Delmarva Freight Plan

Chapter 9

Freight Policy Guidance and Beyond

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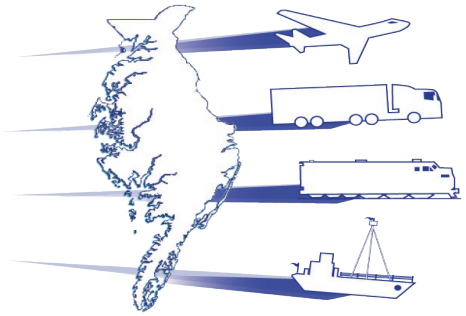
Building on the project guidance from the previous chapter, details below summarize general policy perspectives that will play an equally crucial role in helping to guide the course of freight related activities on the peninsula and highlight future freight actions. This policy guidance generally aims to encompass the previously identified key issues, stakeholder concerns, and focus areas. It also closes with a series of next steps to consider beyond completion of this plan relative to performance monitoring, future updates or further research.



9.1 Guiding Principles

Align with strategic freight goals: Ongoing freight planning and related general transportation planning and decisions on the Delmarva Peninsula should align with or help to support the overarching strategic goals summarized by this plan (*Exhibit 9.1*; see also *Chapter 1*). These goals reflect consistency with National Freight Policy while highlighting several of the most important strategic issues for the peninsula.

Enhance peninsula-specific freight focus areas: Ongoing planning efforts and decision-making should also aim to address or improve the numerous issues summarized by this plan as freight focus areas (see *Chapter 6* and *Exhibits 6.9-6.10*). The focus area discussions provide a level of background detail needed to better understand and potentially act upon the strategic goals.

Integrate freight-related project planning insights: Project planning and programming efforts that impact the Delmarva Peninsula should reference and, where possible, incorporate project guidance as identified by this plan (see *Chapter 8*). The freight plan is not a formal programming document, does not have authority to commit priorities or funding for any jurisdiction, and makes no attempt to supplant any broader transportation planning requirements or processes of the state, MPO, or other transportation entities serving the peninsula. However, insights from the freight plan's screening and prioritization efforts serve as a valuable reference in terms of potentially supporting or enhancing future decision-making by such entities within their respective processes and regardless of jurisdiction.

Foster multi-jurisdictional freight coordination: While freight transportation system planning will always benefit from effective coordination across jurisdictional boundaries, this fact is critical on the Delmarva Peninsula. The statement that freight "knows no boundaries" certainly rings true across the separate multimodal transportation systems, regulations, and requirements of the peninsula's 3 states, 14 counties, multiple MPOs, numerous local jurisdictions, and a wide variety of other public/private partners or stakeholders that own, operate, or utilize essentially all potential modes of freight transportation. Adding to these complexities are the peninsula's geographical constraints with limited points of access; its role amidst significant transportation corridors with connections to major metropolitan areas in the surrounding region; or the potentially challenging freight-related needs of unique customers such as the tourist industry, international ports, Dover AFB, or NASA Wallops Flight Facility, among others.

Continued planning efforts should build upon the recent successes of the Delmarva Freight Summit meetings, Delmarva Freight and Goods Movement Working Group meetings, and other activities that have fostered open and proactive discussions between public and private freight stakeholders, industries, interest groups, infrastructure owners, and local communities. Though the specific needs and interests of the various players may not always align, their potential abilities to successfully influence the peninsula's future are clearly intertwined.

Exhibit 9.1 – Strategic Freight Goals for the Delmarva Peninsula

Economic Vitality

Improve the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness

- *Support efforts to preserve existing multimodal freight-transportation infrastructure to ensure mode choice and competition between modes*
- *Support efforts to preserve land use compatibility adjacent to freight infrastructure throughout the peninsula*
- *Support strategically-located or planned improvements that recognize existing and projected population concentrations, employment and development, and related secondary traffic/population-based freight patterns*
- *Support efforts that address changes in economic activities (local, regional, national, or global) or growth in targeted industries*
- *Support efforts to enhance access to and from major regional ports and international shipping opportunities in multiple surrounding states*

Freight Connectivity, Mobility & Accessibility

Reduce congestion on the freight transportation system

- *Enhance freight mobility through broader transportation improvements that recognize the unique seasonal or tourist-based congestion aspects of travel to, from, and within the Delmarva Peninsula*
- *Enhance freight network connectivity with an emphasis on the unique needs and constraints related to serving the Delmarva Peninsula's limited geographical points of access*
- *Enhance opportunities for accessing and utilizing the freight transportation network on the peninsula through strategic multimodal infrastructure improvements*

Safety & Security

Improve the safety, security, and resilience of the freight transportation system

- *Support improvements that recognize the criticality and regional/national freight significance of I-95 and the Northeast Corridor*
- *Support improvements that enhance system redundancy with respect to I-95 and the Northeast Corridor and with respect to the geographical point of access limitations of the peninsula*
- *Support improvements that recognize the presence and unique needs of the region's governmental, military, or international shipping communities*

System Management, Operations & Maintenance

Improve the state of good repair of the freight transportation system

Use advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system

- *Enhance policies and opportunities related to truck parking and rest areas, weight limits, taxes, tolls, or other motor freight issues*
- *Support efforts to address physical improvements on secondary roads and bridges critical to motor freight access throughout the peninsula*
- *Support efforts to maintain or enhance dredging operations and the identification and preservation of adequate disposal sites for excess dredge materials*

Sustainability & Environmental Stewardship

Reduce adverse environmental and community impacts of the freight transportation system

- *Support improvements that recognize the unique relationships between consumer demand and commodity flows on the peninsula with respect to seasonal or tourist-based variability and quality of life*
- *Support efforts to improve the flexibility and resiliency of the freight transportation system to meet changing global energy demands or sources*

Bold	*- National Freight Policy Goals*
Italics	*- Focus details for Delmarva Peninsula*

9.2 General Policy Perspectives

Economic Vitality

Focus on regional supply chain positioning: Foster potential economic growth in anticipated or incentivized growth areas, and within the peninsula's core commodity groups or key supply chains. Such interests may span the energy, agriculture, poultry and agribusiness, food products (including value-added food production), chemical products, and retail industries, among others. Specific actions should enhance the economic and trade potential of the region while minimizing the potential for "missed" opportunities. Examples may include regulatory planning to streamline multi-jurisdictional transportation regulations; industry-specific planning to diversify logistical plans; or transportation planning to support efficient and well-maintained multimodal options, multimodal geographic hubs, and industry-specific freight access needs.

Support trade and market expansion opportunities: Track anticipated trends having substantial domestic or international trade implications, including inbound crude oil or grains, or outbound fracking support materials, refined oil products, or frozen poultry. Broader opportunities may also include support for the U.S. Foreign Trade Zone program to encourage, facilitate, and expedite participation in international trade, and in coordination with the Delaware Economic Development Office (DEDO) and regional port systems.

Enhance regional port access and opportunities: Recognize that with an anticipated growth in international trade, access to Wilmington, Baltimore, Hampton Roads, or other regional port locations will become even more critical to serve multimodal hubs and major assets that support the ongoing economic and trade potential of the region. Specific coordination efforts should investigate future public-private venture interests to potentially expand the Port of Wilmington to the south in the vicinity of a 176-acre site in Riveredge Industrial Park in New Castle[1]. General port-related coordination should also track potential marine highway or short-sea shipping opportunities that may develop in the future, particularly in light of increasing congestion levels along the I-95 corridor and throughout east coast metropolitan areas.

Consider area-specific strategies and opportunities: Track key business/industry trends and notable site development needs, particularly as they affect any of the peninsula's major freight hubs or local freight zones. Specific locations may include, for example, area near PBF Energy Refinery, Dover AFB, or NASA Wallops Flight Facility; and within Wicomico County as related to S/WMPO's Wicomico River Port Development Study.

Discuss land use issues and implications: 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.

Reflect market access and logistics trends or needs: Consider the impacts of future congestion on freight efficiencies and infrastructure investment decisions in general, and on "just-in-time" distribution facilities or services specifically. Strategies should aim to avoid any competitive business disadvantages on the peninsula and should consider the potential influence of trends in e-commerce; warehousing, distribution, or fulfillment centers; and consumer-direct or aggregated delivery services (e.g., e-Bay Now or Amazon Lockers).

[1] Milford, Maureen; "A New Vision for Port of Wilmington"; The News Journal; www.delawareonline.com; July 14, 2014.

Freight Connectivity, Mobility, and Accessibility

Detail the peninsula's freight network: Continue to define and refine a freight network for the Delmarva Peninsula, building on this plan, WILMAPCO's classifications, and in coordination with DelDOT, MDOT, and VDOT. Further detail the network inventory by adding/mapping technical data such as road widths, bridge loads, weight limits, height restrictions, operating restrictions, etc., and by compiling all information into a readily-accessible format that can be referenced by or distributed to a broad audience. Consider the freight network tier designations as referenced within this plan including:

- *Tier 1F* – State Primary Freight Corridor (included on the Federal PFN)
- *Tier 1S* – State Primary Freight Corridor (not included on the Federal PFN)
- *Tier 2* – State Secondary Freight Corridor
- *Tier 3* – First/Last Mile or other potential freight-relevant connection
- *Tier 4* – not categorized

Formalize the peninsula's roadway freight network: Where appropriate, supplement the peninsula's roadway freight network definition with potential formal designations such as the following:

- *Federal PFN* – Coordinate with future revisions or additions to the Federal PFN, adding critical linkages, if possible, such as the Bay Bridge to Salisbury via US 50, or the Bay Bridge to Middletown via US 301 (and potentially extending to I-95 via the future US 301 expressway and portions of DE 1).
- *Critical Rural or Urban Freight Corridors* – Consider potential candidates per MAP 21's guidelines for Critical Rural Freight Corridors. Track future updates to federal freight planning guidance relative to the possibility of a new Critical Urban Freight Corridor designation.
- *Signed Truck Routes* – Coordinate any potential changes to existing or new signed truck routes on the peninsula with the appropriate agency requirements (e.g., review and approval processes, roadway or pavement design criteria, signing or safety needs, etc.). It is not the intent of the freight corridor designations or discussions in this plan to preclude or supersede any agency-specific requirements.

Enhance multimodal/intermodal connections: Recognize the need to provide efficient access to key multimodal freight hubs in order to link the roadway network with rail, water, air, or pipeline transportation systems. Reference and maintain consistency with mode-specific rail, aviation, or port planning documents.

Manage traffic congestion and access: Support comprehensive transportation planning and management activities relative to alleviating traffic congestion in general, and specifically in key freight corridors, bottleneck locations, and freight hubs, as well as during peak season travel conditions. Where possible, integrate the freight-related project screening and prioritization insights identified by this plan. Emphasize operational improvements such as traffic signal optimization or ITS. Further recognize the potentially unique impacts of congestion on the peninsula relative to industry-specific needs (e.g., time-sensitive agriculture, poultry, or food product deliveries) or peak season demands (e.g., logistics, inventory, or distribution shifts).

Minimize freight/passenger conflicts: Support efforts to minimize freight and passenger travel conflicts at key locations while enhancing the flexibility of the freight system to move products efficiently and on-time. Support projects such as the Chesapeake Connector; grade-separation of critical rail crossings (e.g., US 40 in Bear, Delaware); or other strategies that would mutually benefit freight and public travel needs or conditions.

Safety and Security

Integrate freight interests throughout safety planning activities: Coordinate across agencies and jurisdictions to ensure that freight interests are reflected throughout safety planning activities such as crash prevention or mitigation programs, rail safety programs, or relative to freight operations and technology applications such as the Oversize/Overweight (OS/OW) Permit System or CVISN programs. Supplement existing HSIP program considerations by potentially exploring a standardized method of truck-related crash data assessments or periodic summaries for the peninsula, which in turn would require a simplified method to efficiently compile/compare separate crash datasets from Delaware, Maryland, and Virginia.

Integrate freight interests throughout emergency planning activities: Coordinate across agencies and jurisdictions to ensure that freight interests are reflected throughout safety, security, and emergency planning activities at all levels. Support inter-agency meetings, training opportunities, mock exercises, or first-responder capabilities that help to optimize communications, coordination, data-sharing, or related practices, while also considering the specific freight types, patterns, or modes on the peninsula. At a broader level, consider freight movement issues relative to evacuation planning, post-incident supply or recovery operations, emergency freight routes or freight detours, and surrounding community access or impacts.

Focus on overweight and hazardous materials: Support efforts to explore the identification of typical overweight or hazardous material freight routes in conjunction with ongoing and future CVISN initiatives or related truck monitoring and enforcement interests. Include a focus on site-specific hazardous material issues, overweight or hazardous materials tracking, and security screening options relative to the key freight activities or routes on the peninsula.

Support Homeland Security efforts relative to peninsula-specific freight activities: Coordinate with federal, state, and local agencies to help inform efforts and needs relative to security management and operations, cargo screening or inspection technologies, cargo theft protection, and broader security interests. Discuss key freight movements, infrastructure, pinch points, or critical systems relative to asset protection. Support ITS technologies or other cost-savings mechanisms that state DOTs may be able to deploy in support of security-related efforts.

System Management, Operations, and Maintenance

Strengthen jurisdictional relationships and collaboration: Ensure effective collaboration with all parties responsible for managing, operating, and maintaining various components of the freight transportation system. Include a focus on issues that affect land use and freight traffic relationships (e.g., rail crossing or traffic signal programs); that involve private freight infrastructure or potential public/private partnership opportunities; that influence staffing, training, management, or organizational needs; or that potentially enhance the deployment or integration of ITS solutions both geographically and within or between agencies.

Review and monitor truck policies and peninsula-wide implications: Consider policy enhancements that will help to manage the operational and cost efficiencies of motor freight transportation throughout the peninsula while also accounting for potential relationships or conflicts with federal, state, or local policy limitations. Recognize policy implications versus the various unique facets of the peninsula such as its limited geographical points of access, coverage across three separate states with varying statewide policies, a diverse mix of urban area freight hubs and rural agricultural activities, or a pronounced peak season traffic demand.

Multi-jurisdictional discussions of key truck regulations and their impact on the peninsula may focus on:

- Federal Hours-of-service regulations versus additional needs for truck parking or rest areas
- Multi-state cooperation/collaboration on truck weight limit, idling, or similar restrictions
- Multi-state cooperation/collaboration on designated truck routes and mapping across the peninsula
- Reviews of local truck parking or delivery policies and restrictions

Consider truck traffic needs or impacts during roadway maintenance and construction activities: Recognize potential freight system issues such as permitting, rural truck traffic, overweight/oversize trucks, weight limits or route restrictions that may require special attention during the construction planning process. Monitor changes in heavy vehicle traffic patterns, particularly along identified freight corridors, to continue to support pavement design and management programs and related decision-making that account for such traffic. Similarly emphasize bridge maintenance and reconstruction along critical freight routes.

Expand the use of technologies in freight system management and operations: Expand capabilities both in direct freight applications and where mutual benefits may be achieved alongside general passenger travel. Specific opportunities on the peninsula may include the following:

- Support ongoing freight initiatives such as the statewide deployment of Weigh-in-Motion (WIM) devices, multi-state CVISN efforts (*see related call-out box*), or other freight safety/security screening interests.
- Support mutually-beneficial ITS applications such as All Electronic Tolling (AET), adaptive signal systems, or real-time traffic and construction reporting systems.
- Consider partnering with universities or other entities to research and develop alternate technological solutions that may reduce reliance on existing proprietary ITS systems. Encourage market ideas and competition to improve flexibility or cost efficiencies for system procurement options and maintenance needs.

Explore long-term solutions to waterway dredging needs on the peninsula: Focus on the identification of adequate disposal sites for excess dredge materials, as well as broader discussions relative to federally-allocated dredge funding shortfalls and the potential need for alternate funding arrangements or cost-sharing options. Consider supporting research into the re-use of dredged materials, as well as improvements to environmental education to foster public relations and a more complete understanding of dredging impacts and disposal site needs or opportunities.

Ongoing CVISN Initiatives

Delaware is in the process of implementing a comprehensive commercial vehicle weight and safety enforcement program. The State currently utilizes state-of-the–art, web-based technology to perform e-credentialing of registration and tax payments; the State also conducts e-screening for safety performance through the PrePass® system installed at the Middletown Scale House on US-301 near the Delaware-Maryland State line. Projects in development include an aggressive virtual weigh station (VWS) program and development of systems and applications to enhance roadside inspection and enforcement activities. Delaware reports all credentialing and safety information into a national database that gives the credential issuers and enforcement officers' real-time information. These systems have been paid for with substantial assistance from the federal Commercial Vehicle Information Systems Network (CVISN) and the Performance Registration information Management (PRISM) programs.

Although Delaware, Maryland, and Virginia have made significant investments in commercial vehicle enforcement, much remains to be done. Commodity flows identified in this report indicate that additional study is warranted in enhanced safety technology, particularly in the identification of truck cargo and the ability to identify hazardous cargo at the scale houses, at roadside enforcement and in response to an incident. With the completion of VWS locations in southern New Castle County and adjacent counties in Maryland, Delaware and its partners need to identify additional freight corridors where commodity flows indicate a need for heightened commercial vehicle enforcement.

One large truck population continues to move outside of Delaware's enhanced weight and safety enforcement capabilities. Currently all interstate commercial vehicles over 26,000 pounds are subject to enhanced enforcement and inspection at the scale houses. This captures approximately 8,400 vehicles. Meanwhile, there are an additional 19,000 plus vehicles in Delaware weighing between 10,000 and 80,000 pounds that are registered as intrastate operators that do not leave the state. These intrastate trucks are subject to the same level of safety enforcement as your family car. The magnitude of the safety problem associated with these vehicles is unknown; however, if they mirror the interstate commercial vehicle fleet, nearly a quarter of these intrastate vehicles are operating unsafe vehicles that may require being put out of service. Including all vehicles above 10,000 pounds (both interstate and intrastate) in the interstate commercial vehicle weight and safety enforcement program should be studied, with the understanding that PRISM grant funds are available to implement such a program.

Sustainability and Environmental Stewardship

Implement strategies to reduce freight's impact on air quality: Consider expansion of emissions control and monitoring efforts in conjunction with broader truck enforcement and inspection activities. Review state-specific variations in truck idling regulations and the potential benefits or impacts of implementing consistent multi-state regulations across the Delmarva Peninsula. Support targeted initiatives such as an expansion of Truck Stop Electrification (TSE) facilities as well as general advancements in truck, fuel, or clean diesel technologies, including coordination with programmatic efforts through the EPA and the Mid-Atlantic Diesel Collaborative (*see related call-out box*).

Mid-Atlantic Diesel Collaborative

EPA's National Clean Diesel Campaign (NCDC) promotes clean air strategies and partnerships to reduce diesel emissions. Within this campaign are Regional Clean Diesel Collaboratives, including coverage on the Delmarva Peninsula under the jurisdiction of the Mid-Atlantic Diesel Collaborative (MDC).

The MDC is a partnership between leaders from federal, state, and local government, the private sector, and environmental groups in Delaware, Maryland, Virginia, Pennsylvania, West Virginia, and the District of Columbia. The MDC's mission and purpose is to leverage resources and expertise to reduce diesel emissions to protect public health throughout the Mid-Atlantic Region; promote collaboration and coordination among projects within the Region; and raise awareness of activities underway and the need for additional diesel emission reduction projects in the Region. Strategies employed by the MDC and their partners aim to:

- Facilitate the education and awareness of key constituent groups in the Region about diesel pollution as a public health and quality of life issue, and ways to improve air quality.
- Provide a forum for diverse stakeholders to exchange ideas to reduce diesel emissions in the Region.
- Implement projects throughout the Region by leveraging funds from a variety of sources to achieve measurable emissions reductions and create momentum for future diesel emission reductions.
- Promote, review and publicly recognize voluntary projects and strategies in the Mid-Atlantic region that increase the availability and use of verified technologies, idling reduction technologies, emission reducing fuels, and employ practices and habits to reduce fuel consumption.
- Encourage participation in the Collaborative.
- Share information and expertise to facilitate administration of projects to reduce diesel emissions throughout the Region.

Sources: http://www.epa.gov/cleandiesel/index.htm; http://dieselmidatlantic.org/

Support efforts to research and manage freight's relationship with water resources: Continue to proactively manage water, wetlands, or other environmental issues as an inherent part of the overall waterway dredge management process. Monitor and plan for critical spills control issues, particularly in light of the importance of the area's Chesapeake Bay or Delaware Bay water environments.

Continue to investigate freight issues relative to Sea-Level Rise (SLR) adaptation planning: Conduct and track vulnerability assessments of key freight infrastructure that may be impacted by flooding, inundation, or storm impacts as a result of future sea-level rise. Include a focus on critical freight-carrying roadway segments, bridges, low-lying rail lines, tunnels, port facilities, or navigable channels.

Balance freight operations and key community, land use, or quality of life issues: Refer to guidance in FHWA's *Freight and Land Use Handbook*[2] to integrate appropriate and coordinated land use policies, effective transportation systems and services, effective operations and management policies, and continuous education and outreach to ensure that freight is a "good neighbor" to communities across the peninsula. Review and consider freight needs or implications relative to local first/last mile route connections, when considering land use or zoning modifications, when developing project or roadway design criteria, or when exploring Complete Streets initiatives, road diets, or similar types of corridor modifications. Include a focus on communities surrounding key freight transportation hubs or port locations, as well as coordination with programmatic efforts through the EPA Ports Initiative (*see related call-out box*).

EPA Ports Initiative

The Ports Initiative vision is to develop and implement environmentally sustainable port strategies. These strategies will identify opportunities and find solutions to create healthy air quality in communities and reduce climate risk, while supporting jobs and the economy.

Ports are the main gateway for US trade and are critical to the economies of many cities and regions. In recent years, there has been a growing emphasis on the globalization of trade and the transportation infrastructure needed to support it. As our nation adapts to meet these demands, it is important to consider what this growth means for the environment.

Over the years, EPA has been working with ports through a number of programs. Through its Ports Initiative, EPA explores effectively partnering with port stakeholders to identify opportunities and find and fund solutions that create more sustainable ports systems by:

- encouraging environmental progress at ports and reducing climate risk
- supporting operational and technological improvements to increase efficiency
- improving community health and air quality
- encouraging sustainable economic development that supports our economy and jobs

Source: http://www2.epa.gov/ports-initiative/about-ports-initiative

[2] FHWA Freight and Land Use Handbook; April 2012; http://www.ops.fhwa.dot.gov/publications/fhwahop12006/index.htm

9.3 Beyond the Freight Plan

Effective freight planning must continue beyond the research, analyses, projects, and policies summarized throughout this document. The exact course of future efforts will inevitably vary depending on changes in statutory requirements, local or regional freight and industry trends, technological developments, or other such influences; and specific planning activities will involve agencies, stakeholders, and planning partners at all levels. Key follow-up actions summarized below focus on anticipated needs relative to freight system performance monitoring, strategic implementation actions, and future plan enhancement options.

Freight System Performance Monitoring

Requirements and Challenges

MAP-21 establishes performance measurement and performance monitoring (*see related call-out box*) as key features to support decision-making processes that will help to invest resources in projects that collectively will make progress toward the achievement of national planning goals in seven overall areas, including freight movement and economic vitality. Research and technical efforts in this Delmarva Freight Plan lay the groundwork toward complying with these provisions; however, five key challenges remain:

1. *Statutory Schedule:* Given USDOTs' statutory schedule for the subject requirements, the ultimate rules and specific performance measurement details have yet to be finalized. Moving forward, it will be important for USDOT to offer a fair level of flexibility to states both in terms of measuring data that will be relevant to state-specific needs, and to allow adequate time to potentially adjust existing processes (such as those discussed here) to fully comply with the ultimate rulings.

2. *Multi-State Challenges:* As the Delmarva Peninsula covers a multi-state/multi-jurisdictional area, inconsistencies that may affect performance monitoring efforts are inevitable. Issues or conflicts may arise with data availability, format, or ownership; differing program requirements in each state; or the organizational structure of those responsible for monitoring. Additional efforts may also be needed to either aggregate or disaggregate datasets – depending on their source – for direct application into each state's performance monitoring programs.

3. *Performance Measure Refinements:* Though an initial set of freight-related performance measures will be identified, additional research and agency/stakeholder coordination beyond the scope of this freight plan will be required in some cases to fully implement and/or finalize these suggestions. The process should not be expected to be perfect in its very first outing; rather it will likely benefit from subsequent revisions based on trends or lessons learned throughout its usage. Refinements may also ultimately hinge on data availability, data consistency, private stakeholders' willingness or ability to share data, or the feasibility or practicality of maintaining and updating such information over the long-term.

4. *Performance Target Refinements:* Performance targets may likewise benefit from refinements over a longer period to ensure that they are reasonable, realistic, and meaningful versus state-specific needs. The process of establishing targets should ultimately be flexible enough to adjust to the final USDOT rulings, the final set of state-specific measures, and actual future data trends.

MAP-21 Performance Measure Requirements:

Requires the Secretary, in consultation with States, metropolitan planning organizations (MPOs), and other stakeholders, to establish performance measures in the areas listed below. Provides for DOT to establish such measures within 18 months of enactment, and prohibits DOT from establishing additional performance measures. [§1203; 23 USC 150(c)]

- Pavement condition on the Interstate System and on remainder of the National Highway System (NHS)
- Performance of the Interstate System and the remainder of the NHS
- Bridge condition on the NHS
- Fatalities and serious injuries – both number and rate per vehicle mile traveled – on all public roads
- Traffic congestion
- On-road mobile source emissions
- Freight movement on the Interstate System

MAP-21 Freight Performance Monitoring Requirements:

Requires DOT (within a broader rulemaking on performance) to establish measures for States to use to assess freight movement on the Interstate System. [§1203; 23 USC 150(c)]

Requires each State to set performance targets in relation to these measures and integrate the targets within its planning processes. States must also report periodically on their progress in relation to the targets and on how they are addressing congestion at freight bottlenecks. [§1201, 1203; 23 USC 135(d)(2), 135(f)(7), 150(d)-(e)]

Requires each MPO to set performance targets in relation to the freight measures, integrate these targets within their planning processes, and report periodically on their progress in relation to these targets. [§1201; 23 USC 134(h)(2), 134(i)(2)(C)]

Source: http://www.fhwa.dot.gov/map21/factsheets/

5. *Impacts of Regional Influences on System Performance:* MAP-21 accountability measures and the notion of making significant progress toward achieving performance targets must recognize the unique geographical location of the Delmarva Peninsula relative to the surrounding region. From a systems perspective, insights from regional analysis conducted as part of this plan confirm the practical observation that major transportation investments on the peninsula can influence regional traffic pattern shifts beyond the peninsula. For example, substantial improvements along I-95 may induce a regional shift off of US 1 (in southeastern Pennsylvania) in favor of I-95. Conversely, major improvements to the Bay Bridge may induce a regional shift off of I-95 (as far back as Washington D.C.) in order to avoid congestion in the Baltimore region. These effects emphasize the need for continued regional planning, as well as the need to account for these impacts in planning for regionally significant local projects.

Depending on the performance measures or targets in play, these types of regional traffic shifts have the potential to reduce the local system benefits of the transportation investments made while providing a significant benefit to the overall regional transportation system. While the Delmarva Peninsula is certainly not the only location in the U.S. with a transportation system so interconnected with the surrounding region, it may be exceptionally sensitive to regional influences given the make-up of travel between the adjacent metropolitan areas (e.g., Norfolk, Washington D.C., Baltimore, Philadelphia, and New York) due to the impact of the I-95 and US 301 corridors, which collectively make up almost 20% of the peninsula's overall VMT, or 35% of the truck VMT. As such, it will be exceptionally important to not just set the appropriate performance measures and targets, but to also maintain a systems perspective alongside any future insights that they may provide relative to tracking overall progress toward the intended performance targets.

Performance Measures

An initial set of performance measures for monitoring the freight environment on the Delmarva Peninsula generally, and in the state of Delaware specifically, was compiled based on the research and technical efforts of this plan as well as an informal review of recent similar practices in other statewide freight planning efforts[3]. At least 36 tentative measures were retained and, consistent with other components of this plan, were organized by major focus area category ranging from Economic Vitality to Sustainability and Environmental Stewardship (*Exhibit 9.2*).

Potential sources and, where available, baseline data and background assumptions were included in the list of performance measures. It will be necessary to view performance monitoring as an ongoing effort to be continued beyond the confines of this document as many of the proposed measures – noted in *Exhibit 9.2* as To-Be-Determined (TBD) – will require additional agency/stakeholder coordination, refined data details, or documentation of future implementation trends to finalize their baseline values. Several measures may also require reference to or integration with broader non-freight related planning efforts including, for example, topics on background traffic congestion, pavement and bridge conditions, or traffic signal operations. It is anticipated that DelDOT Planning, their MPO planning partners, and other participants involved with the Delmarva Freight & Goods Movement Working Group contain the necessary personnel and resources to champion future efforts to fill-in and/or refine the initial set of measures proposed here.

Performance Targets

MAP-21 further requires the establishment of performance targets in relation to the performance measures, integration of the targets within state and MPO planning processes, and periodic reports on progress in relation to the targets. While this plan proposes an initial set of performance measures, it does not attempt to establish the corresponding set of performance targets. As with finalization of the measures themselves, it is anticipated that setting such targets will be an ongoing effort until the final USDOT ruling. Reiterating previous discussions related to potential challenges, the process of establishing targets should ultimately be flexible enough to adjust to the final USDOT rulings, the final set of state-specific measures, and actual future trends.

[3] Notable reviews referenced a 2011 *Transportation Performance Scorecard* from the Virginia Office of Intermodal Planning and Investment; a 2013 *Maryland Freight System Performance Annual Report* from MDOT; a March 2014 *MAP-21 Performance Report* from Florida DOT; and a June 2014 draft of the *Washington State Freight Mobility Plan* from Washington State DOT.

Exhibit 9.2 – Performance Monitoring Measures

Measures for Economic Vitality	Baseline Data	Background Assumptions
Population level	**1.39M**	2010, 14-county basis w/ 902,823 in DE + 442,296 in MD + 45,553 in VA
Employment level	**504k**	2010, 14-county basis w/ 359,026 in DE + 130,865 in MD + 14,461 in VA
Source: TBD in conjunction w/ broader planning programs; baseline data above from freight plan Exhibit 7.4 and related scenario planning efforts		
Delmarva freight total tonnage	**69.6M**	2011, 12-county basis w/ 28.8M inbound + 28.0M outbound + 12.8M internal; not incl. 87.2M pass-thru
Delmarva freight total value	**$74.6B**	2011, 12-county basis w/ 33.2B inbound + 31.5B outbound + 10.0B internal; not incl. 252.7B pass-thru
Delmarva freight inbound/outbound freight ratio (by weight)	**1.03**	2011, 12-county basis w/ 28,884,251 inbound vs. 27,954,253 outbound
Source: TBD in conjunction w/ future commodity data updates; baseline data above from freight plan Exhibits 3.1-3.2 and related Transearch, Waybill, and FAF data summaries		
Port of Wilmington annual cargo tonnage	**5.6M**	2011 basis w/ 5,628, 807 tons
Port of Wilmington foreign cargo tonnage	**4.4M**	2011 basis w/ 1,246,918 domestic + 4,381,889 foreign
Port of Wilmington foreign import/export ratio	**3.68**	2011 basis w/ 3,446,432 imports + 935,457 exports
Source: USACE Navigation Data Center or Diamond State Port Corporation; baseline data above from freight plan Exhibit 4.17 and related USACE principal ports data summaries		
Waterborne freight tonnage along freight-significant river systems	**2.3M**	2011 basis w/ 1,064,830 via Wicomico River + 653,357 via Nanticoke River + 569,650 via Pocomoke River
Inbound/outbound freight ratio along freight-significant river systems	**1.39**	2011 basis w/ 1,329,807 inbound vs. 958,030 outbound via the Wicomico, Nanticoke, and Pocomoke Rivers
Source: USACE Navigation Data Center or Delmarva Water Transport Committee; baseline data above from freight plan Exhibit 4.18 and USACE waterborne commerce data summaries		

Measures for Freight Connectivity, Mobility, and Accessibility	Baseline Data	Background Assumptions
Travel time and/or delay in freight-significant corridors	**TBD**	-
Travel time and/or delay between benchmark destinations	**TBD**	-
Source: TBD pending future coordination w/ broader state or MPO planning programs; refer also to freight plan Exhibit 7.9 and other Chapter 7 system or corridor-specific modeling summaries		
Truck share of Delmarva freight total tonnage	**83%**	2010 basis vs. 10% rail + 7% river barge; does not reflect air, pipeline, or major regional port shipping
Source: TBD in conjunction w/ future commodity data updates; baseline data above from freight plan Exhibit 7.8 and related scenario planning efforts		
Daily Truck VMT	**5.3M**	2010 basis for truck miles traveled per model run data
Daily Truck VHT	**93k**	2010 basis for truck hours traveled per model run data
Percent of truck VHT at LOS E/F	**11%**	2010 basis for truck hours traveled at LOS E/F vs. total truck VHT per model run data
Daily system truck delay	**5.5k**	2010 basis for system truck delay hours per model run data
Percent of road mileage at congested speeds < 60% of free-flow speeds	**5%**	2010 basis per model run data for typical weekday PM peak periods
Source: DelDOT Cube Cargo / Cube Voyager model; baseline data above from freight plan Chapter 7 and related scenario planning efforts; additional corridor details available throughout Chapter 7		
Percent of rail network capable of supporting 286k	**TBD**	-
Port of Wilmington average truck turn-around time	**TBD**	-
Source: TBD pending future coordination (e.g., w/ state rail agencies, rail owner/operators, Diamond State Port Corporation)		

Exhibit 9.2 – Performance Monitoring Measures (Continued)

Measures for Safety and Security	Baseline Data	Background Assumptions
Number of total crashes involving large trucks	TBD	-
Number of fatal crashes involving large trucks	18	3-year average (2011-2013), 14-county basis w/ annual fatal counts per NHTSA FARS data
Number of persons injured in crashes involving large trucks	TBD	-
Source: TBD pending future coordination (e.g., w/ state crash reporting programs and available system data); baseline fatal crash counts from online NHTSA FARS database		
Number of total crashes at public highway-rail crossings	8	3-year average (2011-2013), 14-county basis w/ annual crash counts per FRA WBAPS data
Number of public highway-rail crossing improvements implemented	TBD	-
Source: TBD pending future coordination (e.g., w/ state rail agencies or rail owners/operators); baseline crash counts from online FRA Web Accident Prediction System		
Number of commercial vehicle inspections performed	TBD	-
Source: TBD pending future coordination (e.g., w/ applicable state agencies or enforcement personnel)		

Measures for System Management, Operations, and Maintenance	Baseline Data	Background Assumptions
Pavement conditions summary	TBD	-
Bridge conditions summary	TBD	-
Source: TBD pending future coordination w/ broader state or MPO planning programs		
Number of VWS or WIM sites added (or in operation)	TBD	-
Number of truck parking spaces available	TBD	-
Number of traffic signals updated or retimed	TBD	-
Source: TBD pending future coordination (e.g., w/ applicable state agencies and/or MPOs, as well as progress tracking subsequent to this freight plan)		
Dredge material placement capacity remaining	TBD	Anticipate a focus on the Nanticoke, Pocomoke, and Wicomico Rivers
Percent of key waterway mileage at federally-authorized depth	TBD	Anticipate a focus on the Nanticoke, Pocomoke, and Wicomico Rivers
Source: TBD pending future coordination (e.g., w/ USACE, Delmarva Water Transport Committee)		
Number (or value) of high/moderate priority freight actions implemented	TBD	Anticipate tracking and/or referencing projects or actions throughout freight plan Chapters 8 and 9
Mileage (or value) of rail enhancements implemented	TBD	TBD
Source: TBD pending future coordination (e.g., w/ state planning or MPOs, state rail agencies, rail owners/operators, as well as progress tracking subsequent to this freight plan)		

Measures for Sustainability and Environmental Stewardship	Baseline Data	Background Assumptions
Number (or value) of emissions reducing actions implemented	TBD	-
Source: TBD pending future coordination (e.g., w/ applicable state agencies or the Mid-Atlantic Diesel Collaborative)		

Strategic Implementation Actions

To support the implementation of projects, policies, or related activities outlined by this plan while also generally continuing to advance the state of freight planning on the peninsula, a number of strategic follow-up planning actions will be required. As with previous discussions on performance monitoring, it is anticipated that the peninsula's state, MPO, or regional planning partners and efforts through the Delmarva Freight & Goods Movement Working Group will be able to identify the necessary personnel and resources to champion such actions including, but not limited to, the following:

Encourage the State Freight Advisory Committee: Continue outreach and coordination through the Delmarva Freight & Goods Movement Working Group meetings and annual Delmarva Freight Summits.

Finalize performance measures: Complete and/or refine the initial set of performance monitoring measures and baseline data assumptions documented in this plan. Coordinate refinements with other statewide planning programs and broader non-freight related planning efforts as required.

Set initial performance targets: Set realistic, reasonable, and meaningful performance targets in conjunction with the selection of final performance monitoring measures.

Prepare for performance reporting: Establish realistic schedules, assignment responsibilities, and report templates to facilitate future performance monitoring updates and related reporting needs.

Refine future performance monitoring details: Consider future needs or opportunities to further refine performance measures or targets over a longer period. Catalysts for change may include compliance needs based on final federal statutory rulings, integration needs alongside other statewide planning programs, or new opportunities with future expansion or implementation efforts (e.g., additional access to WIM site data, statewide travel time monitoring datasets, GIS dashboards, etc.). In conjunction with these efforts, consider a review of newer data sources, applications, or limitations by way of a dedicated project, a group action within the Delmarva Freight Advisory Working Group, or a focused Delmarva Freight Transportation Data Convention[4].

Track future implementation details: Develop summary tracking tools, lists, spreadsheets, etc., and assign responsibilities for periodically updating the status of projects or studies on the screening and prioritization lists developed by this plan. To further document broader freight planning efforts and to help support future performance reporting needs, similarly track general freight related actions, decisions, meetings, policies, strategies, or related investments that may be advanced or implemented subsequent to completion of this freight plan.

Enhance integration within statewide planning processes: Consider a review of other formal planning processes such as the statewide prioritization process for Delaware's Comprehensive Transportation Plan (CTP) to identify potential enhancements that could be made within those processes given the newest available information compiled by this freight plan.

[4] As recommended by BEACON at Salisbury University in an August 2011 draft Freight Transportation Study Conducted for the Salisbury/Wicomico Metropolitan Planning Organization.

Inform future funding and implementation decisions: Incorporate insights from the freight plan's project screening and prioritization efforts into broader discussions relative to formal project planning, programming, or funding decisions. Likewise consider the identification of key freight project candidates for which each state and/or their planning partners may wish to pursue unique freight-eligible funding opportunities including, for example, MAP-21's increased federal match percentage, TIGER grants, public/private partnerships, or similar options.

Maintain compliance with federal freight planning revisions: Monitor federal-level proposals and reauthorization modifications that would influence freight planning requirements, program details, or project funding opportunities. Potential examples include future extensions or revisions to current MAP-21 freight guidelines, adoption of freight provisions within The GROW AMERICA Act, re-defining of the federal Primary Freight Network (PFN) and/or its purpose, or revival of the Projects of National and Regional Significance (PNRS) program. Continue to update state and regional freight planning perspectives in compliance with any new or revised programs, particularly as it may be beneficial to state needs or priorities including, for example revisions pertaining to:

- Multimodal freight incentive programs
- National freight infrastructure programs
- Multimodal redefinition of the National Freight Network
- Formal designation of new Critical Rural or Critical Urban Freight Corridors
- Formal designation of new Intermodal Connectors
- Statewide freight advisory committee roles and responsibilities

Future Plan Enhancement Options

To further advance the state of freight planning on the peninsula while also maintaining or enhancing key components relative to future plan updates, a number of additional freight planning enhancements may also be considered. Whereas the previous list of strategic implementation actions focused primarily on management, application, or integration of the plan; the potential enhancements discussed here focus more on discrete add-on components that would supplement or expand the scope of the current plan including, but not limited to, the following:

Maintain future commodity flow data: Determine a reasonable schedule, area, and approach for updating commodity flow data in conjunction with future freight plan maintenance, Cube Cargo model maintenance, or other targeted freight studies. The primary data source for this plan relied on 2011 IHS Transearch data by county for the 12-county area in Delaware and Maryland only, supplemented with STB rail waybill data for Delaware, as well as a variety of 2011/2012 projections from FHWA's FAF-3 dataset. Future revisions should reassess as-needed the required data geography and level of detail versus specific update or modeling needs, as well as potential implications of FHWA's future development of the FAF-4 dataset and beyond.

Maintain the Cube Cargo model: Integrate the Cube Cargo commodity flow model that was developed as part of this freight plan with applicable planning processes or applications for DelDOT, WILMAPCO, or their planning partners. Update the model as-needed in conjunction with future freight plan maintenance, commodity flow data updates, or refined population and employment projections. Consider additional applications of the model as a tool to support overall regional planning including system level assessments of future project impacts, additional scenario evaluations, or similar efforts.

Investigate additional freight planning scenarios: Consider the development and assessment of additional freight planning scenarios in conjunction with future planning needs or interests. Example scenario refinements could explore issues related to:

- Modified growth levels or locations
- Sea-level rise adaptation planning
- Peak season congestion conflicts
- Motor freight cost sensitivities
- Motor freight weight limits or payload equivalency factors

Study key supply chains: To gain a more in-depth understanding of key supply chains and related needs or opportunities relevant to the peninsula, consider supporting additional targeted supply chain studies similar to efforts through WILMAPCO that were recently completed for Delmarva's chemical products industry. Other key supply chains noted in this plan encompass industries related to energy, agriculture (including poultry and agribusiness), food products, and retail (including related warehousing/distribution facilities); or to a lesser degree construction, transportation equipment, and miscellaneous manufacturing.

Study potential expansion of CVISN's VWS coverage: Consider a targeted effort to identify additional freight corridors where commodity flows indicate a need for heightened commercial vehicle enforcement. Expansion interests may include a focus on overweight or hazardous material truck travel patterns, which would require a more in-depth review of applicable commodity flows, enforcement/inspection activities, route restrictions, or similar details.

Study potential expansion of CVISN's enforcement coverage: Consider a targeted study to include all vehicles above 10,000 pounds (both interstate and intrastate) in the interstate commercial vehicle weight and safety enforcement program. PRISM grant funds may be available to implement such a program.

Evaluate strategies for compiling multistate crash data: Explore options for developing an efficient and effective approach to compiling and assessing truck crash details from multiple crash reporting systems across the peninsula's tri-state area. Efforts would require a more in-depth review of state-specific crash reporting details, data request or confidentiality concerns, data consistency issues, or similar details.

Integrate dashboard summaries: Explore options to integrate GIS data and dashboard summaries in conjunction with ongoing freight system performance monitoring or as related to broader statewide planning efforts. Consider partnerships with local universities to support such efforts, coupled with a state-of-the-practice review of similar applications such as VDOT's Performance Reporting System for Projects and Programs *(*http://dashboard.virginiadot.org/*)*.

Develop a mapping and data platform to summarize Delmarva's freight environment: Explore options for the detailed development of a robust, publicly accessible, mapping and data inventory tool to compile relevant details for a broad understanding and presentation of the freight environment on the Delmarva Peninsula. Consider partnerships with local universities to support such efforts, coupled with a state-of-the-practice review of similar applications such as DVRPC's Philly Freight Finder *(*http://www.dvrpc.org/webmaps/PhillyFreightFinder/*)*.

9.4 Closing

The Delmarva Freight Plan was aimed at supporting key national freight planning goals in compliance with MAP-21, while also providing a broad assessment of local and regional freight planning needs. This approach was paired with the development of a Cube Cargo commodity flow model to support ongoing and future planning efforts in the region, alongside customized freight scenario testing to help inform decision-making in the face of unknown futures. The plan further included a comprehensive project screening and prioritization process to help evaluate projects having the most potential to influence the freight system, while also providing data-oriented elements that may be used to help pursue freight-specific funding options for those projects. Capping these efforts were generalized summaries of freight policies, performance monitoring needs, strategic implementation actions, and future plan enhancement options that will ultimately help to support the region's freight planning efforts now, tomorrow, and into the future.

While completion of this plan may be considered a milestone amongst freight planning activities on the Delmarva Peninsula, it is undoubtedly not an end. Rather it should serve as a catalyst that helps to continue the momentum of a renewed emphasis on freight and goods movement planning that must continue well beyond the confines of this document.