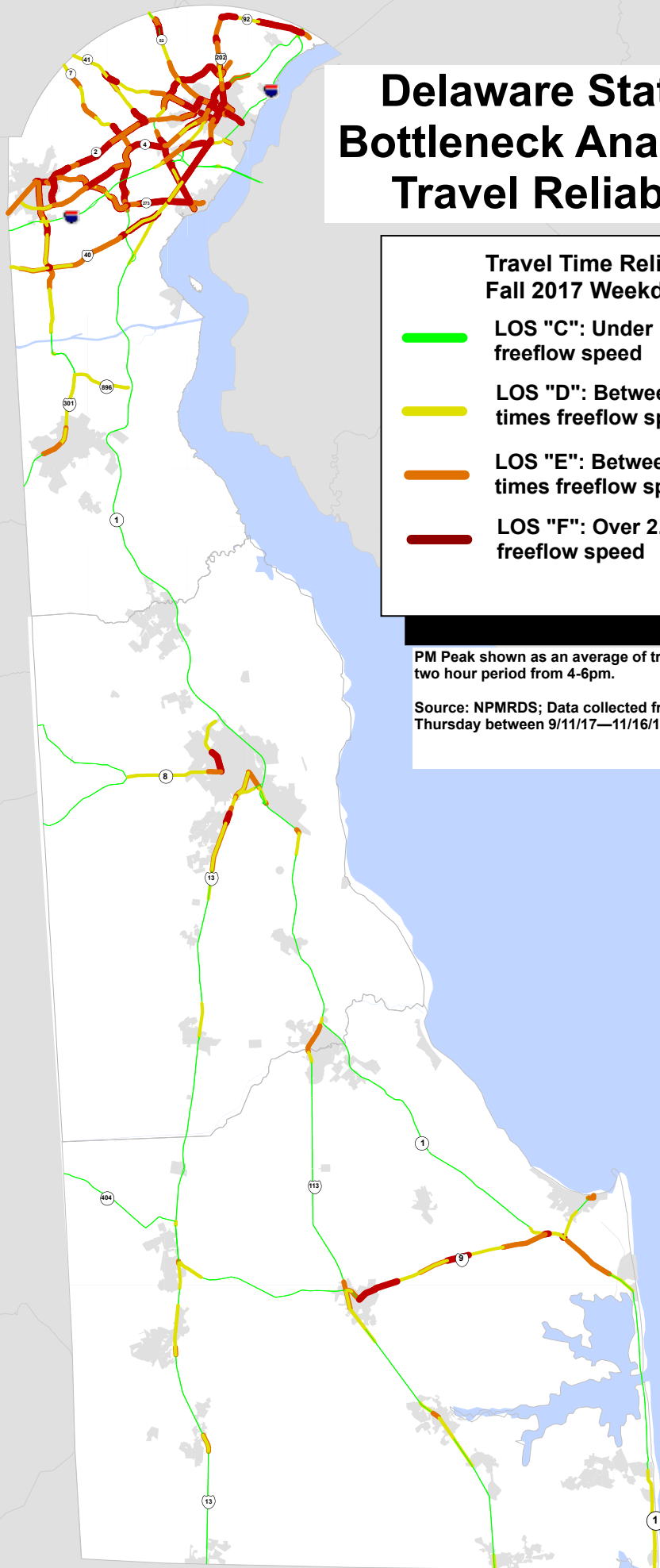
Delaware Statewide Truck Bottleneck Analysis: PM Peak Travel Reliability (4-6pm)

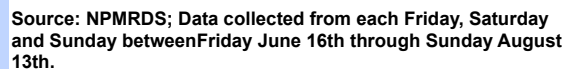
Travel Time Reliability: Fall 2017 Weekdays

-  LOS "C": Under 1.5 times freeflow speed
-  LOS "D": Between 1.5 and 2 times freeflow speed
-  LOS "E": Between 2 and 2.5 times freeflow speed
-  LOS "F": Over 2.5 times freeflow speed

PM Peak shown as an average of travel time reliability from a two hour period from 4-6pm.

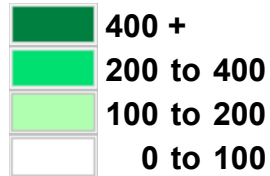
Source: NPMRDS; Data collected from each Monday through Thursday between 9/11/17—11/16/17





Delaware Statewide Truck Bottleneck Analysis: Daily Truck Trip Generation

Daily Truck Trip Generation Unit & Combination

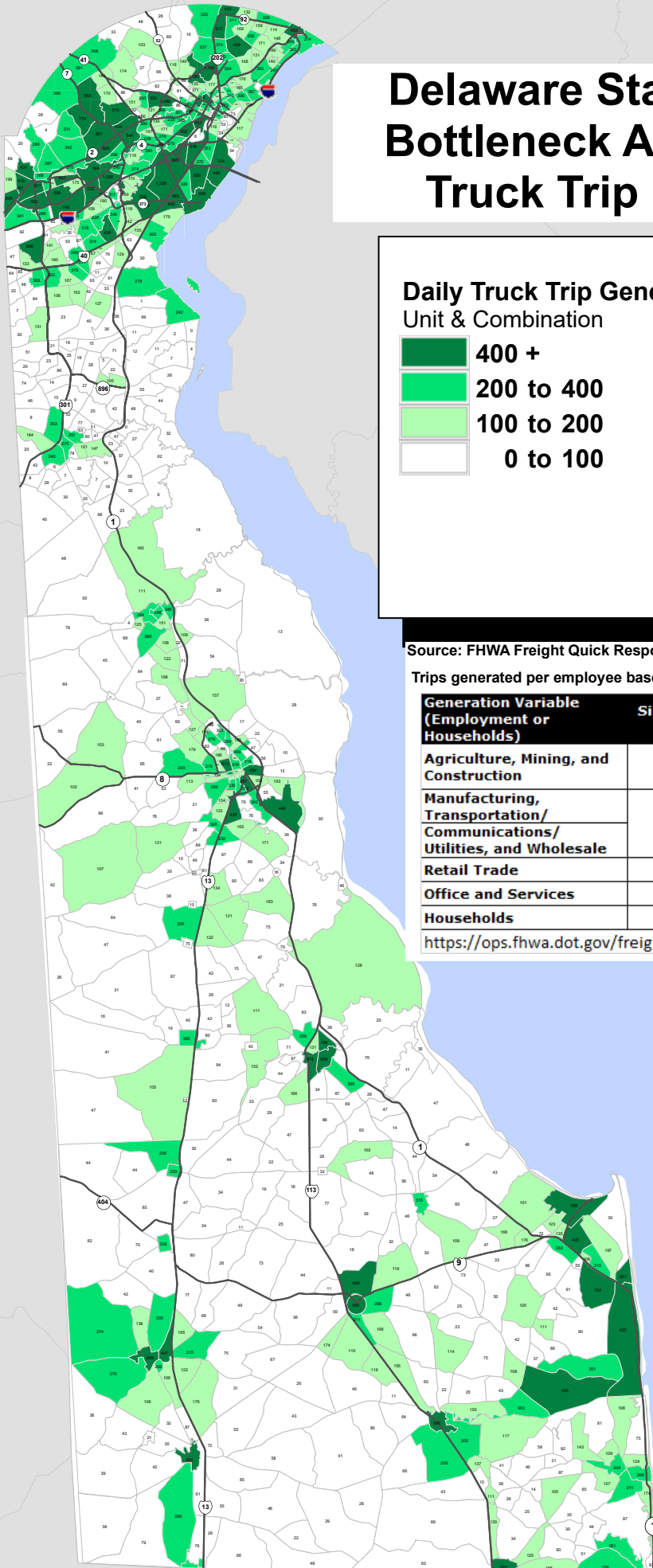


Source: FHWA Freight Quick Response Manual:

Trips generated per employee based on the following job types:

Generation Variable (Employment or Households)	Single Unit Trucks	Combination Trucks
Agriculture, Mining, and Construction	0.289	0.174
Manufacturing, Transportation/ Communications/ Utilities, and Wholesale	0.242	0.104
Retail Trade	0.253	0.065
Office and Services	0.068	0.009
Households	0.099	0.038

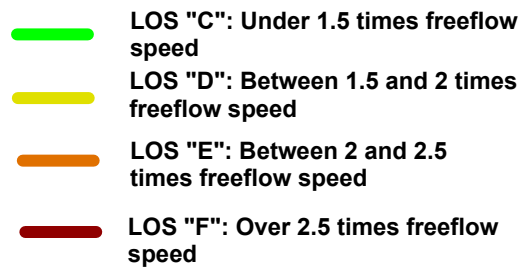
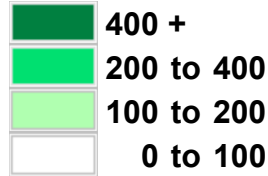
<https://ops.fhwa.dot.gov/freight/publications/qrfm2/sec>



Delaware Statewide Truck Bottleneck Analysis: Daily Truck Trip Generation & PM Peak Reliability

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Daily Truck Trip Generation Unit & Combination



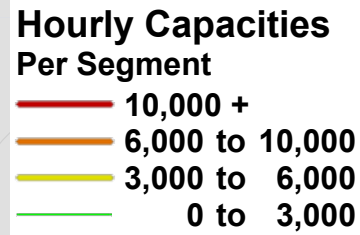
Source: FHWA Freight Quick Response Manual:

Trips generated per employee based on the following job types:

Generation Variable (Employment or Households)	Single Unit Trucks	Combination Trucks
Agriculture, Mining, and Construction	0.289	0.174
Manufacturing, Transportation/ Communications/ Utilities, and Wholesale	0.242	0.104
Retail Trade	0.253	0.065
Office and Services	0.068	0.009
Households	0.099	0.038

<https://ops.fhwa.dot.gov/freight/publications/qrfm2/sec>

Delaware Statewide Truck Bottleneck Analysis: Hourly Capacities



Hourly Capacities are calculated by multiplying the number of through lanes by the capacity calculated through the 2015 update. The 2015 update used the following factors in measuring capacity:

- Speed Limit
- Presence of shoulders wider than 6ft.
- Number of friction factors (i.e. signals, commercial entrances, etc..) along segment

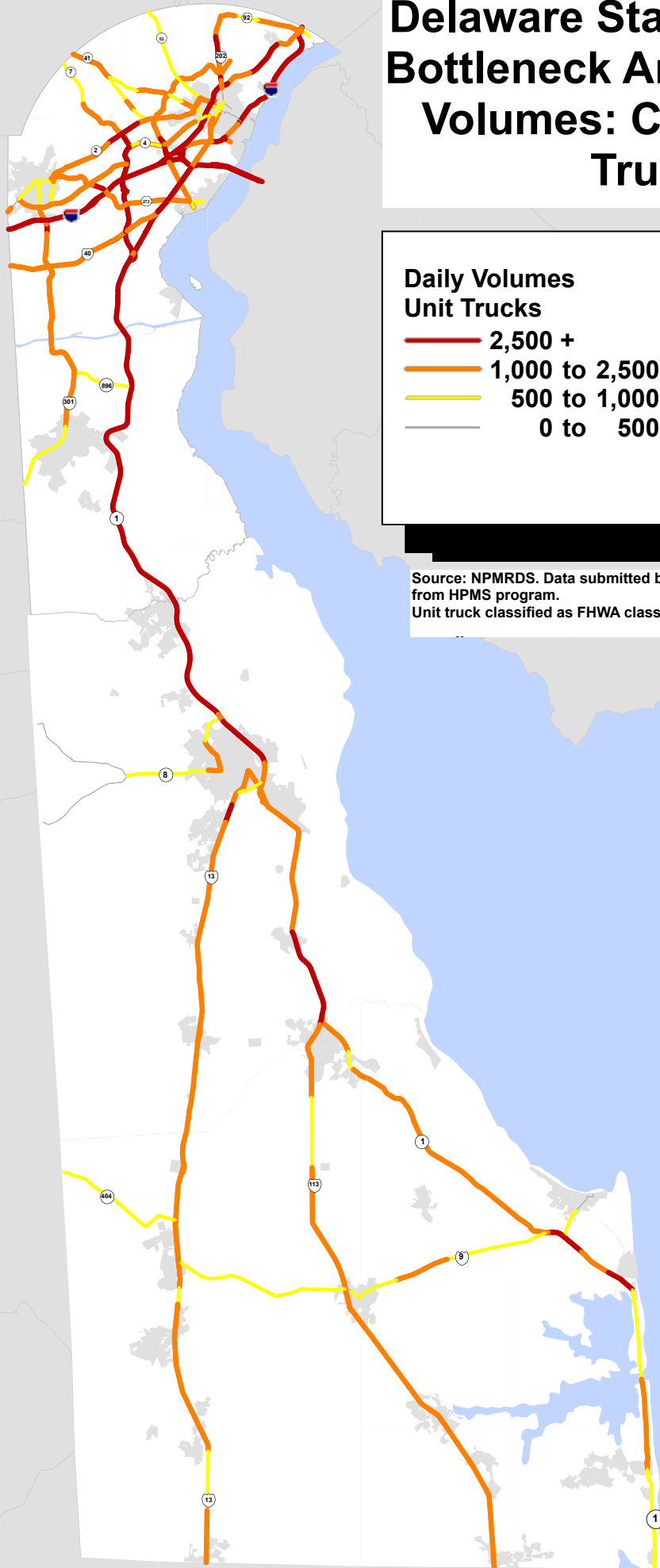
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Delaware Statewide Truck Bottleneck Analysis: Daily Volumes: Combination Trucks

Daily Volumes Unit Trucks



Source: NPMRDS. Data submitted by DOTs
from HPMS program.
Unit truck classified as FHWA class 5 - 7.



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Delaware Statewide Truck Bottleneck Analysis: Daily Volumes: Combination Trucks



2,500 +

— 1,000 to 2,500

 500 to 1,000

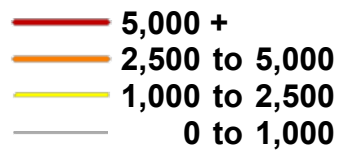
0 to 500

Source: NPMRDS. Data submitted by DOTs from HPMS program.
Combination truck classified as FHWA class 8 and higher.

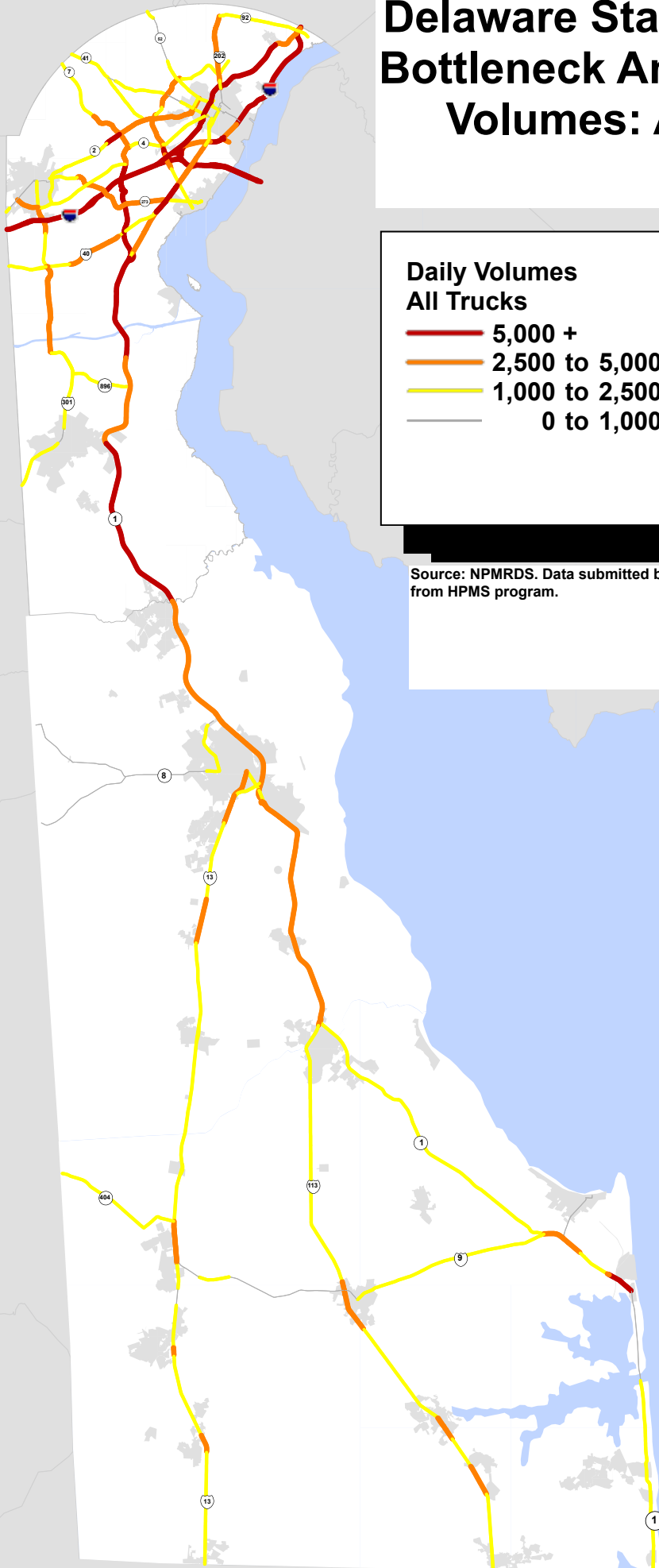
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Delaware Statewide Truck Bottleneck Analysis: Daily Volumes: All Trucks

Daily Volumes All Trucks



Source: NPMRDS. Data submitted by DOTs
from HPMS program.



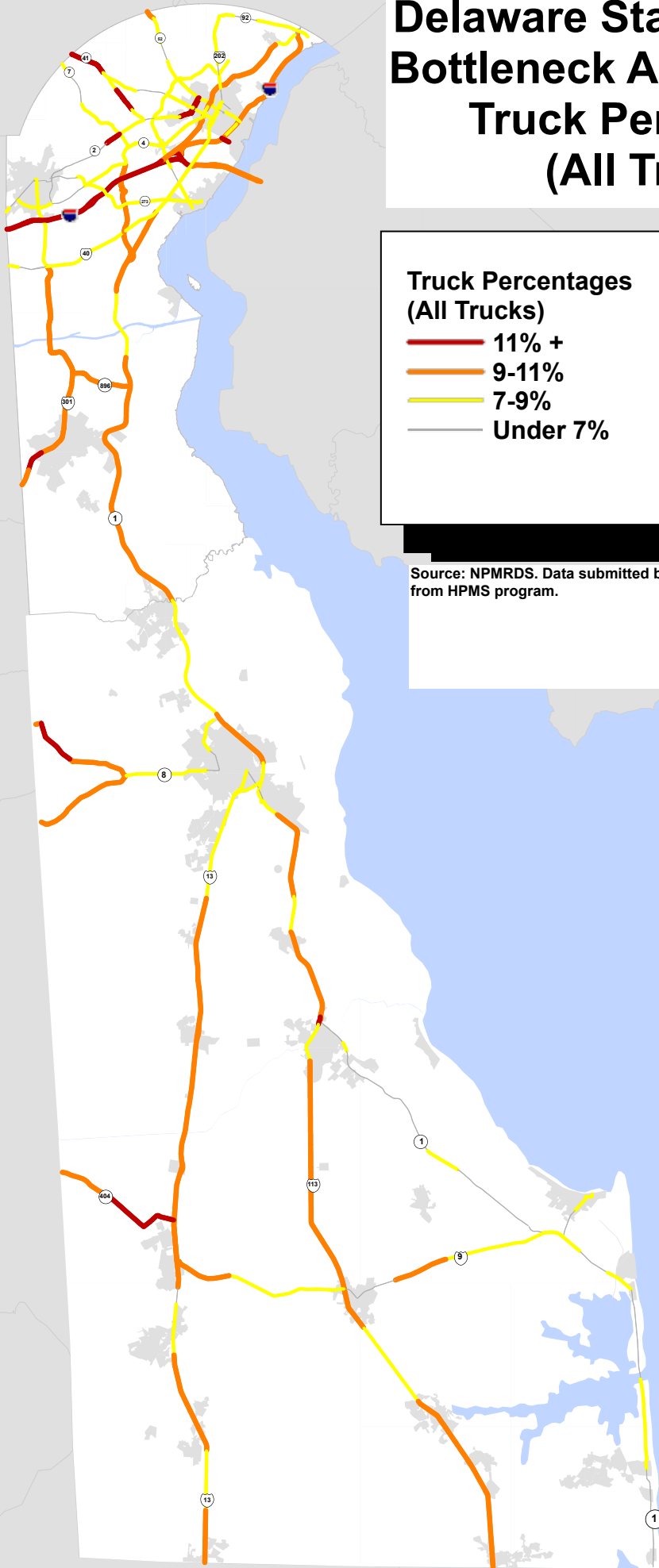
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Delaware Statewide Truck Bottleneck Analysis: Daily Truck Percentages (All Trucks)

Truck Percentages (All Trucks)

- 11% +
- 9-11%
- 7-9%
- Under 7%

Source: NPMRDS. Data submitted by DOTs from HPMS program.



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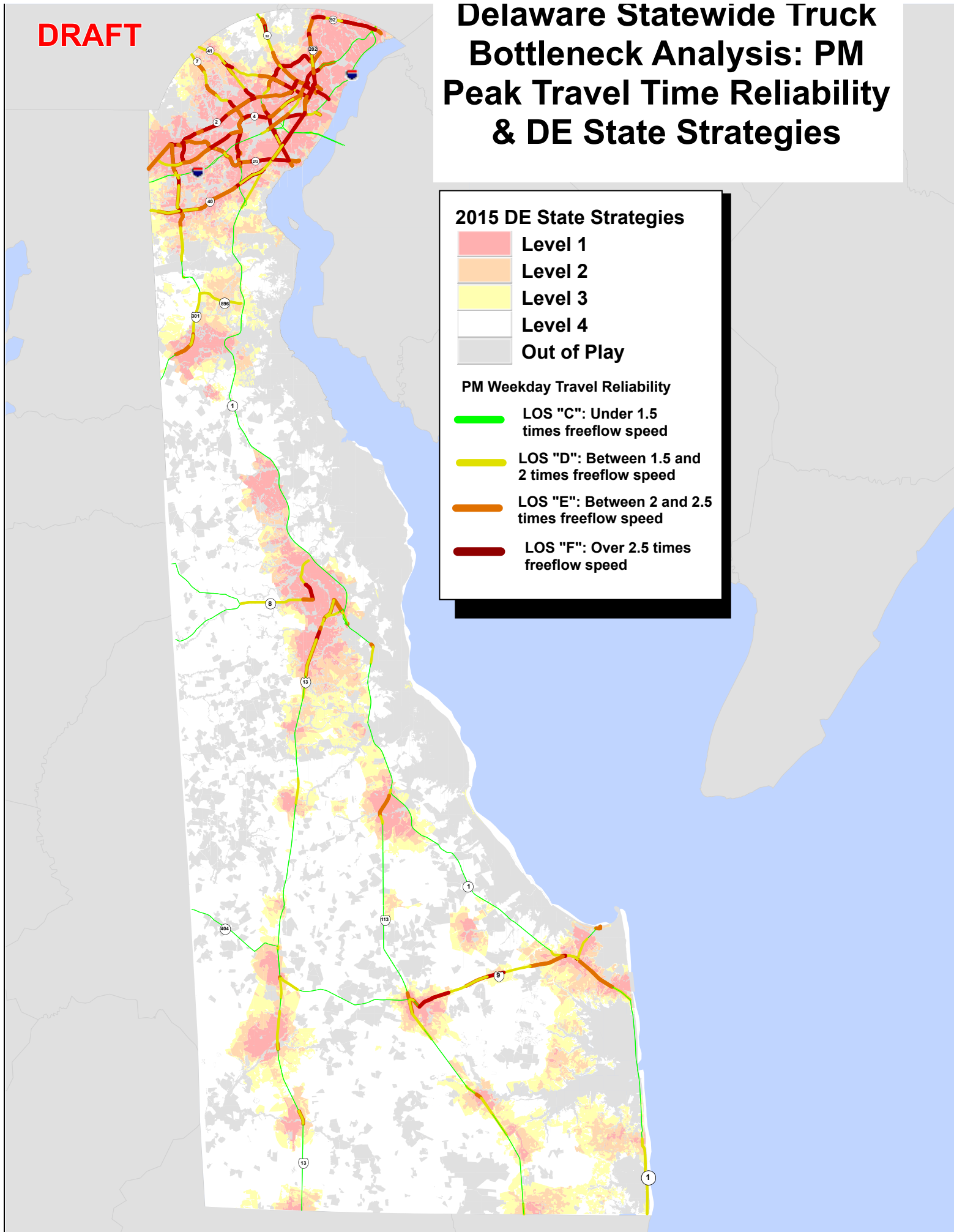
Delaware Statewide Truck Bottleneck Analysis: PM Peak Travel Time Reliability & DE State Strategies

2015 DE State Strategies

- Level 1
- Level 2
- Level 3
- Level 4
- Out of Play

PM Weekday Travel Reliability

- LOS "C": Under 1.5 times freeflow speed
- LOS "D": Between 1.5 and 2 times freeflow speed
- LOS "E": Between 2 and 2.5 times freeflow speed
- LOS "F": Over 2.5 times freeflow speed



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Delaware Statewide Truck Bottleneck Analysis: Daily Volumes (all trucks) & DE State Strategies

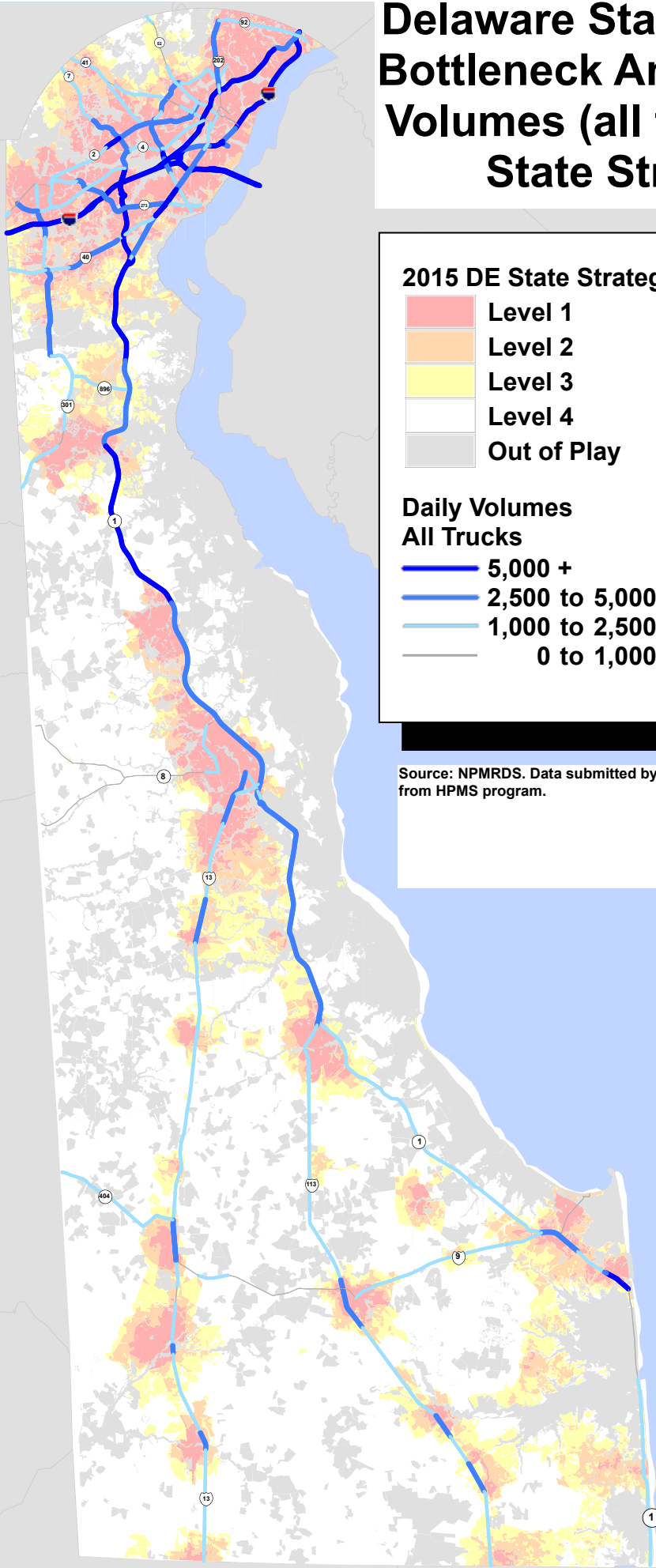
2015 DE State Strategies

- Level 1
- Level 2
- Level 3
- Level 4
- Out of Play

Daily Volumes All Trucks

- 5,000 +
- 2,500 to 5,000
- 1,000 to 2,500
- 0 to 1,000

Source: NPMRDS. Data submitted by DOTs from HPMS program.





APPENDIX G:

Freight Project Candidates – Truck Bottleneck Improvements

G. APPENDIX G: Freight Project Candidates – Truck Bottleneck Improvements

The following project candidate references are based on detailed reviews of Delaware's Statewide Truck Bottleneck Analysis (documented elsewhere in this plan) in comparison to planned projects on Delaware's CTP or corresponding MPO planning/programming resources that overlap the identified truck bottleneck areas. These project candidates may play a particularly important role in the state's overall freight action plan, especially in relationship to federal requirements for bottleneck improvements. These requires include the following reference:

- **49 U.S.C. §70202(b)(7):** state freight plans must include “an inventory of facilities with freight mobility issues, such as bottlenecks, within the state, and for those facilities that are state owned or operated, a description of the strategies the state is employing to address the freight mobility issues.”
- **23 CFR §490.107:** states must provide a “discussion on progress of the State DOT's efforts in addressing congestion at truck freight bottlenecks within the State, as described in 23 CFR 490.107(b)(1)(ii)(F), through comprehensive freight improvement efforts of State Freight Plan or MPO freight plans; the Statewide Transportation Improvement Program (STIP) and Transportation Improvement Program (TIP); regional or corridor level efforts; other related planning efforts; and operational and capital activities targeted to improve freight movement on the Interstate System.” (23 CFR 490.107(b)(2)(ii)(D), 23 CFR 490.107(b)(3)(ii)(D))

All potential bottleneck improvements summarized herein generally reflect a snapshot in time and should otherwise be viewed for reference only. Prior to making any official assumptions related to these lists, formal/current project updates should be coordinated (independent of this plan) with DeIDOT and the state's MPO planning partners to remain consistent with any subsequent updates or changes relative to broader ongoing transportation planning/programming efforts throughout Delaware.



Delaware Statewide Truck Bottleneck Planned Improvements Summary (5/16/22)

Map ID	Bottleneck	Related Projects and Studies	Description	Estimated In-Service Year / Project Status	Project Website (if applicable)
High Ranked Bottlenecks					
2	SR 7 & SR 2 Area (Kirkwood Hwy.)	SR 2 & SR 7 Intersection Improvements	Alternatives evaluated as part of Senate Resolution #10 Committee Recommendations. Recommendations include grade-separated options	Alternatives evaluated in 2021. Project to be included in WILMAPCO RTP Aspirations List	http://www.wilmapco.org/sr10/Intersection_Analysis_DEC_20.pdf
		Delaware Park Blvd Extension, SR 2 to SR 4	A four-lane boulevard type roadway connecting the intersection of SR 4 and SR 58 with SR 2 at Delaware ParkBoulevard. Included in the Churchmans Crossing Plan Plan Update (2021)	Long Term project in WILMAPCO RTP Aspirations list (2050)	http://www.wilmapco.org/churchmans/
		SR 7 & Milltown Rd. Intersection Improvements	Alternatives evaluated as part of Senate Resolution #10 Committee Recommendations. Recommendations include short term restriping options and long term grade-separated options	Alternatives evaluated in 2021. Project to be included in WILMAPCO RTP Aspirations List	http://www.wilmapco.org/sr10/Intersection_Analysis_DEC_20.pdf
		Last Corridor Signal Re-timing	SR 7 portion retimed in 2020; SR 2 portion retimed in 2017	N/A	Regular updates available at http://www.wilmapco.org/cms
6	US 13: I-495 to SR 273	US 13 & Bacon Ave. Safety Intersection Improvements	Part of 2018 DelDOT HEP (Site S-1) Improvements included in a corridor-wide effort	FY 2025	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201601102
		US 13 & SR 273 Intersection Safety Improvements	Part of 2018 DelDOT HEP (Site S-2). Improvements included in a corridor-wide effort	FY 2025	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201601102
		US 13 & SR 273. Intersection Improvements	Long term option of a grade separated interchange	Project to be included in WILMAPCO RTP Aspirations List. No estimated In-Service Year	http://www.wilmapco.org/rtp
		SR 141/US 13 Interchange upgrade	Upgrade of existing on/off ramps	Project to be included in WILMAPCO RTP Aspirations List. No estimated In-Service Year	http://www.wilmapco.org/rtp
		Last Corridor Signal Re-timing: 2018	Portion of US 13 retimed in 2020 (I-295 to I-495)		Regular updates available at http://www.wilmapco.org/cms
8	SR 273: Airport Rd. to SR 141	SR 273: I-95 to SR 1	Intersection / Road Improvements	WILMAPCO RTP Project Aspirations List	
		US 13 & SR 273 Intersection Safety Improvements	Part of 2018 DelDOT HEP (Site S-2). Improvements included in a corridor-wide effort	2025	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201601102
		US 13 & SR 273. Intersection Improvements	Long term option:grade separated interchange	Project to be included in WILMAPCO RTP Aspirations List. No estimated In-Service Year	http://www.wilmapco.org/rtp
		HSIP NCC, SR 273, Appleby Road to Airport Road	Widen to provide two left-turn lanes from eastbound SR 273 onto Airport Road and three through lanes on westbound SR 273.	FY 2021	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T200900704
		Last Corridor Signal Re-timing: 2018			Regular updates available at http://www.wilmapco.org/cms/

Delaware Statewide Truck Bottleneck Planned Improvements Summary (5/16/22)

Map ID	Bottleneck	Related Projects and Studies	Description	Estimated In-Service Year / Project Status	Project Website (if applicable)
High Ranked Bottlenecks (Continued)					
3	SR 4: SR 273 to SR7/SR 4 (JP Morgan)	SR 4 / Harmony Road Intersection	Improvements include adding turn lanes and geometric improvements	Project in DelDOT CTP. Construction scheduled for FY2027	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T202111601
		Churchmans Crossing Study	Bottleneck is part of large sub regional study to be completed by Spring 2021	TBD (if any)	http://www.wilmapco.org/churchmans/
		SR 4 / Churchmans Road Intersection	Churchmans Crossing Plan Plan Update (2021)	Project in DelDOT CTP. Construction scheduled for FY2027	http://www.wilmapco.org/churchmans/
		Delaware Park Blvd Extension, SR 2 to SR 4	A four-lane boulevard type roadway connecting the intersection of SR 4 and SR 58 with SR 2 at Delaware Park Boulevard. Included in the Churchmans Crossing Plan Plan Update (2021)	Long Term project in WILMAPCO RTP Aspirations list (2050)	http://www.wilmapco.org/churchmans/
		SR 4/ SR 7 Intersection (JP Morgan)	Additional turn lanes and other geometric improvements.	Construction scheduled for FY2027	http://www.wilmapco.org/churchmans/
		Last Corridor Signal Re-timing: 2019			Regular updates available at http://www.wilmapco.org/cms/
15	US 9/DE 1: Five Points Area	Multiple projects under 5 Points Transportation Study	The Five Points Transportation Study is examining and implementing improvements to the area around the intersection located at Routes 1 and 9 in Lewes. The study began with Phase 1 – Five Points Working Group and has moved into Phase 2 – Implementation.		https://deldot.gov/projects/Studies/fivepoints/
		Last Corridor Signal Re-timing: 2018 (US 9) and 2016 (DE 1)	US 9 Business retimed in 2020		

Delaware Statewide Truck Bottleneck Planned Improvements Summary (5/16/22)

Map ID	Bottleneck	Related Projects and Studies	Description	Estimated In-Service Year / Project Status	Project Website (if applicable)
Moderate Ranked Bottlenecks					
1	SR 896: SR 4 to Old Baltimore Pike	SR 896 Widening from I-95 to US 40	Increase capacity of SR 896 by adding onetravel lane in each direction	Long Term project in WILMAPCO RTP (2050)	
		I-95 / SR 896 Interchange	Improvements at the interchange to address congestion in the peak hours, along with accidents during different times of the day.	FY 2026	https://deldot.gov/information/projects/i95/i95_sr896/index.shtml
		2019 HEP Site C	Identification of safety improvements from I-95 ramps to Mopar Dr.	Alternatives being evaluated	
		Last Corridor Signal Re-timing: 2017	Retimed in 2020		Regular updates available at http://www.wilmapco.org/cms
10	US 13 (Dover): Bay Rd. to SR 10 - Camden	East Camden Bypass	Provide a new connection from US 13 to Lebanon Road (SR 10) and Rising Sun Road.	FY 2025	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201709502
		HEP, KC, US13, Lochmeath Way to Puncheon Run Connector	Widen to provide a third through lane in each direction on US 13 from Lochmeath Way to the Puncheon Run Connector.	FY 2025	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201500202
		Last Corridor Signal Re-timing: 2016			
13	US 9/US 113: Georgetown Area	US 113 @ SR 18/SR 404 (Georgetown) Grade Separated Intersection	Grade separated intersection at US 113 and SR 18/SR 404 in Georgetown DE. Include widening US 113 to provide three lanes in each direction from Bedford St to Ennis St.	FY 2026	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201412701
		Last Corridor Signal Re-timing: 2019			
11	S. Bay Rd.: US 13 Split to Puncheon Run Connector	HSIP SC, US 9 and SR 5 Intersection	Widen to provide turn lanes at the US 9/SR 5 intersection to address safety and operational issues and accommodate heavy vehicles.	Completed FY 2021	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201100901
		Last Corridor Signal Re-timing: 2016			

Delaware Statewide Truck Bottleneck Planned Improvements Summary (5/16/22)

Map ID	Bottleneck	Related Projects and Studies	Description	Estimated In-Service Year / Project Status	Project Website (if applicable)
Low Ranked Bottlenecks					
4	SR 1: S. of I-95 Ramps to S. of SR 273	SR 1: Roth Bridge - SR 273	Identify and prioritize cost-effective short, mid- and long-term transportation infrastructure improvements along SR 1 from the Roth Bridge to south of I-95 that reduce congestion and travel times and improve safety, while minimizing environmental impacts.	Alternatives being evaluated	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T200511001
		Last Corridor Signal Re-timing: N/A			
5	I-495: US 13 to I-95				
		Last Corridor Signal Re-timing: N/A			
7	I-295: US 13 to I-95	I-295 Northbound from SR 141 to US 13	Additional capacity from I-95 northbound from the SR141 interchange to I-295 northbound.	FY 2026	http://www.drba.net/LinkClick.aspx?fileticket=Bkz6VQUYsCc%3d&amp;tabid=131
		Last Corridor Signal Re-timing: N/A			
12	US 113: DE 1 to Old Shawnee Rd.	US 113, North / South Improvements	This project will continue to work on viable alternatives for a limited access highway throughout Sussex County to address existing and future transportation needs along US 113 while preserving environmental and historic resources and accommodating planned economic growth.		https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T200212701#project-details1
		Last Corridor Signal Re-timing: 2019			
14	US 113: Millsboro Area - Betts Pond to Dagsboro Rd.	US 113, North / South Improvements	This project will continue to work on viable alternatives for a limited access highway throughout Sussex County to address existing and future transportation needs along US 113 while preserving environmental and historic resources and accommodating planned economic growth.		https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T200212701#project-details1
		North Millsboro Bypass, US 113 to SR 24	2 lane connector road between US 113 and SR 24 north of Millsboro DE. The new alignment will start at US 113 and extend eastward bridging over Fox Run Road, the Norfolk Southern Railroad, the Millsboro pond, and Gravel Hill Road. Includes grade separated intersection at the US 113/SR 20 intersection.	FY 2025	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201912701
		Last Corridor Signal Re-timing: 2014			
9	SR 15 & SR 8: West Dover	HEP KC, SR 8 and SR 15 Intersection Improvements	Construction of an additional through lane on each leg of SR 15 (Saulsbury Road).	FY 2023	https://deldot.gov/projects/index.shtml?dc=details&projectNumber=T201500201
		Salisbury & McKee Road Improvements	Expand to 4 Lanes	Mid Term project in Dover/Kent RTP (2022-2030)	www.doverkentmpo.org
		Last Corridor Signal Re-timing: 2020			



APPENDIX H:

Freight Project Candidates – Port Strategic Plan References

H. APPENDIX H: Freight Project Candidates – Port Strategic Plan References

The following project candidate references are specific to the Port of Wilmington based on details taken directly from the 2016 *Strategic Master Plan for the Diamond State Port Corporation*.

Pending further coordination with the Port, no updates have been made to the project elements or cost estimates reflected on these lists since their creation in 2016, with one exception. The original costs were reported in terms of year 2016 dollars, while the information on the following pages adjusts those costs to reflect inflation to year 2020 dollars based on a 2016-2020 multiplier of 1.07 per guidance/details in USDOT's *Benefit-Cost Analysis Guidance for Discretionary Grant Programs* (March 2022 Revised).

All port project details summarized herein should otherwise be viewed for reference only. It is likely that several project needs, elements, or alternatives have changed and/or been partially advanced or revised since the 2016 update of the Port's strategic plan. Prior to making any official assumptions related to these lists, formal/current project updates should be coordinated (independent of this plan) with the Diamond State Port Corporation (DSPC) and GT USA Wilmington, LLC, to remain consistent with any subsequent updates or changes relative to broader ongoing Port planning and improvement efforts at the Port of Wilmington or related facilities.



Exhibit 1: Port Project Candidates for State of Good Repair (2016 Strategic Master Plan Alternative 1)

		ALT 1 State of Good Repair	
#	Port Improvement / Key Item	Cost (2016 \$M)	Inflated Cost (2020 \$M)
-	<i>Inflation Adjustment Multiplier</i>	-	1.07
1	Current Funded Commitments		
1a	Equipment	\$ 15.7	\$ 16.8
1b	Other Tasks	\$ 27.5	\$ 29.4
2	Other Commitments		
2a	Unfunded Additional Commitments	\$ 4.7	\$ 5.0
3	Expansion Opportunity		
3a	Internal Gate	\$ 0.46	\$ 0.50
3b	Site Improvements	\$ 9.4	\$ 10.1
3c	Maintenance Bldg Relocation	\$ 9.6	\$ 10.3
4	Cold Storage Warehouse		
4a	Demolition of Warehouse B/C/D	\$ 7.3	\$ 7.8
4b	Reconstruction of Cold Storage	\$ 80.8	\$ 86.4
5	New Main Gate		
5a	Demolition of Existing Gate/Bldgs	\$ 1.3	\$ 1.4
5b	Site Improvements	\$ 4.7	\$ 5.0
5c	New Gate	\$ 4.1	\$ 4.4
5d	New Building	\$ 5.0	\$ 5.4
6	Other Costs		
6a	Engineering, Construction Management	\$ 10.9	\$ 11.7
-	Totals		
-	<i>Funded Subtotal (#1)</i>	\$ 43.2	\$ 46.2
-	<i>Unfunded Subtotal (#2 thru #6)</i>	\$ 138.3	\$ 148.0
-	TOTAL	\$ 181.5	\$ 194.2

Exhibit 2: Port Project Candidates for Market Demand/Growth (2016 Strategic Master Plan Alternative 1A)

		ALT 1A Market Demand/Growth	
#	Port Improvement / Key Item	Cost (2016 \$M)	Inflated Cost (2020 \$M)
-	<i>Inflation Adjustment Multiplier</i>	-	1.07
7	Extend Berth/Crane Rail through Floating Berth		
7a	Demolition	\$ 0.79	\$ 0.84
7b	New Berth Structure	\$ 28.5	\$ 30.5
7c	Upland Fill, Site Improvements	\$ 13.0	\$ 13.9
7d	Mods to Juice Unloading Facility	\$ 1.1	\$ 1.2
7e	2 Cranes, RTG & Other Yard Eq.	\$ 39.8	\$ 42.6
8	Storage		
8a	Upland 10 Acre Multi-Purpose Storage	\$ 15.3	\$ 16.3
9	Construct RO-RO Storage on Pigeon Point Parcel		
9a	Property Acquisition	\$ -	\$ -
9b	Gate	\$ 0.58	\$ 0.6
9c	Site Improvements	\$ 37.4	\$ 40.0
10	Other Costs		
10a	Engineering, Construction Management	\$ 8.4	\$ 9.0
-	Totals		
-	TOTAL	\$ 144.9	\$ 155.0

Exhibit 3: Port Project Candidates for Port/Terminal Expansion (2016 Strategic Master Plan Alternatives 2B/C, 3, and 4)

		ALT 2B WHS River		ALT 2C WHS Land		ALT 3 Riveredge		ALT 4 Edgemoor	
#	Port Improvement / Key Item	Cost (2016 \$M)	Inflated Cost (2020 \$M)	Cost (2016 \$M)	Inflated Cost (2020 \$M)	Cost (2016 \$M)	Inflated Cost (2020 \$M)	Cost (2016 \$M)	Inflated Cost (2020 \$M)
-	<i>Inflation Adjustment Multiplier</i>	-	1.07	-	1.07	-	1.07	-	1.07
11	Property Acquisition								
11a	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
12	Berth / Yard / Buildings								
12a	Dredging	\$ -	\$ -	\$ 33.3	\$ 35.6	\$ 87.3	\$ 93.4	\$ 18.5	\$ 19.8
12b	Berth Structure	\$ 674.8	\$ 722.0	\$ 118.1	\$ 126.4	\$ 118.1	\$ 126.4	\$ 118.1	\$ 126.4
12c	Yard / Earthwork	\$ 103.7	\$ 111.0	\$ 56.8	\$ 60.8	\$ 157.1	\$ 168.1	\$ 16.7	\$ 17.9
12d	Buildings	\$ 2.3	\$ 2.5	\$ 2.3	\$ 2.5	\$ 10.2	\$ 10.9	\$ 10.2	\$ 10.9
12e	Demolition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28.2	\$ 30.2
12f	Civil Infrastructure	\$ 76.0	\$ 81.3	\$ 94.7	\$ 101.3	\$ 103.1	\$ 110.3	\$ 110.0	\$ 117.7
13	Internal Access Road / Gate / Rail								
13a	Access Rd / Infrastructure	\$ -	\$ -	\$ -	\$ -	\$ 87.2	\$ 93.3	\$ -	\$ -
13b	Gate	\$ 2.2	\$ 2.4	\$ 2.2	\$ 2.4	\$ 4.1	\$ 4.4	\$ 4.1	\$ 4.4
13c	Rail	\$ 3.6	\$ 3.9	\$ 3.6	\$ 3.9	\$ 4.9	\$ 5.2	\$ 1.8	\$ 1.9
14	Other Infrastructure Cost								
14a	Permitting / Design / CM	\$ 80.6	\$ 86.2	\$ 31.8	\$ 34.0	\$ 50.0	\$ 53.5	\$ 32.1	\$ 34.3
15	Equipment								
15a	Reefer & Scales	\$ 31.6	\$ 33.8	\$ 31.6	\$ 33.8	\$ 31.6	\$ 33.8	\$ 31.6	\$ 33.8
15b	Cranes / Yard Equipment	\$ 119.4	\$ 127.8	\$ 119.4	\$ 127.8	\$ 228.8	\$ 244.8	\$ 119.4	\$ 127.8
-	Totals								
-	<i>Infrastructure Subtotal (#11 thru #14)</i>	\$ 943.2	\$ 1,009.2	\$ 342.8	\$ 366.8	\$ 622.0	\$ 665.5	\$ 339.7	\$ 363.5
-	<i>Equipment Subtotal (#15)</i>	\$ 151.0	\$ 161.6	\$ 151.0	\$ 161.6	\$ 260.4	\$ 278.6	\$ 151.0	\$ 161.6
-	ALTERNATIVE TOTAL	\$ 1,094.2	\$ 1,170.8	\$ 493.8	\$ 528.4	\$ 882.4	\$ 944.2	\$ 490.7	\$ 525.0



APPENDIX I:

Freight Project Candidates – Screening Details

I. APPENDIX I: Freight Project Candidates – Screening Details

The following details reflect the initial set of approximately 120 project candidates that were screened from Delaware's CTP and related planning/programming resources. These details include input assumptions for 15 project screening criteria to help assess each project's potential freight relevance and general project readiness as described in Chapter 5 of the 2022 Delaware State Freight Plan. It is anticipated that the list of project candidates and screening details will continue to evolve as a working tool to be used/referenced on an ongoing basis as part of broader planning/programming efforts beyond the snapshot in time compiled on the following pages.



ID	PROJECT	CRITERIA 1 Associated with a completed Study (if any)	CRITERIA 2 Project location in relation to National Highway Freight Network (NHFN)	CRITERIA 3 Is project along the Strategic Highway Network (STRAHNET)?	CRITERIA 4 Is the project along one of the congestion hotspots in the DelDOT TMC's Traffic Operations Manangement Plans (TOMP)?	CRITERIA 5 Is the project located within one of the 15 Statewide Truck Bottlenecks?	CRITERIA 6 Is project designed as a Final Mile route OR provides direct access to one?	CRITERIA 7 Project location within DE State Strategies (2020)	CRITERIA 8 Project status within DelDOT CTP/MPO Long Range Plans (where applicable)
1	US 13 and SR 404 / Newton Rd Lengthen right turn land and accel lane	DeIDOT	Critical Rural Freight Corridor	Yes	Yes			Level 1	
2	US 13 / SR 14 Intersection Improvements	DeIDOT	Critical Rural Freight Corridor	Yes			Yes	Level 1	
3	SR 1 widening. One lane each direction, SR 299 to Kent Line	DeIDOT SR 1 Study (2021)	Critical Rural Freight Corridor	Yes				Level 3	WILMAPCO TIP/CTP
4	US 113 at SR 18 Grade Separated Intersection		Critical Rural Freight Corridor		Yes	Yes (Rank: Moderate)		Level 1	
5	US 113/Johnson Rd. Final Mlle Improvements	Final Mile Study (2021)	Critical Rural Freight Corridor			Yes (Rank: Moderate)	Yes	Level 2	
6	US 113 Improvements - Selbyville		Critical Rural Freight Corridor			Yes (Rank: Moderate)		Level 3	
7	Protected Roadside Shoulder Truck Parking along SR 1	DE Statewide Truck Parking Study (2021)	Critical Rural Freight Corridor					Level 1	WILMAPCO RTP - Aspirations
8	SR 1, Front St Grade Separated Intersection		Critical Rural Freight Corridor		Yes		Yes	Level 1	
9	Truck Parking - Sussex Location	DE Statewide Truck Parking Study (2021)	Critical Rural Freight Corridor		Yes			Level 1	
10	US 113 US 9 Grade Separation		Critical Rural Freight Corridor		Yes			Level 1	
11	US 113 Improvements - Dagsboro		Critical Rural Freight Corridor					Level 1	
12	Boyd's Corner Rd Widening		Critical Rural Freight Corridor					Level 2	WILMAPCO TIP/CTP
13	SR 1 Widening - 1 lane each direction	DeIDOT SR 1 Study (2021)	Critical Rural Freight Corridor					Level 3	
14	SR 1 Cave Neck Rd Grade Separation		Critical Rural Freight Corridor					Level 3	
15	US 113 & Avenue of Honor Grade Separated Intersection		Critical Rural Freight Corridor					Level 3	
16	US 113 at SR 16 Grade Separated Intersection		Critical Rural Freight Corridor				Yes	Level 3	
17	SR 1 Widening 1 lane each direction	DeIDOT SR 1 Study (2021)	Critical Rural Freight Corridor					Level 4	
18	SR 1 Slaughter Beach Rd Grade Separation		Critical Rural Freight Corridor					Level 4	
19	SR 1 and SR 16 Grade Separation		Critical Rural Freight Corridor		Yes		Yes	Level 4	
20	US113 & Redden Rd Grade Separated Intersection		Critical Rural Freight Corridor				Yes	Level 4	
21	US 13, Lochmeath Way to Puncheon Run Connector		Critical Urban Freight Corridor	Yes	Yes	Yes (Rank: Moderate)	Yes	Level 1	
22	SR 1 Widening, Tyboults Corner to SR 273		Critical Urban Freight Corridor	Yes	Yes			Level 2	WILMAPCO TIP/CTP
23	US 13, Walnut Shade Rd to Lochmeath Way		Critical Urban Freight Corridor	Yes	Yes		Yes	Level 1	
24	SR 1 Widening/Improvements, Tybouts Corner to Roth Bridge		Critical Urban Freight Corridor	Yes				Level 2	WILMAPCO TIP/CTP
25	US 13/Kings Hwy Intersection Improvements		Critical Urban Freight Corridor	Yes				Level 2	

ID	PROJECT	CRITERIA 9 EJ Screening #1 (EJ Community): Minority/Low Income Concentrations	CRITERIA 10 EJ Screen #2 (EJ Air Quality): Diesel Particulate Matter Concentrations.	CRITERIA 11 Is project within a 4ft. inundation area for Sea Level Rise (SLR)?	CRITERIA 12 Projet Key focus type	CRITERIA 13 Does project have a regional impact? (Direct- Indirect-Nominal)	CRITERIA 14 Eligibility with IIA Program(s)	CRITERIA 15 Project Cost Range
1	US 13 and SR 404 / Newton Rd Lengthen right turn land and accel lane	Moderate: 60-80th percentile			Intersection	Nominal	TBD	TBD
2	US 13 / SR 14 Intersection Improvements	Moderate: 60-80th percentile			Intersection	Indirect	TBD	TBD
3	SR 1 widening. One lane each direction, SR 299 to Kent Line				Road	Direct	TBD	TBD
4	US 113 at SR 18 Grade Separated Intersection	High: 80-100th percentile			Interchange	Indirect	TBD	TBD
5	US 113/Johnson Rd. Final Mlle Improvements				Final Mile	Final Mile	TBD	TBD
6	US 113 Improvements - Selbyville	Moderate: 60-80th percentile			Road	Nominal	TBD	TBD
7	Protected Roadside Shoulder Truck Parking along SR 1	Moderate: 60-80th percentile			Parking	Direct	TBD	TBD
8	SR 1, Front St Grade Separated Intersection				Interchange	Indirect	TBD	TBD
9	Truck Parking - Sussex Location				Parking	Direct	TBD	TBD
10	US 113 US 9 Grade Separation				Interchange	Indirect	TBD	TBD
11	US 113 Improvements - Dagsboro	Moderate: 60-80th percentile			Road	Nominal	TBD	TBD
12	Boyd's Corner Rd Widening				Road	Indirect	TBD	TBD
13	SR 1 Widening - 1 lane each direction				Road	Direct	TBD	TBD
14	SR 1 Cave Neck Rd Grade Separation				Interchange	Indirect	TBD	TBD
15	US 113 & Avenue of Honor Grade Separated Intersection				Interchange	Indirect	TBD	TBD
16	US 113 at SR 16 Grade Separated Intersection	Moderate: 60-80th percentile			Interchange	Indirect	TBD	TBD
17	SR 1 Widening 1 lane each direction			Yes	Road	Direct	TBD	TBD
18	SR 1 Slaughter Beach Rd Grade Separation	High: 80-100th percentile			Road	Direct	TBD	TBD
19	SR 1 and SR 16 Grade Separation				Interchange	Indirect	TBD	TBD
20	US113 & Redden Rd Grade Separated Intersection	Moderate: 60-80th percentile			Interchange	Indirect	TBD	TBD
21	US 13, Lochmeath Way to Puncheon Run Connector		Moderate: 60-80th percentile		Road	Indirect	TBD	TBD
22	SR 1 Widening, Tyboults Corner to SR 273	Moderate: 60-80th percentile	Moderate: 60-80th percentile		Road	Direct	TBD	TBD
23	US 13, Walnut Shade Rd to Lochmeath Way				Road	Indirect	TBD	TBD
24	SR 1 Widening/Improvements, Tybouts Corner to Roth Bridge				Road	Direct	TBD	TBD
25	US 13/Kings Hwy Intersection Improvements				Intersection	Indirect	TBD	TBD

ID	PROJECT	CRITERIA 1 Associated with a completed Study (if any)	CRITERIA 2 Project location in relation to National Highway Freight Network (NHFN)	CRITERIA 3 Is project along the Strategic Highway Network (STRAHNET)?	CRITERIA 4 Is the project along one of the congestion hotspots in the DelDOT TMC's Traffic Operations Manangement Plans (TOMP)?	CRITERIA 5 Is the project located within one of the 15 Statewide Truck Bottlenecks?	CRITERIA 6 Is project designed as a Final Mile route OR provides direct access to one?	CRITERIA 7 Project location within DE State Strategies (2020)	CRITERIA 8 Project status within DelDOT CTP/MPO Long Range Plans (where applicable)
26	US 13/273, Hares Corner Grade Separation	DeIDOT	Critical Urban Freight Corridor		Yes	Yes (Rank: High)		Level 1	WILMAPCO RTP - Aspirations
27	SR 141/US 13 Interchange upgrade	DeIDOT	Critical Urban Freight Corridor		Yes	Yes (Rank: High)		Level 1	WILMAPCO RTP - Aspirations
28	SR 896 Widening to 6 lanes, US 40 to I-95	US 40 Transportation Plan (2000)	Critical Urban Freight Corridor		Yes	Yes (Rank: Moderate)		Level 2	WILMAPCO TIP/CTP
29	Added Truck Parking - Kent	DE Statewide Truck Parking Study (2021)	Critical Urban Freight Corridor		Yes	Yes (Rank: Moderate)		Level 1	
30	US 40/SR 896 Grade Separated Intersection	US 40 Transportation Plan (2000)	Critical Urban Freight Corridor		Yes			Level 1	WILMAPCO TIP/CTP
31	US 40 Pulaski Hwy Widening/Improvements	US 40 Transportation Plan (2000)	Critical Urban Freight Corridor		Yes			Level 1	
32	US 40 Overpass at Rail Crossing	US 40 Plan (2000)	Critical Urban Freight Corridor		Yes			Level 1	
33	US 40 SR 7 Grade Separation	US 40 Transportation Plan (2000)	Critical Urban Freight Corridor		Yes		Yes	Level 2	WILMAPCO TIP/CTP
34	US 40 Widening, Salem Church Rd to Walther Rd	US 40 Transportation Plan (2000)	Critical Urban Freight Corridor		Yes		Yes	Level 2	
35	US 40 Pulaski Hwy Widening/Improvements	US 40 Transportation Plan (2000)	Critical Urban Freight Corridor		Yes		Yes	Level 2	
36	SR896/Bethel Church Road Interchange	US 301 (2008)	Critical Urban Freight Corridor					Level 3	WILMAPCO TIP/CTP
37	I295 Widening		Primary Freight Network	Yes (Interstate)		Yes (Rank: High)		Level 1	
38	I295 Widening		Primary Freight Network	Yes (Interstate)		Yes (Rank: High)		Level 1	
39	I95 Ramp Widening		Primary Freight Network	Yes (Interstate)	Yes	Yes (Rank: Low)		Level 1	
40	I295 Widening		Primary Freight Network	Yes (Interstate)	Yes	Yes (Rank: Low)		Level 1	
41	I295 Widening		Primary Freight Network	Yes (Interstate)	Yes	Yes (Rank: Low)		Level 1	
42	I295 Widening		Primary Freight Network	Yes (Interstate)		Yes (Rank: Low)		Level 1	
43	Protected Roadside Shoulder Truck Parking along I-95 SB	DE Statewide Truck Parking Study (2021)	Primary Freight Network	Yes (Interstate)				Level 1	WILMAPCO RTP - Aspirations
44	Protected Roadside Shoulder Truck Parking along I-95 NB	DE Statwide Truck Parking Study (2021)	Primary Freight Network	Yes (Interstate)				Level 1	WILMAPCO RTP - Aspirations
45	I95 Widening, Mall Area to DE/MD Line		Primary Freight Network	Yes (Interstate)				Level 1	
46	SR 896 & I-95 Flyover and Reconfiguration		Primary Freight Network		Yes	Yes (Rank: Moderate)		Level 2	WILMAPCO TIP/CTP
47	Truck Staging Location Near Port of Wilmington	Port of Wilmington Truck parking Study	Primary Freight Network				Yes	Level 1	WILMAPCO TIP/CTP
48	SR 273 at I-95 interchange reconfiguration	Churchmans Crossing Plan Update (2021)	Primary Freight Network		Yes			Level 1	
49	SR 4/Churchmans Rd Intersection Improvements	Churchmans Crossing Plan Update (2021)	Remaining NHS Route		Yes	Yes (Rank: High)		Level 1	
50	SR 4/Harmony Rd Intersection Improvements	Churchmans Crossing Plan Update (2021)	Remaining NHS Route		Yes	Yes (Rank: High)		Level 1	WILMAPCO TIP/CTP

ID	PROJECT	CRITERIA 9 EJ Screening #1 (EJ Community): Minority/Low Income Concentrations	CRITERIA 10 EJ Screen #2 (EJ Air Quality): Diesel Particulate Matter Concentrations.	CRITERIA 11 Is project within a 4ft. inundation area for Sea Level Rise (SLR)?	CRITERIA 12 Projet Key focus type	CRITERIA 13 Does project have a regional impact? (Direct- Indirect-Nominal)	CRITERIA 14 Eligibility with IJA Program(s)	CRITERIA 15 Project Cost Range
26	US 13/273, Hares Corner Grade Separation		Moderate: 60-80th percentile		Intersection	Indirect	TBD	TBD
27	SR 141/US 13 Interchange upgrade		Moderate: 60-80th percentile		Intersection	Indirect	TBD	TBD
28	SR 896 Widening to 6 lanes, US 40 to I-95		Moderate: 60-80th percentile		Road	Direct	TBD	TBD
29	Added Truck Parking - Kent	Moderate: 60-80th percentile			Parking	Direct	TBD	TBD
30	US 40/SR 896 Grade Separated Intersection		Moderate: 60-80th percentile		Interchange	Direct	TBD	TBD
31	US 40 Pulaski Hwy Widening/Improvements	Moderate: 60-80th percentile	Moderate: 60-80th percentile		Road	Indirect	TBD	TBD
32	US 40 Overpass at Rail Crossing	High: 80-100th percentile	Moderate: 60-80th percentile		Interchange	Indirect	TBD	TBD
33	US 40 SR 7 Grade Separation	Moderate: 60-80th percentile	Moderate: 60-80th percentile		Interchange	Indirect	TBD	TBD
34	US 40 Widening, Salem Church Rd to Walther Rd	High: 80-100th percentile	Moderate: 60-80th percentile		Road	Indirect	TBD	TBD
35	US 40 Pulaski Hwy Widening/Improvements	Moderate: 60-80th percentile			Road	Indirect	TBD	TBD
36	SR896/Bethel Church Road Interchange				Interchange	Indirect	TBD	TBD
37	I295 Widening	Moderate: 60-80th percentile	High: 80-100th percentile		Interstate	Direct	TBD	TBD
38	I295 Widening		High: 80-100th percentile		Interstate	Direct	TBD	TBD
39	I95 Ramp Widening	Moderate: 60-80th percentile	High: 80-100th percentile		Interstate	Direct	TBD	TBD
40	I295 Widening	High: 80-100th percentile	High: 80-100th percentile		Interstate	Direct	TBD	TBD
41	I295 Widening	Moderate: 60-80th percentile	High: 80-100th percentile		Interstate	Direct	TBD	TBD
42	I295 Widening	Moderate: 60-80th percentile	High: 80-100th percentile		Interstate	Direct	TBD	TBD
43	Protected Roadside Shoulder Truck Parking along I-95 SB	High: 80-100th percentile	High: 80-100th percentile		Parking	Direct	TBD	TBD
44	Protected Roadside Shoulder Truck Parking along I-95 NB	Moderate: 60-80th percentile	High: 80-100th percentile		Parking	Direct	TBD	TBD
45	I95 Widening, Mall Area to DE/MD Line		Moderate: 60-80th percentile		Interstate	Direct	TBD	TBD
46	SR 896 & I-95 Flyover and Reconfiguration		High: 80-100th percentile		Interchange	Direct	TBD	TBD
47	Truck Staging Location Near Port of Wilmington	High: 80-100th percentile	High: 80-100th percentile		Parking	Direct	TBD	TBD
48	SR 273 at I-95 interchange reconfiguration	Moderate: 60-80th percentile	High: 80-100th percentile		Interchange	Indirect	TBD	TBD
49	SR 4/Churchmans Rd Intersection Improvements		High: 80-100th percentile		Intersection	Nominal	TBD	TBD
50	SR 4/Harmony Rd Intersection Improvements		High: 80-100th percentile		Intersection	Nominal	TBD	TBD

Delaware Freight Project Screening - **REVISED May 5, 2022**

ID	PROJECT	CRITERIA 1 Associated with a completed Study (if any)	CRITERIA 2 Project location in relation to National Highway Freight Network (NHFN)	CRITERIA 3 Is project along the Strategic Highway Network (STRAHNET)?	CRITERIA 4 Is the project along one of the congestion hotspots in the DelDOT TMC's Traffic Operations Manangement Plans (TOMP)?	CRITERIA 5 Is the project located within one of the 15 Statewide Truck Bottlenecks?	CRITERIA 6 Is project designed as a Final Mile route OR provides direct access to one?	CRITERIA 7 Project location within DE State Strategies (2020)	CRITERIA 8 Project status within DelDOT CTP/MPO Long Range Plans (where applicable)
51	Center Turn Overpass ("Elevated Lefts")	Senate Resolution 10 recommendations (2018)	Remaining NHS Route		Yes	Yes (Rank: High)		Level 1	WILMAPCO RTP - Aspirations
52	SR 7 at Milltown Road - SR 7 Thru-Traffic Overpass	Senate Resolution 10 recommendations (2018)	Remaining NHS Route			Yes (Rank: High)		Level 1	WILMAPCO RTP - Aspirations
53	Add 3rd Lane on 273 from SR 1 to I-95	Churchmans Crossing Plan Update (2021)	Remaining NHS Route		Yes			Level 1	WILMAPCO RTP - Aspirations
54	3rd Lane on 273: SR 4 to I-95	Churchmans Crossing Plan Update (2021)	Remaining NHS Route		Yes			Level 1	WILMAPCO RTP - Aspirations
55	SR 273 Delaware St. Widening - City of New Castle		Remaining NHS Route					Level 1	
56	SR 2/Harmony Rd Intersection Improvements		Remaining NHS Route		Yes			Level 1	DelDOT CTP / WILMAPCO TIP
57	Rte 141 Improvements		Remaining NHS Route				Yes	Level 1	
58	SR 7 at Skyline Drive: Reconstruct EB and WB approaches with concurrent side street phasing	Senate Resolution 10 recommendations (2018)	Remaining NHS Route				Yes	Level 1	WILMAPCO RTP - Aspirations
59	SR 141 at SR 48: Center Turn Overpass ("Elevated Lefts") or Echelon	Senate Resolution 10 recommendations (2018)	Remaining NHS Route		Yes			Level 1	WILMAPCO RTP - Aspirations
60	Tyler McConnell Bridge Widening		Remaining NHS Route					Level 1	WILMAPCO TIP/CTP
61	Christina Pkwy, Elkton Rd to College Ave add 1 lane each direction		Remaining NHS Route					Level 1	
62	Limestone Rd Widening		Remaining NHS Route					Level 2	WILMAPCO RTP - Aspirations
63	Newton Road - Flatten Geometric Curve	DelDOT	Remaining NHS Route					Level 3	
64	Delaware Park Blvd Extension, SR 2 to SR 4	Churchmans Crossing Plan Update (2021)			Yes	Yes (Rank: High)		Level 1	WILMAPCO RTP - Aspirations
65	Walker Rd Improvements (Saulsbury Rd to N State St)	Final Mile Study (2021)				Yes (Rank: Low)	Yes	Level 1	
66	North Millsboro Bypass, US 113 to SR 24					Yes (Rank: Low)		Level 2	
67	Garashes Lane Extension	Port Truck Alternatives Study (2022)					Yes	Level 1	WILMAPCO RTP - Aspirations
68	Pigeon Point Rd. Extension Option 2 via Davidson Ln.	Port Truck Alternatives Study (2022)						Level 1	WILMAPCO RTP - Aspirations
69	Eagle Run Road: SR 273 - SR 7	Churchmans Crossing Plan Update (2021)						Level 1	
70	East 7th St Improvements	7th Steet Peninsula Study (2020)					Yes	Level 1	WILMAPCO TIP/CTP
71	Swedes Landing and 7th Street Intersection Improvments	7th Street Peninsula Study (2020)					Yes	Level 1	WILMAPCO TIP/CTP
72	New Sweden Rd. Connector							Level 1	
73	North Claymont Rd. Spine Road	North Claymont Area Master Plan			Yes			Level 1	
74	Pigeon Point Road Expansion - Option 1	Port Truck Alternatives Study (2022)						Level 2	WILMAPCO RTP - Aspirations
75	Crowell Rd. Extension - MacArthur Dr. to Sears Blvd.	Town of Newport Transporation Plan					Yes	Level 1	WILMAPCO RTP - Aspirations

Delaware Freight Project Screening - **REVISED May 5, 2022**

ID	PROJECT	CRITERIA 9 EJ Screening #1 (EJ Community): Minority/Low Income Concentrations	CRITERIA 10 EJ Screen #2 (EJ Air Quality): Diesel Particulate Matter Concentrations.	CRITERIA 11 Is project within a 4ft. inundation area for Sea Level Rise (SLR)?	CRITERIA 12 Projet Key focus type	CRITERIA 13 Does project have a regional impact? (Direct- Indirect-Nominal)	CRITERIA 14 Eligibility with IJA Program(s)	CRITERIA 15 Project Cost Range
51	Center Turn Overpass (“Elevated Lefts”)		Moderate: 60-80th percentile		Interchange	Indirect	TBD	TBD
52	SR 7 at Milltown Road - SR 7 Thru-Traffic Overpass		Moderate: 60-80th percentile		Intersection	Nominal	TBD	TBD
53	Add 3rd Lane on 273 from SR 1 to I-95	Moderate: 60-80th percentile	High: 80-100th percentile		Road	Indirect	TBD	TBD
54	3rd Lane on 273: SR 4 to I-95	Moderate: 60-80th percentile	High: 80-100th percentile		Road	Indirect	TBD	TBD
55	SR 273 Delaware St. Widening - City of New Castle		Moderate: 60-80th percentile	Yes	Road	Nominal	TBD	TBD
56	SR 2/Harmony Rd Intersection Improvements		Moderate: 60-80th percentile		Intersection	Nominal	TBD	TBD
57	Rte 141 Improvements	High: 80-100th percentile	Moderate: 60-80th percentile		Road	Nominal	TBD	TBD
58	SR 7 at Skyline Drive: Reconstruct EB and WB approaches with concurrent side street phasing				Intersection	Nominal	TBD	TBD
59	SR 141 at SR 48: Center Turn Overpass (“Elevated Lefts”) or Echelon				Intersection	Nominal	TBD	TBD
60	Tyler McConnell Bridge Widening				Road	Indirect	TBD	TBD
61	Christina Pkwy, Elkton Rd to College Ave add 1 lane each direction	Moderate: 60-80th percentile			Road	Indirect	TBD	TBD
62	Limestone Rd Widening				Road	Nominal	TBD	TBD
63	Newton Road - Flatten Geometric Curve	Moderate: 60-80th percentile			Road	Nominal	TBD	TBD
64	Delaware Park Blvd Extension, SR 2 to SR 4		High: 80-100th percentile		Road	Direct	TBD	TBD
65	Walker Rd Improvements (Saulsbury Rd to N State St)	High: 80-100th percentile	Moderate: 60-80th percentile		Final Mile	Nominal	TBD	TBD
66	North Millsboro Bypass, US 113 to SR 24	Moderate: 60-80th percentile		Yes	Road	Indirect	TBD	TBD
67	Garashes Lane Extension	High: 80-100th percentile	High: 80-100th percentile	Yes	Road	Direct	TBD	TBD
68	Pigeon Point Rd. Extension Option 2 via Davidson Ln.	High: 80-100th percentile	High: 80-100th percentile	Yes	Road	Direct	TBD	TBD
69	Eagle Run Road: SR 273 - SR 7		High: 80-100th percentile		Road	Final Mile	TBD	TBD
70	East 7th St Improvements	High: 80-100th percentile	High: 80-100th percentile	Yes	Final Mile	Final Mile	TBD	TBD
71	Swedes Landing and 7th Street Intersection Improvments	High: 80-100th percentile	High: 80-100th percentile		Intersection	Indirect	TBD	TBD
72	New Sweden Rd. Connector	High: 80-100th percentile	High: 80-100th percentile	Yes	Road	Final Mile	TBD	TBD
73	North Claymont Rd. Spine Road	High: 80-100th percentile	High: 80-100th percentile		Intermodal	Indirect	TBD	TBD
74	Pigeon Point Road Expansion - Option 1	High: 80-100th percentile	High: 80-100th percentile	Yes	Road	Direct	TBD	TBD
75	Crowell Rd. Extension - MacArthur Dr. to Sears Blvd.		Moderate: 60-80th percentile		Final Mile	Direct	TBD	TBD

Delaware Freight Project Screeing - REVISED May 5, 2022

ID	PROJECT	CRITERIA 1 Associated with a completed Study (if any)	CRITERIA 2 Project location in relation to National Highway Freight Network (NHFN)	CRITERIA 3 Is project along the Strategic Highway Network (STRAHNET)?	CRITERIA 4 Is the project along one of the congestion hotspots in the DelDOT TMC's Traffic Operations Manangement Plans (TOMP)?	CRITERIA 5 Is the project located within one of the 15 Statewide Truck Bottlenecks?	CRITERIA 6 Is project designed as a Final Mile route OR provides direct access to one?	CRITERIA 7 Project location within DE State Strategies (2020)	CRITERIA 8 Project status within DelDOT CTP/MPO Long Range Plans (where applicable)
76	Truck Restriction on Windsor Dr.- Trucks to use new Crowell Rd. Extension	Town of Newport Transportation Plan						Level 1	WILMAPCO RTP - Aspirations
77	SR 72 widen to four lanes, Wyoming Rd. to SR 4	DeIDOT					Yes	Level 1	
78	SR 72 widen to four lanes, Old Baltimore Pike to US 40	DeIDOT			Yes			Level 1 & 2	WILMAPCO RTP - Aspirations
80	Truck Parking - NCC Location	DE Statewide Truck Parking Study (2021)					Yes	Level 3	WILMAPCO RTP - Aspirations
81	Improvements to portions of existing Lafferty Lane	Dover Air Cargo Freight Access Study (2021)					Yes	Level 1	Dover/Kent MPO
82	SR 299, SR 1 to Catherine St	Westtown TID			Yes			Level 1	WILMAPCO TIP/CTP
83	Harrington Terminal: Added Rail Capacity	Harrington Intermodal Feasibility Study (2021)						Level 1	
84	Harrington Terminal Road "B"	Harrington Intermodal Feasibility Study (2021)						Level 1	
85	Add one left turn lane to Christiana hospital at the intersection of SR 299 and Gloucester	Easttown TID			Yes			Level 1	
86	Airport Road Extension, SR 24 to Postal Lane	Five Points TID			Yes			Level 1	
87	Aux. Truck Parking (During emergency/off peak periods)	DE Truck Parking Study (2021)			Yes			Level 1	
88	Levels Rd: Widen to 2 lanes each direction from Existing US 301 to beyond proposed Westown North Industrial Park	Westtown TID					Yes	Level 1	
89	SR 71 Main St/ Pine Tree Rd Improvements: Add 71 NB/SB Left turns onto Main St. Pine Tree Corner Rds.	SNCC Master Plan (2020)					Yes	Level 1	WILMAPCO RTP - Aspirations
90	Main St Widening	Final Mile Study (2021)					Yes	Level 1	
91	US 13 & Denneys Rd. Improvements	Final Mile Study (2021)					Yes	Level 1	
92	Added Rail Capacity & Track Extension - Former BASF Facility	Stakeholder Input - Carload Express						Level 1	
93	Seaford Agri-Business Barge - to Rail Intermodal Faciltity	Stakeholder Input - Carload Express						Level 1	
94	Glasgow Avenue, SR 896 to US 40	Final Mile Study (2021)						Level 1	WILMAPCO TIP/CTP
95	Nanticoke River Dredging Assessment - DE Portion	Stakeholder input - Delmarva Water Transport Committee						Level 1 & 2	
96	Horsepond Road Improvements 2-lane road	Dover Air Cargo Freight Access Study (2021)					Yes	Level 2	Dover/Kent MPO
97	Scarborough Rd C-D Extension - Dover Mall Access	Final Mile Study (2021)			Yes			Level 2	
98	Extension of Clunkey Dr.	Harrington Intermodal Feasibility Study (2021)						Level 2	
99	Mulberry Knoll Rd Extension: US 9 to Cedar Grove Rd.	Five Points TID						Level 2	
100	Airport Road Extension (Alternative B), SR24 to Old Landing Road	Five Points TID			Yes			Level 2	
101	Park Avenue Relocation near Georgetown Airport							Level 2	

ID	PROJECT	CRITERIA 9 EJ Screening #1 (EJ Community): Minority/Low Income Concentrations	CRITERIA 10 EJ Screen #2 (EJ Air Quality): Diesel Particulate Matter Concentrations.	CRITERIA 11 Is project within a 4ft. inundation area for Sea Level Rise (SLR)?	CRITERIA 12 Projet Key focus type	CRITERIA 13 Does project have a regional impact? (Direct- Indirect-Nominal)	CRITERIA 14 Eligibility with IJA Program(s)	CRITERIA 15 Project Cost Range
76	Truck Restriction on Windsor Dr.- Trucks to use new Crowell Rd. Extension		Moderate: 60-80th percentile		Final Mile	Direct	TBD	TBD
77	SR 72 widen to four lanes, Wyoming Rd. to SR 4	High: 80-100th percentile	Moderate: 60-80th percentile		Road	Indirect	TBD	TBD
78	SR 72 widen to four lanes, Old Baltimore Pike to US 40	Moderate: 60-80th percentile	Moderate: 60-80th percentile		Road	Nominal	TBD	TBD
80	Truck Parking - NCC Location	Moderate: 60-80th percentile	Moderate: 60-80th percentile		Parking	Direct	TBD	TBD
81	Improvements to portions of existing Lafferty Lane	High: 80-100th percentile			Intermodal	Nominal	TBD	TBD
82	SR 299, SR 1 to Catherine St				Road	Indirect	TBD	TBD
83	Harrington Terminal: Added Rail Capacity				Rail	Direct	TBD	TBD
84	Harrington Terminal Road "B"				Intermodal	Direct	TBD	TBD
85	Add one left turn lane to Christiana hospital at the intersection of SR 299 and Gloucester				Intersection	Nominal	TBD	TBD
86	Airport Road Extension, SR 24 to Postal Lane				Road	Indirect	TBD	TBD
87	Aux. Truck Parking (During emergency/off peak periods)				Parking	Direct	TBD	TBD
88	Levels Rd: Widen to 2 lanes each direction from Existing US 301 to beyond proposed Westown North Industrial Park				Final Mile	Nominal	TBD	TBD
89	SR 71 Main St/ Pine Tree Rd Improvements: Add 71 NB/SB Left turns onto Main St. Pine Tree Corner Rds.				Intersection	Nominal	TBD	TBD
90	Main St Widening	Moderate: 60-80th percentile			Final Mile	Final Mile	TBD	TBD
91	US 13 & Denneys Rd. Improvements				Final Mile	Final Mile	TBD	TBD
92	Added Rail Capacity & Track Extension - Former BASF Facility					Direct	TBD	TBD
93	Seaford Agri-Business Barge - to Rail Intermodal Facility			Yes		Direct	TBD	TBD
94	Glasgow Avenue, SR 896 to US 40					Final Mile	TBD	TBD
95	Nanticoke River Dredging Assessment - DE Portion					Direct	TBD	TBD
96	Horsepond Road Improvements 2-lane road	High: 80-100th percentile			Intermodal	Indirect	TBD	TBD
97	Scarborough Rd C-D Extension - Dover Mall Access				Final Mile	Final Mile	TBD	TBD
98	Extension of Clunkey Dr.				Intermodal	Direct	TBD	TBD
99	Mulberry Knoll Rd Extension: US 9 to Cedar Grove Rd.				Road	Nominal	TBD	TBD
100	Airport Road Extension (Alternative B), SR24 to Old Landing Road				Road	Indirect	TBD	TBD
101	Park Avenue Relocation near Georgetown Airport	Moderate: 60-80th percentile			Road	Nominal	TBD	TBD

ID	PROJECT	CRITERIA 1 Associated with a completed Study (if any)	CRITERIA 2 Project location in relation to National Highway Freight Network (NHFN)	CRITERIA 3 Is project along the Strategic Highway Network (STRAHNET)?	CRITERIA 4 Is the project along one of the congestion hotspots in the DelDOT TMC's Traffic Operations Manangement Plans (TOMP)?	CRITERIA 5 Is the project located within one of the 15 Statewide Truck Bottlenecks?	CRITERIA 6 Is project designed as a Final Mile route OR provides direct access to one?	CRITERIA 7 Project location within DE State Strategies (2020)	CRITERIA 8 Project status within DelDOT CTP/MPO Long Range Plans (where applicable)
102	SR 72 widen to four lanes, Rue Madora to SR 71	DeIDOT			Yes			Level 2	WILMAPCO RTP - Aspirations
103	SR 72: McCoy Road - SR 71				Yes			Level 2	WILMAPCO TIP/CTP
104	Reconfigure Fox Rd. - Remove access from Little Creek Rd.	Dover Air Cargo Freight Access Study (2021)					Yes	Level 3	Dover/Kent MPO
105	US 301 Spur	US 301 (2008)						Level 3	
106	Bethel Church Road Realignment w/Interchange	US 301 (2008)						Level 3	
107	Access Road to SR 14 from Indurstrial Park	Harrington Intermodal Feasibility Study (2021)						Level 3	
108	Harrington Terminal Road "C"	Harrington Intermodal Feasibility Study (2021)						Level 3	
109	DuPont Blvd. Widening	DeIDOT						Level 3	
110	US 404 / Newton Rd. Lengthen right-turn lane and accel lane	DeIDOT						Level 3	
111	Tub Mill Rd. Improvements to local road standards and multi-modal facilities	Final Mile Study (2021)					Yes	Level 3	
112	US 13/SR 71 Intersection - Add 2nd NB Left Turn Lane	SNCC Master Plan (2020)						Level 3	WILMAPCO RTP - Aspirations
113	New Rd between Little Creek Rd and Whiteoak Rd - Horsepond Rd.	Dover Air Cargo Freight Access Study (2021)					Yes	Level 4	
114	Starlifter Avenue Extension: Galaxy Drive to Little Creek Rd.	Dover Air Cargo Freight Access Study (2021)						Level 4	Dover/Kent MPO
115	Horsepond Road Extension 2-lane road	Dover Air Cargo Freight Access Study (2021)					Yes	Level 4	
116	Paddock Rd US 13 to US 1	Final Mile Study (2021)						Level 4	
117	Susquehanna River Bridge Replacement	MD Freight Plan Suggested Project Stakeholder Input - MD Freight Plan Suggested Project						N/A	MD Freight Plan Recommendation
118	Added Truck Parking, Elkton Maryland	Stakeholder Input - MD Freight Plan Suggested Project						N/A	MD Freight Plan Recommendation
119	C & D Canal Dredging	Stakeholder Input - MD Freight Plan Suggested Project						N/A	MD Freight Plan Recommendation
120	MD 213 Roadway Reconstruction and Operational Improvements	Stakeholder Input - MD Freight Plan Suggested Project						N/A	MD Freight Plan Recommendation

ID	PROJECT	CRITERIA 9 EJ Screening #1 (EJ Community): Minority/Low Income Concentrations	CRITERIA 10 EJ Screen #2 (EJ Air Quality): Diesel Particulate Matter Concentrations.	CRITERIA 11 Is project within a 4ft. inundation area for Sea Level Rise (SLR)?	CRITERIA 12 Projet Key focus type	CRITERIA 13 Does project have a regional impact? (Direct- Indirect-Nominal)	CRITERIA 14 Eligibility with IJA Program(s)	CRITERIA 15 Project Cost Range
102	SR 72 widen to four lanes, Rue Madora to SR 71				Road	Nominal	TBD	TBD
103	SR 72: McCoy Road - SR 71	Moderate: 60-80th percentile				Indirect	TBD	TBD
104	Reconfigure Fox Rd. - Remove access from Little Creek Rd.	High: 80-100th percentile			Intermodal	Nominal	TBD	TBD
105	US 301 Spur				Road	Indirect	TBD	TBD
106	Bethel Church Road Realignment w/Interchange				Road	Nominal	TBD	TBD
107	Access Road to SR 14 from Indurstrial Park				Intermodal	Direct	TBD	TBD
108	Harrington Terminal Road "C"				Intermodal	Direct	TBD	TBD
109	DuPont Blvd. Widening				Road	Indirect	TBD	TBD
110	US 404 / Newton Rd. Lengthen right-turn lane and accel lane	Moderate: 60-80th percentile			Intersection	Nominal	TBD	TBD
111	Tub Mill Rd. Improvements to local road standards and multi-modal facilities				Final Mile	Final Mile	TBD	TBD
112	US 13/SR 71 Intersection - Add 2nd NB Left Turn Lane				Intersection	Nominal	TBD	TBD
113	New Rd between Little Creek Rd and Whiteoak Rd - Horsepond Rd.	Moderate: 60-80th percentile			Intermodal	Indirect	TBD	TBD
114	Starlifter Avenue Extension: Galaxy Drive to Little Creek Rd.	High: 80-100th percentile			Intermodal	Final Mile	TBD	TBD
115	Horsepond Road Extension 2-lane road	High: 80-100th percentile			Intermodal	Indirect	TBD	TBD
116	Paddock Rd US 13 to US 1			Yes	Final Mile	Final Mile	TBD	TBD
117	Susquehanna River Bridge Replacement					Direct	TBD	TBD
118	Added Truck Parking, Elkton Maryland					Direct	TBD	TBD
119	C & D Canal Dredging					Direct	TBD	TBD
120	MD 213 Roadway Reconstruction and Operational Improvements					Indirect	TBD	TBD



APPENDIX J:

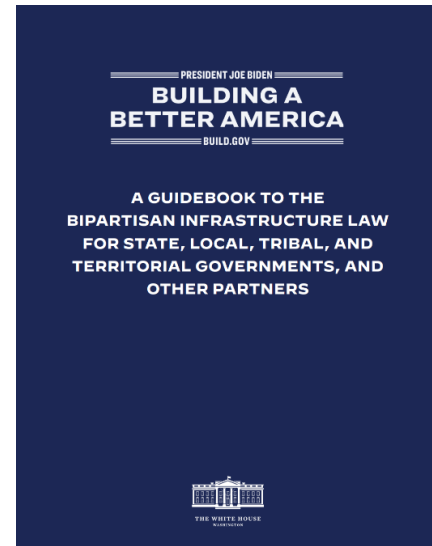
Funding Highlights – Federal Programs

J. APPENDIX J: Funding Highlights – Federal Programs

The following pages summarize potential federal funding programs introduced by the Bipartisan Infrastructure Law (BIL), also referred to as the Infrastructure Investment and Jobs Act (IIJA). These summaries reflect a partial set of references that were directly extracted from the White House's March 2022 version of *Building a Better America: A Guidebook to Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other Partners*.

Specifically, this appendix summarizes funding programs for:

- Roads, Bridges, and Major Projects
- Passenger and Freight Rail
- Public Transportation
- Airports and Federal Aviation Administration Facilities
- Ports and Waterways
- Safety
- Electric Vehicles, Buses, and Ferries
- Clean Energy and Power
- Water
- Resilience
- Environmental Remediation
- Broadband



Building a Better America | Guidebook

The complete (and most current) copy of the guidebook is available online and provides additional details describing each funding program individually, as well as a downloadable and searchable data file containing the relevant guidebook and program data.

Building a Better America Guidebook and individual funding program/data details:

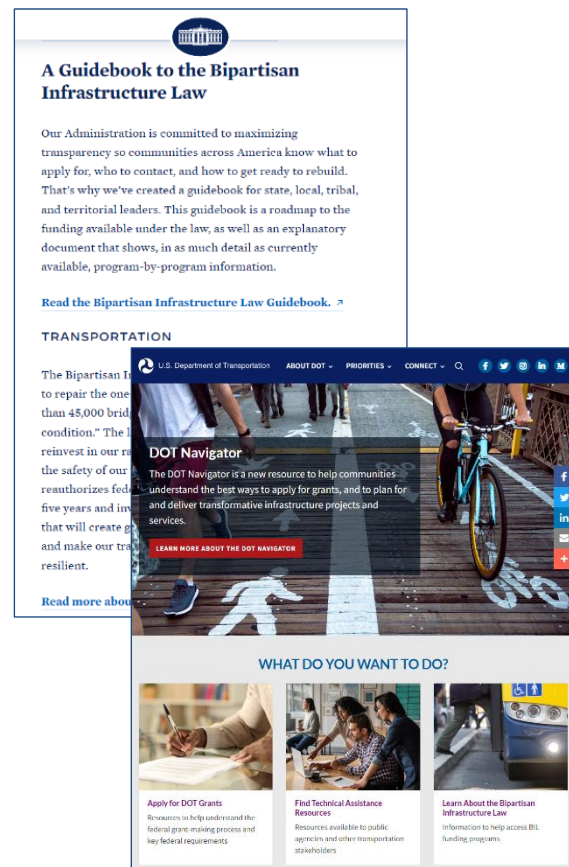
<https://www.whitehouse.gov/build/>.

DOT Navigator

Additional details regarding USDOT grant programs and related funding and technical resources are also available online at the new DOT Navigator website.

DOT Navigator website:

<https://www.transportation.gov/dot-navigator>.





Executive Summary

On November 15th, 2021, President Biden signed the [Bipartisan Infrastructure Law](#) – a once-in-a-generation investment in our nation’s infrastructure, competitiveness, and communities. This bill is a historic opportunity to rebuild America’s roads, bridges and rails; expand access to clean drinking water; ensure that every American has access to high-speed internet; to tackle the climate crisis and advance environmental justice, while investing in communities – both urban and rural – that have too often been left behind. This bipartisan effort will help ease inflationary pressures; strengthen supply chains by making long overdue improvements for our nation’s ports, airports, rail, and roads; drive the creation of good-paying union jobs with high labor standards that can be accessed by all workers, especially those from underserved communities; and, grow the economy sustainably and equitably for decades to come.

Overview and Purpose of this Guidebook

To achieve the ambitious goals outlined by the President and this legislation, the Biden-Harris Administration needs help. Building a better America is a shared endeavor no one can do alone, and investing federal infrastructure dollars will require significant coordination between the federal government, states, Tribal governments, community stakeholders, local governments, and other key partners.

This guidebook is a roadmap to the funding available under the law. It explains, in as much detail as currently available, how much funding is available at the program level. Our primary goal is to help our partners across the country know what to apply for, who to contact for help, and how to get ready to rebuild. We have also published an accompanying data file on [Build.gov](#) that allows users to quickly sort programs funded under the law by fields like agency, amount, eligible recipient, or program name.

The guidebook contains 13 chapters grouping Bipartisan Infrastructure Law programs by issue area. Each chapter contains a cover note explaining how to get ready to apply for and receive this subset of funding. These memos identify additional resources our partners can and should utilize to prepare while the federal government gets ready to distribute Bipartisan Infrastructure Law funds from new and existing programs.



This is the first version of this product. In the coming weeks, we plan to publish subsequent versions of this document to keep our partners up to date on the latest deadlines and details. The White House has also encouraged external stakeholders to use this information to develop local or regional-specific guides on available sources of funding, so every community in America can identify, understand, and access investment opportunities that they need and deserve under the law. This initial publication is not an attempt to capture every possible federal infrastructure program, authorization, or expenditure—rather, it provides our partners with a deeper view into funding soon to be available under the law. If you have questions, please see the appendix for agency-level contact information and links to more information online.

Additional Resources & Actions

Earlier this month, the White House Infrastructure Implementation Coordinator sent a [letter to Governors](#) recommending a series of preparatory actions, including appointing infrastructure coordinators to manage the flow of funds to their states. He [also outlined steps cities](#) can take to prepare and has begun deeper intergovernmental engagements with Tribal leaders, county officials, civil rights and territorial leaders through outreach calls, listening sessions, and Tribal consultations.

The American Rescue Plan, signed into law in 2020, has already provided over \$350 billion in critical resources to every state, Tribal, county, city, and unit of local government to support their response to the COVID-19 public health emergency, including in making the investments needed to ensure a durable and equitable economic recovery. Recipients of Bipartisan Infrastructure Law funding should look to leverage those resources to help prepare for the transformative investments included under the law. For example, American Rescue Plan funding could be used to train the workers needed to build high quality infrastructure; hire back the public sector workers needed to help manage potential federal investments; and get a jump start on water, sewer, and broadband projects that could complement investments from the infrastructure law. We encourage everyone to review the U.S. Department of Treasury’s website [here](#), which explains how to request funding, eligible uses, and other important information about American Rescue Plan funding.

We recognize local capacity may be strained due to the pandemic, the need to account for heightened cybersecurity, climate and other known hazard risks, the effects of historic underinvestment, or just the challenges of day-to-day governance. A community’s lack of capacity to apply for federal funds can create significant inequities – and for many communities, this will be their first time applying for funds from a suite of federal agencies. Many funding streams in the Bipartisan Infrastructure Law specifically set aside funds for disadvantaged communities.



Further, in keeping with efforts like the President’s Justice40 Initiative, the Administration is committed to ensuring disadvantaged communities receive benefits from all available resources in relevant Bipartisan Infrastructure Law programs. The White House Infrastructure Implementation Team and the components across the Executive Office of the President and the federal agencies will be engaging states, Tribal governments, territories, federal agencies, philanthropies, civil rights leaders, advocates and others to leverage all available resources to quickly deliver the necessary technical assistance and capacity to underserved communities. We intend to use this guidebook as a critical tool to accelerate and amplify the impact of this work.

Disclaimer

This guidebook is designed to help users familiarize themselves with the Bipartisan Infrastructure Law. Nothing contained in this document constitutes guidance from the U.S. government on any law, program, policy, application process, or funding eligibility. Applicants for funding should consult official agency or program specific guidance for additional information.



Roads, Bridges and Major Projects

Challenge: One in five miles, or 173,000 total miles, of our highways and major roads and more than 43,500 bridges are in poor condition. Bridges in poor condition pose heightened challenges in rural communities, which often may rely on a single bridge for the passage of emergency service vehicles.

Solutions: The Bipartisan Infrastructure Law reauthorizes federal surface transportation programs for five years and invests approximately \$400 billion over that period to repair our roads and bridges and support transformational projects that will create good-paying union jobs, boost regional and the national economy, make our transportation system safer and more resilient.

Funding Overview:

The Bipartisan Infrastructure Law also contains significant new funding for roadways, bridges, and other major projects funded by the Federal Highway Administration and the Department of Transportation. Highlights include:

- **A total of \$40 billion¹ in dedicated funding for bridges.** This funding includes \$12.5 billion for the *Bridge Investment Program*, which is a competitive program to replace, rehabilitate, preserve, or protect some of the nation's most important and economically significant bridges. The rest of the funds fall under the *Bridge Formula Program*, which provides formula funding to States to replace, rehabilitate, preserve, protect, and construct bridges on public roads. Notably, the program includes a 15 percent (\$4 billion) set aside for off-system bridges. These are bridges often owned and maintained by cities, counties, and towns—and typically located on roads normally ineligible for federal highway funding. On January 14, 2022, the Department of Transportation released the first year of funding for the Bridge Formula Program. \$5.3 billion

¹\$40 billion is provided through the Bipartisan Infrastructure Law in advanced appropriations and contract authority, an additional \$3.3 billion is authorized under Division A of the Bipartisan Infrastructure Law, but is subject to appropriations, for a total program level of \$43.3 billion.



will be available to states, the District of Columbia, and Puerto Rico in Fiscal Year 2022, along with \$165 million for Tribal governments. The federal government will also cover 100 percent of the cost of off-system bridge projects under the Bridge Formula Program for bridges owned by a local government or Tribe. (See Fiscal Year 2022 State apportionment [here](#)).

- **\$8 billion for the Infrastructure for Rebuilding America (INFRA) Program**, which supports freight and highway projects of regional and national significance.
- **\$7.5 billion for Rebuilding American Infrastructure Sustainably and Equitably (RAISE) grants**—a competitive grant program (formerly BUILD and TIGER) which provides funding for road, rail, transit, and other surface transportation of local and/or regional significance. Selection criteria includes safety, sustainability, equity, economic competitiveness, mobility, and community connectivity.
- **\$5 billion for the National Infrastructure Project Assistance or “Megaprojects.”** This program—sometimes referred to as the “Megaprojects program” or MEGA —provides grants on a competitive basis to support multi-jurisdictional or regional projects of significance that may also cut across multiple modes of transportation. Communities are eligible to apply for funding to complete critical large projects that would otherwise be unachievable without assistance.

The Bipartisan Infrastructure Law also includes a five-year reauthorization for the Federal Highway Administration at the Department of Transportation. A major component of this reauthorization is \$273.2 billion in Federal-aid highway formula funding for States. In December 2021, the Federal Highway Administration announced that it disbursed to all 50 states and the District of Columbia a total of \$52.5 billion of this formula funding for Fiscal Year 2022; this represents a more than 20 percent increase over Fiscal Year 2021 formula funding. (See the Fiscal Year 2022 State apportionment [here](#)).



Getting Ready:

Federal-aid Highway Formula Funding and Bridge Formula Program – The Federal Highway Administration distributes both Federal-aid Highway Formula funding and Bridge Formula Program funding to State departments of transportation. State Departments of Transportation then program projects (select them for funding) through statewide and metropolitan transportation planning processes. Project sponsors should contact their State Department of Transportation for additional information about how to access any of these categories of formula funding.

Competitive Grant Programs – In order to prepare for upcoming application openings, potential recipients should begin to work with stakeholders to develop a list of priority projects that would be suited for applications for competitive grant funding programs such as the Bridge Investment Program, RAISE, MEGA, and INFRA.

Existing Resources:

- Information on the Federal Highway Administration’s implementation of the Bipartisan Infrastructure Law is available [here](#).
- Information on Federal Highway Administration’s resources for technical assistance and local support is available [here](#).
- Information on the Department of Transportation’s INFRA program is available [here](#).
- Information on Department of Transportation’s RAISE program is available [here](#).



Program Name	Agency Name	Funding Amount
National Highway Performance Program	Department of Transportation	\$148,000,000,000
Surface Transportation Block Grant Program	Department of Transportation	\$72,000,000,000
Bridge Formula Program	Department of Transportation	\$26,675,000,000
Congestion Mitigation & Air Quality Improvement Program	Department of Transportation	\$13,200,000,000
Bridge Investment Program	Department of Transportation	\$12,200,000,000
Local and Regional Project Assistance Grants (RAISE)	Department of Transportation	\$7,500,000,000
Nationally Significant Freight & Highway Projects (INFRA)	Department of Transportation	\$7,250,000,000
National Highway Freight Program	Department of Transportation	\$7,150,000,000
National Infrastructure Project Assistance (Megaprojects)	Department of Transportation	\$5,000,000,000
Tribal Transportation Program	Department of Transportation	\$2,966,800,000
Metropolitan Planning	Department of Transportation	\$2,280,000,000
Federal Lands Transportation Program (funds for National Park	Department of Transportation	\$1,731,187,250
Federal Lands Access Program	Department of Transportation	\$1,487,875,000
Transportation Infrastructure Finance and Innovation Act	Department of Transportation	\$1,250,000,000
Appalachian Development Highway System	Department of Transportation	\$1,250,000,000
Rural Surface Transportation Grant Program	Department of Transportation	\$1,000,000,000
National Culvert Removal, Replacement, & Restoration Grant	Department of Transportation	\$1,000,000,000
Puerto Rico Highway Program	Department of Transportation	\$900,995,000
Advanced Transportation Technologies & Innovative Mobility	Department of Transportation	\$900,000,000
Tribal Transportation Facility Bridges (Bridge Formula Funding Set-	Department of Transportation	\$825,000,000
State Incentives Pilot Program (Set-aside within Nationally Significant Freight and Highway Projects - INFRA)	Department of Transportation	\$750,000,000
Reconnecting Communities Pilot Program	Department of Transportation	\$1,000,000,000
Highway Research & Development Program	Department of Transportation	\$310,000,000
Nationally Significant Federal Lands and Tribal Projects	Department of Transportation	\$275,000,000
Intelligent Transportation Systems Program	Department of Transportation	\$250,000,000
Congestion Relief Program	Department of Transportation	\$250,000,000
Territorial Highway Program	Department of Transportation	\$239,505,000
Tribal Transportation Facility Bridge (Set-aside)	Department of Transportation	\$200,000,000
Federal Lands Transportation Program (Funding for U.S. Fish & Wildlife	Department of Transportation	\$180,000,000
Federal Lands Transportation Program (For other Federal Land Management Agencies)	Department of Transportation	\$153,637,750
Federal Lands Transportation Program (Funding for U.S. Forest	Department of Transportation	\$130,000,000
Grants for Planning, Feasibility Analysis, and Revenue Forecasting (Bridge Investment Program Set-aside)	Department of Transportation	\$100,000,000
Accelerated Implementation and Deployment of Advanced Digital Construction Management Systems (Set-aside)	Department of Transportation	\$100,000,000
Strategic Innovation for Revenue Collection (Set-aside)	Department of Transportation	\$75,000,000
Accelerated Implementation and Deployment of Pavement Technologies (Set-aside)	Department of Transportation	\$60,000,000
On-the-Job Training Program	Department of Transportation	\$50,000,000
Disadvantaged Business Enterprises	Department of Transportation	\$50,000,000
National Motor Vehicle Per-Mile User Fee Pilot (Set-aside)	Department of Transportation	\$50,000,000
Tribal High Priority Projects Program	Department of Transportation	\$45,000,000
Highway Use Tax Evasion Projects	Department of Transportation	\$20,000,000
TOTAL - ROADS, BRIDGES AND MAJOR PROJECTS		\$318,855,000,000



Passenger and Freight Rail

Challenge: U.S. passenger rail lags behind the rest of the world in reliability, speed, and coverage. The Bipartisan Infrastructure Law is a once-in-a-generation opportunity to position our railways to play a central role in our transportation and economic future. Our rail networks have the potential to offer safe, reliable, efficient, and climate-friendly alternatives to driving or flying.

Solutions: The Bipartisan Infrastructure Law invests \$66 billion in advanced appropriations and authorizes up to an additional \$36 billion over the next five years for Department of Transportation's rail programs. This includes funding to modernize the Northeast Corridor, and bring world-class rail service to areas outside the northeast and mid-Atlantic; refurbish Amtrak's fleet and facilities; and upgrade freight rail service in rural communities and on shared freight-passenger routes. This legislation enables the Federal Railroad Administration to lay the foundation for a sustainable rail investment program, on par with other modes of transportation, that advances safe, clean, equitable, and efficient world-class passenger and freight rail.

Funding Overview: The Federal Railroad Administration's funding falls into five major programs (1) Amtrak, (2) the Federal-State Partnership for Intercity Passenger Rail Grant Program, (3) the Consolidated Rail Infrastructure and Safety Improvements Grant Program, (4) the Railroad Crossing Elimination Grant Program, and (5) the Restoration and Enhancements Grant Program.

The funding allocated towards **Amtrak** is broken into two categories: (1) Amtrak Northeast Corridor, and (2) Amtrak National Network. In general, the funds for Amtrak are to be used for capital projects to address Amtrak's state of good repair backlog, including funding for infrastructure, fleet replacement, and ADA updates.

The **Consolidated Rail Infrastructure and Safety Improvements Grant Program** will fund projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. This program leverages private, state, and local investments to support safety enhancements and general improvements to infrastructure.

The **Railroad Crossing Elimination Grant Program** provides funds for the mitigation or elimination of hazards at railway-highway crossings. This is a new grant program enacted in the Bipartisan Infrastructure Law.

The Federal-State Partnership for **Intercity Passenger Rail Grant Program** provides funds for capital projects that reduce the state of good repair backlog, improve performance, or expand or establish new intercity passenger rail service. This program was significantly revised under the Bipartisan Infrastructure Law, providing direction specific to the Northeast Corridor and non-Northeast Corridor projects. While there is only a single grant program, the funding is broken into two categories: (1) Northeast Corridor, and (2) non-Northeast Corridor projects.



The **Restoration and Enhancements Grant Program** provides operating assistance to initiate, restore, or enhance intercity passenger rail service.

From the funding provided above, Bipartisan Infrastructure Law also authorizes for two additional rail programs: the Corridor Identification and Development Program and the Interstate Rail Compact Program.

The **Corridor Identification and Development Program** will identify new intercity passenger rail corridors, develop the necessary service planning elements, and create a non-Northeast Corridor Project Pipeline for associated capital projects.

The **Interstate Rail Compacts Grant Program** will provide funding for interstate rail compacts' administrative costs and to conduct railroad systems planning, promotion of intercity passenger rail operations, and the preparation of grant applications.

Getting Ready:

Potential applicants should start to identify projects now. More information about the new rail programs in the Bipartisan Infrastructure Law can be found on the Federal Rail Administration's dedicated Bipartisan Infrastructure Law page [here](#). All new Notices of Funding Opportunities will be posted [here](#).

Existing Resources:

- Details about Federal Rail Administration's competitive discretionary grant programs can be found [here](#), as well as information on Amtrak can be found [here](#). More information about the new rail programs in the Bipartisan Infrastructure Law can be found on [Federal Rail Administration's dedicated Bipartisan Infrastructure Law page](#).
- Federal Rail Administration provides technical assistance to grantees through webinars and other on-demand resources. Additional information about Federal Rail Administration's [competitive grants application process](#), [state](#) and [regional rail planning](#), [training and guidance](#), and recordings of [past webinars](#) can be found on Federal Rail Administration's website.
- Federal Rail Administration also provides oversight and subject matter expertise to projects funded under the Railroad Rehabilitation & Improvement Financing loan program that is managed by the Department's Build America Bureau. More information on Railroad Rehabilitation & Improvement Financing can be found [here](#).



Program Name	Agency Name	Funding Amount
Federal-State Partnership for Intercity Passenger Rail Grants	Department of Transportation	\$36,000,000,000
Amtrak National Network Grants	Department of Transportation	\$15,750,000,000
Amtrak Northeast Corridor Grants	Department of Transportation	\$6,000,000,000
Consolidated Rail Infrastructure and Safety Improvement Grants	Department of Transportation	\$5,000,000,000
Railroad Crossing Elimination Program	Department of Transportation	\$3,000,000,000
Restoration & Enhancement Grant Program	Department of Transportation	\$250,000,000
TOTAL - PASSENGER AND FREIGHT RAIL		\$66,000,000,000



Public Transportation

Challenge: America's public transit infrastructure has faced decades of underinvestment— with an estimated \$105 billion repair backlog, representing more than 27,000 buses and vans, 2,000 rail cars, 200 passenger stations, 300 maintenance facilities, and hundreds of miles of track, guideway, signals, and power systems in need of repair or replacement. Communities of color are twice as likely to take public transportation, and many of these communities lack sufficient public transit options. Switching from personal vehicle use to public transit can also reduce greenhouse gas emissions for the transportation sector, which is now the largest single source of emissions in the country.

Solutions: The Bipartisan Infrastructure Law invests \$91.2 billion to repair and modernize transit. The legislation supports expanded public transportation choices nationwide, replacing thousands of deficient transit vehicles, including buses, with clean, zero emission vehicles, and improving accessibility for the elderly and people with disabilities.

Funding Overview: Transit funding falls into two major categories (1) Federal Transit Administration Reauthorization (\$69.9 billion), (2) Supplemental Appropriations (\$21.3 billion).

The Bipartisan Infrastructure Law includes a five-year reauthorization for the Federal Transit Administration programs at the Department of Transportation. Highlights of the Federal Transit Administration's Bipartisan Infrastructure Law authorities include:

Federal Transit Administration Capital Investment Grants (\$8⁸ billion in total from reauthorization and supplemental appropriations) are used to support new and expanded high-capacity rail and bus service. The program includes New Starts for the construction of new systems and expansion of existing systems, Small Starts for projects with capital costs less than \$400 million, and Core Capacity for projects that upgrade existing corridors to handle increased demand. Federal Transit Administration also supports the pilot program for Expedited Project Delivery for new high-capacity transit projects.

The Federal Transit Administration **Low or No Emission (Bus) Grants** (\$5.6 billion) provides funding to state and local governments for the purchase or lease of zero-emission and low-emission transit buses, including acquisition, construction, and leasing of required supporting facilities. 5 percent of the funding for zero emission buses within this program will also support workforce development training so transit operators and mechanics can learn how to maintain and operate zero emission vehicles. Lastly, two programs supporting Accessibility are the (1) All Stations Accessibility Program (\$1.75 billion) and (2) additional funding for the Enhanced Mobility of Seniors

⁸ 8 billion is provided through the Bipartisan Infrastructure Law in advanced appropriations, an additional \$15 billion is authorized under Division C of the Bipartisan Infrastructure Law for a total program level of \$23 billion.



and Individuals with Disabilities Formula Program (\$2.2 billion). The All Stations Accessibility Program, a new program under the Bipartisan Infrastructure Law, provides funds to eliminate rail station barriers to access for persons with disabilities while the Enhanced Mobility of Seniors and Individuals with Disabilities Program, an existing program, increases funding to provide mobility options to seniors and persons with disabilities.

Getting Ready:

What a potential recipient (state/local/Tribal government) can do now to prepare to receive funding in this section – including the biggest hurdles they can expect to face (e.g. maps for broadband)?

Bipartisan Infrastructure Law Program Changes – All potential recipients can learn about Bipartisan Infrastructure Law changes to the Federal transit program by reviewing the [Federal Transit Administration Program Fact Sheets](#).

Formula Grant Programs – Potential recipients can review upcoming [Federal Transit Administration Apportionment Notices](#) which will include both funding program levels and specific Fiscal Year 2022 funding information.

Competitive Grant Programs – Potential recipients can review the [Federal Transit Administration Notices of Funding Opportunity](#) for competitive grant programs. Notices will be published throughout 2022.

To sign up for Federal Transit Administration updates regarding grant programs and other news, please visit [here](#).

Existing Resources:

- The American Rescue Plan includes \$30.5 billion in federal funding to support public transportation systems. Information on American Rescue Plan funding can be found [here](#).
- A full list of Federal Transit Administration grant programs can be found [here](#).
- A list of Federal Transit Administration -sponsored technical assistance centers can be found [here](#).



Program Name	Agency Name	Funding Amount
Urbanized Area Formula Grants	Department of Transportation	\$33,390,947,107
State of Good Repair Grants	Department of Transportation	\$21,640,412,832
Capital Investment Grants	Department of Transportation	\$8,000,000,000
Low or No Emission (Bus) Grants	Department of Transportation	\$5,624,550,890
Formula Grants for Rural Areas	Department of Transportation	\$4,109,463,374
Bus and Bus Facilities Formula Grants	Department of Transportation	\$3,161,294,400
Enhanced Mobility of Seniors and Individuals with Disabilities	Department of Transportation	\$2,193,105,343
Ferry Service for Rural Communities	Department of Transportation	\$2,000,000,000
Bus and Bus Facilities Competitive Grants	Department of Transportation	\$1,966,392,169
All Stations Accessibility Program	Department of Transportation	\$1,750,000,000
Rail Vehicle Replacement Grants	Department of Transportation	\$1,500,000,000
Metropolitan Transportation Program	Department of Transportation	\$799,441,834
Strengthening Mobility and Revolutionizing Transportation (SMART) Grants	Department of Transportation	\$500,000,000
Public Transportation on Indian Reservations Formula	Department of Transportation	\$183,250,437
Statewide Transportation Planning	Department of Transportation	\$167,001,389
Urbanized Area Passenger Ferry Program	Department of Transportation	\$150,000,000
Appalachian Development Public Transportation Assistance Program	Department of Transportation	\$137,437,828
Research, Development, Demonstration and Deployment Projects (Less Set Aside)	Department of Transportation	\$132,218,677
Rural Transportation Assistance Program	Department of Transportation	\$91,552,911
Pilot Program for Transit Oriented Development	Department of Transportation	\$68,864,631
Public Transportation Technical Assistance and Workforce Development	Department of Transportation	\$61,978,167
Public Transportation on Indian Reservations Competitive	Department of Transportation	\$45,812,610
Transit Cooperative Research Program	Department of Transportation	\$34,432,315
Pilot Program for Enhanced Mobility	Department of Transportation	\$24,102,620
National Rural Transportation Assistance Program	Department of Transportation	\$13,743,783
TOTAL - PUBLIC TRANSPORTATION		\$87,746,003,317



Airports and Federal Aviation Administration Facilities

Challenge: The United States built modern aviation, but many of our airports lag behind our competitors. According to some rankings, no U.S. airport ranks in the top 25 of airports worldwide.

Solutions: The Bipartisan Infrastructure Law invests \$25 billion to address repair and maintenance needs, reduce congestion and emissions, and modernize our National Aerospace System.

Funding Overview: This funding falls into three major programs covered under this section – (1) Facilities and Equipment funding (\$5 billion), (2) the Airport Infrastructure Grant Program (\$15 billion), and (3) the Airport Terminal Program (\$5 billion).

The **Facilities and Equipment Program** provides funding for Federal Aviation Administration-owned airport traffic control towers including Federal Aviation Administration-owned contract towers. This funding will allow the Federal Aviation Administration to place a down payment on the growing end-of-life backlog within the facilities portfolio. The focus on lower tier airport traffic control towers and specific facilities portfolio backlog items will help to improve safety, security, and environmental standards at facilities that infrequently receive the limited amount of yearly appropriated Facilities and Equipment Program dollars.

The **Airport Infrastructure Grant Program** is the largest new program funded for airports under the Bipartisan Infrastructure Law. On December 16, 2021, the Federal Aviation Administration at the Department of Transportation announced the initial allocations for the [Airport Infrastructure Grant Program](#) – which provides grants to thousands of airports across the country to invest in a variety of maintenance and improvement projects (e.g. runways and taxiways, noise, multimodal, and terminal buildings). The program also includes a competitive \$100 million (\$20 million annually) specifically for airport-owned contract airport traffic control towers. Through this program, Bipartisan Infrastructure Law funding provides local airports with flexible funding to address specific pressing needs. (See Fiscal Year 2022 state allocation [here](#) and an interactive map of where funding is going [here](#).) Funds that remain unobligated at the end of the fifth year, are available for a competitive discretionary grant program. Under the discretionary program, the first \$100 million will be for airport-owned contract airport traffic control towers, with remaining unobligated funds going to projects that reduce airport emissions, noise impacts, dependence on the electric grid or provide benefits to the surrounding community.

The **Airport Terminal Program** is a new program for airports under the Bipartisan Infrastructure Law. This program is a discretionary grant program for terminal development, multimodal and airport-owned airport traffic control towers.

**Getting Ready to Receive Grant Funding:**

In order to prepare to receive funding, potential recipients such as airport owners/operators should begin to identify what the primary airside and/or landside needs are and begin to develop a strategy and plan as to how this additional funding would be used to address the airport needs and challenges. Potential recipients will work with their local Federal Aviation Administration Airports District Office to ensure all requirements to receive funding are met (i.e. airspace, on an approved airport layout plan, and National Environmental Policy Act, etc.). For the two competitive grant programs (Airport Owned Contract Tower Program or Airport Terminal Program), airport owners/operators will need to apply based on the requirements in the Notice of Funding Opportunity issued for each competitive program.

Existing Resources:

- The Airport Improvement Program and Supplemental Discretionary Programs includes approximately \$3.75 billion annually for capital improvement programs at eligible U.S. airports. See more on the Airport Improvement Program and Discretionary Program [here](#).



Program Name	Agency Name	Funding Amount
Facilities and Equipment	Department of Transportation	\$5,000,000,000
Airport Infrastructure Grants	Department of Transportation	\$15,000,000,000
Airport Terminal Program	Department of Transportation	\$5,000,000,000
AIRPORTS AND FEDERAL AVIATION ADMINISTRATION FACILITIES		\$25,000,000,000



Ports and Waterways

Challenge: The United States' underfunded port and waterway infrastructure has real costs to families, our economy, and our global competitiveness. The surge of both imports and exports moving through outdated infrastructure as we recover from the COVID pandemic has strained our ports and their intermodal connections and slowed the global supply chain. To support our growing economy, we must strengthen our supply chain and invest in the transportation systems that move cargo to, through, and from our ports.

Solutions: The Bipartisan Infrastructure Law invests over \$16.7 billion to improve infrastructure at coastal ports, inland ports and waterways, and land ports of entry along our borders.

Funding Overview: This [funding](#) falls into several major categories: (1) Army Corps of Engineers; (2) Land Ports of Entry Modernization and Construction Program (\$3.85 billion); and (3) the Port Infrastructure Development Program (\$2.25 billion); (4) and other programs (\$1.6 billion) (including the America's Marine Highways program, which will receive \$25 million).

The **Army Corps of Engineers'** funding will support construction projects as well as operations and maintenance. Construction funding will be used for the construction of coastal ports, inland waterways, and other water infrastructure. Operations and maintenance funds will be used to dredge Federal navigation projects and to operate and maintain authorized Army Corps projects, including repair of damages caused by natural disasters.

The **Land Ports of Entry Modernization and Construction Program** provides funds to modernize and improve Land Ports of Entry at our Northern and Southwest Borders. Funds will be split between the General Services Administration and Customs and Border Protection.

The **Port Infrastructure Development Program** funds improvements of the infrastructure needed to move cargo to, through, and around ports. The Bipartisan Infrastructure Law significantly expands funding for this program, and expands eligibility to include projects that will improve resiliency to address sea-level rise, flooding, extreme weather events, earthquakes, and tsunami inundation, as well as projects that will help reduce or eliminate criteria pollutants and greenhouse gas emissions associated with port operations, including projects for port electrification.



Getting Ready for Port Funding:

What a potential recipient (state/local/Tribal government) can do now to prepare to receive funding is:

Potential recipients can work with their sponsors to:

- (1) identify project needs and attend webinars covering both “How to Apply” and “Benefit Cost Analysis” development;
- (2) Read the “Frequently Asked Questions” section of the U.S. Maritime Administration’s website and submit questions to the PIDPGrants@dot.gov;
- (3) Adhere to the requirements of the Notice of Funding Opportunity;
- (4) Submit applications prior to the deadline on grants.gov;
- (5) Avoiding beginning any of the work outlined in a project application while applications are still pending;
- (6) Notify the U.S. Maritime Administration if any of the scope, schedule, or budget items have changed since application submission; and
- (7) Wait patiently until a notification is made that awards have been announced.

Existing Resources:

- The Department of Transportation offers a number of other funding opportunities through programs such as RAISE and INFRA as well as loans through programs such as Transportation Infrastructure Finance and Innovation Act and Railroad Rehabilitation and Improvement Financing to support port projects. More information about these opportunities can be found [here](#).



Program Name	Agency Name	Funding Amount
Corps of Engineers Operation and Maintenance	Department of Defense – Army Corps of Engineers	\$4,000,000,000
Real Property Activities	General Services Administration	\$3,418,008,000
Inland Waterways Projects	Department of Defense – Army Corps of Engineers	\$2,500,000,000
Port Infrastructure Development Program Grants	Department of Transportation	\$2,250,000,000
Major Rehabilitation for Rivers and Harbors	Department of Defense – Army Corps of Engineers	\$1,500,000,000
Construction of Ferry Boats and Ferry Terminal Facilities	Department of Transportation	\$912,000,000
Mississippi River and Tributaries	Department of Defense – Army Corps of Engineers	\$808,000,000
Reduction of Truck Emissions at Port Facilities	Department of Transportation	\$400,000,000
Land Port of Entry Modernization	U.S. Customs and Border Protection	\$330,000,000
Major Shore, Housing, Aids to Navigation, Survey and Design	Department of Homeland Security	\$158,000,000
Major Shore, Housing, Aids to Navigation, Survey and Design	Department of Homeland Security	\$131,500,000
Major Shore, Housing, Aids to Navigation, Survey and Design	Department of Homeland Security	\$120,000,000
Land Port of Entry Modernization	U.S. Customs and Border Protection	\$100,000,000
America's Marine Highway Program Grants	Department of Transportation	\$25,000,000
Major Shore, Housing, Aids to Navigation, Survey and Design	Department of Homeland Security	\$19,500,000
Operations and Support	Department of Homeland Security	\$5,000,000
TOTAL - PORTS AND WATERWAYS		\$16,677,008,000



Safety

Challenge: The United States has one of the highest traffic fatality rates in the industrialized world, double the rate in Canada and quadruple that in Europe. Even as people drove less because of the pandemic, an estimated 38,680 people died in motor vehicle crashes in 2020, of which an estimated 6,236 were people walking and 891 people were biking. Additionally, safety concerns remain across modes, from the risk of vehicle/train collisions at railroad grade crossings to aging natural gas pipelines throughout the country.

Solutions: The Bipartisan Infrastructure Law includes nearly \$38 billion to improve the safety of the United States transportation system by helping states and territories support a broad array of traffic safety priorities, including the safety of drivers and vulnerable road users, safety at railroad crossings, and replacement or repair of obsolete natural gas pipelines.

Funding Overview: Funding allocated to safety is divided into several categories **(1)** Highway Safety Improvement Program (\$15.6 billion); **(2)** Safety-Related Activities (\$17.5 million); **(3)** Safe Streets and Roads for All (\$5 billion⁹); **(4)** Federal Motor Carrier Safety Administration and National Highway Traffic Safety Administration (\$11.8 billion); **(5)** Pipeline and Hazardous Materials Safety Administration (\$1.2 billion); and **(6)** Rail Crossing Safety (\$4.2 billion).

Bipartisan Infrastructure Law reauthorizes the Federal Highway Administration's **Highway Safety Improvement Formula Program** and includes nearly \$4 billion over levels in the Fixing America's Surface Transportation Act.

Safe Streets and Roads for All is a new competitive discretionary grant program for local and Tribal "vision zero" plans and other improvements to reduce crashes and fatalities not only for drivers, but also for cyclists, pedestrians, and all other roadway users.

Bipartisan Infrastructure Law funding will provide a five-year reauthorization for the Federal Motor Carrier Safety Administration and the National Highway Traffic Safety Administration, which includes a plus up over Fixing America's Surface Transportation Act levels.

Pipeline and Hazardous Materials Safety Administration's funding includes a new **Pipeline Modernization Program** (\$1 billion) provides competitive grant funding for a municipality or community owned utility to repair, rehabilitate, or replace its natural gas distribution pipeline systems to reduce incidents and fatalities and to avoid economic losses.

⁹ \$5 billion is provided through the Bipartisan Infrastructure Law in advanced appropriations, an additional \$1 billion is authorized under Division B of the Bipartisan Infrastructure Law for a total program level of \$6 billion.



Lastly, the Bipartisan Infrastructure Law includes funding for rail crossing safety through the **Rail-Highway Grade Crossing Formula Program** (\$1.2 billion) to reduce the number and severity of incidents to motorists, bicyclists, and pedestrians at grade crossings, and the **Railroad Crossing Elimination Program** (\$3 billion¹⁰) for competitive grants to eliminate rail crossings, where feasible.

Getting Ready:

The Bipartisan Infrastructure Law creates a number of new discretionary grant programs like Safe Streets and Roads for All and provides additional funding for existing programs. State, regional, local, and Tribal governments are encouraged to engage with the Department about upcoming opportunities, the requirements associated with them, and the timeframes when application opportunities will occur.

The Bipartisan Infrastructure Law also updates Federal aid formula program requirements and eligibilities, and States should expect updated guidance from Federal Highway Administration, Federal Motor Carrier Safety Administration, and National Highway Traffic Safety Administration in the coming months.

¹⁰ \$3 billion is provided through the Bipartisan Infrastructure Law in advanced appropriations, an additional \$2.5 billion is authorized under Division B of the Bipartisan Infrastructure Law for a total program level of \$5.5 billion.



Program Name	Agency Name	Funding Amount
Highway Safety Improvement Program	Department of Transportation	\$15,557,499,996
Safe Streets and Roads for All	Department of Transportation	\$5,000,000,000
Railroad Crossing Elimination Grants	Department of Transportation	\$3,000,000,000
Motor Carrier Safety Assistance Program	Department of Transportation	\$2,432,500,000
Highway Safety Programs	Department of Transportation	\$1,992,000,000
Motor Carrier Safety Operations and Programs	Department of Transportation	\$1,925,000,000
National Priority Safety Programs	Department of Transportation	\$1,874,500,000
Railway-Highway Crossings Program	Department of Transportation	\$1,225,000,000
Natural Gas Distribution Infrastructure Safety and	Department of Transportation	\$1,000,000,000
Highway Safety Research & Development	Department of Transportation	\$970,000,000
Crash Data	Department of Transportation	\$750,000,000
Vehicle Safety and Behavioral Research	Department of Transportation	\$548,500,000
High Priority Activities Program	Department of Transportation	\$432,500,000
Wildlife Crossings Pilot Program	Department of Transportation	\$350,000,000
Commercial Driver's License Implementation Pro	Department of Transportation	\$297,500,000
High-Visibility Enforcement	Department of Transportation	\$201,600,000
Racial Profiling Data Collection Grants	Department of Transportation	\$57,500,000
National Driver Register	Department of Transportation	\$36,000,000
Commercial Motor Vehicle Enforcement Training	Department of Transportation	\$25,000,000
Safety-Related Activities (Set-aside)	Department of Transportation	\$17,500,000
Commercial Motor Vehicle Operators Grant Progr	Department of Transportation	\$16,500,000
TOTAL - SAFETY		\$37,709,099,996



Electric Vehicles, Buses and Ferries

Challenge: Building a network of electric vehicle chargers and supporting the transition to electrification across all types of vehicles is critical to reduce emissions and help to combat the climate crisis. U.S. market share of plug-in electric vehicle sales is only one-third the size of the Chinese electric vehicle market.

Solutions: The Bipartisan Infrastructure Law includes a \$7.5 billion investment in electric vehicle charging to help build out a national network of 500,000 electric vehicle chargers. This investment will make electric vehicles accessible to all Americans, create good-paying jobs across the country, and ensure a convenient, reliable, affordable, and equitable charging experience for all users. The Bipartisan Infrastructure Law provides funding for deployment of electric vehicle chargers along highway corridors to facilitate long-distance travel and within communities to provide convenient charging where people live, work, and shop.

In addition, there are investments from the Bipartisan Infrastructure Law for specific vehicles to transition to electric- school buses, transit buses and even passenger ferries to reduce emissions for their riders including children and low-income families that bear the greatest burdens of pollution while trying to meet their mobility needs.

Funding Overview: This funding falls into five major programs (1) National Electric Vehicle Infrastructure Formula Program (\$5 billion) (2) National Electric Vehicle Infrastructure Grant Program (\$2.5 billion), (3) Clean School Bus Program (\$5 billion), (4) Low- and No-Emission transit bus Program (\$5.6 billion) and (5) Electric or Low Emitting Ferry Program (\$250 million) for a total of over \$18 billion in investments to reduce emissions through the electrification of vehicles.

The **National Electric Vehicle Charging Formula Program (\$5 billion) and Grant Program (\$2.5 billion)** provides a total of \$7.5 billion to states to procure and install electric vehicle chargers, with the goal of building a national network of electric vehicle chargers and to support charging in communities where people live, work, and shop. The Formula Program targets charging along corridors and Interstates whereas the Grant Program will invest in communities to support innovative approaches that ensure charger deployment reaches rural, disadvantaged, and other hard-to-reach communities. Funding amounts by State for the \$5 billion investment can be found in the Department of Transportation's state-by-state fact sheets [here](#).

New funding will also go to improve transit and school buses. The **Clean School Bus Program, Low- and No-Emission Transit Bus Program, and Electric or Low Emitting Ferry Grant Program** support transitioning buses and ferries to zero-emission alternatives. These programs will support innovation in new types of vehicles that reduce pollution in communities and for children and passengers.



In addition, the Bipartisan Infrastructure Law creates the Joint Office of Energy and Transportation, which will provide within technical assistance to support the efficient and equitable deployment of electric vehicle Charging and other related programs. This office will be a key resource for local communities.

Getting Ready:

- Identify a staff lead on electric vehicle charging to provide guidance, share lessons learned, and coordinate with state and federal staff.
- Connect with State Departments of Transportation who will receive the Formula Program funds and other electric vehicle planning entities like the State Departments of Energy or Environment. Work with them to identify current and potential Alternative Fuel Corridors in and near your community.
- Reach out to school districts and transit agencies to ensure they are preparing for upcoming funding opportunities and know where to go for technical assistance.
- Stay tuned for more information from the Joint Office of Energy and Transportation and the technical assistance and capacity building they will provide.
- Learn more about the technologies, case studies, and lessons learned on the Alternative Fuels Data Center (afdc.energy.gov).
- Watch for upcoming funding opportunities from Environmental Protection Agency, Department of Energy, and Department of Transportation for competitive grants funded through the Bipartisan Infrastructure Law investments.
- Watch for Federal Highway Administration formula program guidance and apportionment tables in February.

Existing Resources:

- Read this [Department of Transportation Report](#) on charging infrastructure.
- Check out the Department of Energy's [Alternative Fuels Data Center](#).
- Read more on the Environmental Protection Agency's [Clean School Bus Program](#) and the Department of Transportation [Low or No Emission Vehicle Program](#).



Program Name	Agency Name	Funding Amount
National Electric Vehicle Infrastructure Formula Program	Department of Transportation	\$5,000,000,000
Charging and Fueling Infrastructure Grants (Community Charging)	Department of Transportation	\$1,250,000,000
Charging & Fueling Infrastructure Grants (Corridor Charging)	Department of Transportation	\$1,250,000,000
Low or No Emission (Bus) Grants	Department of Transportation	\$5,624,550,890
Clean School Bus Program	Environmental Protection Agency	\$5,000,000,000
Electric or Low-Emitting Ferry Program	Department of Transportation	\$250,000,000
Electric Drive Vehicle Battery Recycling And 2nd Life Apps	Department of Energy	\$200,000,000
Low or No Emission Vehicle Component Assessment Program	Department of Transportation	\$26,169,974
TOTAL - ELECTRIC VEHICLES, BUSES AND FERRIES		\$18,600,720,864



Clean Energy and Power

Challenge: Our energy system is in desperate need of modernization and reform to increase resilience and bring low-cost clean energy to more Americans. Power outages cost the U.S. economy up to \$70 billion every year and one in three U.S. households face challenges paying their energy bills. Many promising clean energy technologies that can help to meet our climate goals work in the lab but have yet to be demonstrated at scale. Too many of our homes, schools, and offices are inefficient, contributing to high energy bills and air pollution. And for too long, we have ceded ground on manufacturing to our global competitors.

Solutions: The Bipartisan Infrastructure Law is the largest investment in clean energy infrastructure in American history. It will modernize our power grid by building and upgrading thousands of miles of resilient transmission lines to reduce outages and energy costs and facilitate the expansion of clean energy. It will invest in energy efficiency and clean energy improvements in our homes, schools, businesses, and communities to make them cleaner and more affordable. And it will fund new programs to support the development, demonstration, and deployment of cutting-edge clean energy technologies to accelerate our transition to a zero-emission economy, while also creating good paying jobs and investing in manufacturing in communities across the country.

Funding Overview: This funding includes four major areas, covered under this section – **(1)** delivering clean power (~\$21.3 billion), **(2)** clean energy demonstrations (~\$21.5 billion), **(3)** energy efficiency and weatherization retrofits for homes, buildings, and communities (\$6.5 billion), and **(4)** funding for clean energy manufacturing and workforce development (\$8.6 billion).

Delivering clean power

In January 2022, the Department of Energy launched a new **“Building a Better Grid Initiative” initiative to accelerate the deployment of new transmission lines** that will connect Americans to cleaner, cheaper electricity, while improving the resilience and reliability of the grid. This initiative will leverage the ~\$16.5 billion in Bipartisan Infrastructure Law funding to reliably deliver clean, affordable power to more Americans, improving resilience of our grid infrastructure, and helping achieve the President’s goal of 100 percent carbon pollution-free electricity by 2035. In addition, Bipartisan Infrastructure Law provides \$6 billion for a **Civil Nuclear Credit Program** that will provide financial support to existing nuclear reactors that are at risk of closing and being replaced by higher-emitting power resources, and more than \$700 million for **upgrades to our existing hydropower fleet** that will improve efficiency, maintain safety, and reduce environmental impacts. Key eligible recipients for much of this funding are states, tribes, communities, and utilities, including utilities that operate under regulatory supervision by local governments and State commissions.



Clean energy demonstrations

In December 2021, the Department of Energy established a new **Office of Clean Energy Demonstrations** to oversee the \$21.5 billion in Bipartisan Infrastructure Law funding for clean energy demonstration projects for innovative technologies like clean hydrogen, carbon capture, grid-scale energy storage, advanced nuclear reactors, and more. Demonstration projects test the effectiveness of innovative technologies in real-world conditions at scale, often leveraging public-private partnerships to pave the way towards commercialization and widespread deployment. Much of this funding will go to large projects that can be significant engines of local and regional economic development and job creation.

Energy efficiency

In the Bipartisan Infrastructure Law, Department of Energy is charged with investing an additional \$6.5 billion to support weatherization and other energy efficiency improvements to reduce energy costs for American families, businesses, schools, and communities, improve comfort and health, and cut carbon and air pollution, which disproportionately harms lower-income communities and communities of color. These investments will also help state local, and Tribal governments develop and implement their own clean energy and energy efficiency programs that will create jobs in their communities. Much of this funding will flow through existing State Energy Offices, local governments, or weatherization and housing agencies.

Clean energy manufacturing and workforce

The Bipartisan Infrastructure Law investments in clean energy technology supply chains for technologies like batteries will allow America to make the energy technologies of the future right here at home, boosting our competitiveness within a global clean energy market expected to reach \$23 trillion by the end of the decade. These investments will create good jobs up and down the supply chain—especially manufacturing jobs and skills-matched opportunities for fossil fuel workers. Department of Energy’s funding will go primarily to clean energy manufacturing facilities across the country. Department of Interior’s funding will enable the U.S. Geological Survey’s Earth Mapping Resources Initiative (Earth MRI) to modernize the Nation’s maps of critical minerals necessary for clean energy technologies and for other key manufacturing sectors of the economy. This mapping will focus on both minerals still in the ground and mineral resources that may be reprocessed from legacy mine wastes. The maps will also provide data useful to support remediation of abandoned mine lands, and will improve the Nation’s understanding of other natural resources such as groundwater and geothermal energy, and geologic hazards such as earthquakes.



Getting Ready:

The power and clean energy provisions in the Bipartisan Infrastructure Law cover a variety of technologies, funding across competitive and formula formats, and potential recipient including state, local, territorial, and Tribal governments, clean energy companies, utilities, and others. To guide program design and help potential recipients prepare to apply for and receive funding, Department of Energy will issue requests for information, notices of intent, webinars, and other stakeholder engagement opportunities.

To stay apprised of these opportunities, potential applicants can go to www.energy.gov/bipartisan-infrastructure-law-programs for the latest announcements and upcoming engagements.

Existing Resources:

- The Department of Energy has stood-up centralized [one-stop shop](#) online for Bipartisan Infrastructure Law program information.
- Please review the Department of Energy’s recent Notice of Intent on its “[Building a Better Grid Initiative](#)” which lays out a plan for forthcoming actions on grid modernization.
- The United States Geological Service is leading an ongoing effort to identify areas that may contain undiscovered critical mineral resources, as the enhancement of our domestic mineral supply decreases our national reliance on foreign sources of minerals fundamental to our economy and security. Read more on their Earth Mapping Resources Initiative [here](#).



Program Name	Agency Name	Funding Amount
Power Marketing Administration Transmission Borrowing Authority	Department of Energy	\$10,000,000,000
Regional Clean Hydrogen Hubs	Department of Energy	\$8,000,000,000
Civil Nuclear Credit Program	Department of Energy	\$6,000,000,000
Program Upgrading Our Electric Grid and Ensuring Reliability and Resili	Department of Energy	\$5,000,000,000
Preventing Outages and Enhancing the Resilience of the Electric Grid Gr	Department of Energy	\$5,000,000,000
Weatherization Assistance Program	Department of Energy	\$3,500,000,000
Four Regional Clean Direct Air Capture Hubs	Department of Energy	\$3,500,000,000
Battery Manufacturing and Recycling Grants	Department of Energy	\$3,000,000,000
Battery Materials Processing Grants	Department of Energy	\$3,000,000,000
Deployment of Technologies to Enhance Grid Flexibility	Department of Energy	\$3,000,000,000
Carbon Capture Demonstration Projects Program	Department of Energy	\$2,537,000,000
Transmission Facilitation Program	Department of Energy	\$2,500,000,000
Carbon Storage Validation and Testing	Department of Energy	\$2,500,000,000
Advanced Reactor Demonstration Program	Department of Energy	\$2,477,000,000
Carbon Dioxide Transportation Infrastructure Finance and Innovation I	Department of Energy	\$2,100,000,000
Clean Hydrogen Electrolysis Program	Department of Energy	\$1,000,000,000
Energy Improvement in Rural and Remote Areas	Department of Energy	\$1,000,000,000
Carbon Capture Large-Scale Pilot Programs	Department of Energy	\$937,000,000
Advanced Energy Manufacturing and Recycling Grants	Department of Energy	\$750,000,000
Critical Material Innovation, Efficiency, And Alternatives	Department of Energy	\$600,000,000
Rehabilitation of High Hazard Potential Dams	Department of Homeland Secu	\$585,000,000
Hydroelectric Incentives	Department of Energy	\$553,600,000
Energy Efficiency and Conservation Block Grant Program	Department of Energy	\$550,000,000
Clean Hydrogen Manufacturing Recycling	Department of Energy	\$500,000,000
Grants for Energy Efficiency and Renewable Energy Improvements at Pu	Department of Energy	\$500,000,000
Industrial Emission Demonstration Projects	Department of Energy	\$500,000,000
State Energy Program	Department of Energy	\$500,000,000
Purchase of Power and Transmission Services	Department of Energy	\$500,000,000
Industrial Research and Assessment Center Implementation Grants	Department of Energy	\$400,000,000
Energy Storage Demonstration Pilot Grant Program	Department of Energy	\$355,000,000
Earth Mapping Resources Initiative	Department of the Interior	\$320,000,000
Carbon Utilization Program	Department of Energy	\$310,140,781
Energy Efficiency Revolving Loan Fund Capitalization Grant Program	Department of Energy	\$250,000,000
Assisting Federal Facilities with Conservation Technologies	Department of Energy	\$250,000,000
Building Codes Implementation for Efficiency and Resilience	Department of Energy	\$225,000,000
Energy and Minerals Research Facility	Department of the Interior	\$167,000,000
Industrial Research and Assessment Centers	Department of Energy	\$150,000,000
Long-Duration Energy Storage Demonstration Initiative and Joint Progr	Department of Energy	\$150,000,000
National Dam Safety Program	Department of Homeland Secu	\$215,000,000
Rare Earth Elements Demonstration Facility	Department of Energy	\$140,000,000
Rare Earth Security Activities	Department of Energy	\$127,000,000
Hydroelectric Production Incentives	Department of Energy	\$125,000,000
Battery and Critical Mineral Recycling	Department of Energy	\$125,000,000
Watershed Rehabilitation Program	Department of Agriculture	\$118,000,000
Front-End Engineering and Design Program Out Activities Under Carbor	Department of Energy	\$100,000,000



Commercial Direct Air Capture Technology Prize Competition	Department of Energy	\$100,000,000
Geothermal Research & Development	Department of Energy	\$84,000,000
Section 243 Hydroelectric Efficiency Improvement Incentives (Sec 403)	Department of Energy	\$75,000,000
Critical Material Supply Chain Research Facility	Department of Energy	\$75,000,000
Marine Energy Research, Development, and Demonstration	Department of Energy	\$70,400,000
Wind Energy Technology Program	Department of Energy	\$60,000,000
Energy Efficiency Materials Pilot Program	Department of Energy	\$50,000,000
Solar Improvement Research & Development	Department of Energy	\$40,000,000
National Marine Energy Centers	Department of Energy	\$40,000,000
Energy Auditor Training Grant Program	Department of Energy	\$40,000,000
Wind Energy Tech Recycling Research & Development	Department of Energy	\$40,000,000
Hydropower Research, Development, and Demonstration	Department of Energy	\$36,000,000
New Solar Research & Development	Department of Energy	\$20,000,000
Solar Recycling Research & Development	Department of Energy	\$20,000,000
Pre-Commercial Direct Air Capture Prize Competitions	Department of Energy	\$15,000,000
Energy Efficient Transformer Rebates	Department of Energy	\$10,000,000
Pumped Storage Hydropower Wind and Solar Integration and System R&D	Department of Energy	\$10,000,000
Extended Product System Rebates	Department of Energy	\$10,000,000
Lithium-Ion Recycling Prize	Department of Energy	\$10,000,000
Career Skills Training	Department of Energy	\$10,000,000
Capital Improvement and Maintenance for Dams	Department of Agriculture	\$10,000,000
Building, Training, And Assessment Centers	Department of Energy	\$10,000,000
TOTAL - CLEAN ENERGY AND POWER		\$74,952,140,781



Water

Challenge: The nation has underinvested in water infrastructure for too long, putting communities at risk. Lead pipes, watermain breaks, PFAS contamination, and failing wastewater management systems threaten the safety and security of Americans across the country. Long-term drought and water shortages in many areas of the nation, fueled by climate change, have laid bare underinvestment in water reuse, conveyance and storage infrastructure.

Solutions: The legislation's \$55 billion investment represents the largest investment in drinking water, wastewater, water reuse, conveyance and water storage infrastructure in American history, including dedicated funding to replace lead service lines and address the dangerous chemical PFAS (per- and polyfluoroalkyl).

Funding Overview: This funding falls into seven major programs covered under this section – **(1)** the Drinking Water and Clean Water State Revolving Funds (\$23.43 billion), **(2)** Lead Service Lines (\$15 billion), **(3)** PFAS and Emerging Contaminants (\$10 billion), **(4)** Indian Water Rights (\$2.5 billion), **(5)** Indian Health Service Water and Sewer (\$1.8 billion), **(6)** Water and Sewer Tax (\$1.25 billion), **(7)** Rural Water (\$1 billion), **(8)** Western Water (\$7.1 billion).

The **Drinking Water and Clean Water State Revolving Funds** provide below-market rate loans and grants to fund water infrastructure improvements to protect public health and the environment. This additional funding will go towards existing Environmental Protection Agency programs– the Fiscal Year 2022 allocations from the Bipartisan Infrastructure Law can be found [here](#).

The **Lead Service Lines** program provides funding for lead pipe replacement. This was announced as part of a broader Lead Pipe and Paint Action Plan on December 16, 2021. The fact sheet covering the entirety of the program can be found [here](#).

The **PFAS and Emerging Contaminants** program provides funding for states and water utilities to be used in the treatment of any pollutant that is a perfluoroalkyl or polyfluoroalkyl substance (PFAS) or any pollutant identified by the Environmental Protection Agency Administrator as a contaminant of emerging concern.

The **Indian Water Rights** program is to satisfy Federal obligations under Indian water rights settlements enacted as of November 15, 2021.

The **Western Water** program appropriates funds to be spent on projects associated with water storage, groundwater storage, and conveyance projects, water recycling and reuse projects, water desalination projects and studies, watershed management, dam repair and replacement, repairing and replacing aging infrastructure, and WaterSMART grants.



The **Indian Health Service Water and Sewer** program provides funds for the provision of domestic and community sanitation facilities for Tribal communities.

The **Water and Sewer Tax** excludes from taxable income any “contribution in aid of construction” or any other contribution for purposes of water storage.

The **Rural Water Project** invests in water infrastructure projects in rural communities.

Getting Ready:

The majority of the water funding will move through the State Revolving Fund programs. Water utilities, non-profits, drinking water providers, and other potential recipients should begin to work with local stakeholders and state program contacts to identify potential projects, with a focus on prioritizing projects serving disadvantage communities. The Environmental Protection Agency and other agencies will provide technical assistance to help these disadvantaged communities overcome barriers to receiving loans and grants for water improvements. Potential recipients of the lead service line funding are also encouraged to accelerate the development and use of lead service-line inventories, which can help guide the design of replacement projects eligible for these funds. Additional national program guidance will be issued soon to state water primacy agencies.

Existing Resources:

- Funds from State and Local Fiscal Recovery Funds as part of the American Rescue Plan can be used to support necessary improvements in water, including for the State Revolving Funds, lead service line replacement programs, and other projects that assist systems most in need to provide clean drinking water. See more about the guidance that permitted the use of these funds [here](#).
- Funding through the CARES act State and Local Fiscal Recovery Funds can also be used to make necessary investments to improve access to clean drinking water.
- Funding is available for water infrastructure through Environmental Protection Agency’s existing State Revolving Funds and grant programs under the Water Improvements for the Nation Act, including \$25 million in 2022 to improve drinking water quality in small, underserved, and disadvantaged communities; and additional funding for lead testing in school and child care drinking water grants, and reducing lead in drinking water grants.
- Department of Agriculture funds are also available through the Water and Waste Disposal Loan and Grant Program.



- Department of Housing and Urban Development Community Block Development Block Grant funds are available for a wide range of community needs, including lead reduction initiatives.

Program Name	Agency Name	Funding Amount
Drinking Water State Revolving Fund Lead Service Lines Replacement	Environmental Protection Agency	\$15,000,000,000
Drinking Water State Revolving Fund	Environmental Protection Agency	\$11,713,000,000
Clean Water State Revolving Fund	Environmental Protection Agency	\$11,713,000,000
Water Infrastructure Improvements for the Nation Small and Underserved Communities Emerging Contaminants Grant Program	Environmental Protection Agency	\$5,000,000,000
Drinking Water State Revolving Fund Emerging Contaminants (incl. PFAS)	Environmental Protection Agency	\$4,000,000,000
Indian Health Service Sanitation Facilities Construction Program	Department of Health and Human Services	\$3,500,000,000
Aging Infrastructure Account	Department of the Interior	\$3,200,000,000
Indian Water Rights Settlements	Department of the Interior	\$2,500,000,000
Water & Groundwater Storage, And Conveyance	Department of the Interior	\$1,150,000,000
Rural Water Projects	Department of the Interior	\$1,000,000,000
Clean Water State Revolving Fund-Emerging Contaminants	Environmental Protection Agency	\$1,000,000,000
Water Recycling	Department of the Interior	\$1,000,000,000
Dam Safety Program	Department of the Interior	\$500,000,000
WaterSMART Grants	Department of the Interior	\$400,000,000
Water Desalination Projects	Department of the Interior	\$250,000,000
Safety of Dams, Water Sanitation, And Other Facilities	Department of the Interior	\$200,000,000
Watershed Management Projects	Department of the Interior	\$100,000,000
Central Utah Project	Department of the Interior	\$50,000,000
Underground Injection Control Grants: Class VI wells	Environmental Protection Agency	\$50,000,000
Tribal Irrigation and Power Systems	Department of the Interior	\$50,000,000
Water Resources Development Act Data Acquisition	Department of Commerce	\$25,000,000
Soil Moisture and Snowpack Pilot Program	Department of Commerce	\$1,000,000
Geographic Programs - Columbia River Basin Restoration Program	Environmental Protection Agency	\$79,000,000
Geographic Programs - Great Lakes Restoration Initiative	Environmental Protection Agency	\$1,000,000,000
Geographic Programs - Gulf of Mexico	Environmental Protection Agency	\$53,000,000
Geographic Programs - Lake Champlain	Environmental Protection Agency	\$40,000,000
Geographic Programs - Lake Pontchartrain Restoration Program	Environmental Protection Agency	\$53,000,000
Geographic Programs - Long Island Sound	Environmental Protection Agency	\$106,000,000
Geographic Programs - Northwest Forest	Environmental Protection Agency	\$4,000,000
Geographic Programs - South Florida Geographic Initiatives Program	Environmental Protection Agency	\$16,000,000
Geographic Programs - Southeast New England Coastal Watershed Restoration Program	Environmental Protection Agency	\$15,000,000
National Estuary Program Grants	Environmental Protection Agency	\$132,000,000
Geographic Programs - Chesapeake Bay Program	Environmental Protection Agency	\$238,000,000
Geographic Programs - Puget Sound	Environmental Protection Agency	\$89,000,000
Geographic Programs - San Francisco Bay Water Quality Improvement Fund	Environmental Protection Agency	\$24,000,000
TOTAL - WATER		\$64,251,000,000



Resilience

Challenge: Millions of Americans feel the effects of climate change each year when their roads wash out, power goes down, homes are destroyed by wildfires, or schools get flooded. Last year alone, the United States faced 20 extreme weather and climate-related disaster events with losses exceeding \$1 billion each – a cumulative price tag of more than \$145 billion. People of color and underserved communities are disproportionately vulnerable to the climate crisis and are more likely to experience the negative health and environmental effects of climate-related and extreme weather events. Further, the country’s critical infrastructure is at risk from a wide variety of additional hazards. Investments in the Bipartisan Infrastructure Law prioritize this “all hazards” approach to protecting our infrastructure with an emphasis on designing projects that will be resilient in the face of cybersecurity threats and climate and extreme weather-related risks.

Solutions: The Bipartisan Infrastructure Law makes our communities safer and our infrastructure more resilient to the impacts of climate change and cyber-attacks, with an investment of more than \$50 billion to protect against droughts, heat, floods and wildfires, in addition to a major investment in weatherization. The legislation is the largest investment in the resilience of physical and natural systems in American history.

Funding Overview: This bill contains historic funding for resilience to all hazards – including cyber, climate, and other threats communities face. Some of the most significant of these investments are:

- (1) Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Grants (\$8.7 billion),
- (2) Wildfire Management (\$8.25 billion)
- (3) Investments in Resilience through the Army Corps of Engineers (\$7 billion)
- (4) Western Water (\$3.8 billion),
- (5) Flood Mitigation Assistance Program (\$3.5 billion)
- (6) Weatherization (\$3.5 billion)
- (7) Cybersecurity (\$1.3 billion).

PROTECT (Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation) Program includes \$7.3 billion in formula funding that will be distributed to States and \$1.4 billion in competitive grants to help States and local agencies improve the resiliency of transportation infrastructure. PROTECT grants include resilience improvement grants, community resilience and evacuation route grants, and at-risk coastal infrastructure grants.

The money allocated to **Wildfire Management** encompasses a suite of programs aimed at reducing risk of wildfires, detecting wildfires, instituting firefighter workforce reforms and building more resilient infrastructure to be overseen by Department of Agriculture, Department of Interior, and the National Oceanic Atmospheric Association. The largest portion of this funding is for the Department of Agriculture’s U.S. Forest



Service (\$3.37 billion) and the Department of the Interior (\$1.46 billion) for wildfire risk reduction.

Investments in Resilience through the Army Corps of Engineers allocates funding to the Army Corps with specific set-asides for projects related to coastal storm risk management, hurricane and storm damage reduction inland flood risk management, and aquatic ecosystem restoration.

The **Western Water** program provides substantial new funding for that will help western communities fight drought by investing in new and expanded water storage, water efficiency water reuse and dam safety projects throughout the west.

Federal Emergency Management Agency's Flood Mitigation Assistance Program financial and technical assistance to states and communities to reduce the risk of flood damage to homes and businesses through buyouts, elevation and other activities.

The **Weatherization** program reduces energy costs for low-income households by increasing the energy efficiency of their homes, while ensuring health and safety.

Money allocated to **Cybersecurity** is spread across multiple programs to strengthen cyber systems and defense against future attacks, including funding for State, Local, Tribal, and Territorial grants for the Federal Emergency Management Administration, cyber response and recovery, and Research & Development in cyber.

Getting Ready:

Resilience-related funding opportunities vary significantly by program. States and communities should be pro-active in reaching out to the Department of Transportation for transportation-related resilience funding and to the Interior Department's Bureau of Reclamation regarding western water grant opportunities. State officials who are working closely with U.S. Forest Service and the Department of the Interior wildfire teams should not hesitate to approach federal officials and identify mutually-beneficial strategies for reducing dangerous fuel loads across federal and state lands. Tribal officials should contact the Bureau of Indian Affairs at the Department of Interior to learn about the full range of climate resilience funding that may be available to them.

**Existing Resources:**

In addition to specific funding made available through Bipartisan Infrastructure Law, communities and states that are seeking federal funding for locally-important resilience investments should explore potential opportunities under existing resilience-focused programs at the Federal Emergency Management Administration and the Department of Housing & Urban Development. Both Departments have robust resilience funding programs, including the Federal Emergency Management Agency's [Building Resilient Infrastructure & Communities](#) program.



Program Name	Agency Name	Funding Amount
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) - Formula	Department of Transportation	\$7,299,999,998
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) - Discretionary	Department of Transportation	\$1,400,000,000
Carbon Reduction Program	Department of Transportation	\$6,419,999,998
Preventing Outages and Enhancing the Resilience of the Electric Grid Grants	Department of Energy	\$5,000,000,000
Flood Mitigation Assistance Grants (National Flood Insurance Act Sec 1366)	Department of Homeland Security	\$3,500,000,000
Coastal Storm Risk Management, Hurricane, And Storm Damage Reduction Projects	Army Corps of Engineers	\$2,550,000,000
Inland Flood Risk Management (FRM) Projects	Army Corps of Engineers	\$2,500,000,000
Aquatic Ecosystem Restoration (AER) Projects	Army Corps of Engineers	\$1,900,000,000
State and Local Cybersecurity Grant Program	Department of Homeland Security	\$1,000,000,000
Building Resilient Infrastructure and Communities (Robert T Stafford Act Section 203(i))	Department of Homeland Security	\$1,000,000,000
Wildfire Management - Fuels Management	Department of the Interior	\$878,000,000
Reforestation Trust Fund (Replant Act)	Department of Agriculture	\$528,000,000
Hazardous Fuels Management	Department of Agriculture	\$514,000,000
Community Wildfire Defense Grant Program For At-Risk Communities	Department of Agriculture	\$1,000,000,000
Hazard Mitigation Revolving Loan Funds/Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Act (Robert T Stafford Act, Sec 205)	Department of Homeland Security	\$500,000,000
Watershed And Flood Prevention Operations	Department of Agriculture	\$500,000,000
Flood and Inundation Mapping and Forecasting, Water Modeling, and Precipitation Studies	Department of Commerce	\$492,000,000
National Oceans and Coastal Security Fund	Department of Commerce	\$492,000,000
Habitat Restoration	Department of Commerce	\$491,000,000
Federal Wildland Firefighter Salaries And Expenses	Department of Agriculture	\$480,000,000
Continuing Authorities Program (CAP) (Under Flood Control Act And River And Harbor Act)	Army Corps of Engineers	\$465,000,000
Hazardous Fuels (Mechanical Thinning And Timber Harvesting; Precommercial Thinning In Young Growth)	Department of Agriculture	\$400,000,000
Grants For States And Tribes For Voluntary Restoration	Department of the Interior	\$400,000,000
Financial Assistance To Facilities That Purchase And Process Byproducts For Ecosystem Restoration Projects	Department of Agriculture	\$400,000,000
Department of Interior Wildfire Management - Burned Area Rehabilitation	Department of the Interior	\$325,000,000
Emergency Watershed Protection Program	Department of Agriculture	\$300,000,000
Colorado River Drought Contingency Plan	Department of the Interior	\$300,000,000
Flood Control, and Coastal Emergencies	Army Corps of Engineers	\$251,000,000
Capital Improvement And Maintenance - Legacy Road And Trail Remediation Program	Department of Agriculture	\$250,000,000
Prescribed Fires	Department of Agriculture	\$250,000,000
Fuel Breaks	Department of Agriculture	\$250,000,000
Activities Under Cybersecurity For The Energy Sector Research, Development, And Demonstration Program	Department of Energy	\$250,000,000
Rural And Municipal Utility Advances Cybersecurity Grant And Technical Assistance Program	Department of Energy	\$250,000,000
Aquatic Ecosystem Restoration And Protection Projects	Department of the Interior	\$250,000,000
Department of Interior Wildfire Management - Preparedness	Department of the Interior	\$245,000,000
Emergency Preparedness Grants	Department of Transportation	\$234,125,000
Burned Area Recovery	Department of Agriculture	\$325,000,000
Coastal Zone Management	Department of Commerce	\$207,000,000
Ecosystem - Fish Passage	Department of the Interior	\$200,000,000



Water-Related Environmental Infrastructure Assistance	Army Corps of Engineers	\$200,000,000
Joint Chiefs Landscape Restoration Partnership Program	Department of Agriculture	\$180,000,000
Ecosystem - Klamath Basin	Department of the Interior	\$162,000,000
Regulatory Program	Army Corps of Engineers	\$160,000,000
Restoration Projects Via States And Tribes	Department of Agriculture	\$160,000,000
Ecological Health Restoration Contracts	Department of Agriculture	\$150,000,000
Tribal Climate Resilience - Community Relocation	Department of the Interior	\$130,000,000
Capital Improvement And Maintenance - Construction And Maintenance Of Roads For Forest Restoration Projects That Reduce Wildfire Risk	Department of Agriculture	\$100,000,000
Pollution Prevention Grants	Environmental Protection Agency	\$100,000,000
Collaborative Forest Landscape Restoration Program	Department of Agriculture	\$100,000,000
Restore Native Vegetation On Federal/Non-Federal Land	Department of Agriculture	\$100,000,000
Removal Of Vegetation For Biochar And Innovative Wood Products	Department of Agriculture	\$100,000,000
Post-Fire Restoration	Department of Agriculture	\$100,000,000
Forest Health Management on Federal Lands Program and Forest Health Management on Cooperative Lands Program	Department of Agriculture	\$100,000,000
Working Capital Fund	Department of the Interior	\$100,000,000
Direct Federal Spending For Invasives	Department of the Interior	\$100,000,000
Ocean And Coastal Observing Systems	Department of Commerce	\$100,000,000
Multi-Benefit Projects To Improve Watershed Health	Department of the Interior	\$100,000,000
Cyber Response and Recovery Fund	Department of Homeland Security	\$100,000,000
State Fire Assistance	Department of Agriculture	\$88,000,000
Tribal Climate Resilience - Adaptation Planning	Department of the Interior	\$86,000,000
Research Supercomputing	Department of Commerce	\$80,000,000
Revegetation Effort to Implement National Seed Strategy	Department of Agriculture	\$70,000,000
Direct Federal Spending (Or Other) For National Revegetation Strategy	Department of the Interior	\$70,000,000
Critical Infrastructure Security and Resilience Research	Department of Homeland Security	\$69,806,250
National Seed Strategy	Department of Agriculture	\$60,000,000
Ecosystem - Sagebrush-Steppe	Department of the Interior	\$50,000,000
Preplanning Fire Response Workshops And Workforce Training	Department of Agriculture	\$50,000,000
Contracts And Agreements For Restoration On Federal Lands	Department of the Interior	\$50,000,000
Wildfire	Department of Commerce	\$50,000,000
Colorado River Endangered Species Recovery and Conservation Programs	Department of the Interior	\$50,000,000
Advanced Energy Security Program	Department of Energy	\$50,000,000
Wildfire	Department of Commerce	\$50,000,000
Ocean And Coastal Observing Systems	Department of Commerce	\$50,000,000
Direct Federal Spending For Resilient Recreation Sites	Department of the Interior	\$45,000,000
Flood Plain Management Services	Army Corps of Engineers	\$45,000,000
To Complete Or Initiate And Complete Studies That Were Authorized Prior To The Date Of This Act	Army Corps of Engineers	\$45,000,000
Physical Security	Department of Homeland Security	\$38,800,000
Sector Risk Management Agencies	Department of Homeland Security	\$35,000,000
Planning Assistance To States	Army Corps of Engineers	\$30,000,000
Section 118 Of Water Resources Development Act of 2020	Army Corps of Engineers	\$30,000,000
Provide Financial Assistance To States, Indian Tribes, And Units Of Local Government To Establish And Operate Reverse-911 Telecommunication Systems	Department of Agriculture	\$30,000,000
Ecosystem - Delaware River Basin Conservation Act	Department of the Interior	\$26,000,000
National Geological And Geophysical Data Preservation Program	Department of the Interior	\$23,668,000
Southwest Ecological Restoration Institute	Department of Agriculture	\$20,000,000
Volunteer Fire Assistance	Department of Agriculture	\$20,000,000
Ecosystem - Lake Tahoe	Department of the Interior	\$17,000,000
Cybersecurity	Department of Homeland Security	\$14,500,000
Probabilistic Analysis of National Threats, Hazards and Risks	Department of Homeland Security	\$13,400,000



Countering Violent Extremism	Department of Homeland Security	\$12,800,000
Research And Development Via Joint Fire Science Program Partnership With Department Of Interior	Department of Agriculture	\$10,000,000
Agreement with National Oceanic and Atmospheric Administration For Geostationary Operations Environmental Satellite Program	Department of Agriculture	\$10,000,000
Wildfire Management - Joint Fire Science Program	Department of the Interior	\$10,000,000
Firewood Banks	Department of Agriculture	\$8,000,000
Wildfire Detection And Monitoring Equipment	Department of Agriculture	\$5,000,000
First Responder Capability	Department of Homeland Security	\$4,000,000
Explosives Threat Assessment	Department of Homeland Security	\$2,800,000
Develop And Publish Every 5 Years A Map Depicting At-Risk Communities, Including Tribal Communities	Department of Agriculture	\$1,200,000
Network & System Security & Investment	Department of Homeland Security	\$1,000,000
Water Infrastructure Finance and Innovation Program Account	Army Corps of Engineers	\$75,000,000
Energy Sector Operational Support for Cyber Resilience Program	Department of Energy	\$50,000,000
TOTAL - RESILIENCE		\$47,886,099,246



Environmental Remediation

Challenge: In thousands of rural and urban communities around the country, hundreds of thousands of orphaned oils and gas wells, abandoned mines, brownfields and Superfund sites sit idle— sources of blight and pollution. These sites pose serious safety hazards, while also causing ongoing air, water, and other environmental damage. Further, many of these sites are located in disadvantaged communities that have suffered from years of disinvestment.

Solutions: The bill will invest \$21 billion in environmental remediation – the largest investment in addressing legacy pollution in American history. These projects will remediate environmental harms, address the legacy pollution that harms the public health of communities, create good-paying union jobs, and advance long overdue environmental justice.

Funding Overview: This funding falls into four major programs covered under this section – **(1)** abandoned mine land reclamation (\$11.3 billion), **(2)** orphan oil & gas well plugging, remediation and restoration (\$4.7 billion), **(3)** Superfund site cleanup (\$3.5 billion), and **(4)** brownfield remediation and revitalization (\$1.5 billion).

- The Bipartisan Infrastructure Bill provides \$11.3 billion to the Department of Interior to provide grants to states and Tribes for abandoned coal mine land reclamation. These funds will be disbursed by the [Office of Surface Mining Reclamation and Enforcement](#) to eligible States and Tribes. The Bipartisan Infrastructure Bill also provides \$25 million to Department of Interior to help states update their abandoned mine land inventories. Finally, the Bipartisan Infrastructure Bill includes language enabling the Office of Surface Mining and Reclamation to give priority to reclamation projects that provide employment for current and former coal industry workers.
- The Bipartisan Infrastructure Bill provides \$4.7 billion to the Department of Interior to establish three new oil and gas well plugging, remediation and reclamation grant programs - \$250 million for wells on federal lands, \$4.3 billion for wells on state and private lands, and \$150 million for wells on Tribal lands. These funds include initial, formula, and performance-based grants for states and tribes, as well as funding for technical assistance to help identify, prioritize, and plug wells. Virtual targeted engagements to gain perspectives from Indian Tribes with a history of oil and gas development have been planned for February 8, 9, and 10, 2022.
- The Bipartisan Infrastructure Bill provides \$3.5 billion in new funds to the Environmental Protection Agency to fund clean-ups and remedial actions on Superfund sites. The bill waives the state cost-share requirements for this new funding and encourages the Environmental Protection Agency to consider the unique Superfund needs of Tribal communities. The Environmental Protection



Agency has [already announced](#) \$1 billion of this funding will clear the backlog of 49 previously unfunded sites, while accelerating cleanup at dozens of locations across the country.

- The Bipartisan Infrastructure Bill provides \$1.5 billion to the Environmental Protection Agency to expand its existing brownfield remediation and revitalization grant programs. \$1.2 billion of the funding is for brownfield assessment grants, cleanup grants, technical assistance, environmental remediation job training, and reuse/economic revitalization. \$300 million of the funds will flow to support state and Tribal brownfield clean-up programs.

Getting Ready:

Potential grant applicants should begin to inventory sites and launch community-led stakeholder engagement sessions to determine eligibility for funding remediation work, as well as assess the needs of the local workforce from a training standpoint, so jobs created by these projects can employ members of affect communities.

Abandoned Mine Land Reclamation: Begin discussions with communities, watershed groups, and recreation interests (such as fishing groups) to identify acid mine drainage problems that may be newly eligible for funding given the broader allowable uses of Bipartisan Infrastructure Bill funding.

Orphan Well Plugging: Begin outreach to communities near orphaned well sites to identify sites that have the most significant impacts or are preventing other beneficial uses of the land. Work with your state geologic surveys to identify other areas that may need to be inventoried for orphaned wells.

Superfund Site Clean-Up: Environmental Protection Agency Superfund site teams will work to ensure communities have the information and support they need to meaningfully participate in the remedial process, including holding a public meeting prior to the start of construction, engaging communities in discussions about redevelopment opportunities, and offering technical assistance and job training opportunities.

Brownfield Remediation: Potential applicants for brownfields grants should become familiar with application guidelines and determine which priority sites are eligible for funding. Please see the following webpages for additional information

**Existing Resources:**

- More information about available technical assistance resources can be found [here](#) for the Brownfields Program.
 - [Types of Brownfield Grant Funding](#)
 - [Tips for Applying](#)
- More information about resources available to communities for addressing Superfund sites can be found at the links below:
 - [Superfund Technical Assistance Needs Assessment](#)
 - [Superfund Technical Assistance Grant](#)
 - [Superfund Technical Assistance Services for Communities](#)
 - [Superfund Community Advisory Group support](#)
 - [Superfund Job Training Initiative](#)
 - [Superfund Redevelopment Program](#)



Program Name	Agency Name	Funding Amount
Abandoned Mine Reclamation Fund	Department of the Interior	\$11,293,000,000
Orphaned Well Site Plugging, Remediation, And Restoration	Department of the Interior	\$4,677,000,000
Superfund Remedial	Environmental Protection Agency	\$3,500,000,000
Brownfields Projects	Environmental Protection Agency	\$1,200,000,000
Clean Energy Demonstration Program on Current and Former Mine Land	Department of Energy	\$500,000,000
Brownfields Categorical Grants	Environmental Protection Agency	\$300,000,000
Direct Federal Spending for Revegetation of Mined Lands	Department of the Interior	\$100,000,000
Funding to Support Orphan Well Plugging	Department of Energy	\$30,000,000
TOTAL - ENVIRONMENTAL REMEDIATION		\$21,600,000,000



Broadband

Challenge: Ensure that all Americans have access to affordable, reliable, high-speed internet service. High quality internet service is necessary for Americans to do their jobs, to participate equally in school learning, health care, and to stay connected. Yet, by one definition, more than 30 million Americans live in areas where there is no broadband infrastructure that provides minimally acceptable speeds – a particular problem in rural communities throughout the country. And, according to the latest Organisation for Economic Co-operation and Development data, among 35 countries studied, the United States has the second highest broadband costs.

Solutions: The Bipartisan Infrastructure Law invests roughly \$65 billion to help ensure that every American has access to reliable high-speed internet through a historic investment in broadband infrastructure deployment. The legislation will also help lower prices for internet service and help close the digital divide, so that more Americans can make full use of internet access.

Funding Overview: This funding falls into 7 major program areas– **(1)** the Broadband Equity, Access, and Deployment Program (\$42.45 billion), **(2)** the Affordable Connectivity Program (\$14.2 billion); **(3)** Digital Equity Planning, Capacity and Competitive Grants (\$2.75 billion); **(4)** the Tribal Broadband Connectivity Program (\$2 billion), **(5)** Rural Broadband Programs at the Department of Agriculture (\$2 billion); **(6)** the Middle Mile Broadband Infrastructure Program (\$1 billion); and **(7)** Private Activity Bonds (~\$600 million).

On January 7, 2022 – the National Telecommunications and Information Administration at the Department of Commerce released a Notice seeking comment on the **Broadband Equity, Access and Deployment program, the Middle Mile Broadband Infrastructure Program, and the Digital Equity Planning Grant Program.** The Broadband Equity, Access and Deployment program is a formula-based grant program to states, territories and the District of Columbia primarily for the purposes of state broadband planning and deployment. It can also be used for broadband data collection and mapping; to promote broadband adoption, including through the provision of affordable internet-connected devices; to provide Wi-Fi or reduced-cost internet access to multi-family housing units; and for other uses that the National Telecommunications and Information Administration determines are necessary to facilitate the goals of the program. States will distribute funds through a competitive grant program. Funding recipients have an obligation to offer a low-cost plan as a condition of receiving funding for broadband deployment. Future-proof deployments are prioritized. Each state, including the District of Columbia and Puerto Rico, will receive at least \$100 million. American Samoa, Guam, The Northern Marianas and the U.S. Virgin Islands will each receive at least \$25 million. The remainder of the funds will be allocated based on a formula that considers the number of locations in



each State or territory unserved by broadband and the number of high cost unserved locations.

The Middle Mile Broadband Infrastructure Program, administered by the National Telecommunications and Information Administration, will provide grants for the construction, improvement or acquisition of middle-mile infrastructure to eligible entities, including, but not limited to, telecommunications companies, technology companies, electric utilities, and utility cooperatives.

The Digital Equity Planning, Digital Equity Capacity, and Digital Equity Competitive Grants are three National Telecommunications and Information Administration-administered grant programs (two formula-based and one competitive) to plan for and then promote digital inclusion and equity for communities that lack the skills, technologies and support needed to take advantage of broadband connections. Grants can be used to accelerate the adoption of broadband through digital literacy training, workforce development, devices access programs, and other digital inclusion measures.

The Tribal Broadband Connectivity Program is an existing National Telecommunications and Information Administration program, that provides grants to federally recognized Tribal governments, Tribal organizations, Tribal Colleges and Universities, the Department of Hawaiian Homelands, and Alaska Native Corporations for broadband deployment on Tribal lands, as well as for telehealth, distance learning, broadband affordability, and digital inclusion.

On December 31, 2021, the Federal Communications Commission launched the **Affordable Connectivity Program** which provides a subsidy of up to \$30/month for low-income families (up to \$75/month for low-income families on Tribal Lands) to use toward the internet service plan of their choice offered by participating internet service providers, as well as a one-time \$100 towards a desktop, laptop or tablet computer offered by participating internet service providers.

The Broadband ReConnect Program, administered by the Rural Utilities Service at the Department of Agriculture, will provide almost \$2 billion in loans and grants toward the costs of construction, improvement, or acquisition of facilities and equipment needed to provide broadband service in eligible rural areas. Companies, cooperatives; and state, local, Tribal, and territorial governments may all apply for ReConnect funding.

Private Activity Bonds – the Bipartisan Infrastructure Bill allows states and local governments to issue private activity bonds to support broadband deployment in rural areas.



Getting Ready:

The Broadband Equity, Access and Deployment Program and the State Digital Equity Planning and Capacity Grants: In order to prepare to receive funding from the National Telecommunications and Information Administration from the Broadband Equity, Access and Deployment and State Digital Equity Planning and Capacity Grant programs, States should identify and solidify their state broadband leadership teams and begin coordinating across state agencies and with Tribal and local governments and other stakeholders to begin to develop a strategy and plan for identifying and meeting the state's broadband deployment, affordability and equity challenges.

Affordable Connectivity Program: In order to make sure low-income households in your communities can take advantage of the Affordable Connectivity Program, State, Tribal, and local leaders, internet service providers, and non-profits should identify opportunities to effectively reach out to low-income households and inform them about the program.

The Tribal Broadband Connectivity Program: Tribal leaders should identify and solidify their broadband planning, deployment and affordability programs and plan to participate in Tribal consultations, and National Telecommunications and Information Administration webinars and other information sessions regarding the Tribal Broadband Connectivity Program.

The Broadband ReConnect Program: Rural companies, government officials, and residents interested in bringing better broadband to your communities should to participate in Rural Utilities Service webinars to learn about the funding opportunity provided by the Broadband ReConnect Program.

**Existing Resources:**

- The American Rescue Plan included \$350 billion in State and Local Fiscal Recovery Funds, administered by the Department of the Treasury, which can be used to provide broadband affordability and deployment programs to respond to the negative economic impacts of the pandemic and to meet the necessary investments to expand affordable access to broadband. See more [here](#).
- Broadband deployment projects and digital connectivity projects are eligible uses for funding from the \$10 billion Capital Projects Program, administered by the Department of the Treasury and funded by the American Rescue Plan. Each State has been allocated more than \$100 million under that program, each Territory has been allocated more than \$14 million, and each Tribal government has been allocated \$167,000 under that program. See more [here](#).
- The Broadband ReConnect Program at the Department of Agriculture, is accepting applications, through February 22, 2022, for \$1.15 billion in grants and loans for broadband deployment in rural areas. See [here](#) for more information.



Program Name	Agency Name	Funding Amount
Broadband Equity, Access, And Deployment Program	Department of Commerce	\$42,450,000,000
Affordable Connectivity Program	Federal Communications Commission	\$14,200,000,000
Tribal Broadband Connectivity Program	Department of Commerce	\$2,000,000,000
Distance Learning, Telemedicine, And Broadband Program: Recon	Department of Agriculture	\$1,926,000,000
State Digital Equity Planning Grant	Department of Commerce	\$60,000,000
State Digital Equity Capacity Grant	Department of Commerce	\$1,440,000,000
State Digital Equity Competitive Grant	Department of Commerce	\$1,250,000,000
Middle Mile Grants Program	Department of Commerce	\$1,000,000,000
Distance Learning, Telemedicine, And Broadband Program: Broadb	Department of Agriculture	\$74,000,000
Affordable Connectivity Program - Outreach Grants	Federal Communications Commission	TBD
Broadband Deployment Locations Map	Federal Communications Commission	\$10,000,000
Denali Commission Broadband Funding	Denali Commission	\$250,000
TOTAL - BROADBAND		\$64,410,250,000



APPENDIX K:

Funding Highlights – Delaware Estimates (FY 2022-2026)

K. APPENDIX K: Funding Highlights – Delaware Estimates (FY 2022-2026)

The following pages summarize five-year formula funding estimates and related benefits for the state of Delaware based on details compiled by USDOT *State by State Fact Sheets Highlighting Benefits of the Bipartisan Infrastructure Law* (BIL), also referred to as the Infrastructure Investment and Jobs Act (IIJA).

The attached details were last updated on April 11, 2022.

Future updates may be referenced online at:

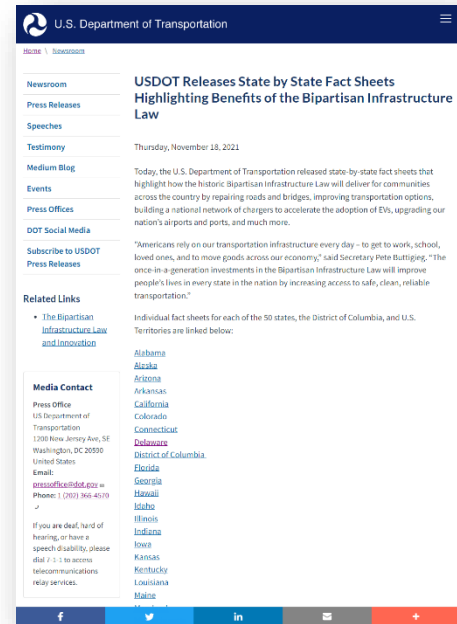
<https://www.transportation.gov/briefing-room/bipartisan-infrastructure-law-will-deliver-delaware>.

Note that funding apportionments, project specific obligations, and competitive grant candidate interests are all subject to change as part of broader ongoing transportation planning and programming efforts. Refer to DelDOT and the Delaware Department of Finance for updates. As a sample set of state-specific estimates, apportionments to Delaware for fiscal year (FY) 2022 are summarized below.

Exhibit K1: Federal-Aid Highway Program Apportionments to Delaware (FY 2022)

Federal-Aid Highway Program	FY 2022 Delaware Apportionment
National Highway Performance Program	\$ 120,040,689
Surface Transportation Block Grant Program	\$ 58,398,173
Highway Safety Improvement Program	\$ 12,386,467
Railway Highway Crossings Program	\$ 1,225,000
Congestion, Mitigation & Air Quality Program	\$ 12,706,466
Metropolitan Program	\$ 2,350,707
National Highway Freight Program	\$ 5,866,504
Carbon Reduction Program	\$ 5,207,171
Protect Formula Program	\$ 5,920,926
TOTAL	\$ 224,102,103

Source: USDOT FHWA, *Fiscal Year (FY) 2022 Supplementary Tables – Apportionments Pursuant to the Infrastructure Investment and Jobs Act*, (before post-apportionment set-asides; before penalties; before sequestration), (Classification N4510.864 – Table 1), February 23, 2022, https://www.fhwa.dot.gov/legisregs/directives/notices/n4510864/n4510864_t1.cfm.





U.S. Department of Transportation
Office of Public Affairs
1200 New Jersey Avenue, SE
Washington, DC 20590
www.transportation.gov/newsroom

News

The Bipartisan Infrastructure Law Will Deliver for Delaware

President Biden and Vice President Harris's Bipartisan Infrastructure Law is the largest long-term investment in our infrastructure and competitiveness in nearly a century. **The need for action in Delaware is clear, and recently released state-level data demonstrates that the Bipartisan Infrastructure Law will deliver for Delaware.** For decades, infrastructure in Delaware has suffered from a systemic lack of investment. The historic Bipartisan Infrastructure Law will make life better for hundreds of thousands of Delaware residents, create a generation of good-paying union jobs and economic growth, and position the United States to win the 21st century.

Specifically, with regard to transportation, the Bipartisan Infrastructure Law will:

Repair and rebuild our roads and bridges with a focus on climate change mitigation, resilience, equity, and safety for all users, including cyclists and pedestrians. In Delaware there are 19 bridges and over 253 miles of highway in poor condition. Since 2011, commute times have increased by 5% in Delaware, and on average, each driver pays \$456 per year in costs due to driving on roads in need of repair. The Bipartisan Infrastructure Law is the single largest dedicated bridge investment since the construction of the interstate highway system. **Based on formula funding alone, Delaware would expect to receive approximately \$1.4 billion over five years in Federal highway formula funding for highways and bridges.** On an average annual basis, this is about 33.4% more than the State's Federal-aid highway formula funding under current law (1). Delaware can also compete for the \$15.77 billion Bridge Investment Program for economically significant bridges and \$15 billion of national funding in the law dedicated to megaprojects that will deliver substantial economic benefits to communities. Delaware can also expect to receive approximately \$27 million over five years in formula funding to reduce transportation-related emissions, in addition to about \$31 million over five years to increase the resilience of its transportation system (2). States may also apply federal aid dollars towards climate resilience and safety projects.

Improve the safety of our transportation system. The Bipartisan Infrastructure Law invests \$13 billion over the Fixing America's Surface Transportation (FAST) Act levels directly into improving roadway safety. Over five years, Delaware will receive approximately \$15 million in 402 formula funding for highway safety traffic programs, which help states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes. On an average annual basis, this represents about a 29% increase over FAST Act levels (3). Local and tribal governments in Delaware will also be eligible to compete for \$6 billion in

funding for a new **Safe Streets for All program** which will provide funding directly to these entities to support their efforts to advance “vision zero” plans and other improvements to reduce crashes and fatalities, especially for cyclists and pedestrians. In addition, Delaware can expect to receive approximately \$9.2 million over five years in funding to augment their commercial motor vehicle (CMV) safety efforts to reduce CMV crashes through the Federal Motor Carrier Safety Administration’s Motor Carrier Safety Assistance Program (MCSAP) formula grant. This represents about a 56% increase in funding compared to FAST Act levels (4). Delaware will be able to apply for funds to modernize data collection systems to collect near real time data on all reported crashes, including fatal ones, to enhance safety and to allow the Department to understand and address trends as they are identified.

Improve healthy, sustainable transportation options for millions of Americans. Delawareans who take public transportation spend an extra 87% of their time commuting and non-White households are 3.7 times more likely to commute via public transportation. 10% of transit vehicles in the state are past useful life. **Based on formula funding alone, Delaware would expect to receive about \$186 million over five years under the Bipartisan Infrastructure Law to improve public transportation options across the state (5). In the first year, this represents about a 36% increase over 2021 FAST Act formula transit funding levels.**

Build a network of EV chargers to facilitate long-distance travel and provide convenient charging options. The U.S. market share of plug-in electric vehicle (EV) sales is only one-third the size of the Chinese EV market – in 2020, plug-in electric vehicles made up only 2.3% of new car sales in the U.S., compared to 6.2% in China. The President believes that must change. The law invests \$7.5 billion to build out the first-ever national network of EV chargers in the United States and is a critical element in the Biden-Harris Administration’s plan to accelerate the adoption of EVs to address the climate crisis and support domestic manufacturing jobs. **Under the Bipartisan Infrastructure Law, Delaware would expect to receive about \$18 million over five years to support the expansion of an EV charging network in the state (6). Delaware will also have the opportunity to apply for grants out of the \$2.5 billion available for EV charging.**

Modernize and expand passenger rail and improve freight rail efficiency and safety. The Bipartisan Infrastructure Law includes \$102 billion to eliminate the Amtrak maintenance backlog, modernize the Northeast Corridor, and bring world-class rail service to areas outside the northeast and mid-Atlantic. Within these totals, \$41 billion would be provided as grants to Amtrak, \$43.5 billion for Federal-State Partnership for Intercity Passenger Rail Grants for intercity rail service, including high-speed rail. On top of this, Delaware will be eligible to compete for \$10 billion for rail improvement and safety grants and \$5.5 billion for grade crossing safety improvements.”

Improve our nation’s airports. The United States built modern aviation, but our airports lag far behind our competitors. **Under the Bipartisan Infrastructure Law, airports in Delaware would receive approximately \$6 million for infrastructure development for airports over five years (7).** This funding will address airside and landside needs at airports, such as improving runways, taxiways and airport-owned towers, terminal development projects, and noise reduction projects. In addition, \$5 billion in discretionary funding is available over five years for airport terminal development projects that address the aging infrastructure of our nation’s airports, including projects that expand accessibility for persons with disabilities, improve access for historically disadvantaged populations, improve energy efficiency, and improve airfield safety.

State and local governments can look forward to these new & expanded competitive grant programs in the Bipartisan Infrastructure Law (BIL) anticipated to launch over the course of the next year:

- **Safe Streets for All (\$6B, new)** – This program will provide funding directly to local and tribal governments to support their efforts to advance “vision zero” plans and other improvements to reduce crashes and fatalities, especially for cyclists and pedestrians.
- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants (\$15B, expanded)** – RAISE grants support surface transportation projects of local and/or regional significance.
- **Infrastructure for Rebuilding America (INFRA) Grants (\$14B, expanded)** – INFRA grants will offer needed aid to freight infrastructure by providing funding to state and local government for projects of regional or national significance. The BIL also raises the cap on multimodal projects to 30% of program funds.
- **Federal Transit Administration (FTA) Low and No Emission Bus Programs (\$5.6B, expanded)** – BIL expands this competitive program which provides funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities.
- **FTA Buses + Bus Facilities Competitive Program (\$2.0B, expanded)** – This program provides competitive funding to states and direct recipients to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities.
- **Capital Investment Grants (CIG) Program (\$23B, expanded)** – The BIL guarantees \$8 billion, and authorizes \$15 billion more in future appropriations, to invest in new high-capacity transit projects communities choose to build.
- **Federal Aviation Administration (FAA) Terminal Program (\$5B, new)** – This discretionary grant program will provide funding for airport terminal development and other landside projects.
- **MEGA Projects (\$15B, new)** – This new National Infrastructure Project Assistance grant program will support multi-modal, multi-jurisdictional projects of national or regional significance.
- **Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Program (\$8.7B, new)** – PROTECT will provide \$7.3 billion in formula funding to states and \$1.4 billion in competitive grants to eligible entities to increase the resilience of our transportation system. This includes funding for evacuation routes, coastal resilience, making existing infrastructure more resilient, or efforts to move infrastructure to nearby locations not continuously impacted by extreme weather and natural disasters.
- **Port Infrastructure Development Program (\$2.25B, expanded)** – BIL will increase investment in America’s coastal ports and inland waterways, helping to improve the supply chain and enhancing the resilience of our shipping industry. BIL overall doubles the level of investment in port infrastructure and waterways, helping strengthen our supply chain and reduce pollution.
- **5307 Ferry Program (\$150M, existing)** – BIL retains the \$30 million per year passenger ferry program for ferries that serve urbanized areas.
- **Electric or Low Emitting Ferry Program (\$500M, new)** – This competitive grant program will support the transition of passenger ferries to low or zero emission technologies.

- **Rural Ferry Program (\$2B, new)** – This competitive grant program will ensure that basic essential ferry service continues to be provided to rural areas by providing funds to States to support this service.
- **Federal Highway Administration (FHWA) competitive grants for nationally significant bridges and other bridges (\$15.77B, new)** – This new competitive grant program will assist state, local, federal, and tribal entities in rehabilitating or replacing bridges, including culverts. Large projects and bundling of smaller bridge projects will be eligible for funding.
- **FTA All Station Accessibility Program (\$1.75B, new)** – This competitive grant program will provide funding to legacy transit and commuter rail authorities to upgrade existing stations to meet or exceed accessibility standards under the Americans with Disabilities Act.
- **Charging and fueling infrastructure discretionary grants (Up to \$2.5B, new)** – This discretionary grant program will provide up to \$2.5 billion in funding to provide convenient charging where people live, work, and shop.
- **Reconnecting Communities Pilot Program (\$1B, new)** – This new competitive program will provide dedicated funding to state, local, MPO, and tribal governments for planning, design, demolition, and reconstruction of street grids, parks, or other infrastructure.
- **FHWA Nationally Significant Federal Lands and Tribal Projects (\$1.78B, expanded)** – This discretionary program provides funding for the construction, reconstruction, and rehabilitation of nationally-significant projects within, adjacent to, or accessing Federal and tribal lands. BIL amends this program to allow smaller projects to qualify for funding and allows 100% federal share for tribal projects.
- **Strengthening Mobility and Revolutionizing Transportation (SMART) Grant Program (\$1B, new)** – The SMART Grant program will be a programmed competition that will deliver competitive grants to states, local governments, and tribes for projects that improve transportation safety and efficiency.
- **Rural Surface Transportation Grant Program (\$2B, new)** – This new competitive grant program will improve and expand surface transportation infrastructure in rural areas, increasing connectivity, improving safety and reliability of the movement of people and freight, and generate regional economic growth.

- (1) *These values are estimates and may change based on updated factor data each fiscal year.*
- (2) *These values are estimates and may change based on updated factor data each fiscal year.*
- (3) *These values are estimates based on the 2020 FHWA public road mileage data for FYs 2022-2026. Formula funding amounts in FYs 2023-2026 are subject to change as a result of the annual public road mile data certified by FHWA. The 402 amounts do not include redistribution of unawarded 405 balances per 23 USC § 405(a)(8) as that information is unknown at this time. The Bipartisan Infrastructure Law specifies NHTSA must distribute the supplemental appropriations for Section 402 in “equal amounts for each fiscal year 2022 through 2026”. This analysis is subject to provisions of FY 2022-FY2026 appropriations acts.*
- (4) *These values are estimates and may change based on updated factor data each fiscal year.*
- (5) *Transit formula funding amounts are subject to changes resulting from the 2020 census or from annual transit service data reported to FTA’s National Transit Database.*
- (6) *These values are estimates and may change based on updated factor data each fiscal year.*
- (7) *Precise allocations would change each year because the formulas use current passenger boarding and cargo data, and this estimate is based on 2019 data.*



APPENDIX L:

Delaware Freight Investment Plan for NHFP Funding

Updated July 2024

L. APPENDIX L: Delaware Freight Investment Plan for NHFP Funding

As part of the overall 2022 Delaware State Freight Plan, the table on the following page represents the current Delaware Freight Investment Plan for National Highway Freight Program (Z460) Funding with projected expenditures through **FY 2028**.



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Delaware Freight Investment Plan for National Highway Freight Program (Y460) Funding

Updated 07/24/24

Item #	Project #	Project	Phase	Ratio	FY	Federal NHFP Funding	Non-Federal Funding	Total Expenditures
1.0	T200601102	SR 72, MCCOY ROAD TO SR 71	Con	80/20	2023	6,311,560	1,577,890	7,889,449
					2024	3,053,858	763,465	3,817,323
					Project Sub-total	9,365,418	2,341,354	11,706,772
2.0	T201611902	US 40, SALEM CHURCH ROAD TO WALTHER ROAD	Con	100/0	2023	-	-	-
					2024	6,963,054	-	6,963,054
					2025	4,000,000	-	4,000,000
					2026	6,176,909	-	6,176,909
					2027	3,125,420	-	3,125,420
					Project Sub-total	20,265,383	-	20,265,383
3.0	T201500202	HEP KC, US13 LOCHMEATH WAY TO PUNCHEON RUN CONNECTOR	Con	100/0	2024	-	-	-
					2025	2,101,069	-	2,101,069
					2026	-	-	-
					2027	2,669,000	-	2,669,000
					2028	5,750,100	-	5,750,100
					Project Sub-total	10,520,169	-	10,520,169

Funding Summary (All Projects)					Annual NHFP Apportionments	Unused NHFP Balance at End of FY
		FY	Federal NHFP Funding	Non-Federal Funding	Total Expenditures	
		2023*	6,311,560	1,577,890	7,889,449	5,864,157
		2024*	10,016,912	763,465	10,780,377	10,016,912
		2025	6,101,069	-	6,101,069	6,101,069
		2026	6,176,909	-	6,176,909	6,223,091
		2027	5,794,420	-	5,794,420	5,749,174
		2028	5,750,100	-	5,750,100	5,749,174
Overall 2023 - 2028			40,150,970	2,341,354	42,492,324	39,703,577

*Total NHFP funding amounts include the annual NHFP apportionment, plus unused NHFP funding carried over previous years