Dover Freight Plan

Final Report

April 2025

This final was endorsed by the following:

Dover City Council, February 10, 2025
Dover Kent County MPO Public Advisory Council (PAC), February 13, 2024
Dover Kent County MPO Technical Advisory Council (TAC), February 18, 2024
Dover Kent County MPO Council, March 12, 2024

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Executive Summary

Statewide freight plans are required by the Federal Highway Administration (FHWA) and the *Delaware State Freight Plan* of 2022 recommended DelDOT undertake local planning support initiatives. Local freight planning support includes utilizing DelDOT municipal assistance for tasks available within statewide planning contracts, along with similar MPOs within the state.

The importance of local freight planning cannot be overstated; 36% of employees in Kent County work in a Freight-Intensive Sector (Delaware State Freight Plan). Therefore, focused on the City of Dover, this report assists in identifying and addressing local freight movement concerns of both freight operators and members of the community within the freight network in addition to evolving freight movement patterns as e-commerce grows.

Namely, the core objectives of this report are as follows:

- Increase collaboration among government and industry stakeholders to address freight issues and concerns.
- Build upon previous freight planning efforts.
- Identify freight movement issues and develop recommendations to help protect, manage, and accommodate freight activity in the city of Dover.

To achieve these objectives, a process was developed to both ascertain the existing conditions of the study area as well as the needs and desires of the freight operators and communities they operate within. This process was characterized by the following work tasks:

- Coordinating monthly check-in calls with the project team.
- Establishing a public/stakeholder engagement framework.
- Assess the existing conditions utilizing applicable information and recommendations from prior and ongoing relevant planning efforts and historical knowledge of the study area informed by both the WILMAPCO and the Dover/Kent County MPO to gather additional freight-specific data for the study area,
    - Reviewal of current land use and development regulations in the city of Dover (I.e., zoning code, land subdivision regulations) as they relate and apply to freight- and rail-related land uses, freight movement, and freight parking.
    - A site visit to conduct parking counts and locations frequently used for truck parking; truck routes were also observed and documented, signage and geometric issues were also photographed and documented.
- Upon completion of assessment, this final report was engendered to convey both the analysis findings and the associated recommendations.

Those recommendations are summarized by the table below:

Dover Freight Plan Recommendations			
Category	**Recommendation**	**Description**	**Responsible Parties**
Development Review & Regulations	1A: Adopt truck parking requirements	Adopt development regulations requiring developers to provide truck parking/staging as part of manufacturing, warehouse, and logistics developments.	City of Dover
	1B: Implement freight considerations checklist	Incorporate freight-specific planning considerations checklist into development review processes.	Development review entities at all government levels
Land Use Planning	2A: Protect existing freight-intensive development opportunities along truck routes.	Preserve opportunities for freight-intensive development in appropriate locations by protecting parcels currently zoned for freight-generating uses along Dover's existing and future truck routes from rezoning.	City of Dover and Kent County
	2B: Create opportunities for freight-intensive development along Dover's truck routes.	Create opportunities for freight-intensive development in appropriate locations by pursuing rezoning for suitable parcels not presently zoned for freight-intensive uses along Dover's existing and future truck routes.	City of Dover and Kent County
Communication & Coordination	3A: Improve intergovernmental coordination.	Improve communication and coordination between local, county, and state government and MPO regarding freight-related land development and transportation projects.	City of Dover, Kent County, State of Delaware
	3B: Improve stakeholder coordination.	Improve engagement with local freight operators to better address their needs during planning processes.	City of Dover, Kent County, State of Delaware
	3C: Revisit *Dover Air Cargo Freight Access Study* recommendations.	Revisit the *Dover Air Cargo Freight Access Study – Planning and Environmental Linkage (PEL) Report* (2021) to determine if recommendations need to be adjusted based on leasing activity at Garrison Oak Business and Technology Center.	Dover Kent MPO, City of Dover, Kent County, State of Delaware

1 Introduction and Background

1.1 STUDY AREA, SCOPE, PROJECT SPONSOR, AND STUDY TEAM

The study area is the City of Dover. However, some recommendations also apply to Kent County. Broadly, the methodology and recommendations included in this report may be worth consideration by other municipalities in the State of Delaware that are interested in integrating freight planning with their comprehensive planning process.

The study sponsor is the Delaware Department of Transportation (DelDOT). The study team consisted of representatives from the Delaware Department of Transportation (DelDOT), Dover/Kent County Metropolitan Planning Organization (Dover Kent MPO), City of Dover, and the study consultant Whitman, Requardt and Associates, LLP.

The scope of this planning effort was as follows:

- Confirm the scope of work, project limits, deliverables, and schedule with the study team.
- Hold monthly coordination meetings with the study team.
- Perform a desktop analysis to document the existing conditions.
- Prepare study area project mapping using readily available geospatial data.
- Conduct targeted outreach to city staff, public agencies, and industry stakeholders such as Dover Air Force Base, Central Delmarva Railroad, and local freight-related companies.
- Conduct a site visit to document on street truck parking.
- Develop preliminary recommendations.
- Prepare for and conduct a public workshop to present preliminary recommendations. Adjust the recommendations based on feedback received.
- Prepare a final report to document the findings.

1.2 PLANNING CONTEXT

This planning effort was undertaken as part of DelDOT's local freight planning support initiative, which is identified as a short-term (1–4 years) implementation task in the *2022 Delaware State Freight Plan*.[1] The purpose of this initiative is to assist municipalities in identifying and addressing localized freight issues, including:

- Safety and speed management
- Truck routing, signage, and guidance
- Comprehensive planning
- Truck parking and staging
- Curb management
- Freight environmental impacts
- Development regulations for freight facilities
- Community quality-of-life issues

1.3 OBJECTIVES

The objectives of this planning effort are to:

1. Increase collaboration among government and industry stakeholders to address freight issues and concerns.
2. Build upon previous freight planning efforts.
3. Identify freight movement issues and develop recommendations to help protect, manage, and accommodate freight activity in Dover.

This plan is intended to be a resource for the City of Dover and DelDOT as they address freight issues and needs in planning and development review processes.

1.4 STUDY METHODOLOGY

This plan was developed using the following methods:

- Review of prior relevant planning efforts.
- Documentation and mapping of existing and anticipated future conditions.
- Obtaining stakeholder input via one-on-one interviews, an industry roundtable, and phone surveys.
- Development of recommendations based on analysis of existing conditions, findings informed by previous planning efforts, and feedback from stakeholders.
- Obtaining public input via public workshop and surveying.

[1] Delaware Department of Transportation, *2022 Delaware State Freight Plan* (Dover, Delaware: Delaware Department of Transportation, 2022), page 6-18, https://deldot.gov/Business/freight/pdfs/2022/2022%20Delaware%20State%20Freight%20Plan%20Full.pdf.

1.5 PRIOR RELEVANT PLANNING EFFORTS

This section includes an overview of prior planning efforts that relate to freight. A summary of additional plans that were reviewed in the preparation of this document, such as the 2019 Dover Comprehensive Plan, are included in Appendix A.

1.5.1 2022 Delaware State Freight Plan

The *2022 Delaware State Freight Plan* "assesses freight transportation system details, needs, and opportunities in order to identify key projects, strategies, and other planning-related actions that will maximize the efficiency and reliability of Delaware's current and projected freight transportation networks…"[2] As noted above, the *State Freight Plan* recommended local freight planning as a short-term implementation task.

The *State Freight Plan* will be updated in 2026 based on federal requirements for state freight plans as revised under the 2021 Infrastructure Investment and Jobs Act (IIJA) and as detailed per 49 U.S.C. §70202(e).

1.5.2 Delaware First/Final Mile Freight Network Development Final Report (August 2021)

The *Delaware First/Final Mile Freight Network Development Final Report* presents an inventory of road segments in Delaware that serve as first/final mile (FFM) freight connectors. FFM freight connectors are road or street segments that connect mainline freight routes with freight handling facilities. Notable clusters of activity are usually found near manufacturing facilities, retail centers, distribution centers, warehouses, ports, intermodal terminals, and farms. Study results include a data-driven screening of a state-specific first/final mile roadway network, coupled with an evaluation of potential needs and issues based on five major categories of consideration: institutional, land use, mobility, safety, and condition. Planning recommendations included guidance and support for policies, partnerships, projects, and programs that would help to prioritize and improve the network.

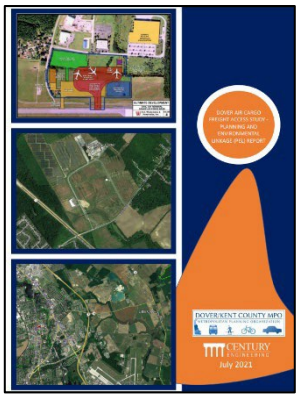
[2] Delaware Department of Transportation, *2022 Delaware State Freight Plan*, 1–1.

The *Delaware First/Final Mile Freight Network Development Final Report* presents the Protect-Manage-Accommodate (PMA) framework, shown in Table 1, as a strategic lens that can help DelDOT and its planning partners "contextualize and prioritize which freight conflicts they wish to address."[3] This framework may assist DelDOT and Dover in avoiding or mitigating conflicts between freight uses and other land uses as land development and transportation improvements occur.

The PMA framework is a lens through which planners can view the interaction of freight movement and other land uses. It is a foundational concept that can be applied to addressing freight in a range of planning contexts, including the present plan. Recommendations presented in this plan were developed within the PMA framework.

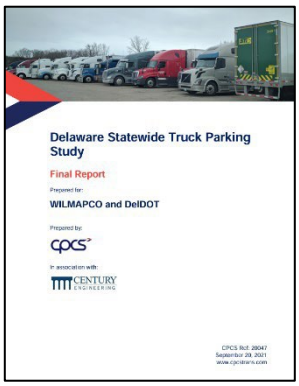
1.5.3 Dover Air Cargo Freight Access Study – Planning and Environmental Linkage (PEL) Report (2021)

This study analyzed potential roadway improvements in the area around the Central Delaware Aviation Complex (CDAC) and the Garrison Oak Business and Technology Center (GOBTC) and made recommendations for improvements to support truck access to these facilities.



1.5.4 Delaware Statewide Truck Parking Study (2021)

This statewide study inventories all truck parking within the state (authorized and unauthorized) and explores needs and methods to improve truck parking availability. Results identify potential information and technology improvements and site-specific truck parking capacity improvements at existing and private sites, other state-owned facilities, and along roadway shoulders.



[3] CPCS, *Delaware First/Final Mile Freight Network Development Final Report*, 2021, 15, http://www.wilmapco.org/freight/First_Final_Mile_Final_Report.pdf.

Table 1. Protect-Manage-Accommodate Framework for Contextualizing Freight Conflicts (adapted from the Delaware First/Final Mile Freight Network Development Final Report)

	"Protect"	"Manage"	"Accommodate"
Definitions	**Protect** freight industries from unreasonable conflicts	**Manage** conflicts in tactical and targeted ways	**Accommodate** freight needs to prevent major issues
Context	Areas where freight industries are dominant; also freight facilities of high importance	Areas where freight and non-freight activities are both significant land uses	Areas where non-freight businesses and/or residential communities are dominant
Examples	Freight clusters Ports, airports, intermodal terminals	Mixed-use areas Freight clusters transitioning to mixed use	Central business districts or small-town downtowns "Stranded" freight facilities (legacy facilities enveloped by communities)
Additional Notes	The focus is thus on accommodating non-freight needs where reasonable, while prioritizing support for the competitiveness and productivity of the area's commercial and industrial base. This can require considerable advance planning to prevent non-industrial activities' encroachment into industrial areas.	A balanced approach reflects the reality that freight industries may impose negative externalities on communities (such as traffic and noise), but these industries may also constitute significant businesses employing many of the people in those same communities. If done well, conflicts can be managed by finding tactical, targeted, and creative solutions rather than merely striving for compromise between competing stakeholders.	The beneficiaries of efficient freight movement are not only transportation companies and large shippers, but also freight receivers such as homes, businesses, and restaurants. These receivers rely on trucks for deliveries of everyday goods. Therefore, ensuring the safety and mobility of all road users, including local trucks, is to everyone's benefit, even in situations where freight mobility is not a prime policy objective.

2 Stakeholder and Public Involvement Process

Public involvement is a process where feedback from various stakeholders is collected and organized to inform decision-making. It is a key component of the planning process; therefore, appropriate identification of internal and external stakeholders early in the study process is essential. Stakeholders in the freight community have historic knowledge and ongoing awareness of the conditions of the study area as well as the needs and desires of the freight community. A public involvement plan provides a framework for how stakeholders interact with both the planning process and decision-makers.

The public involvement plan evolved throughout the project in response to feedback from agency partners and stakeholders, but included the following steps:

- Held a virtual meeting with agency representatives including Dover Kent MPO, City of Dover, and the Kent Economic Partnership (KEP) to confirm the goals and limitations of the project.
- Established a project webpage on DelDOT Interact to share information with stakeholders and the public, including hosting public workshop materials.
- Worked with the agency representatives to identify all relevant stakeholders and ascertain their interest in participating in the study process.
- Determined the best way to collect stakeholder input. Opted to hold individual interviews followed by a Freight Roundtable; these events were held in-person and virtually.
- Held an in-person stakeholder meeting to review preliminary recommendations.
- Held an in-person public open house where a presentation concerning the plan goals, parameters, and background where the public was able to provide feedback about concerns, opportunities, and other observations. All workshop materials were also posted to the project website.
- Presented at the October 27, 2024 Dover City Council Committee of the Whole meeting.
- Presented at the December 11, 2024 Winter Freight Meeting for feedback from agency stakeholders.
- Conducted a public survey with online and in print options. The survey was advertised at the public workshop and City Council meeting and distributed via email to project stakeholders.

2.1 STAKEHOLDER INTERVIEWS

Five individual interviews were conducted in the spring of 2024 with industry stakeholders where existing conditions, ongoing issues, and freight-related concerns were discussed. These interviewees represented the following organizations: Procter & Gamble, Dover Air Force Base (DAFB), Delmarva Central Railroad Company (DCR), Byler's Store, and the Office of State Planning and Coordination (OSPC).

According to these stakeholders there were overarching problems concerning connectivity and mobility across the transportation network, procedural hinderances relating to the development coordination process, and economic constraints. Interviewees also shared their hopes for future freight-operations and facilities. The interviewees and interview dates are included in Appendix B. For more information on the feedback received please see Section 4.1.1.

2.2 FREIGHT ROUNDTABLE

The Freight Roundtable Meeting was held on March 26, 2024, at the Dover Kent MPO Conference Room in Camden to solicit broad feedback on freight issues in the Dover area for both this planning effort and

the East-West Freight Route Feasibility Analysis Phase 2. DelDOT and Dover Kent MPO provided an overview of the goals and objectives of each study before an open discussion with attendees. Appendix C lists the meeting attendees. For more information on the feedback received please see Section 4.1.2

2.3 APPENDIX STAKEHOLDER MEETING

A stakeholder meeting was held on September 9, 2024, at the Dover Public Library to review the preliminary recommendations. DelDOT provided an overview the planning effort and reviewed previously identified challenges and opportunities. This meeting included a presentation showcasing preliminary recommendations. The main objectives of the meeting were as follows:

- Increase collaboration among government and industry stakeholders to address freight issues and concerns.
- Identify freight movement issues and refine recommendations to help protect, manage, and accommodate freight activity in Dover.
- Stakeholders were given the opportunity to discuss potential changes to recommendations as well as additional recommendations and issues to address.

Appendix D lists the meeting attendees. For more information on the feedback received please see Section 4.1.3.

2.4 PUBLIC OPEN HOUSE AND SURVEY

DelDOT held a public Open House on October 29, 2024, at City of Dover City Hall. Public notice of the Open House was posted on the state's public meeting calendar.

Presentation materials were posted on the project website on the day of the workshop to allow those who could not attend the workshop to review the information presented and provide feedback.

The objectives of the public workshop were to:

- Present the study background, existing conditions, and preliminary recommendations.
- Solicit feedback from the public on the preliminary recommendations.

A public survey was conducted in conjunction with the Open House. Printed surveys and a QR code linking to the online survey were available at the Open House and on the project website from October 29, 2024, to November 29, 2024. There were three responses to the survey. The public was also invited to send written comments to DelDOT through November 29, 2024. Appendix E provides an overview of the survey questions and results. For more information on the feedback received please see Section 4.1.4.

2.5 DOVER CITY COUNCIL COMMITTEE OF THE WHOLE MEETING

Following the Public Open House, the project team presented at the Dover City Council Committee of the Whole Meeting. The agenda, meeting packet (this includes the presentation), recording, and minutes from the meeting are available via the City of Dover online calendar.

The project team reviewed the preliminary recommendations with Council. Council members had questions regarding the density of freight traffic, future connections to SR 1, and how to best communicate with freight operators regarding the designated freight routes. None of the comments received resulted in changes to the draft preliminary recommendations.

3 Existing and Anticipated Future Conditions

3.1 LAND USE

Land use planning is central to fostering synergy between social and economic activities by establishing and regulating the appropriate use of a given property through zoning. Since zoning dictates what types of development (e.g. residential, commercial, manufacturing, etc.) can go where, it dictates the parts of the transportation network that freight has to travel. If not properly planned, freight movements and related land uses have the potential to adversely affect the environment, the supply chain, and quality of life for proximate residents.

3.1.1 Future Land Use

Approximately 1,700 acres (approximately 2%) of the city are zoned for Manufacturing (M) or Industrial Park Manufacturing (IPM, IPM-2, IPM-3). This does not include the approximate 2,268-acre Dover Air Force Base (DAFB), which is zoned R-20 (One Family Residential). These zoning categories permit uses that frequently rely on freight to function.

The *Dover 2019 Comprehensive Plan*'s future land uses map is called the Land Development Plan. The Land Development Plan, shown in Figure 1, provides insight into where freight intensive sector (FIS) land uses are likely to remain or expand in the future. The following land use categories can accommodate some types of FIS uses: Active Agriculture, Commercial, Dover Air Force Base, and Industrial & Public Utilities. The distribution of these land use categories has implications for future freight volumes and movement patterns.

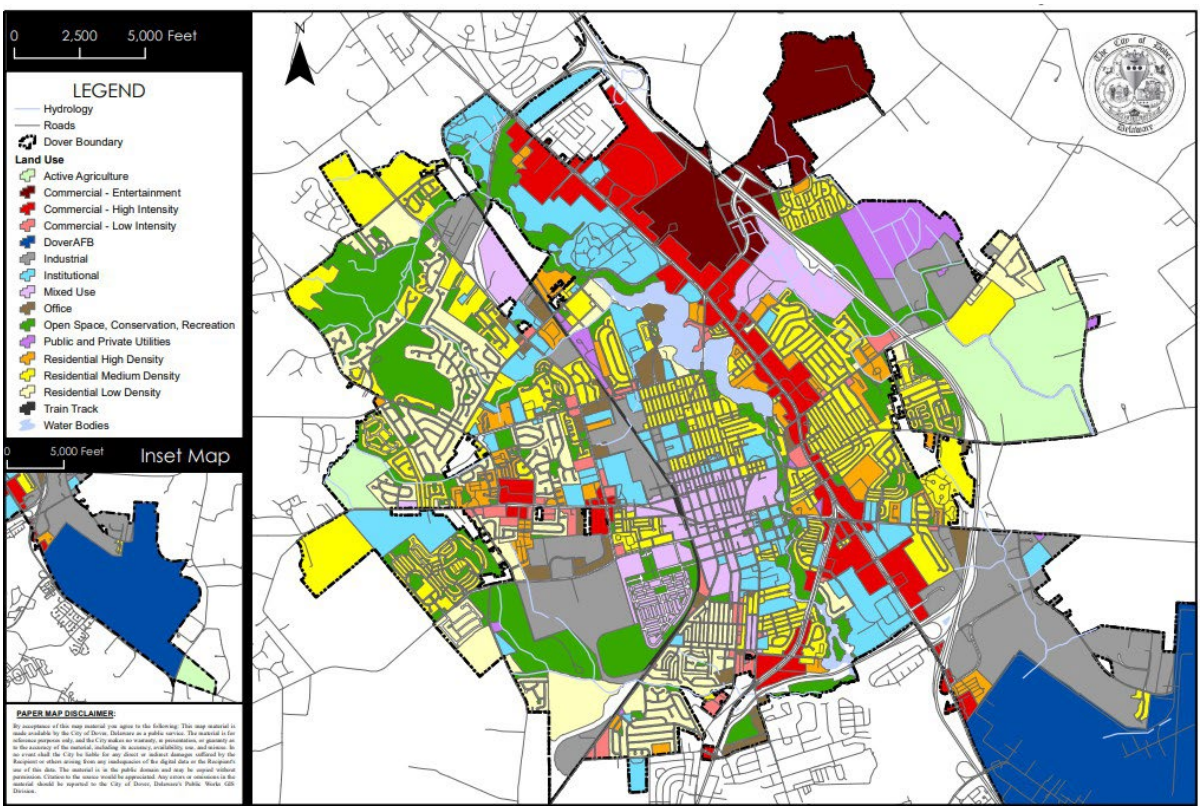


Figure 1. 2019 Proposed Land Development Plan (source: Dover 2019 Comprehensive Plan)

3.1.2 Lands Proposed for Annexation

The 2019 *Dover Comprehensive Plan* identifies parcels that are priorities for annexation and assigns future land use categories to these parcels. As shown in Figure 2, areas near the Central Delaware Aviation Complex (CDAC) and just north of the city along the rail line (including the former Dow Reichhold site, which has rail spurs) are identified for industrial uses. However, there are also areas along the rail line identified for medium-density residential use and mixed use. These uses may result in development that is not compatible with freight rail operations or with industrial development that uses the freight rail, as documented in the August 2022 *Rail Corridor Land Use Study* prepared by Dover Kent MPO and the Kent Economic Partnership.

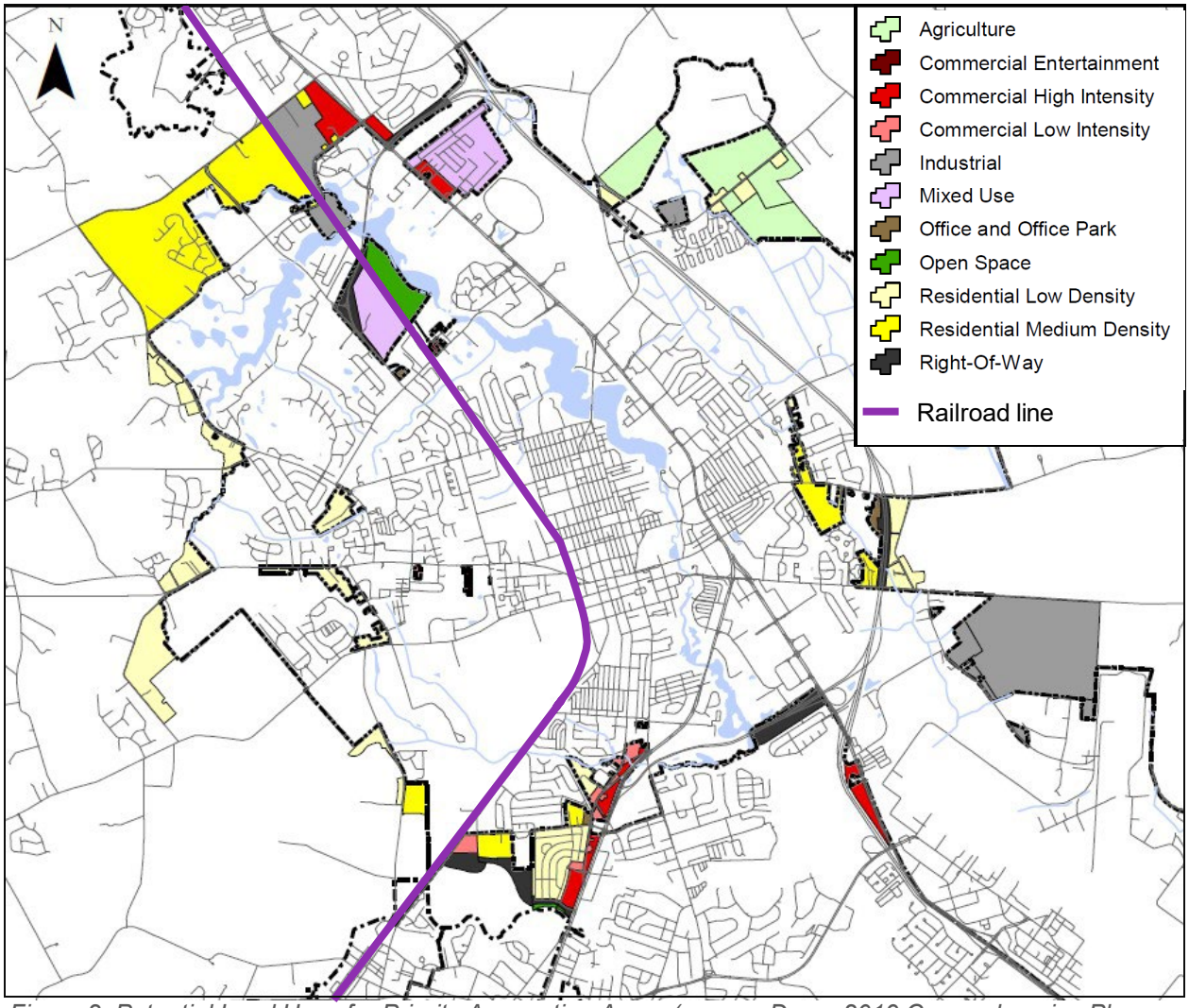


Figure 2. Potential Land Uses for Priority Annexation Areas (source: Dover 2019 Comprehensive Plan Map 13-2) and Delmarva Central Railroad line

3.2 TRANSPORTATION

3.2.1 Freight Routes

National Highway Freight Network

The Federal Highway Administration (FHWA) created the National Highway Freight Network (NHFN) designation "to strategically direct Federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system."[4] The NHFN comprises the following four roadway types:

- Primary Highway Freight System (PHFS): This is a network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measurable and objective national data.
- Other Interstate portions not on the PHFS (non-PHFS): These highways consist of the remaining portion of Interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities.
- Critical Rural Freight Corridors (CRFCs): These are public roads not in an urbanized area which provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.
- Critical Urban Freight Corridors (CUFCs): These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.[5]

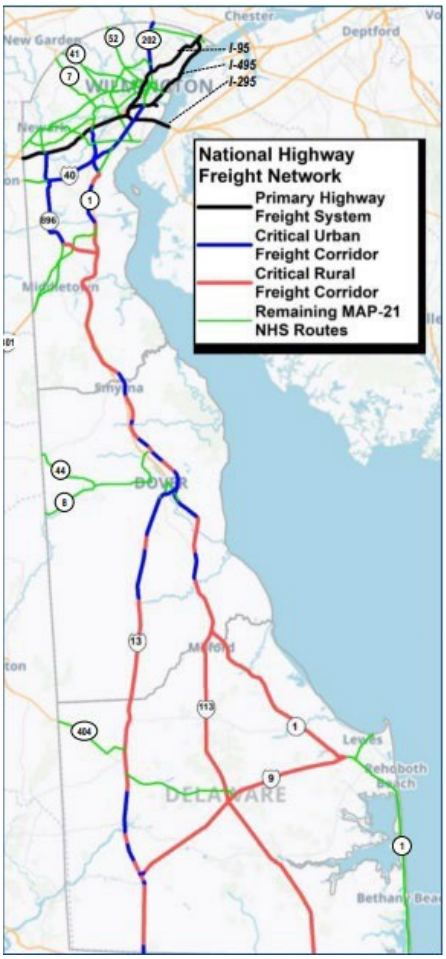


Figure 3. National Highway Freight Network in Delaware

Figure 3 shows the NHFN in the Dover area.

Interim National Multimodal Freight Network

The Delmarva Central Railroad (DCR) is a short line freight railroad on the Interim National Multimodal Freight Network.[6] The main trunk of the DCR is the Delmarva Secondary line, which has an interchange with Norfolk Southern Railroad in Porter, Delaware. As shown in Figure 2, the Delmarva Secondary line runs north-south through west Dover, with spurs connecting to the industrial parcels (Kraft-Heinz, Procter & Gamble, DCO Energy) on the southwest corner of the US 15-P.O.W./M.I.A. Parkway intersection.

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[4] U.S. Department of Transportation Federal Highway Administration, "National Highway Freight Network," FHWA Operations, July 12, 2023, https://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm.
[5] Ibid.
[6] U.S. Department of Transportation, "Interim National Multimodal Freight Network State Maps and Tables," U.S. Department of Transportation, September 11, 2019, https://www.transportation.gov/freight/INMFNTables.

The *2022 Delaware State Freight Plan* identifies the Delmarva Secondary line as an area of opportunity to expand the usage of short line rail in Delaware.[7]

Delaware First/Final Mile Freight Network

The *2022 Delaware State Freight Plan* notes that FFM freight connectors are among the road segments most likely to be affected by roadway deterioration due to heavy truck traffic. The plan identifies several avenues through which DelDOT can better coordinate with other public sector agencies to identify where improvements are needed on the FFM freight network. One avenue is to provide municipal freight planning support to "assist towns with determining routes that are appropriate for heavy vehicles."[8]

Figure 4 shows FFM freight connectors in Dover as identified by the *Delaware First/Final Mile Freight Network Development Final Report*. To provide context for the FFM freight connectors, the map also shows freight-intensive land uses as depicted in the *Dover 2019 Comprehensive Plan*.

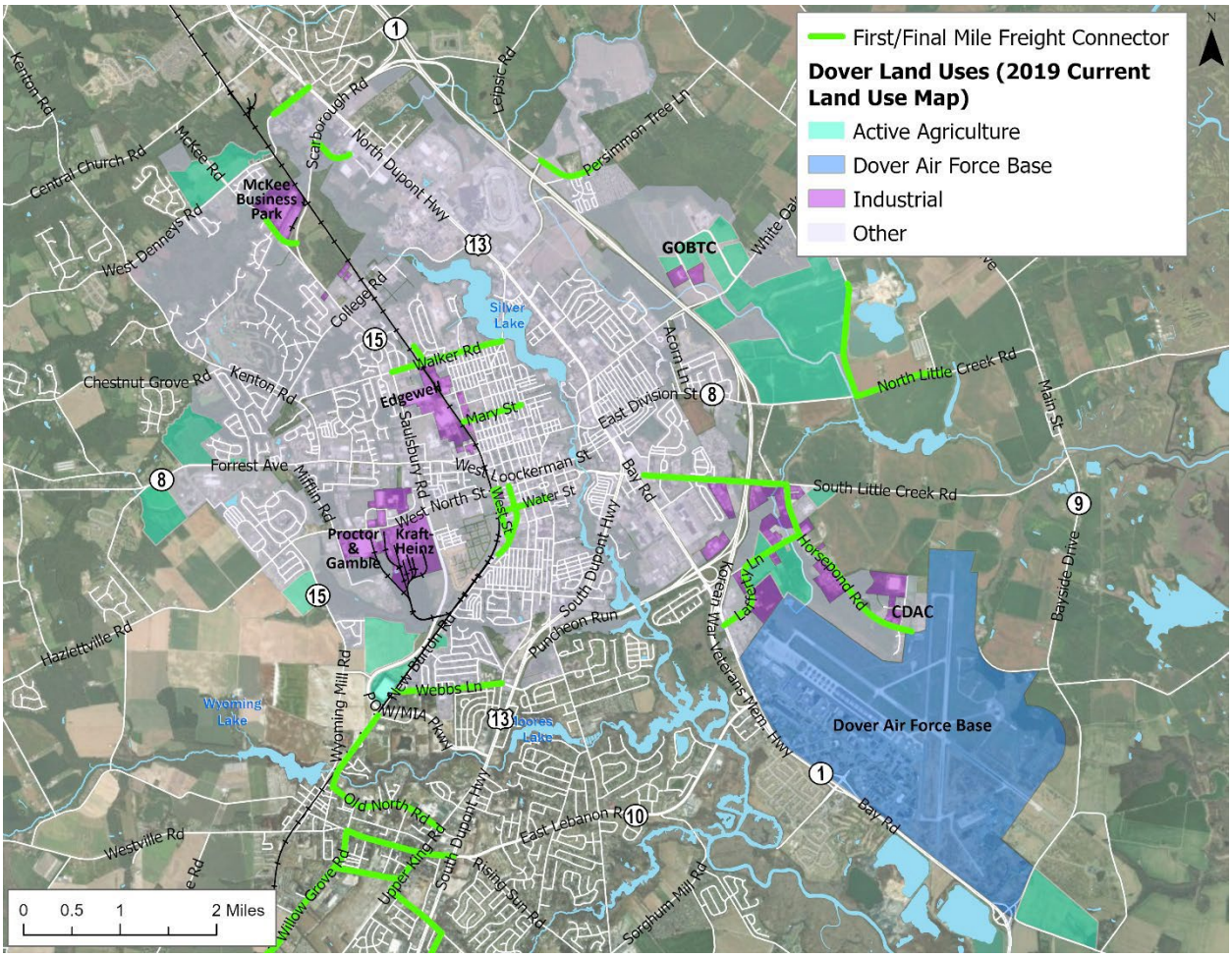

Figure 4. First/Final Mile Freight Connectors and freight intensive land uses

[7] Delaware Department of Transportation, *2022 Delaware State Freight Plan*, page 4-8.
[8] Ibid., D-10.

Locally Designated Truck Routes

Dover also has locally designated truck routes. Chapter 106, Article III, §106-17 of the Dover Code of Ordinances identifies the routes. Commercial vehicles with three or more axles cannot operate on any city streets other than the designated truck routes unless they are making local deliveries or pickups, or if another exception listed in §106-17(c) is applicable.

In February 2024, Dover City Council approved an ordinance to revise the city's designated truck routes. The revised truck routes are shown in Figure 5.

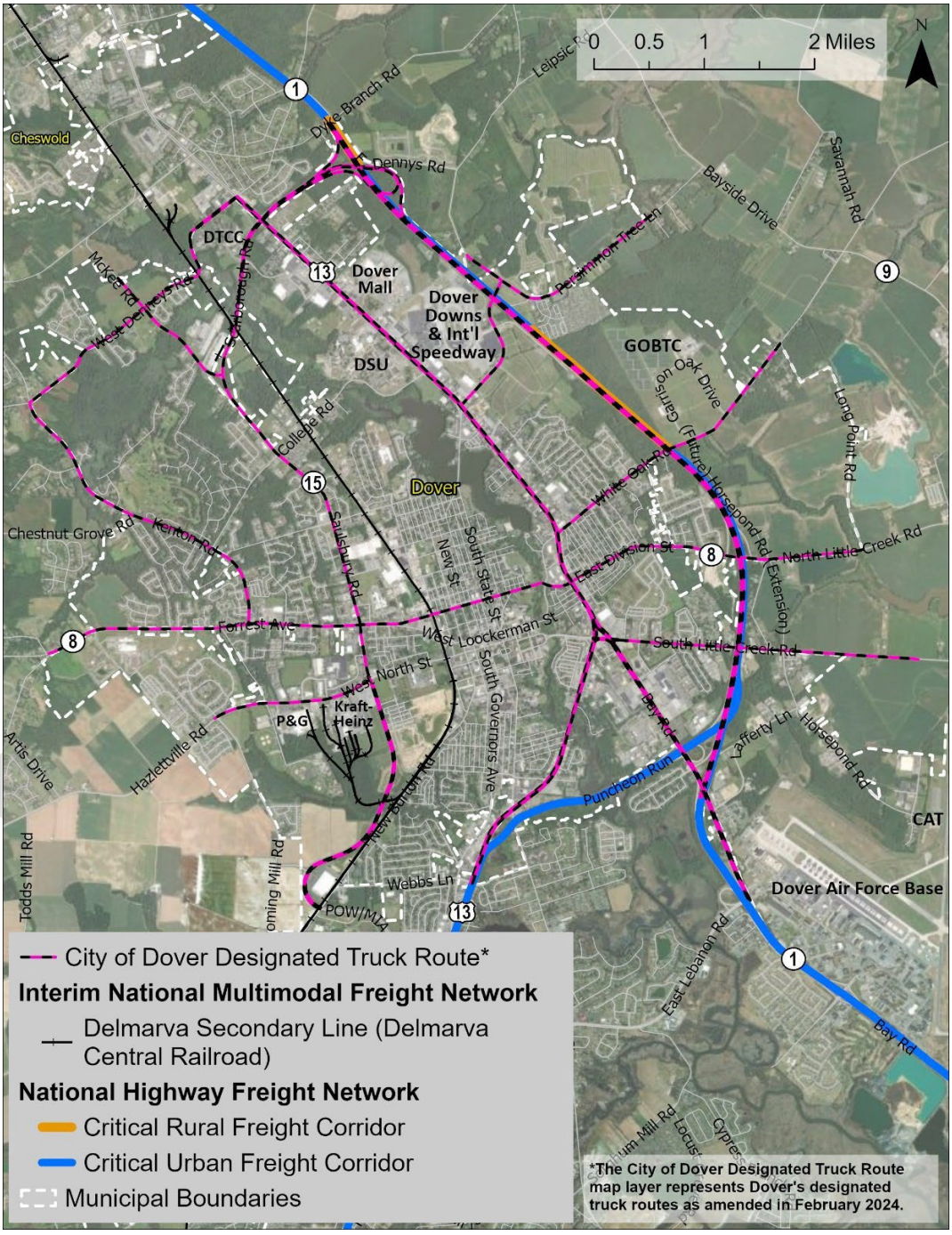

Figure 5. Freight network in Dover Area.

Freight Rail

The Delmarva Central Railroad short line freight rail line runs north-south through western Dover. Kraft-Heinz and Delmarva Corrugated Packaging use DCR's freight rail service via the sidings on their property. Other companies including Procter & Gamble have sidings on their property that they no longer use.

There are several other large parcels zoned for manufacturing or industrial park manufacturing along the DCR line that do not have sidings. These parcels can be seen in Figure 1 and Figure 2. These parcels are interspersed with parcels zoned and developed for residential use. The proximity between residential and industrial land uses can lead to complaints by residents regarding industrial and freight impacts such as noise and emissions, which makes it more challenging for industrial firms to continue operating or new industrial developments to be approved. Dover Kent MPO's 2018 *Rail Zoning Study* and 2022 *Rail Corridor Land Use Study* recommends preserving parcels zoned for FIS uses along the DCR line and creating a minimum setback for non-FIS uses along the DCR line. These actions are recommended to minimize conflict between non-FIS uses, minimize conflict between FIS uses and the rail line itself, and to preserve opportunities for future expansion of freight-rail-supported uses.

Dover and Kent County have an interest in preserving rail freight operations and rail-freight-supported development opportunities because rail freight has several benefits over truck freight, such as reducing truck traffic, greenhouse gas emissions, and wear and tear on roadways.[9] To that end, the 2022 *Rail Corridor Land Use Study* also identifies parcels that are potentially suitable for freight-rail-supported uses in Appendix B of that document.

3.2.2 Traffic Volumes and Congestion

Prior DelDOT planning efforts and analysis has identified congestion hotspots in Dover for automobile traffic in general and freight trucks in particular. The 2021 Kent County Transportation Operations Management Plan (TOMP) identifies Dover as one of three congestion "hotspots" in the county; Camden and northern Milford are the other two hotspots. The TOMP defines congestion hotspots as areas where congestion keeps drivers from reaching their destinations on time. Figure 6, from the TOMP, shows intersections with LOS D or lower and congested corridors in Dover. Table 2 provides a key to the numbers 1–5 shown in Figure 6. These numbers correspond to actions (either in the pipeline or recommended) to mitigate congestion in the hotspot.[10]

[9] Reed Macmillan, Mike Ward, and Catherine Samardza, *Dover/Kent County Metropolitan Planning Organization Rail Zoning Study: An Assessment of Municipal Comprehensive Plans and Future Land Uses for Rail Freight Related Manufacturing/Employment Centers in Kent County, Delaware* (Camden, Delaware: Dover/Kent County MPO, 2018), 19, https://doverkentmpo.delaware.gov/files/2018/11/Final-Rail-Study-November-14-NOV-18-FINAL-version.pdf.

[10] Rybinski Engineering and Delaware Department of Transportation, *Kent County Transportation Operations Management Plan Report* (Dover, Delaware: Delaware Department of Transportation, 2021), 16, https://deldot.gov/Programs/itms/pdfs/Kent-County-TOMP-Report.pdf.

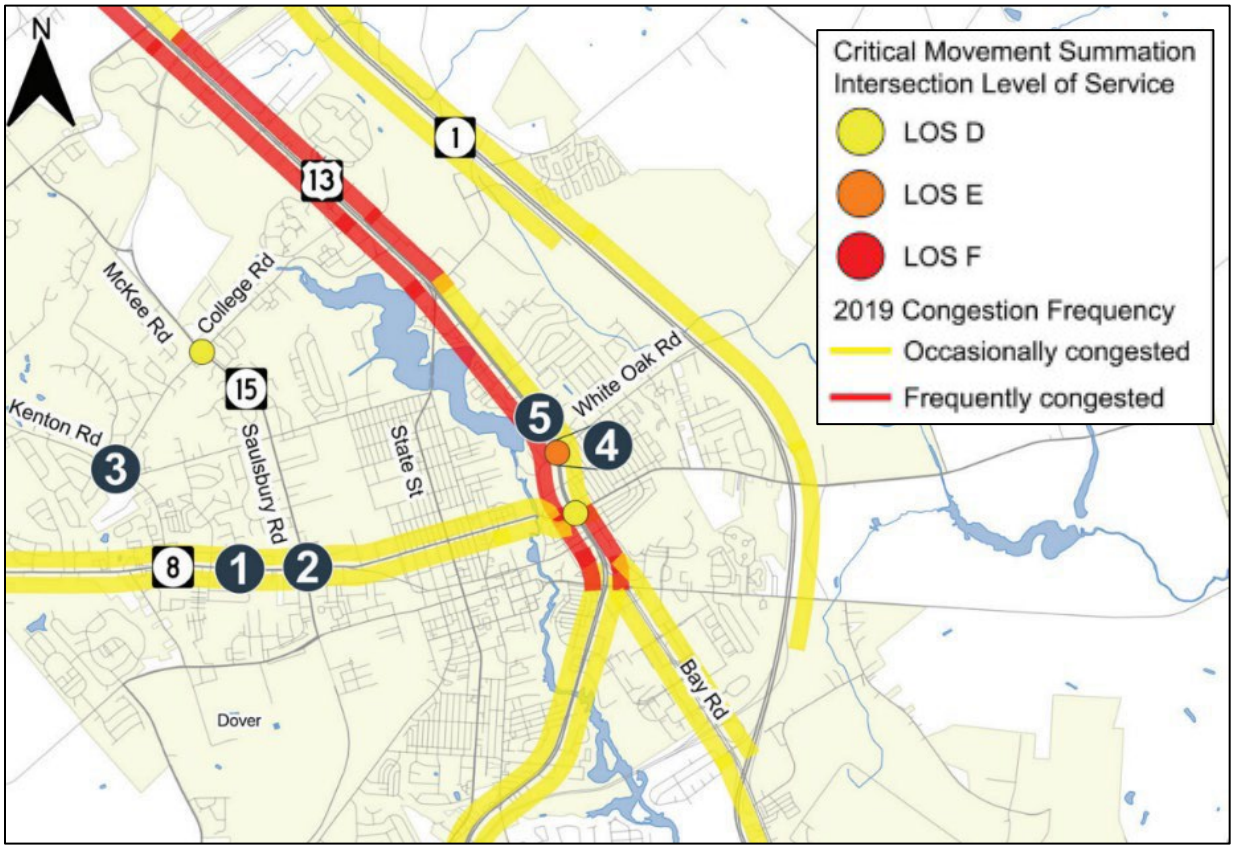

Figure 6. Congested Intersections and Corridors in Dover (source: Kent County TOMP)

Table 2. Key to the Numbers 1–5 in Figure 6 (adapted from the Kent County TOMP)

Map ID	Mitigating action	Timeframe
1	**Conducting a needs study on SR 8.** DelDOT and Dover Kent MPO will conduct a needs study on SR 8 to help pinpoint causes of congestion and make recommendations accordingly.	Project in the pipeline (expected completion date: 2025)
2	**Improving the intersection of SR 8 and SR 15.** Adding a through lane on SR 15 should relieve congestion at this intersection.	Project in the pipeline (expected completion date: 2023)
3	**Kenton Road and College Road corridor updates.** Capacity upgrades will be considered along Kenton Road and College Road as development continues to build up around them.	Project in the pipeline (expected completion date: 2027)
4	**Consider a two-stage pedestrian crossing at the intersection of US 13 and White Oak Rd.** A two-stage pedestrian crossing would improve operations through the intersection. This improvement was already evaluated and recommended from a safety perspective in DelDOT's June 2020 *US 13 Pedestrian Safety Study*.	Short-term recommendation
5	**Allow left turns from Centre Dr onto US 13.** This would alleviate stress at the intersection of White Oak Rd and US 13.	Medium-term recommendation

Figure 7 and Figure 8 illustrate estimated truck traffic volumes and congestion in the Dover area. Figure 7 shows estimated daily heavy truck traffic volumes in 2022 on roads National Highway System (NHS)[11] roads and freight truck bottlenecks. Figure 8 shows the 2022 estimated truck traffic volumes as a percent of 2022 traffic volumes for all vehicles. The truck traffic data comprises unit trucks (FHWA Classes 5–7) and combination trucks (FHWA Class 8 and above). These estimates are derived from the National Performance Management Research Data Set.

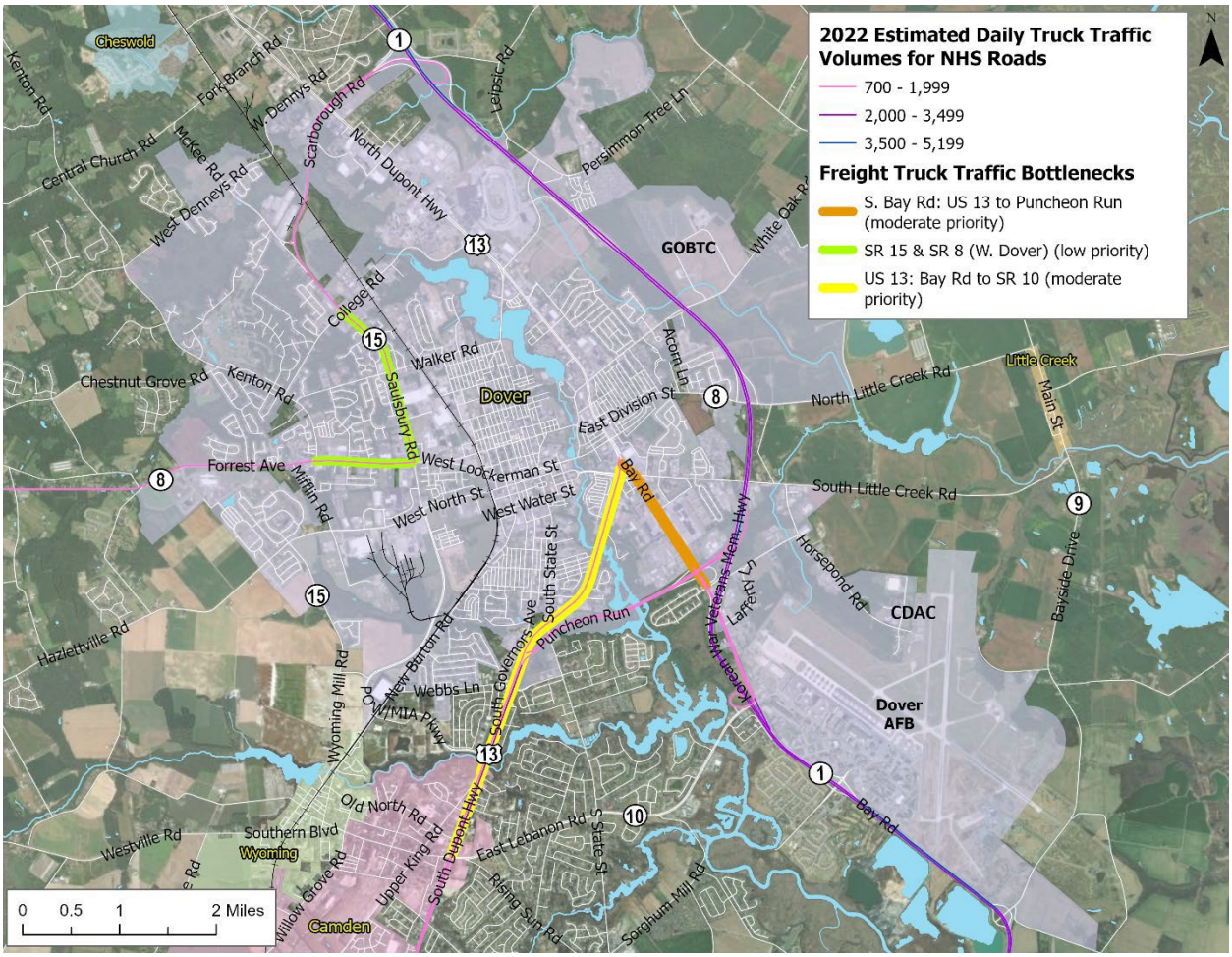

Figure 7. 2022 Heavy Truck Traffic Volume Estimates on NHS Roads and Truck Traffic Bottlenecks (sources: National Performance Management Research Data Set and the 2022 Delaware Statewide Truck Bottleneck Analysis)

[11] The NHS comprises all interstate highways as well as other roads that are important for national mobility, defense, and the economy. Additional information is available at https://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/.

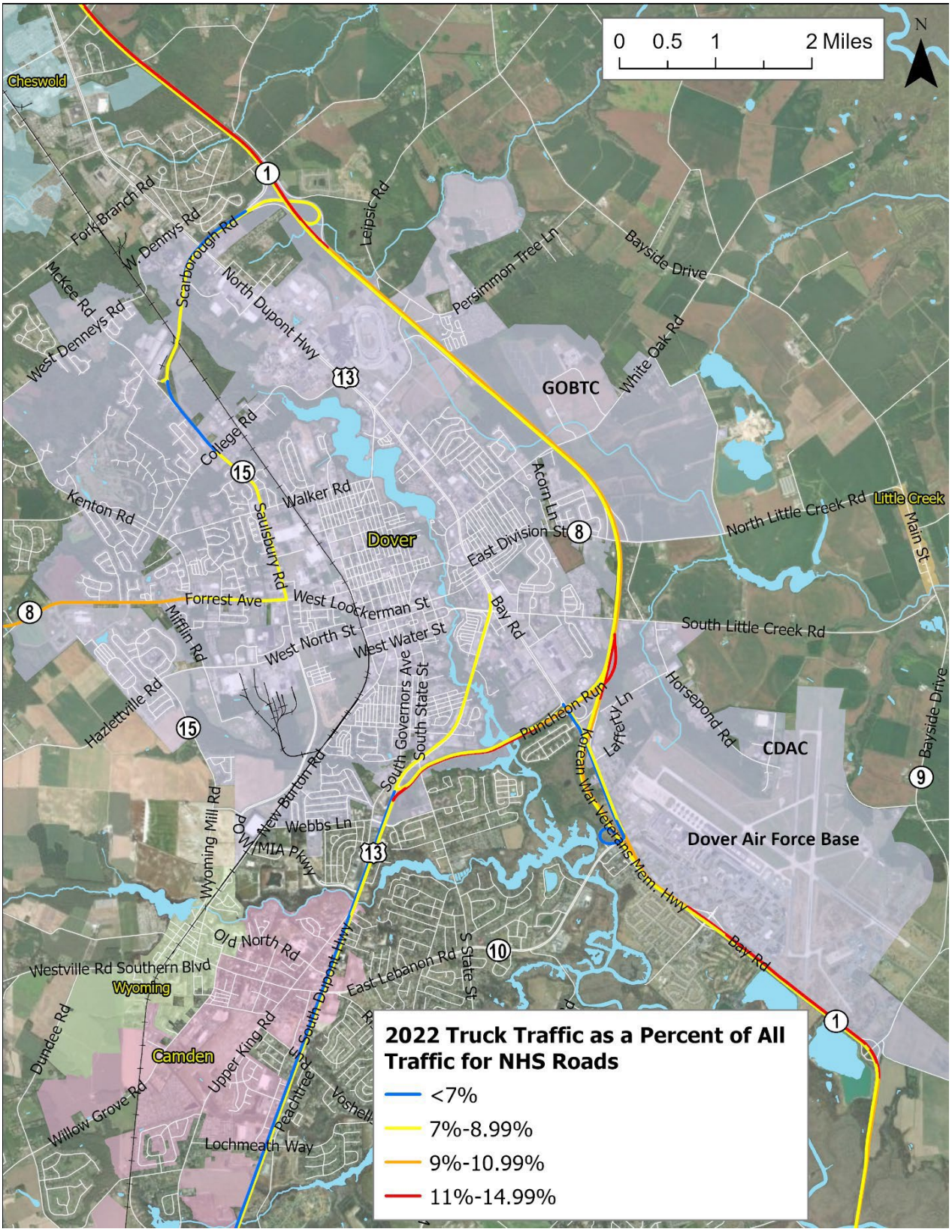

Figure 8. 2022 Heavy Truck Traffic as a Percent of All Traffic for NHS Roads (source: National Performance Management Research Data Set)

The 2022 Delaware Statewide Truck Bottleneck Analysis[12] identified and ranked 15 NHS road segments throughout the state where congestion and delays significantly affect freight mobility and reliability. The data used to identify and rank the bottlenecks included:

- 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 (unit trucks [FHWA Classes 5–7] and combination trucks [Class 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)[13]

As shown in Figure 7, the 2022 analysis identified two moderate-priority bottlenecks and one low-priority bottleneck in Dover. During public outreach for this study, none of the freight stakeholders identified issues traveling these bottleneck corridors.

Section 3.5.1 of this memorandum lists freight-relevant projects included in DelDOT's FY23-28 Capital Transportation Program (CTP) that are proposed in the Dover area. Two of the projects (HEP KC, SR 8 and SR 15 Intersection Improvements and HEP, KC, US13, Lochmeath Way to Puncheon Run Connector) may help alleviate two of the Dover truck bottlenecks.

East-West Truck Movement

The *Kent County East-West Truck Freight Route Feasibility Analysis Phase I* *(East-West Truck Route Analysis Phase I)* reviews east-west freight truck traffic patterns and needs in Kent County west of SR 1. The study provides recommendations to improve traffic flow on key east-west freight corridors, including SR 8.

The *East-West Truck Route Analysis Phase I* notes, out of the corridors included in the analysis, SR 8 has the most traffic signals, at 18 signals.[14] All but two of the traffic signals are in Dover.[15] This large number of traffic signals as well as the high vehicle and pedestrian traffic in downtown Dover, subsequently makes SR 8 less than ideal for truck traffic. Nevertheless, non-local truck traffic likely[16] travels through downtown Dover on SR 8 because SR 8 is one of the county's limited east-west truck route options.

The *East-West Truck Route Analysis Phase I* recommends developing an alternate truck route around downtown Dover. It notes that the planned Camden Bypass project (which will construct a bypass for SR 10 around Camden's downtown) will provide an alternative east-west route through the Dover area that

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[12] "2022 Delaware Statewide Truck Bottleneck Analysis," 2022, http://www.wilmapco.org/freight/2022_DE_Bottlenecks_Summary.pdf.
[13] Delaware Department of Transportation, *2022 Delaware State Freight Plan*, D-11.
[14] Kent Economic Partnership, Dover/Kent County MPO, and Whitman, Requardt & Associates, LLP, *Kent County East-West Truck Freight Route Feasibility Analysis Phase I*, 2021, 5, https://doverkentmpo.delaware.gov/files/2023/01/E-W-Truck-Study-final-11-2022-WEB.pdf.
[15] Ibid., 47.
[16] There are currently no publicly available data regarding the proportion of truck traffic on SR 8 or other streets in downtown Dover that is through traffic (as opposed to trucks making local deliveries or pickups). Therefore, the extent of the impact of through truck traffic on downtown Dover is unclear.

avoids Dover's and Camden's downtowns.[17] This may help direct through truck traffic away from downtown Dover, since diverting to the bypass may be preferable to driving a large truck through a downtown area.

Dover Kent MPO began work on Phase II of the KEP-sponsored Kent County East/West Truck Freight Route Feasibility Analysis in FY 2024. Final recommendation will be presented to the public at the MPO PAC and TAC meetings in June 2025, and the MPO Council in July 2025. Final recommendations will be presented at the Delaware Freight Summit in June.

3.2.3 Crashes

Figure 9 shows crashes involving heavy vehicles in the Dover area during 2019–2021 overlaid on the NHFN and FFM Freight Network. During this period, the percentage of crashes in Dover that involved heavy vehicles (0.2% or 13[18] heavy vehicle crashes out of 6,055 total crashes) was close to the percentage for Kent County (0.3% or 62 heavy vehicle crashes out of 18,644 total crashes).

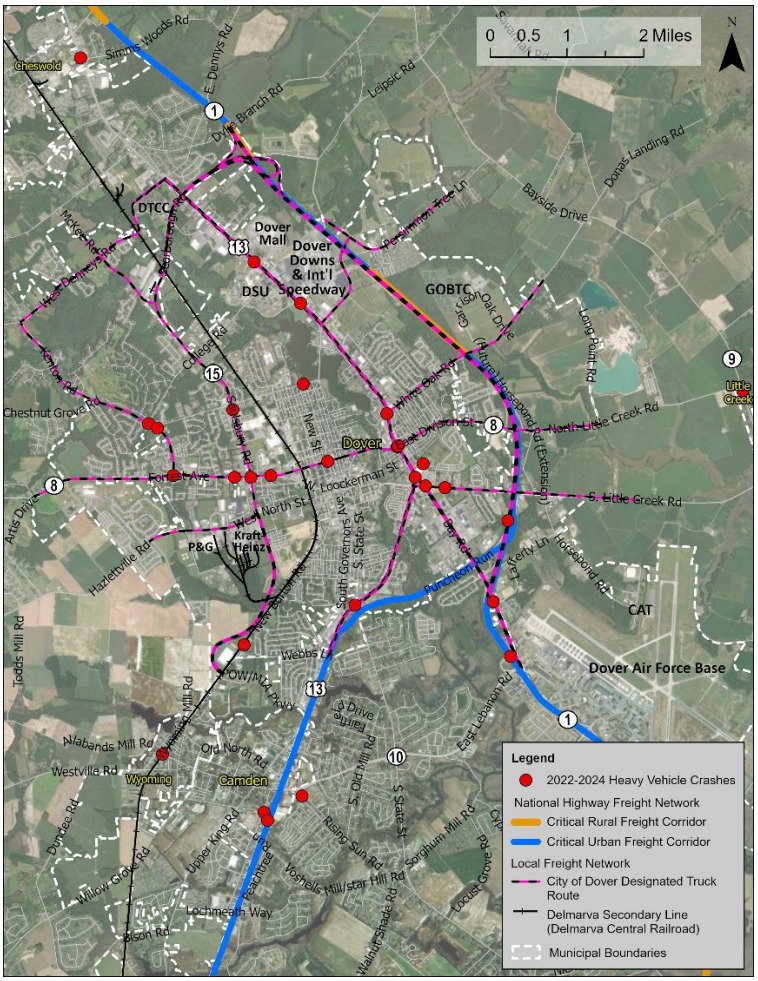

Figure 9. Crashes Involving Heavy Vehicles in the Dover Area, 2019-2021

[17] Kent Economic Partnership, Dover/Kent County MPO, and Whitman, Requardt & Associates, LLP, *Kent County East-West Truck Freight Route Feasibility Analysis Phase I*, 29.
[18] The crash shown at East Division Street and Acorn Street occurred in unincorporated Kent County and is therefore not included in this count.

The *East-West Truck Route Analysis Phase I* provides crash information for SR 8 during 2015–2019. As shown in Figure 10, most truck crashes that occurred on SR 8 during this period occurred in Dover.

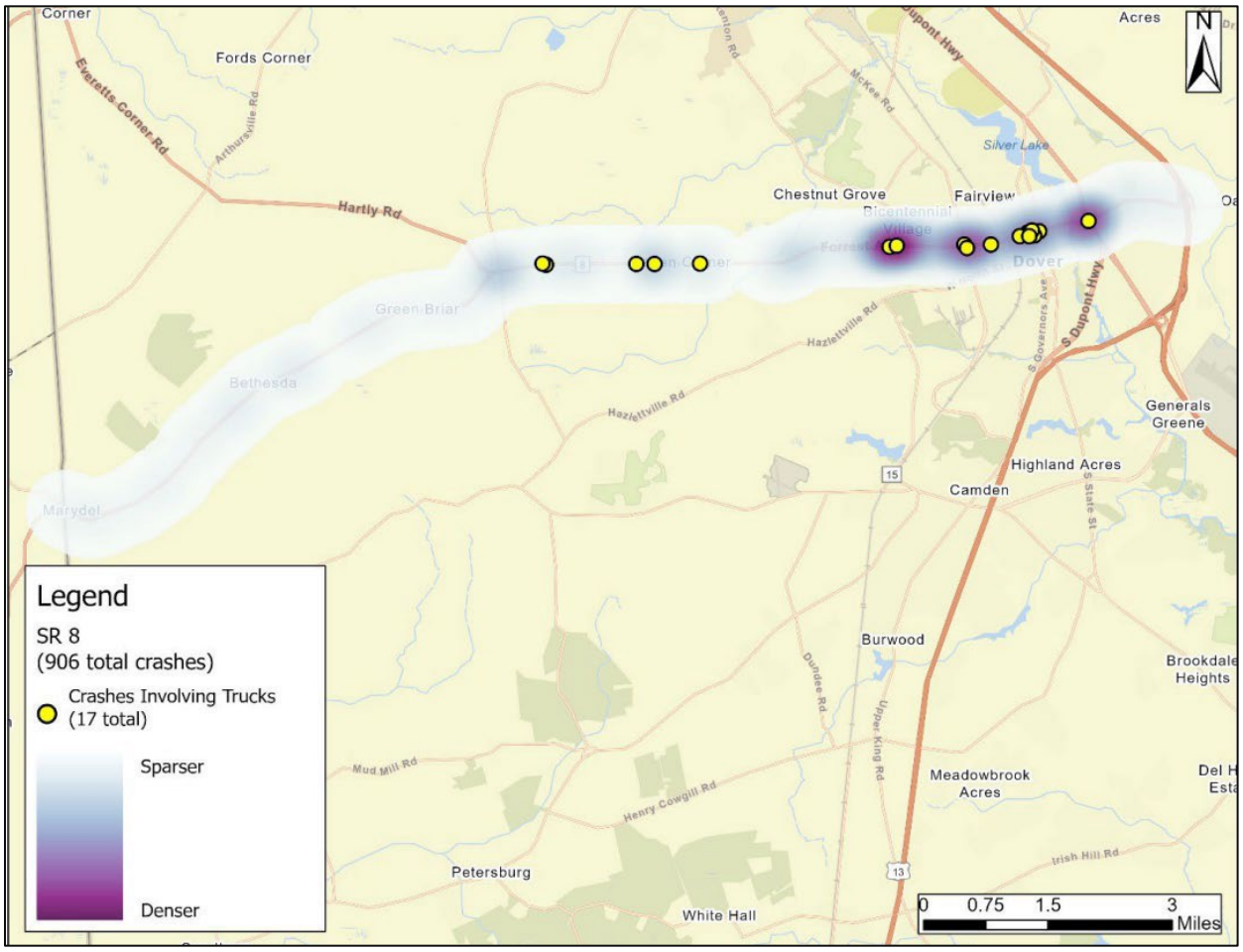

Figure 10. Total Crashes and Truck-Involved Crashes on SR 8, 2015–2019 (source: Kent County East-West Truck Freight Route Feasibility Analysis Phase I)

3.2.4 Truck Parking

Analysis conducted for the *Delaware Statewide Truck Parking Study Final Report* (*Truck Parking Study*) identified five undesignated truck parking clusters in the Dover area, which are shown in Figure 11. The 2023 Dover Kent MPO *Truck Parking Amenities Study* states that Dover Mall's parking lot is another undesignated truck parking location.

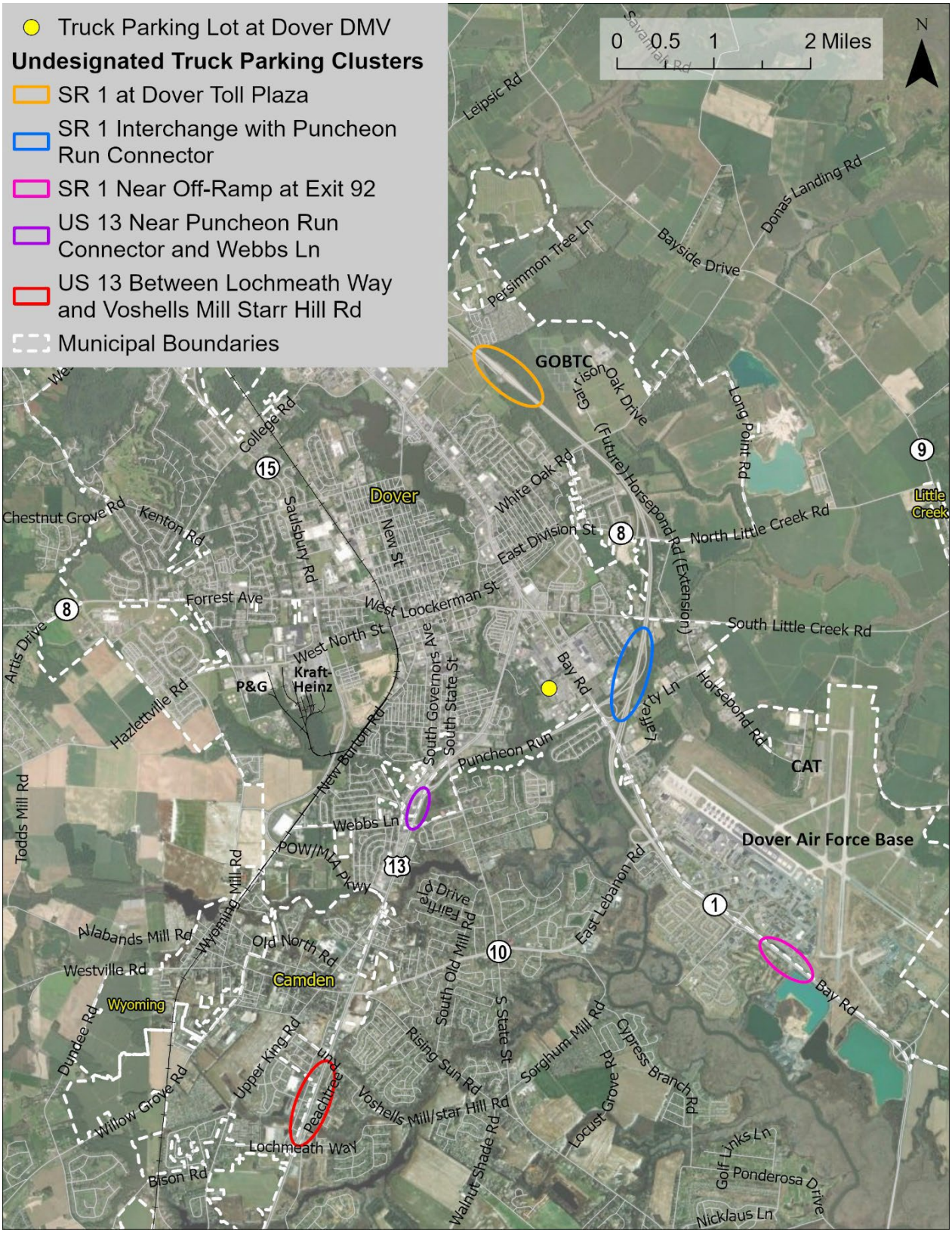

Figure 11. Undesignated Truck Parking Clusters (source: Delaware Statewide Truck Parking Study Final Report)

Multiple types of truck parking are required to meet the different parking needs of drivers. Truck parking needs include parking for drivers who are waiting to make pickups or drop-offs at a facility that is not yet open or does not have an available loading berth and parking for drivers taking breaks and rest periods which are required by the Federal Motor Carrier Safety Association's Hours of Service (HOS) requirements.

To provide truck drivers with adequate rest and recuperation so that they can continue to work safely, truck parking facilities need to provide a variety of amenities. Key amenities include security features like lighting and cameras, bathrooms with showers, fuel, food options, supplies (e.g., toiletries, batteries) for purchase, and Wi-Fi. Other useful amenities are laundry facilities, lounges or break rooms, and auxiliary power units (APUs), which can used to run temperature control systems in refrigerated trucks or truck cabins without requiring the driver to keep their engine running.[19] For a more thorough review of truck amenities, please refer to the 2023 Dover Kent MPO *Truck Parking Amenities Study*.

Another truck parking issue identified by the city of Dover is that Dover residents who own commercial trucks sometimes park them on residential streets. This indicates a need for truck storage lots where truck owners can park their trucks when they are at home. Since these lots would be used for truck storage rather than for drivers to take breaks and rest periods, they would not need to be equipped with the same amenities as a short-term or overnight truck parking facility where the driver stays with their truck.

The *Truck Parking Study* also identifies potential opportunities for additional truck parking. Opportunities in the Dover area are as follows:

- Dover Toll Plaza
  - The study recommends incorporating protected roadside truck parking into planned upgrades to the Dover Toll Plaza, which is by the northernmost undesignated truck parking cluster shown in Figure 11.[20]
- Existing capital project planning and development along SR 1
  - The study states that Dover Kent MPO "is currently studying opportunities to develop a frontage road…to connect existing and planned industrial parks along SR 1" in Dover; suggests that DelDOT consider integrating truck parking into the potential project.[21]
- Intersection of US 13 and SR 10 in Camden
  - The study suggests adding truck parking on state-owned land on the southeast corner of this intersection.[22]
- New freight-generating facilities
  - The study suggests that DelDOT should incentivize or require private development of new truck parking capacity at new freight-generating facilities in Dover.[23]
- Dover International Speedway and Dover Downs parking lots

[19] Kent Economic Partnership and Dover/Kent County MPO, *Truck Parking Amenities Study*, 2023, 14–22, https://doverkentmpo.delaware.gov/files/2023/03/Truck-Parking-Amenities-Final-3.2023.pdf.
[20] CPCS and Century Engineering, *Delaware Statewide Truck Parking Study Final Report*, 2021, 35, http://www.wilmapco.org/freight/DE_Truck_Parking_Final.pdf.
[21] Ibid., 35–36.
[22] Ibid., 37.
[23] Ibid., 38.

- The study states that these lots could be used for truck parking during the businesses' non-peak periods, including overnight.[24]

In the spring of 2023, DelDOT added signage and striping for short-term truck parking at five DelDOT/DTC parking lots. One of the truck parking sites is at the DMV in Dover. In the fall of 2023, DelDOT reported that this site was minimally used.

Town Code Sections Related to Freight Truck Parking and Loading/Unloading

Chapter 106 of the Dover Code of Ordinances addresses traffic and vehicles including truck traffic and loading/unloading. The code sections relevant to stopping, loading, and unloading of delivery trucks include the following:

- Article III, §106-122 prohibits vehicles from parking on city streets for longer than 25 minutes to load or unload freight.
- Article III, §106-123(a) prohibits vehicles with a carrying capacity of more than one ton, trailers, or any combination thereof from parking on city streets for longer than two consecutive hours.
- Article III, §106-123(b) prohibits commercial vehicles with a carrying capacity of more than one ton, trailers, or any combination thereof from parking "in any residential zone in the city except for temporary parking for immediate deliveries, pickups, and/or service calls to residences or for construction work on residential properties."

3.3 ECONOMIC CONDITIONS

3.3.1 Daily Truck Trip Generation

Figure 12 shows Traffic Analysis Zones (TAZs) in the Dover area by the estimated number of daily unit truck and combination truck trips they generate. A TAZ "is a special area delineated by state and/or local transportation officials for tabulating traffic-related data- especially journey-to-work and place-of-work statistics. A TAZ usually consists of one or more census blocks, block groups, or census tracts."[25]

The truck trip generation estimates were produced for the 2022 Delaware Statewide Truck Bottleneck Analysis. They were calculated using methodologies derived from FHWA's 2017 *Quick Response Freight Manual II* and 2015 household and employment data. Note that some of the high-truck trip generation TAZs are not industrial areas. This is because the truck trip counts include trucks returning from delivering goods to other land uses, such as houses and stores. They may also include trips by service or utility trucks that are not carrying freight.

[24] Ibid., 38–39.
[25] State of Delaware, "Delaware Traffic Analysis Zones 2.0," 2023, https://hub.arcgis.com/datasets/delaware::delaware-traffic-analysis-zones-2-0/about.

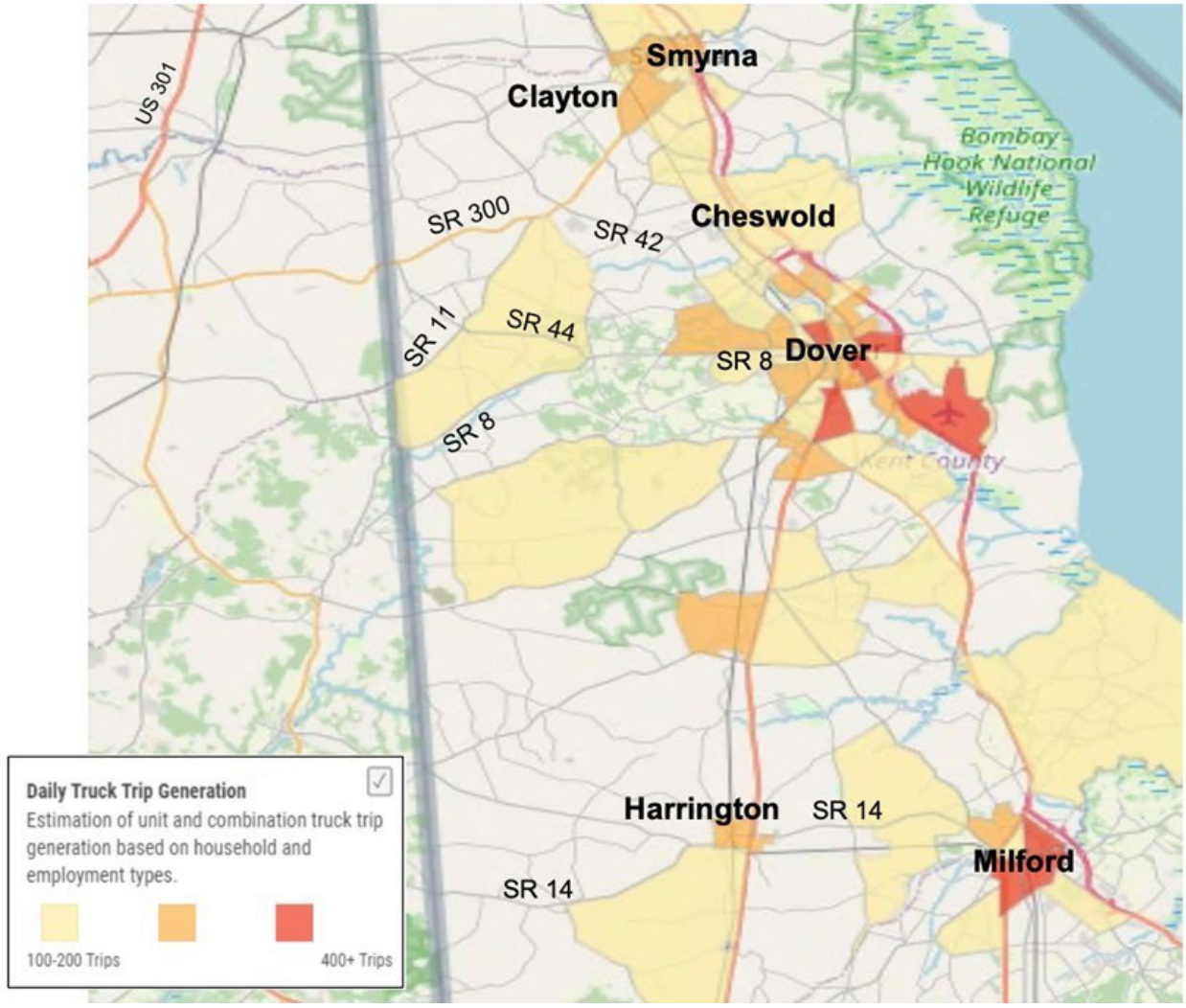

Figure 12. 2020 Estimated Truck Trip Generation by Traffic Analysis Zone (source: Kent County East-West Truck Freight Route Feasibility Analysis Phase 1)

The *Dover 2019 Comprehensive Plan* notes that industrial uses on the west side of Dover have good truck connectivity to SR 1 via McKee/Saulsbury Road, a locally designated truck route, and to US 13 via the P.O.W./M.I.A. Parkway.[26]

Dover Air Force Base

Dover is home to the Dover Air Force Base (DAFB). As the Department of Defense's (DOD) largest aerial port, [27] DAFB is an important freight facility for the US Air Force. Additionally, DelDOT had a 25-year-long joint use agreement (JUA) with the DOD to use DAFB runways for civilian flights. Civil aircraft operations

[26] City of Dover, Delaware, *City of Dover 2019 Comprehensive Plan* (Dover, Delaware: City of Dover, 2020), page 9-5, https://redclay.wra.udel.edu/wpplan/wp-content/Plans/Dover/Dover%202019%20Comprehensive%20Plan%20Adopted%201-13-2020%20Complete.pdf.

[27] United States Air Force, "About Us," Dover Air Force Base, accessed November 17, 2023, https://www.dover.af.mil/About-Us/.

are managed at the CDAC, formerly known as the Civil Air Terminal (CAT),[28] which is next to DAFB and is accessed via Horsepond Road.[29] The CDAC is owned by DelDOT and operated by the Delaware River and Bay Authority (DRBA).[30] The 25-year-long JUA between DelDOT and the DOD expired in December 2022. DelDOT and Dover Air Force Based signed a new JUA on Thursday, August 15, 2024 with a lease term of 50 years. It expands use of DAFB facilities for approved civilian and commercial flight operations, allowing for double the number of annual flight operations that were allowed at the CDAC under the previous lease agreement.[31]

Garrison Oak Business and Technology Center

The Garrison Oak Business and Technology Center (GOBTC) is located east of SR 1 and north of White Oak Road and can be accessed from White Oak Road. The GOBTC has its own zoning category: IPM-2 (Industrial Park Manufacturing Zone – Business and Technology Center). According to the *Dover 2019 Comprehensive Plan*, 4 of the GOBTC's 15 lots have been developed.[32] As of the completion of this plan, all of the remaining lots are under contract.

The GOBTC, CDAC, and Kent County AeroPark (located west of the CDAC) do not have direct access to SR 1 and can only be accessed via local roads that were not designed for heavy truck traffic.[33] For instance, the shortest route between GOBTC and SR 1 requires driving on Acorn Lane, which is a local residential street. This limits the City's ability to attract industrial establishments. The *2022 Delaware State Freight Plan* identifies the impact of GOBTC- and CDAC-related truck traffic on local roads as an area of concern.[34] The *Dover Air Cargo Freight Access Study – Planning and Environmental Linkage (PEL) Report* identified potential roadway projects to better connect CDAC and GOBTC to SR 1. These projects can encourage more economic activity at the facilities and support the increased activity that may result from the new JUA between DelDOT and the DOD. The recommended projects are listed below and shown in Figure 13.

- Extension of Horsepond Road from S. Little Creek Road to White Oak Road
  - Included in DelDOT's FY23–28 Capital Transportation Program (CTP) under the name "Garrison Oak Connector Road (SR 1 via White Oak Road)"
- Improvements to existing Horsepond Road
- Improvements to existing Lafferty Lane
- Extension of Starlifter Avenue from Galaxy Drive to S. Little Creek Road

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[28] According to the *Dover 2019 Comprehensive Plan*, the CDAC comprises the CAT and a portion of the Kent County Aeropark.
[29] Delaware Department of Transportation, *2022 Delaware State Freight Plan*, D-32.
[30] Delaware River and Bay Authority, "Civil Air Terminal (CAT)," accessed November 17, 2023, http://www.catatdover.com/.
[31] Phillips, Mike, "DelDOT and DAFB sign joint use agreement," WDEL, August 16, 2024, https://www.wdel.com/news/deldot-and-dafb-sign-joint-use-agreement/article_453abe6a-5bd8-11ef-8ab0-87c6c73fee4c.html (Accessed January 8, 2025).
[32] City of Dover, Delaware, *Dover 2019 Comprehensive Plan*, page 5-14.
[33] Dover/Kent County MPO and Century Engineering, *Dover Air Cargo Freight Access Study – Planning and Environmental Linkage (PEL) Report*, 2021, 5, https://doverkentmpo.delaware.gov/files/2021/09/Dover-Air-Cargo-Freight-Study-PEL_final.pdf.
[34] Delaware Department of Transportation, *2022 Delaware State Freight Plan*, page 4-6.

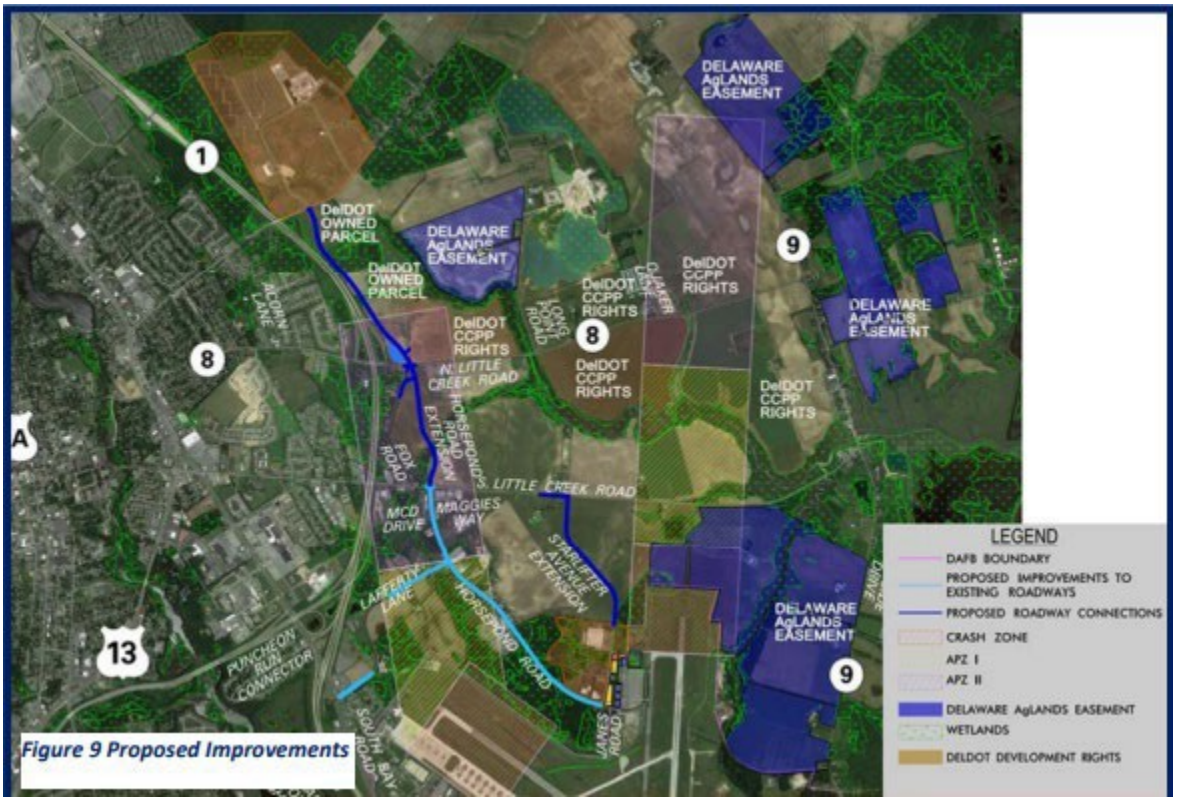

Figure 13. Improvements Recommended by the Dover Air Cargo Freight Access Study – Planning and Environmental Linkage (PEL) Report

3.4 ENVIRONMENT

As the understanding of environmental science improves, there are growing concerns about both air and water quality, public health, land use and development patterns leading to an emphasis on freight transportation projects. Environmental considerations are critical in planning and designing freight projects. Moreover, environmental resources can affect and inversely be affected by all aspects of freight transportation; this includes the location of freight-related facilities, the movement of goods, vehicle performance, and energy use.

3.4.1 FEMA Flood Hazard Areas

Dover contains several bodies of water, each of which is flanked by Federal Emergency Management Agency (FEMA)-designated special flood hazard areas, as shown in Figure 14. Flooding events and their negative impact on freight movement will continue to increase in severity and frequency due to climate change. Some of Dover's FFM connectors and portions of Dover's freight rail are in flood hazard areas.

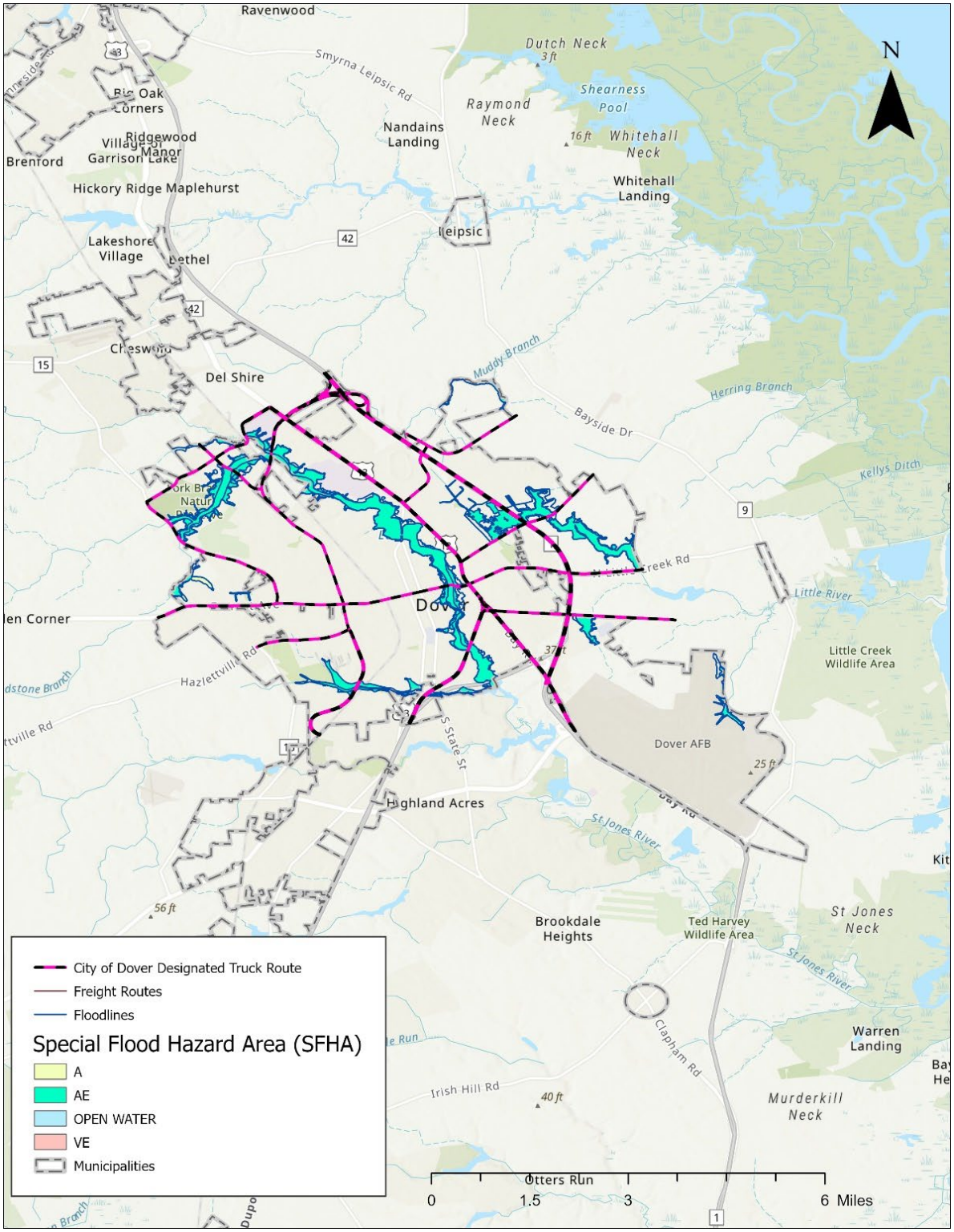

Figure 14. FEMA Special Flood Hazard Areas

3.5 PLANNED FREIGHT-RELEVANT TRANSPORTATION IMPROVEMENTS

3.5.1 DelDOT Capital Transportation Plan Projects in the Dover Area

DelDOT's FY23–28 Capital Transportation Program (CTP) includes several capital projects in the Dover area that may have an impact on freight movement. The projects are listed in Table 3 (projects in Dover) and Table 4 (projects near Dover). The hyperlinks provided in the tables are to the projects' website when available; otherwise, the hyperlink is to the project's page in the CTP.

Table 3. FY23–28 Capital Transportation Plan Projects Proposed in Dover

Project Name, Hyperlink, Description	Construction Start Date / End Date
Kenton Road, SR 8 to Chestnut Grove Road (project website). This project will provide pedestrian and bicycle facilities and operational and safety improvements.	Winter (January–March) 2024 / Fall 2025
Senator Bikeway Phase III, Mifflin Road to DHS (project website). This project will include the design and construction of a bike/ped pathway along RT8 from Mifflin Road to Dover High School.	Spring 2024 / Summer 2024
SR8, Connector from Commerce Way to SR8 (CTP). This project proposes a new connector road from SR 8 to Commerce Way. The connector will consist of two travel lanes with accommodations for bicycles and sidewalks and/or multi-use paths for pedestrians.	FY 2025 / FY 2026
College Road, Kenton Road to McKee Road (CTP). The proposed improvements of this project consist of widening for shoulders, sidewalk, or multi-use path on both sides of College Road; and intersection improvements to accommodate bicycles and drainage improvements. Some utility relocations will be necessary, as well as acquisition of right-of-way and easements. Additionally, the entire roadway will be overlaid with new pavement.	FY 2027 / TBD
West Street, New Burton Road to North Street (CTP). This project will widen West Street to urban collector standards.	FY 2027 / TBD
Garrison Oak Connector Road (SR 1 via White Oak Road) (CTP). This project will provide a new 2-lane connector road between White Oak Road and Little Creek Road, which will improve GOBTC's connectivity to SR 1. Phase 1 includes the design, engineering, land acquisition, and construction of a connector road from GOBTC at White Oak Road. This connection would make access from GOBTC more efficient and competitive for business.	TBD/TBD
HEP, KC,* US13, Lochmeath Way to Puncheon Run Connector (project website). This project will widen to provide a third through lane in each direction on US 13 from Lochmeath Way to the Puncheon Run Connector.	TBD/TBD (construction will not begin until construction of the East and West Camden Bypasses is complete)
Martin Luther King Jr. Blvd. Safety Improvements, River Rd. to Bay Rd. (project website). This project is planned to improve safety and operational	TBD/TBD

Project Name, Hyperlink, Description	Construction Start Date / End Date
improvements along Martin Luther King Jr. Blvd. from River Road to Bay Road. This project was nominated by the 2019 Hazard Elimination Program.	
SR 1, Scarborough Road C-D Roads. This project will construct a new collector-distributor road from the SR 1-Scarborough Road interchange to Dover Mall. Dover Kent MPO's FY23–26 Transportation Improvement Program (TIP) provides the following project justification: "This project will relieve congestion on US 13, improve safety for multi-modal movements throughout the area and encourage economic development."[35] At the time of writing, this project was not listed on DelDOT's Projects Portal or in the FY23–28 CTP Book.	TBD/TBD
*HEP = DelDOT Hazard Elimination Program; KC = Kent County	

Table 4. Freight-Relevant Projects from the FY23–28 Capital Transportation Plan Proposed Near Dover

Project Name / Projects Portal Hyperlink, DelDOT Project Description	Construction Start Date / End Date
East Camden Bypass (project website). This project will provide a new connection from US 13 to Lebanon Road (SR 10) and Rising Sun Road.	Summer 2024 / Summer 2026
West Camden Bypass (project website). This project will provide a new connection from Willow Grove Road and South Street to US 13.	Winter (January–March) 2025 / Winter (January–March) 2026
HEP KC,* SR15/Kenton Rd. at Central Church Rd. Intersection Improvements (project website). This project will construct a roundabout.	Winter (January–March) 2025 / Fall 2025
Rehabilitation of Bridges 2-356B&C on SR10 Lebanon Road (project website). This project will rehabilitate two bridges and add a bike lane.	Spring 2025 / Spring 2026
SR8 & Chestnut Grove - Nault Rd. Intersection Improvements (project website). This project is planned to either expand the existing signalized intersection to include auxiliary lanes or replace the signalized intersection with a roundabout. This project was nominated by the 2020 Hazard Elimination Program.	TBD/TBD
HEP KC,* US13 Walnut Shade Rd. to Lochmeath Way (project website). This project involves the addition of a third lane in each direction on US 13 from south of Walnut Shade Road to Lochmeath Way. This will require roadway widening, stormwater management facilities, multiple intersection redesigns, traffic signal reconfigurations, and multi-modal improvements.	TBD/TBD
*HEP = DelDOT Hazard Elimination Program; KC = Kent County	

[35] Dover/Kent County MPO, *Dover/Kent County Metropolitan Planning Organization Two-Year Transportation Improvement Program Fiscal Years 2023-2026 and 2024-2027* (Camden, Delaware: Dover/Kent County MPO, 2022), A-10, https://doverkentmpo.delaware.gov/files/2022/04/FY2023-2026-DOVER-KENT-MPO-FULL-TIP-DRAFT-5-4-2022-1.pdf.

DelDOT's draft FY25–30 CTP includes two new project candidates in Dover:

1. **Banning Street and Clarence Street between Forest Street and W. North Street Improvements:** Design and construct new two-lane street connection with sidewalks (between Slaughter Street and Forest Street). Upgrade existing segment to match (between W. North Street and Slaughter Street).
2. **US 13 at White Oak Road Intersection Improvements**: Add a two-stage pedestrian crossing system.

4 Findings and Recommendations

DelDOT drew on stakeholder input, existing conditions data, and relevant freight planning best practices to develop preliminary recommendations that can be incorporated into future municipal freight studies, local comprehensive planning, capital planning, operations and maintenance, and intergovernmental coordination.

4.1 FEEDBACK FROM PUBLIC AND STAKEHOLDER INVOLVEMENT PROCESS

4.1.1 Individual Interviews

The following bullets summarize the feedback provided during interviews with freight stakeholders held in spring of 2024.

- Connectivity/mobility:
  - According to the OSPC, there are issues related to freight circulation in Dover's downtown though the streets are locally maintained and therefore not eligible for federal funding. Streets must be able to accommodate the size of trucks while not inducing additional freight trips since the community would like to prevent through freight traffic.
  - Procter & Gamble shared issues associated with connectivity and mobility for east-west (freight) movements. Trucks that are heading west must go east due to freight restrictions. This also requires trucks to traverse areas with a considerable number of streetlights and additional congestion present in the area.
  - Representatives from Procter & Gamble intend on improving both connectivity and mobility by designating their East Dover site for coordination and logistics.
  - Matt Jordan from the Dover Air Force Base shared that they are working with the state to raise Route 9 between DAFB and Port Mahon Road to address flooding issues around Little Creek.
  - Per Lyn Byler, there is a need for a new connector road between the Garrison Oak Technology Park, located off of White Oak Road, and SR 1. Currently, the most direct access to SR 1 is via Acorn Lane to the interchanges located on N. Little Creek Road [Acorn Road is a narrow residential street]. The only route with streets intended to handle freight is via SR 13 which is very indirect route. A new freight connector road between White Oak Road and N. Little Creek Road has been proposed in multiple transportation planning efforts, however it is still years from construction, which reflects a bigger issue in planning efforts as it relates to freight.
- Procedural Hinderances
  - According to truck drivers at Procter & Gamble, there is a consensus that freight facilities are crowded rather than the surrounding roads. This is reinforced by the fact that freight

volumes have shown a steady growth rate for the past 10-15 years, yet the supporting facilities have not expanded. Despite this and the overwhelming importance of the freight industry, there is a current shortage of CDL drivers that will only become more apparent when compounded with the current growth in the freight industry.
    - There is a need for increased collaboration between government and industry stakeholders. As it stands, there is not a way to communicate the needs of the freight community. For example, Cliff Grunstra from the Delmarva Central Railroad (DCR) shared his surprise that rail is not frequently used to move freight from Dover considering there are large industrial and manufacturing facilities located along the rail line that do not currently use rail service.
    - According to Grunstra, the DCR is limited by the lack of development opportunities along the rail corridor. Moreover, acquiring new clients presents a challenge because it takes a minimum of 6 months to construct siding for a new business. There are also difficulties finding contractors to do the construction. Railroad regulations often supersede local, county, and state requirements; however, DCR would like to collaborate with the county to develop a mechanism to preserve land along the rail corridor, potentially similar to Delaware's Agricultural Lands (Aglands) Preservation Program.
    - Matt Jordan shared that all materials outgoing and incoming to the base are transported via trucks. However, there are economic limitations to this arrangement because personnel are required to be in place at admittance checkpoints. This is a challenge because not all parts of the base are operational around the clock.
- Development Coordination
    - The group concurred that the City of Dover was phenomenal to work with during the site development process because they reviewed and granted approvals quickly. Some interviewees noted that DelDOT's development coordination process caused delays because they were required to redraw and resubmit plans, which was unnecessary from the perspective of the interviewee.

4.1.2 March 26, 2024, Freight Roundtable

The following bullets summarize concerns mentioned by industry stakeholders during the March 26, 2024, Freight Roundtable.

- Mobility:
    - Due to the public's disapproval of trucks in their downtown areas, operators must navigate around the downtown area which is difficult because there are no alternate direct east-west routes.
    - Truck routing has been affected by GPS routing applications.
    - Truck operators cited an aversion to navigating the Dover area due to traffic and congestion. As a result, truckers habitually use Route 10 instead of Route 1 whenever possible.
- Loading/unloading:
    - When the roads are adversely affected by weather conditions truck operators are not able to reach the appropriate facilities for loading and unloading. To load materials, they are forced to load their trucks from the road. This presents safety concerns considering many roads do not have shoulders.
- Street geometry:
    - Industry stakeholders cited an inability to navigate roundabouts requiring drivers to traverse the circle which may result in damaging the infrastructure [note: roundabouts are designed with truck aprons which are a raised concrete area between the edge of the

asphalt and center of the roundabout; the truck apron is designed to accommodate the turning radius of trucks].
    - Truck operators shared an inability to complete their routes because local roads are not able to manage truck traffic. In these scenarios, stakeholders cited the benefits of utilizing rail when possible.
- Additional comments:
    - Delaware relies heavily on the poultry industry with roundtable members stating, “If we lose it, we’re done,” which points to a need to sustain the poultry industry.
    - Each rail car hauls roughly 3 tractor trailers worth of goods.
    - Kent County Code has a provision that if a business uses a rail siding it is automatically considered industrial. A local farm (considered an agricultural use) is interested in using the siding, which would keep thousands of trucks off the road. This was shared by KEP, the Agricultural Bureau, and Dover Kent MPO.
    - A few signalized intersections on a straight path may be preferrable to an “out of the way” detours.
    - Rural Maryland roads all have shoulders while Delaware roads do not, it is not advisable to go through Magnolia.
    - Eden Hill is very close to an existing rail meaning land cannot be used for freight purposes.
    - There was a conversation around whether SR 10 would be a good freight connection; industry stakeholders expressed interest. It was noted that DAFB expressed interest in a connection to the rail.

4.1.3 September 9, 2024, Stakeholder Meeting

A stakeholder meeting was held on September 9, 2024. Attendees were given the opportunity to discuss potential changes to preliminary recommendations, provide their own recommendations, and report on additional concerns. Several comments were provided regarding east-west truck access through Dover, especially via SR 8 and Loockerman Street. Stakeholders’ comments relating to east-west connectivity will be addressed by the Dover Kent MPO East-West Freight Route Feasibility Analysis Phase 2.

The following bullets summarize the feedback given at this meeting.

- Parking
    - The City of Dover’s Jason Osika cited there were no provisions made for truck on street truck parking in Garrison Oak Technology Park because it was not desired at the time the area was developed.
    - Marilyn Smith shared that DelDOT produced a flyer to advertise statewide truck parking opportunities such as at the Dover DMV. Stakeholders shared that this information is not widely known by truckers.
    - The Kent Economic Partnership noted that truck parking needs were initially met by shopping centers during off business hours. This is no longer feasible due to increased patronage and extended hours at shopping centers.
    - Dover Kent MPO suggested considering the feasibility of a truck parking area on state owned land off of the POW/MIA Parkway south of Procter & Gamble.
- Observations
    - Recent conversation with travel plaza operators revealed that profit is most directly associated with the sale of diesel fuel, therefore truck traffic is most desirable; as a result, SR 1 was not as appealing since truck volumes are relatively low.

  - Lynn Byler shared concerns regarding restricting truck traffic on SR 8 because it is their primary connection between their new facility at Garrison Oak and Byler's Store which is located on SR 8/Forrest Avenue at Rose Valley School Road, west of Dover.
  - Dover's Principal Planner Dawn Melson-Williams shared that the City will be annexing the area north of the Civil Air Terminal since the Joint Use Agreement between Dover Air Force Base and DelDOT has been signed. There was consensus that the Dover Civil Air Terminal Study should be revisited since the report was prepared when occupancy at Garrison Oak was much lower. [Freight traffic from the Civil Air Terminal and Garrison Oak Technology Park would use infrastructure proposed by the Civil Air Terminal Study].
- Requests
  - Representatives from Procter & Gamble requested that DelDOT provide parking along either US 13 or SR 1 considering that the state's freight activity is growing.
  - Representatives from Byler added that there is also an opportunity to build electric charging stations on land acquired for truck parking. They also noted the state owned parcel located along POW/MIA Parkway as a potential parking opportunity.
  - Kent Economic Partnership and Dover Kent MPO noted that they are in search of a private partner to run a truck stop/travel plaza in Kent County seeing as a lot of operators are not aware of the fiscal opportunities to be found in the state of Delaware.
  - Kent Economic Partnership requested that parcels being evaluated for rezoning to support freight uses be highlighted. Representatives from the City replied that zoning must be compatible with land use categories identified in the Dover Comprehensive Plan. Following the adoption of a new Comprehensive Plan, properties are rezoned to maintain compliance with the new land use map. Outside of that formal process, properties can only be rezoned when property owners apply to rezone their own property. The Dover Comprehensive Plan will be updated next in 2028.
  - There was general interest in pursuing a "truck only lane," or lanes that only allow freight traffic.
  - Procter & Gamble shared that they need a westbound left turn from Hazlettville Road into their facility. They noted they used to have a designated turn lane until the State of Delaware Department of Insurance Office opened across the street and the road was restriped to give the Department of Insurance an eastbound left turn lane.

4.1.4 October 29, 2024, Public Open House and Presentation to Council Committee of the Whole

There were 4 attendees at the Public Open House, two of which were City Council members. One attendee was a member of City staff, and the fourth was a member of the public who was in the building to attend the Council Meeting. The project team provided an overview of the preliminary recommendations. The open house attendees had minimal questions and concurred with the preliminary recommendations. All attendees were provided a copy of the survey, website information, and were asked to share information about the online survey with members of their network who may be interested.

4.2 RECOMMENDATIONS

This section summarizes recommendations relating to development review and regulations, land use planning, and communication and coordination.

Freight facilities and freight movement should be prioritized in local land use planning in terms of comprehensive planning, the site plan review process, and municipal code updates. Adequate planning also requires regular communication between all levels of government. Key examples of the interrelationship between the freight and the local community and land use planning are as follows:

- Freight-generating land uses support regional employment, generate revenue through local and state taxes, and allow for the availability of local goods needed by growing populations and businesses.
- Poor coordination between freight and land use planning can create challenges, such as the routing of large vehicles through residential areas, especially if not addressed proactively.
- Freight volumes and associated impacts on land use are expected to continuously grow in the coming years. Planning for associated needs and impacts now will integrate freight into the community more smoothly, allowing for benefits to their region sooner while minimizing adverse impacts on both residents and the environment.[36]

[36] FHWA Office of Freight Management and Operations, FHWA Freight and Land Use Handbook, 2012, https://ops.fhwa.dot.gov/publications/fhwahop12006/.

4.2.1 Development Review and Regulations

To adequately anticipate and address freight movement needs and conflicts, freight must be considered in the development review process. The development review process is not static, it can be modified and informed by things like the freight consideration checklist proposed in recommendation 1B.

Additional freight education resources available to planners include:

- The Eastern Transportation Coalition's Freight Academy
- National Highway Institute freight-related training courses such as the web-based Integrating Freight into Transportation Decision Making course (Course Number FHWA-NHI-139006)
- The FHWA's Freight Professional Development Program
- Delaware Freight Summits hosted by the University of Delaware Institute for Public Administration

Additionally, development review processes can be modified to more holistically consider freight needs and impacts. Table 5 presents a checklist from the *2022 Delaware State Freight Plan* that was adapted from a similar checklist in the Planning for Freight-Related Development document. The checklist can help planners address land use conflicts related to proposed freight truck trip-generating development during the development review process.

Note that the checklist can be used for the review of all types of development that generate freight truck trips (pick-ups or deliveries), not just shipping facilities. The checklist considers land use conflicts around the site of the proposed facility and transportation impacts on roads likely to be used by trucks serving the facility.

Table 5. Development Review and Regulations Recommendations

Recommendation	Description	Responsible Parties	Notes
Recommendation 1A: Adopt truck parking requirements	Adopt development regulations requiring developers to provide truck parking/staging as part of manufacturing, warehouse, and logistics developments.	City of Dover	Further analysis is necessary to determine the number of truck parking spaces are appropriate in Dover. Examples from other municipalities are included below.

Recommendation	Description	Responsible Parties	Notes
Recommendation 1B: Implement freight considerations checklist	Incorporate freight-specific planning considerations checklist (like the one linked to the right) into development review processes.	Development review entities at all government levels	The WILMAPCO Planning for Freight-Related Development Summary and Checklist (2021) conveys factors to consider when planning for and reviewing proposed freight-related development. The document highlights the importance of considering transportation and land use conditions around proposed freight facilities to mitigate potential conflicts. The checklist is included below.

Examples of Truck Parking Requirements

The Township of Upper Macungie, PA enacted truck parking requirements for all industrial uses including warehousing, distribution, truck terminals, and manufacturing. The requirements are documented in municipal code Section 27-601 Required Number of Parking Spaces (Ord. 9-94, 4/7/1994, § 601; amended by Ord. 2017-4, 6/1/2017; and by Ord. No. 2020-08, 7/9/2020). One ten-foot by eighty-foot truck staging parking space is required for every two loading docks.

The Township of Forks, PA requires truck parking in addition to amenities for truck drivers in Code Section 200-28 Subsection G(17) Wholesale/warehouse [Amended 7-15-2021 by Ord. No. 375]:

> Additional regulations for specific uses:
>
> a) Each and every building containing this use shall have amenities for the truck drivers/operators of the vehicles using the facility…
>
> 1) …
>
> 2) At least one amenity shall be provided for every thirty-truck loading/unloading docks/doorways of the use.
>
> 3) ...Each amenity shall contain not less than one seat per 10 docks/doorways...
>
> 4) ...**There shall be provided at least one twelve-foot-by-eighty-foot truck parking space per each required lounge seat of the amenity.**

b) …adequate queuing space shall be provided within the property boundaries to prevent stacking of tractor-trailers on or along public streets.

c) This use shall reserve a minimum of 5% of the proposed total tractor-trailer parking spaces for trucks which are required to arrive early or required to layover or rest due to hours of service regulations. Such spaces must be made available to tractor-trailers 24 hours a day/seven days a week.

YES	NO	N/A	Local Freight Planning Consideration
			Freight Network Designation: Is the facility adjacent to an existing freight route identified on Delaware's current highway freight network or First/Final Mile freight network?[37] If not, what is the likely route trucks will take to reach major highway corridors?
			Truck Route Obstructions: Do the likely truck routes have sharp turns, low clearance restrictions, or other truck obstructions?
			Truck Route Roadway/Bridge Conditions: Do the likely truck routes have adequate roadway/pavement conditions, shoulder conditions, bridge weight limits, or existing/potential deterioration due to heavy vehicles?
			Truck Route Community Conflicts: Do the likely truck routes run through residential areas, or other sensitive areas such as school zones?
			Truck Route Bicycle/Pedestrian Conflicts: Are the likely truck routes designated as bicycle or pedestrian routes?
			Truck Route Congestion: Are there existing congestion problems on the likely truck routes?
			Truck Route Improvement Funding: If infrastructure improvements are needed for the truck route, will the freight facility developer or tenant help fund these improvements?
			Freight Facility Truck Parking: Is truck parking available nearby, or will the developer provide parking?
			Freight Facility Conflicts: Is the facility located adjacent or near to existing or planned residential development, or other sensitive land uses such as schools?

The *2022 Delaware State Freight Plan* notes that "this checklist is not intended to be a comprehensive planning resource; rather, it should be incorporated as an initial list of typical considerations as part of the land use planning process for communities that are planning for freight-related developments."[38]

[37] Delaware's current highway freight network and FFM freight network can be viewed on the Delaware Freight Plan – Existing Conditions interactive map.
[38] *2022 Delaware State Freight Plan*, p. 6-8.

4.2.2 Land Use Planning

Overview

22 Delaware Code §702 requires municipal governments to develop and update comprehensive plans. The Delaware Office of State Planning Coordination (OSPC) provides guidelines and a checklist to facilitate the comprehensive planning process for municipalities. Although not explicitly stated, updates to local comprehensive plans should also address freight activity and land use issues. The comprehensive plan's planning and policy direction must reflect Dover's community vision so that the plan can serve as a solid foundation for other plans, policies, and decisions. Further, the comprehensive plan should consider issues and impacts associated with current freight activity, which will help the community leverage the benefits of freight while minimizing undesirable impacts.

The FHWA Office of Freight Management and Operations developed the *FHWA Freight and Land Use Handbook* to provide land use and transportation planners with tools and resources to help them assess the impacts of land use decisions on freight movement and the impact of freight-related uses and movement on other land uses and land use planning goals. The handbook provides extensive background information and case studies of freight policies or programs enacted around the country. It is a valuable resource for communities wishing to address freight in their comprehensive planning.

The *2022 Delaware State Freight Plan* recommends two strategies related to land use (bolded italics added):

- ***Freight Land Use Preservation –*** Coordinate with and educate the region's planning officials on the importance of ***preserving critical infrastructure and freight-oriented land uses*** in key freight or rail corridors and industrial areas. Planning and decision-making should aim to ***minimize residential encroachments*** while also ***managing*** real and perceived ***conflicts*** or expectations between the residential and freight communities.
- ***Freight and Community Impact Planning*** – Implement a ***proactive approach*** to assessing and balancing freight impacts, community needs, and competing interests ***much earlier in the planning process***, including the use of tools such as the *Protect-Manage-Accommodate* framework for contextualizing freight conflicts and the local freight planning considerations checklist for freight facilities and truck routes.[39]

Table 6. Land Use Planning Recommendations includes two recommendations reflecting these strategies.

[39] *2022 Delaware State Freight Plan*, p. 6-6.

Table 6. Land Use Planning Recommendations

Recommendation	Description	Responsible Parties	Notes
Recommendation 2A: Protect existing freight-intensive development opportunities along truck routes.	Preserve opportunities for freight-intensive development in appropriate locations by protecting parcels currently zoned for freight-generating uses along Dover's existing and future truck routes from rezoning.	City of Dover and Kent County	
Recommendation 2B: Create opportunities for freight-intensive development along Dover's truck routes.	Create opportunities for freight-intensive development in appropriate locations by pursuing rezoning for suitable parcels not presently zoned for freight-intensive uses along Dover's existing and future truck routes.	City of Dover and Kent County	Draw on Dover Kent MPO's 2022 *Rail Corridor Industrial Land Use Study* for guidance on rezoning for freight-intensive uses

Parcel Analysis

In order to advance recommendations 2A and 2B a parcel analysis was conducted in order to identify parcels that should be protected or preserved for freight specific uses. The parcel identification criteria were as follows:

- Adjacent to a designated Dover truck route or to an improvement recommended in the *Dover Air Cargo Freight Access Study* (2021)
- Designated as a freight-relevant land use category on Dover's (2002) or Kent County's (2018) future land use maps
- Parcel area is not majority wetlands
- Primary use is not a rail spur, public park, or school
- Parcel size:
    - Agricultural parcels: 5+ acres in size or in a cluster of agricultural-zoned parcels that is 5+ acres in size where all parcels in cluster meet the above criteria
    - Non-agricultural parcels: 1+ acre in size or in a cluster of other non-agricultural-zoned parcels that is 1+ acre in size where all parcels in cluster meet the above criteria

The results of the analysis are shown in Figure 15.

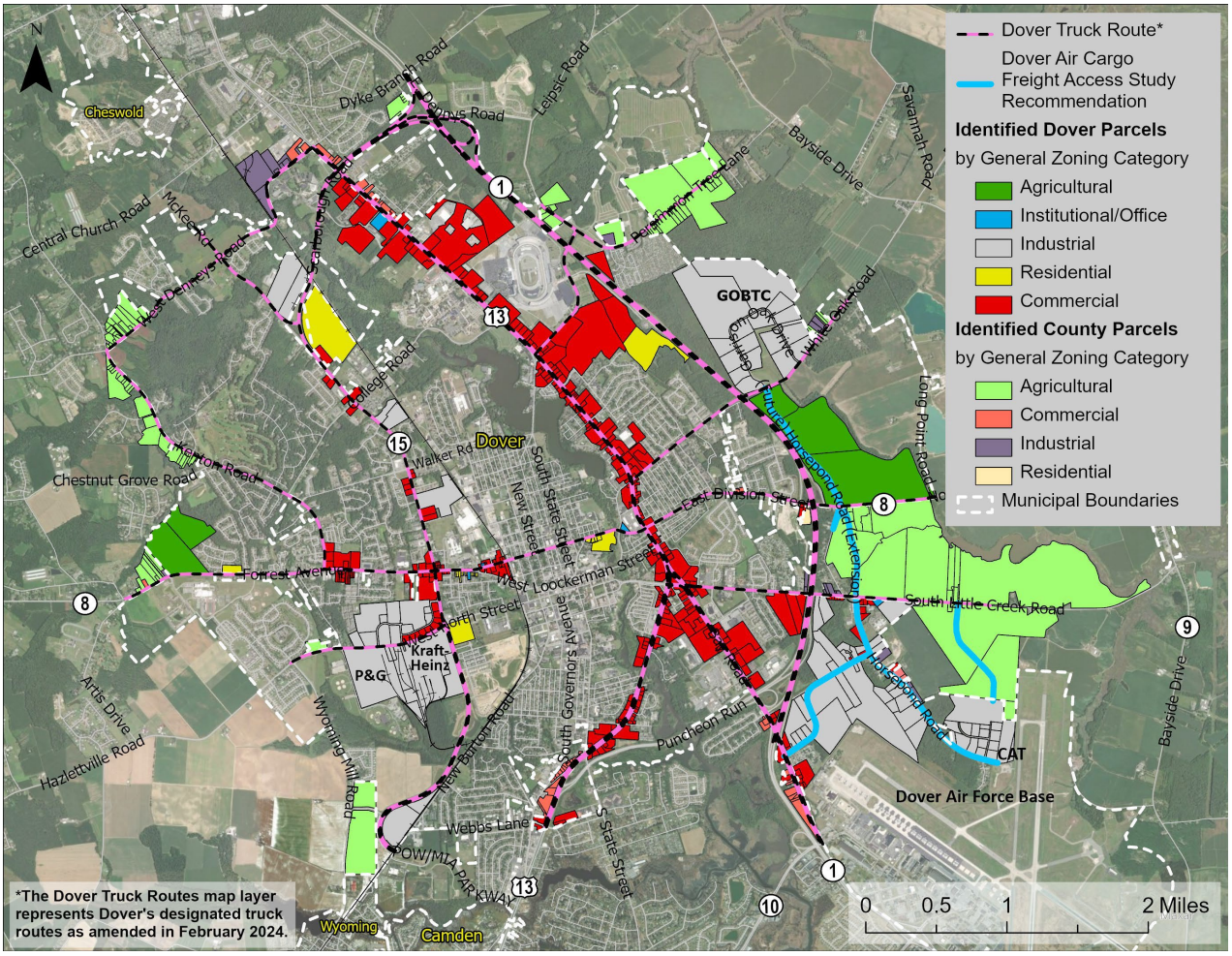

Figure 15. City of Dover and Kent County Parcels identified for protection or preservation for freight intensive uses.

Comprehensive Plan Updates

The next comprehensive plan update process is the logical time to implement Recommendations 2A and 2B. Dover should consider the guidance provided by the documents referenced in this section, and also consider incorporating the following topics.

- *Description of Physical, Demographic, and Economic Conditions – Transportation*[40]
  - Key commercial vehicle traffic routes in and through the City of Dover
  - Key locations with the greatest concerns for truck movement
  - Nearby industries and major employment centers
  - Truck traffic volumes
  - Current conflict between through truck traffic on the one hand and businesses and other road users on the other hand, in downtown Dover
  - Current conflict between residential and freight-related land uses in other areas of Dover

- *Policies, Statements, Goals, and Planning Components for Transportation*
  - Study and, if found to be feasible and beneficial, implement relevant recommendations from the 2022 *Delaware State Freight Plan* and the 2021 *Delaware First/Final Mile Freight Network Development Report*
  - Develop strategies to support economic development and safe and efficient freight movement while promoting quality of life and safety for the community
  - Continue to engage in regional and state planning and coordinate activities to ensure freight needs are considered and supported

In addition to the comprehensive plan, Dover should consider reviewing and updating other local plans, policies, and code sections to ensure they are current and support land use and development decision-making in alignment with the implications of today's freight activity.

The *Northampton County Freight-Based Land Use Management Guide* was developed in 2022 by the Lehigh Valley Planning Commission, a regional planning organization for an area that has experienced some of the highest pressures of freight activity and freight-based land uses in recent years. The guide aims to "assist municipalities in making land use decisions regarding freight-based development and to alleviate issues that result from these types of land uses."[41] This guide may be a useful reference as Dover updates freight-related plans, policies, and code sections.

[40] Terminology comes from the State of Delaware Comprehensive Plan Checklist, 2015, https://stateplanning.delaware.gov/lup/documents/comprehensive-plan-checklist-guide.pdf.
[41] https://www.northamptoncounty.org/CMTYECDV/Pages/Freight-Based-Land-Use-Management-Guide.aspx.

4.2.3 Communication and Coordination

Table 7 presents recommendations that will improve the communication and coordination of freight issues relevant to Dover.

Table 7. Communication and Coordination Recommendations

Recommendation Name	Description	Responsible Parties	Notes
Recommendation 3A: Improve intergovernmental coordination.	Improve communication and coordination between local, county, and state government and MPO regarding freight-related land development and transportation projects.	City of Dover, Kent County, State of Delaware	Collect and share freight-relevant data from land development and transportation improvement projects. Consider a "Dig Once" policy to ensure that relevant freight recommendations are implemented when road work is occurring.
Recommendation 3B: Stakeholder coordination.	Improve engagement with local freight operators to better address their needs during planning processes.	City of Dover, Kent County, State of Delaware	Establish direct points of contact at the City, County, and Dover Kent MPO for key and industry leaders.
Recommendation 3C: Revisit *Dover Air Cargo Freight Access Study* recommendations.	Revisit the *Dover Air Cargo Freight Access Study – Planning and Environmental Linkage (PEL) Report* (2021) to determine if recommendations need to be adjusted based on leasing activity at Garrison Oak Business and Technology Center.	Dover Kent MPO, City of Dover, Kent County, State of Delaware	Dover Kent MPO is monitoring the status of this recommendation.

5 Conclusions and Next Steps

Statewide freight plans are required by the Federal Highway Administration (FHWA) and the *Delaware State Freight Plan* of 2022 recommended DelDOT undertake local planning support initiatives. Local freight planning support includes utilizing DelDOT municipal assistance for tasks available within statewide planning contracts, along with similar MPOs within the state.

The importance of local freight planning cannot be overstated; according to the *Delaware State Freight Plan*, 36% of employees in Kent County work in a Freight-Intensive Sector. Therefore, focused on the City of Dover, this study assists in identifying and addressing local freight movement concerns of both freight operators and members of the community within the freight network in addition to evolving freight movement patterns as e-commerce grows.

This planning process utilized to prepare this study opened new lines of communication between DelDOT, Dover Kent MPO, the City of Dover, and freight stakeholders. Implementing the recommendations documented in this study will require ongoing coordination. As components of the study are implemented, private stakeholder should be notified. This will increase private sector buy-in to the study.

Achieving the Dover Freight plan's desired outcomes will require improvements to development regulations and review, land use planning, and intergovernmental coordination. Both public and private sector freight stakeholders, freight operators, and system owners should also reference the Dover Freight Plan to better understand DelDOT's intended strategic direction as they develop programs and projects.

6 Appendices

APPENDIX A. LOCAL, REGIONAL, AND STATE PLANS, STUDIES, AND PROGRAMS RELATED TO FREIGHT

This appendix provides descriptions of additional relevant planning efforts and programs that are not summarized in Section 1.5 above. Many of the descriptions in this appendix are excerpted or adapted from the *2022 Delaware State Freight Plan*.

6.1.1 Dover

City of Dover 2019 Comprehensive Plan (2020)

Dover's most recent comprehensive plan is the *City of Dover 2019 Comprehensive Plan*, adopted in 2020. The plan addresses freight as follows:

- States that several freight-related employers play an important role in the city's economy. As of 2017, 13.7% of Dover's labor force worked in production, transportation, and materials moving.
- Reports projected changes in freight intensive sector employment in Kent County from 2014 to 2024.
- Recommends developing and implementing strategies for addressing east-west traffic, particularly on SR 8.
- Recommends further study of an access road from the Garrison Oak Business and Technology Center (GOBTC) to SR 1.
- Identifies county lands that Dover is considering annexing, and their potential land use. Some of this land would provide additional opportunities for freight intensive sector development.

Transforming Downtown Dover: Capital City 2030 (2023) (also known as the Downtown Dover Strategic Master Plan)

The *Downtown Dover Strategic Master Plan* was published by the Downtown Dover Partnership. The plan identifies transportation and logistics as an economic sector that is likely to grow in Dover, and states that there are "opportunities for small warehouse growth in Downtown Dover." It also notes that the city could implement job density requirements for new logistics development to discourage sprawling site plans and highly autonomous operations.[42]

Garrison Oak Traffic Study – Technical Memorandum (2017)

This memorandum reports the results of a traffic study of intersections near GOBTC. The study found that intersections in the vicinity of the GOBTC "are expected to operate at acceptable LOS when the [GOBTC] is completely occupied and operational" and therefore the construction of a connector road between GOBTC and the SR 1-SR 8 interchange is not justified. However, the memorandum recommends undertaking an alignment study to determine the feasibility of constructing the connector road.[43]

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[42] Mosaic Development Partners et al., *Transforming Downtown Dover: Capital City 2030* (Dover, Delaware: Downtown Dover Partnership, 2023), 148.
[43] Shilpa Mallem, "Garrison Oak Traffic Study – Technical Memorandum," June 14, 2017, 10, https://doverkentmpo.delaware.gov/files/2019/05/Garrison-Oak-Study-FY17.pdf.

6.1.2 Regional

Innovations 2050: Metropolitan Transportation Plan (2025)

The Dover Kent MPO's Metropolitan Transportation Plan (MTP) serves as a blueprint to assist elected officials in addressing the transportation needs of their constituencies by identifying how Kent County's transportation resources should be managed. It serves as the framework for transportation investment decisions for the years 2025 to 2050. The plan is updated every four years.

Truck Parking Amenities Study (2023)

The Dover Kent MPO conducted this study of the existing conditions of truck parking amenities in Kent County. The study offers a list of amenities that would be most beneficial to truck drivers. Data was gathered from state and federal literature and outreach conducted by MPO staff.

Kent County Airport Inventory (2023)

This inventory was prepared by Dover Kent MPO. It provides descriptions of each airport in the county, descriptions of relevant existing plans and information resources, and findings related to opportunities for growth and development, constraints on growth, land use conflicts, and emergency uses. The study notes that the Civil Air Terminal (CAT) (now known as the Central Delaware Aviation Complex [CDAC]) and Delaware Airpark (outside of Cheswold) are the two aviation facilities most likely to be capable of further development and expansion.

Kent County East-West Truck Freight Route Feasibility Analysis Phase I (2022)

This Dover Kent MPO analysis reviews existing east-west freight truck traffic patterns and needs west of SR 1. The analysis identifies roadway deficiencies that impact freight movements and recommendations to improve traffic flow on key east-west freight corridors in Kent County. The conclusion to the study notes that the Dover Kent MPO recommends a Phase II Engineering Analysis be conducted to assess recommendations. The Phase II analysis is currently in development.

Dover/Kent County Metropolitan Planning Organization Rail Zoning Study (2018) and *Rail Corridor Industrial Land Use Study (2022)*

These Dover Kent MPO-led studies reviewed 13 municipal comprehensive plans and Kent County's comprehensive plan to gauge their level of inclusion of rail freight information and related planning insights. Study products included interactive web mapping to explore land use and potential rail freight development opportunities. Recommendations focused on supporting existing federal, state, and regional freight plan goals and objectives; linking local transportation initiatives articulated in comprehensive plans with available federal and state transportation funding; and identifying future economic initiatives requiring follow-up studies.

Kent County Transportation Operations Management Plan (2021)

The 2021 *Kent County Transportation Operations Management Plan* (*TOMP*) identifies three congestion "hotspots" in Kent County and presents recommendations to reduce congestion at each hotspot. The three congestion hotspots are Dover, Camden, and North Milford.

2020-21 Kent County Target Industry Study Update (2022)

The 2022 *Kent County Target Industry Study* Update was prepared by Rockport Analytics for the Kent Economic Partnership. This study is used to attract economic development to central Delaware, and identifies Distribution, Warehousing, and Logistics as target industry #2.

6.1.3 Delaware

Delaware Truck Bottleneck Identification (2018) and Delaware Statewide Truck Bottleneck Analyses (2020/2022)

These analyses of truck bottlenecks throughout Delaware were completed in coordination with federal Transportation Performance Management (TPM) reporting requirements established by the Moving Ahead for Progress in the 21st Century Act (MAP-21). They identify highway segments in the state that significantly affect freight mobility and reliability. The 2020 and 2022 analyses identified 15 bottlenecks, them as high, medium, or low priorities using a data-driven process, and provided a list of projects/studies relevant to each bottleneck.

Innovation in Motion: The Delaware Long Range Transportation Plan (2019 plus annual supplements)

The LRTP has a 20-year outlook and aims to express Delaware's continually changing transportation environment by conveying land use patterns, demographics, travel patterns, preferences, and technology. All these variables together contribute to Delaware's transportation network.

Delaware First Final/Mile Freight Network Development Working Paper 2: Addressing Delaware's First/Final Mile Freight Needs and Issues (May 2021)

This working paper is the second in a series of two working papers prepared as part of CPCS's Delaware First/Final Mile Freight Network Development Project. It describes the performance needs and issues of the FFM network and strategies that could be used to address these needs and issues.

Delaware First/Final Mile Freight Network Development Working Paper 1: Initial Identification of First/Final Mile Freight Network (February 2021)

This working paper is the first in a series of two working papers prepared as part of CPCS's Delaware First/Final Mile Freight Network Development Project. The paper documents the steps taken to identify the road segments constituting the draft FFM freight network and identifies basic needs, issues, and land use/development trends related to FFM freight connectors.

DelDOT Highway-Rail Grade Crossing Safety Program (annual)

On an annual basis, DelDOT performs a data-driven network screening process to identify public highway-rail at-grade crossing locations for study to evaluate the need for, and feasibility of, safety improvements that could be funded with federal Railway-Highway Crossings Program (Section 130) funds. Potential safety improvements are selected and prioritized for design and implementation based on available funding.

APPENDIX B. STAKEHOLDER INTERVIEWS

Interview Date	Interviewee	Interviewee Organization
March 14, 2024	Matt Jordan	Dover Airforce Base (DAFB)
March 18, 2024	Cliff Grunstra	Delmarva Central Railroad (DCR)
March 18, 2024	Dave Edgell & Josh Thomas	Office of State Planning Coordination (OSPC)
May 6, 2024	Lyn Byler	Byler's Store
May 17, 2024	Joseph Taylor	Procter & Gamble

APPENDIX C. MARCH 26, 2024 FREIGHT ROUNDTABLE MEETING ATTENDANCE

- DelDOT
  - Cooper Bowers
- Dover/Kent MPO
  - Marilyn Smith
  - Mike Petit de Mange
  - Malcolm Jacob
- Kent Economic Partnership
  - Linda Parkowski
  - Zach Prebula
- Kent County Farm Bureau
  - Jim Minner
- Century Engineering (Now known as Kleinfelder, staff for the Dover Kent MPO East-West Truck Study Phase 2)
  - Drew Boyce
  - Ted Foglietta
  - Wes Hicks
- Whitman, Requardt and Associates, LLP
  - Leah Kacanda (Staff)
  - Gemma Tierney (Staff)

APPENDIX D. SEPTEMBER 9, 2024, STAKEHOLDER MEETING ATTENDANCE

- DelDOT
  - Steve Bayer
  - Cooper Bowers
- Dover/Kent County MPO
  - Marilyn Smith
- City of Dover
  - Jason Lyon (Water and Wastewater)
  - Dawn Melson-Williams (Planning)
  - Mark Nowak (Public Works)
  - Chief Thomas Johnson (Police Department)
- Byler's Store, Inc.
  - Lyn Byler
- Procter & Gamble
  - Joseph Taylor
- Kent Economic Partnership
  - Linda Parkowski
- Downtown Dover Partnership
  - Diane Laird

- Century Engineering (Now known as Kleinfelder, staff for the Dover Kent MPO East-West Truck Study Phase 2)
    - Ted Foglietta
    - Sonia Marichic-Goudy
- Whitman, Requardt and Associates, LLP
    - Leah Kacanda (Staff)
    - Gemma Tierney (Staff)

APPENDIX E. PUBLIC SURVEY QUESTIONS AND RESPONSE

Survey Questions:

1. What is your relationship with Dover's freight economy (for example: do you work in the freight industry or an industry that is heavily supported by freight)?

2. For each of the Dover Freight Plan's draft recommendations, check the box under the column that most closely corresponds to your level of support for the recommendation.

Level of support / Recommendation	Strongly support	Support	Neutral	Oppose	Strongly oppose
1A: Adopt development regulations requiring developers to provide truck parking/staging as part of manufacturing, warehouse, and logistics developments					
1B: Incorporate freight-specific planning considerations checklist (like the one developed by CPCS for WILMAPCO) into development review processes					
2A: Preserve opportunities for freight-intensive development in appropriate locations by protecting parcels currently zoned for freight-generating uses along Dover's existing and future truck routes from rezoning					
2B: Enhance opportunities for freight-intensive development in appropriate locations by pursuing rezoning for suitable parcels not presently zoned for freight-intensive uses along Dover's existing and future truck routes					
3A: Improve communication/coordination between local, county, and state government and MPO regarding freight-related land development and transportation projects					
3B: Improve engagement with local freight operators to better address their needs during planning processes					

3. Please share any additional recommendation suggestions, considerations, or questions.

Survey response (none of the 3 participants responded to questions 1 and 3):

Dover Freight Plan

Project Engagement

VIEWS	PARTICIPANTS	RESPONSES	COMMENTS
58	3	15	0

2. For each of the Dover Freight Plan's draft recommendations, select the option under the column that most closely corresponds to your level of support for the recommendation.

	Strongly support	Support	Neutral	Oppose	Strongly oppose
1A: Adopt development regulations requiring developers to provide truck parking/staging as part of manufacturing, warehouse, and logistics developments	33% Strongly support	- Support	67% Neutral	- Oppose	- Strongly oppose
1B: Incorporate freight-specific planning considerations checklist into development review processes	- Strongly support	- Support	100% Neutral	- Oppose	- Strongly oppose
2A: Preserve opportunities for freight-intensive development in appropriate locations by protecting parcels currently zoned for freight-generating uses along Dover's existing and future truck routes from rezoning	33% Strongly support	- Support	67% Neutral	- Oppose	- Strongly oppose
2B: Enhance opportunities for freight-intensive development in appropriate locations by pursuing rezoning for suitable parcels not presently zoned for freight-intensive uses along Dover's existing and future truck routes	- Strongly support	- Support	67% Neutral	- Oppose	33% Strongly oppose
3A: Improve communication/coordination between local, county, and state government and MPO regarding freight-related land development and transportation projects	- Strongly support	- Support	100% Neutral	- Oppose	- Strongly oppose
3B: Improve engagement with local freight operators to better address their needs during planning processes	- Strongly support	- Support	100% Neutral	- Oppose	- Strongly oppose

3 respondents

CITY OF DOVER DELAWARE

The Capital of The First State