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CONNECTIONS
THE REGIONAL PLAN FOR
A SUSTAINABLE FUTURE

DVRPC

LONG-RANGE VISION for FREIGHT

DELAWARE VALLEY
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REGIONAL
PLANNING COMMISSION

The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals and the public with a common vision of making a great region even greater. Shaping the way we live, work and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region - leading the way to a better future.



The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole, while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

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Executive Summary

The Delaware Valley Regional Planning Commission (DVRPC) Long-Range Vision for Freight highlights policies, projects, and studies that are needed to improve freight operations and infrastructure in the Delaware Valley. Advancing the freight initiatives identified in this report can provide the Delaware Valley with many benefits, such as enhancing economic competitiveness.

Nationally, the most successful freight programs have adopted a corridor approach to address freight needs. The foundation of the corridor philosophy is to create facilities that move freight in an efficient, safe, and secure manner, while keeping freight out of local communities as much as possible. DVRPC has identified two multimodal corridors for the DVRPC region, one North-South oriented and one East-West oriented.

The Policies section of this report outlines a set of visions designed to better address the unique needs of the freight industry and to better integrate freight operations with community goals. The five overarching visions are:

- ❧ **Vision 1: Recognize the Value of Freight**
- ❧ **Vision 2: Practice “Freight as a Good Neighbor” Strategies**
- ❧ **Vision 3: Be Environmentally Friendlier and More Sustainable**
- ❧ **Vision 4: Enhance the Links between Freight-Related Transportation and Land Use**
- ❧ **Vision 5: Make Operational Improvements**



Container ship at Packer Avenue Marine Terminal
(Photo provided by Philadelphia Regional Port Authority)

The identified freight projects are grouped into three programs: freight highways and connectors, freight rail, and distribution facilities (including ports, air cargo, and warehousing). A brief description of each individual project is provided as well as a projected cost and time frame for implementation if known.

The capital improvement program laid out in this report focuses on the region’s primary freight corridors and the major facilities within them. Furthermore, the program seeks to maximize each mode of freight transportation and to improve the connections between the

modes. While the program is split into three sections (highways, rail, and distribution facilities), many of the projects have benefits across multiple modes.

The Freight Highway and Connector Program section highlights projects that are of special importance to freight and trucking operations, especially improvements to interstate highways and National Highway System connectors. The entire program totals approximately \$7.8 billion in known costs to public roadways and \$4.6 billion to the region's turnpikes.

The Freight Rail Program section details projects which can improve the region's extensive rail freight network. The goal of the freight rail program is to provide a comprehensive list of all capital projects meant to improve capacity and remove bottlenecks. The identified projects range greatly in cost, from \$500,000 up to \$500,000,000. The total program is estimated to represent roughly \$1.46 billion in needs.

The Distribution Facilities Program section contains a list of the facilities in the DVRPC region where significant expansions are envisioned, thus increasing the cargo processing capabilities of the region. While port, air, and warehouse facility expansions are not traditionally linked to Metropolitan Planning Organization (MPO) funding pots, it is important to anticipate this type of development because of the impacts that may result on highway and rail infrastructure that connect into these facilities.

Projects listed in this document must advance through the prescribed DVRPC project development process if they are to receive federal funding. The first step of this process is to seek inclusion of a specific project in the DVRPC Long-Range Plan. Once that occurs, freight partners should work with the DVRPC member governments and the Regional Transportation Committee and Regional Citizens Committee to discuss the costs and benefits of the project. Individual projects then have the chance to move onto the Transportation Improvement Program and ultimately receive funding. In terms of financing projects, it is also imperative to take advantage of nontraditional funding opportunities and cultivate public-private partnerships.

The Freight-Related Studies section identifies problems and issues that were generated through the process of researching this report, but which do not have identified solutions. These projects represent some of the work that the DVRPC Freight Planning Unit hopes to undertake in the coming years.

Finally, the contents of this report were compiled in close coordination with DVRPC's Freight Advisory Committee, the Delaware Valley Goods Movement Task Force.

Long-Range Plan Overview

Long-Range Plan

The regulations of the Intermodal Surface Transportation Efficiency Act (ISTEA), as well as the subsequent Transportation Equity Act of the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), have given the Delaware Valley Regional Planning Commission (DVRPC) the duty of creating a Long-Range Plan (LRP) for the region with a minimum 20-year planning horizon. The previous LRP, **Destination 2030: A Vision for the Future**, focused on rebuilding the region's existing infrastructure and creating a link between transportation investments and land-use decisions. DVRPC has now created a new LRP, **Connections 2035: The Regional Plan for a Sustainable Future**. Connections 2035 will continue to focus on strengthening the linkages between transportation, land use, economic development, and the environment, as well as tackle new focus areas such as climate change and sustainability.

The DVRPC LRP serves as the foundation for the Transportation Improvement Program (TIP), a short-term capital program of primarily highway and public transit projects. Having a proposed project on the LRP is the first step toward getting the project on the TIP and moving toward project funding and implementation.

Freight Considerations in Long-Range Plans

The movement of freight and freight facilities has received increased attention and scrutiny in DVRPC long-range planning efforts over time. As a result, more research and outreach have been conducted, and freight needs have been better documented in each successive LRP. At all times, the development of the LRP and any specific freight materials are closely coordinated with the DVRPC freight advisory committee, the Delaware Valley Goods Movement Task Force, and its planning subcommittee.

Most recently, the 2030 DVRPC LRP (Destination 2030) included a "freight module," which was integrated into the full transportation and land-use plan. The freight module consisted of a vision statement, goals and strategies, major transportation projects, and a regional facility map. These goals and projects were intended to improve freight flows and mitigate adverse community impacts. The freight module also included mention and a depiction of

the Delaware Valley multimodal freight corridors, which encapsulates DVRPC's primary strategy for effectively dealing with anticipated increases in freight shipments.

Along with freight becoming more important in DVRPC LRPs, freight has also enjoyed increased attention in the federal reauthorization bills. Freight was first emphasized in ISTEA. September 30th, 2009 was the end of the current transportation act, and Congress has begun the process of putting together a new transportation bill. This new bill is likely to include an increased role for freight in the public planning and funding process, and this document will help prepare the Greater Philadelphia Region for that opportunity.

Freight Infrastructure Investments and Economic Development

Among the reasons for supporting freight planning and the freight LRP element are the economic benefits that freight activity can bring to a region. According to a Federal Highway Administration (FHWA) report entitled, "Freight Transportation: Improvements and the Economy," freight transportation is essential to regional and national economies. The saying goes that everything you buy in a store is only there because of the ability to move goods. As a consumer-based economy, we are especially dependent on this ability, and making it easier for goods to move has enormous economic benefits. The way in which goods move has evolved over time, with businesses and individuals now demanding that freight be able to move with increased flexibility and reliability.

Macroeconomic research by Nadiri and Mamuneas has confirmed that transportation investments play a significant role in economic growth. "Simply put, more and better roads reduce the cost of production in most industries at a given level of output by making it faster and cheaper to obtain parts and raw materials and to get finished products to market."¹ Benefits to the carrier are simple: reduced travel time, decreased operating costs, and reduced costs related to crashes. Benefits to shippers are more complicated. These benefits are mainly focused around the ability of a more mobile and reliable infrastructure to allow for production benefits. One of these production benefits is economies of scale. Instead of having multiple sites of production located near multiple consumption areas, additional transportation investments can allow companies to have one large site of production and transport the product to many markets. This is a benefit to the company, and also to the consumer, because of the lower cost of the good being produced.



Inspection of Palletized Lemons
(Photo provided by Philadelphia Regional
Port Authority)

¹ "Freight Transportation Improvements and the Economy," Federal Highway Administration, June 2004.

Additional benefits may be seen by the shipper because a more efficient transportation system can allow for regional specialization and clustering of facilities to improve productivity. This is known as agglomeration economies.

The Freight Corridor Approach

Nationally, the most successful freight programs have adopted a corridor approach to address freight needs. Well-known examples include the Alameda Corridor in Southern California and the I-95 Corridor Coalition along the East Coast. The essence of the Alameda Corridor is the creation of a grade-separated rail corridor that carries cargo eastward from the ports of Los Angeles and Long Beach for inland distribution. Corridor improvements were financed with a bond that is paid back by tolling the railroads that use the main rail line. The I-95 Corridor Coalition functions as a multimodal organization that organizes multijurisdictional initiatives within the corridor along the East Coast of the United States and pursues funding for corridorwide projects.

The foundation of the corridor philosophy is to create facilities that move freight in an efficient, safe, and secure manner, while keeping freight out of local communities as much as possible. In the DVRPC region, two multimodal freight corridors have been identified (see Figure 1). DVRPC has been promoting these corridors and the individual transportation facilities within them to balance freight mobility and community goals within the region.

North-South Corridor

The North-South Freight Corridor includes three major interstate highways (I-95, I-295, and the New Jersey Turnpike), one Class I rail line (CSX), the Delaware River and 33 active port facilities, and the Philadelphia International Airport. The corridor includes the region's greatest concentration of freight facilities, the South Philadelphia, Camden Freight Complex, which holds the largest port facility, the largest intermodal rail facility, and a wide array of warehouses. The corridor is the region's main connection with the northeast megalopolis linking Philadelphia with the North Jersey, New York and Boston markets to the north and the Wilmington, Baltimore and Washington, D.C., markets to the south.

East-West Corridor

The East-West Freight Corridor includes two interstate highways (I-76, I-276/PA Turnpike), one Class I rail line (used by Norfolk Southern and Canadian Pacific), and it intersects the North-South Corridor to also include the South Philadelphia, Camden Freight Complex. The corridor connects Philadelphia with South Jersey, as well as central and western Pennsylvania and the markets of Chicago and the Midwest.

Additional Corridors

There are many additional transportation corridors strongly associated with freight activity in the Delaware Valley. While these other corridors tend to contain transportation facilities of just a single mode (e.g., highway or rail) and convey freight volumes far less than the two primary corridors, they are still essential to the distribution of goods and the economy of the region. These corridors (e.g., arterial highways or short line railroads) may be thought of as subcorridors that are complementary to the two primary corridors. In its freight planning work, DVRPC will also seek to identify and recommend improvements that benefit the movement of freight within these corridors.

Regional Freight Facilities








The DVRPC region hosts a wide array of freight facilities. There are seven interstate highways: I-76, I-276, I-476, I-95, I-195, I-295, and the New Jersey Turnpike. These interstate highways are supported by a dense network of arterial highways. Also, there are 11 National Highway System (NHS) connector roadways that connect the major highways with intermodal freight facilities. The connector roadways must carry 100 trucks per day in each direction to be classified as NHS connectors and be eligible for NHS funding.

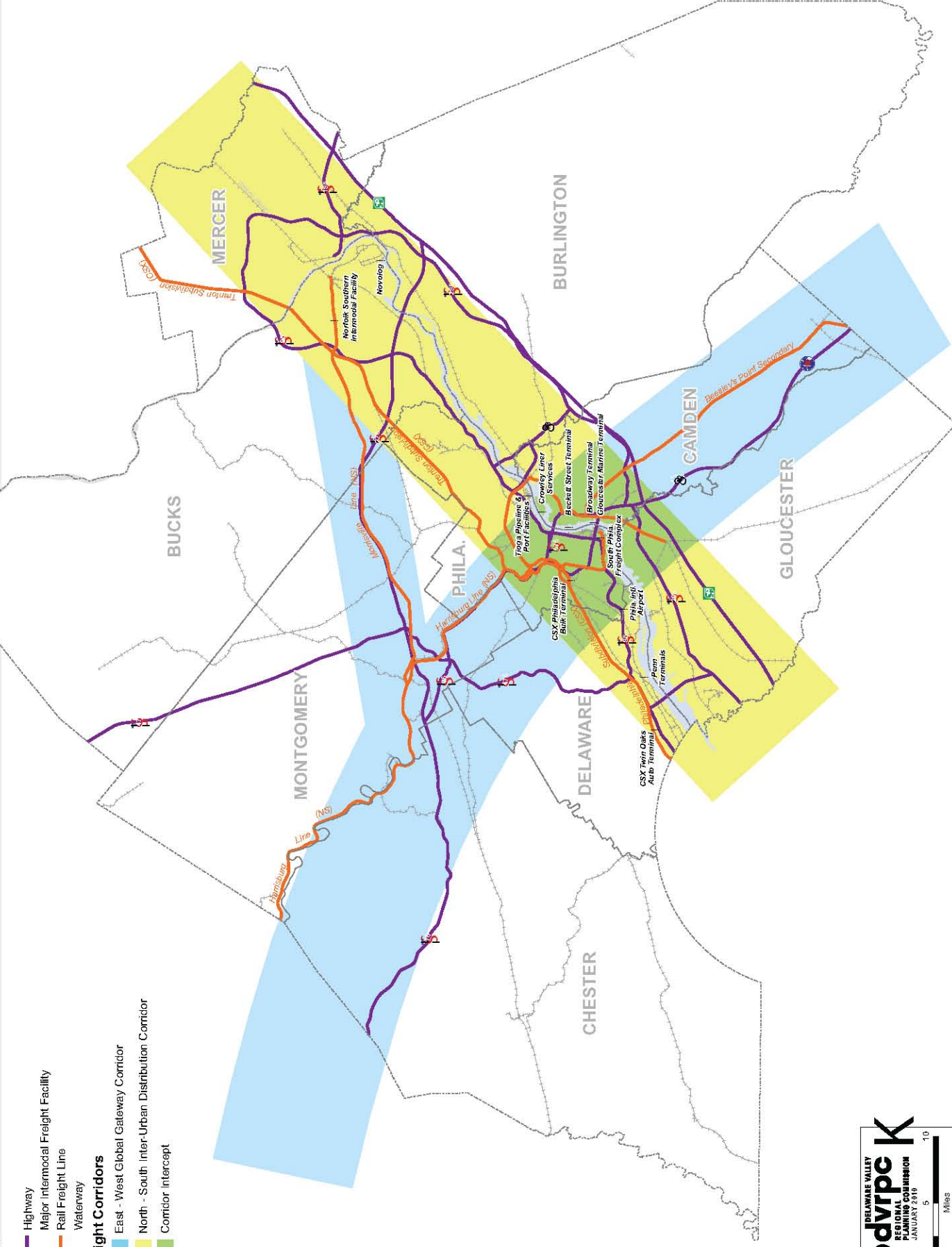
The region is serviced by three Class I rail carriers: CSX, Norfolk Southern, and Canadian Pacific. During the sale of Conrail, Norfolk Southern and CSX created a smaller version of Conrail to serve as a switching and terminal railroad in south Philadelphia and New Jersey. The region also hosts a number of short line railroads that offer direct rail service to their customers.

The DVRPC region's port activity is centered along the Delaware River and hosts 33 active port facilities in six counties. The majority of the tonnage moving along the Delaware River is crude petroleum that is destined for one of the major refineries in the region. In addition, the regional ports specialize in handling niche cargo, such as steel, paper, and fresh produce.

DVRPC Long-Range Vision for Freight

Figure 1: Delaware Valley Freight Corridors

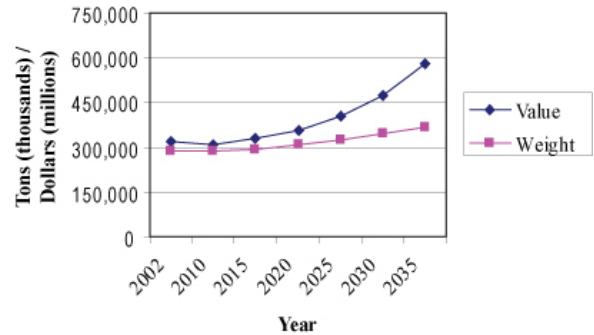
-  Highway
 -  Major Intermodal Freight Facility
 -  Rail Freight Line
 -  Waterway
- Freight Corridors**
-  East - West Global Gateway Corridor
 -  North - South Inter-Urban Distribution Corridor
 -  Corridor Intercept



Regional Growth in Freight Shipments

According to the DVRPC study, Freight Flows and Forecasts in the Philadelphia Consolidated Statistical Area (CSA), 319.6 million tons of freight was shipped within the region, to the region, and out of the region in 2002. The most significant finding of the report was that the value of shipments is expected to grow at a faster rate than the weight of shipments. The total domestic value of shipments within, into, and out of the Philadelphia CSA is forecasted to grow 82 percent from 2002 to 2035, while the same measurement in terms of weight is only forecasted to grow 29 percent. In addition, the report found that: both domestic and international inbound shipments are forecasted to grow much faster than outbound shipments; the Philadelphia CSA is an important region in the energy sector; and the trucking industry is the predominant mode of transportation for the region's shipments and is forecasted to remain that way through 2035.

Figure 2: Freight Flows in the Philadelphia CSA



(Source: Freight Flows and Forecasts in the Philadelphia CSA, DVRPC)

Background

Contents and Purpose

The contents of this report provide a comprehensive inventory of freight project needs for the Delaware Valley through the year 2035. The document lays out capital programs for highways, railroads, and ports and distribution facilities. Projects consist of those creating new capacity, reconstruct existing facilities, and improving operations.

Included in the narrative are policies and studies also designed to improve the regional flow of goods. Policy recommendations included in this report represent ways to make improvements to the freight system across the recognized freight modes. The needed areas of additional research are presented in the studies section. Many of the projects in this section correspond to problems that were identified during the development of this report, where no specific project or solution has been identified.

Process

Initially, a multistep effort with maximum participation and input was organized to produce a regional freight vision. A list of project needs was put together by drawing from the DVRPC 2009 TIP and the DVRPC 2030 Long-Range Plan in the areas of highways, rail freight, and ports and adjacent facilities. The draft project list was used as a basis on which to stage over 20 stakeholder meetings to discuss the status of projects on the draft list and to brainstorm projects that needed to be added. The stakeholder meetings were set up through the professional connections made through the Delaware Valley Good Movement Task Force. Efforts were made to ensure that all modes were covered and that a diversity of geographical interests throughout the region was reflected.

The stakeholder interviews started with a discussion of projects that were on the draft list. Many of the projects were found to be completed, underway, or about to be started. The interviews then progressed to discussions about the short-term projects that were being considered for the stakeholder's facility. Lastly, there was discussion of a long-range vision for the facility and the projects needed to support that vision. Many of the facilities do not have long-range plans (i.e., 10 to 20 years out), so many of the long-range projects cited in this document were identified by DVRPC or other transportation studies, such as the Mid-

Atlantic Rail Operations Study (MAROps), which was prepared by the I-95 Corridor Coalition in 2002.

The following is a list of Delaware Valley Goods Movement Task Force members and stakeholders who were interviewed and consulted about needed projects:

- ❖ Army Corps of Engineers
- ❖ Conrail
- ❖ CSX Corporation
- ❖ Delaware River Maritime Enterprise Council
- ❖ Delaware River Port Authority
- ❖ East Penn Railroad
- ❖ Lansdale Warehouse
- ❖ Montgomery County Planning Commission
- ❖ New Jersey Department of Transportation
- ❖ New Jersey Turnpike Authority
- ❖ Norfolk Southern Corporation
- ❖ Pennsylvania Department of Transportation
- ❖ Pennsylvania Motor Truck Association
- ❖ Pennsylvania Turnpike Commission
- ❖ Penn Terminals
- ❖ Philadelphia Industrial Development Corporation
- ❖ Philadelphia Regional Port Authority
- ❖ Port of Bucks/Keystone Industrial Port Complex/Kinder Morgan
- ❖ Select Greater Philadelphia
- ❖ SMS Rail Lines
- ❖ South Jersey Port Corporation
- ❖ Sunoco

After completing all of the interviews, DVRPC then underwent a vetting process to determine which projects should be included in an updated needs list. It was important that the proposed projects be screened to assure consistency with regional goals and objectives. A draft list was initially presented at the DVRPC Freight Plan Showcase.

Freight Plan Showcase

The Freight Plan Showcase was conducted at the DVRPC offices on October 15, 2008. The Showcase brought members of DVRPC's freight advisory committee face to face with members of the broader planning community (e.g., planners from the pool of DVRPC member governments) to discuss freight operations, facilities, and needs in the Delaware Valley. The Showcase was conducted in a unique "supply chain format" that culminated with the presentation of long-range freight needs and projects by DVRPC staff.



The DVRPC Freight Plan Showcase
(Photo provided by DVRPC)

After the Freight Plan Showcase, several comments and updates on the draft set of projects were received.

Next, the projects and policies were coordinated with Connections 2035 to assure that they met the same goals and visions. Following this meeting, the introduction and policies were rewritten to emphasize issues surrounding the economy and climate change, major themes of Connections 2035. Also, the narrative and project lists were revised to read more fluidly and match the maps in a more consistent fashion.

As a result of this process, a set of policies, projects, and studies emerged that form this report. First, the policies that DVRPC believes are important to freight are laid out in the context of five overarching visions. Next, priority projects are listed in three categories: highway, rail, and distribution facilities. Finally, the studies that still need to be completed to determine additional projects to solve identified problems are defined.

Policies

The policies outlined below are designed to improve the freight system moving into the future and to provide a framework for capital programs. The policies have been grouped under five visions, which serve as overarching themes for DVRPC and the region's freight stakeholders. These policies may also be useful to county and municipal governments seeking to better manage freight activity within their respective jurisdictions.

Vision 1: Recognize the Value of Freight

As discussed in the introduction, freight is a major economic generator. Despite the benefits that freight projects can provide, they have often taken a backseat to passenger-related projects. One reason is the belief that private, for-profit companies should be responsible for their own capital programming. This line of thinking may limit the opportunity to enhance every mode as much as possible.

Public benefits such as economic gains and air quality improvements should be taken into account when considering the use of public funding for freight projects. In the past, freight projects have often been primarily funded through federal earmarks. However, with the effort to reduce earmarks, it is important to find new public mechanisms and sources of funds for freight projects.

☞ **Educate decision-makers on the economic benefits and necessity of goods movement.**

- ❖ Educating state and regional decision-makers, who ultimately make programming and funding decisions, is necessary to help promote freight-related infrastructure projects.

☞ **Ensure that transportation revenues support projects that help freight.**

- ❖ Freight carriers pay substantial amounts of tolls and fuel taxes, and the funds generated should be invested back into the transportation infrastructure.

☞ **Revise benefit-cost analyses to include all freight impacts.**

- ❖ It is believed that benefit-to-cost ratio analyses conducted for transportation projects have undervalued the economic benefit attributed to freight by roughly 15 percent.

☞ **Continue and augment railroad capital funding.**

- ❖ Both Pennsylvania and New Jersey have funding programs for projects that encourage rail freight. Pennsylvania presently offers \$41,000,000 per year in railroad capital funding statewide, while New Jersey offers \$10,000,000 per year. These funding sources should be continued and augmented where possible.

☞ **Ensure that other transportation projects do not negatively impact freight operations.**

- ❖ Many transportation projects do not take into consideration the impacts that they may have on freight operations. For example, two projects currently being looked at in the region (the R6 Extension and the PATCO Expansion) both propose using existing freight right-of-way to expand passenger transit operations. Special attention should be paid to these projects to ensure that freight operations remain viable along the line in the near and long term.

Vision 2: Practice "Freight as a Good Neighbor" Strategies

Additional noise and sound, reduced air quality, and increased traffic, whether real or perceived, are some of the concerns that communities have towards freight. “Not in my backyard” (NIMBY) attitudes can restrict projects meant to help the movement of goods and increase freight’s economic benefits. It is essential for freight operators to work with communities to educate the public on the benefits of freight activity, and to decrease both the real and perceived concerns. Below is a series of policies that could improve neighborhood relations for freight operators:

☞ **Improve signage and infrastructure for local truck traffic generators.**

- ❖ In an effort to get truck traffic safely to local trip generators, proper signage and infrastructure is needed. Identifying appropriate routes and ensuring that the relevant signage is in place for trucks to get to their destination keeps trucks off residential streets.
- ❖ In addition, an inventory should be maintained to identify areas for infrastructure improvements (e.g., turning radii, lane width, and height clearance) to accommodate these larger vehicles.



A sign along the connector to Beckett Street Terminal in Camden, NJ.
(Photo provided by DVRPC)

☞ **Implement quiet zone corridors.**

- ❖ Quiet zones are areas in which a municipality pays for additional improvements at a railroad grade crossing and the trains then refrain from blowing their whistle at that crossing. Funding additional improvements is costly and some municipalities may not be able to afford them. It is feared that a municipality-by-municipality approach to quiet zones could be very inconsistent and could cause safety problems, in which the conductors get confused when to blow the train's whistle. It is also potentially an environmental justice issue, where affluent communities get quiet zones, while disadvantaged communities are unable to afford them.

☞ **Work with local communities to develop landscape and vegetation plans.**

- ❖ Many freight facilities and rail lines are considered an eyesore for a local community. By lining highways and rail lines with greenscapes and creating appealing landscapes around freight facilities, the freight community will improve its relations with the local communities.

☞ **Improve communication between freight stakeholders and county and municipal officials.**

- ❖ County and municipal officials often are in the process of planning future development without regard to freight needs. Often, when dialogue between freight stakeholders and counties and municipalities is needed, the connections are not in place. In the recent past, many counties have looked to the railroads to use some of their rights-of-way to build recreational trails. This is a good place to start these types of relationships.

Vision 3: Be Environmentally Friendlier and More Sustainable

The DVRPC region is an air quality nonattainment area in terms of both ozone and particulate matter. DVRPC has recently expanded into the areas of climate change and sustainability and begun to work with the freight community to promote the value of “going green.” Green technologies represent an effective way for shippers and carriers to become more efficient in terms of fossil fuels consumed. This will help lead the freight industry to profits that are less dependent on the price of crude oil. Also, creating more environmentally friendly freight movement technologies will give freight a more positive public image, which may help resolve some of the NIMBY attitudes that slow projects.

While freight shippers and carriers need to recognize the value of new technologies, seed funding also needs to be made available for freight companies, especially small companies and owner-operator trucking outfits, because they do not have the capital to purchase the more modern equipment.

☞ **Increase truck idle reduction programs and idle-free technology.**

- ❖ Truck idling causes excess greenhouse gas emissions while trucks are stopped in rest areas, along roadways, or while waiting to get into a facility. Anti-idling technology should continue to be implemented to reduce the gas emissions.

- ❖ Truck drivers and companies should follow state laws and not let trucks idle over permitted times unless there are adverse weather conditions.
- ❖ Additional idle-free technology needs to be developed and made available so that truck drivers have access to low-emissions cabin power whenever they are stopped. This will allow them to turn off their engines.

☞ **Highlight and promote private sector businesses that have undertaken fuel reduction strategies, such as, but not limited to:**

- ❖ Use low profile and single wide tires. New low-profile tires provide roughly a five percent reduction in tire rolling resistance, which leads to a one to two percent increase in fuel economy for less-than-truck load movements. Single wide tires have shown roughly a three percent increase in fuel economy for heavy duty truckload movements.
- ❖ Make aerodynamic improvements to trucking fleets. There is still room for improvement in the way that trucks are constructed, especially in the way of better aerodynamics.
- ❖ Train drivers in eco-driving. Studies have suggested that a one-day training session on how to conserve fuel while driving can lead to a five to 25 percent reduction in fuel consumption.
- ❖ Explore additional engine innovations. The biggest reductions can come from retiring old engines and replacing them with modern low-emissions engines. .

☞ **Continue Green Ports Initiatives.**

- ❖ Commercial vessels are estimated to produce significant levels of nitrous oxide and particulate matter. The region should study ways to make ports more environmentally friendly, while maintaining their economic viability.
- ❖ As with trucks, ship idling produces significant air-quality issues for the region. Technology that would allow ships to be powered from the shore is needed so that ships can turn off their engines while they are at port.

☞ **Increase use of environmentally friendly, low-emissions yard locomotives.**

- ❖ Some railroads are experimenting with a new type of yard locomotive called GenSet locomotives. GenSets replace a traditional rail motor (one large diesel powered engine) with three small 700 horsepower engines (the number of engines and the horsepower are different for some companies). Each engine operates independently



A CSX GenSet Locomotive.

(Photograph provided by Anne Strauss-Wieder)

to provide the amount of force needed at that moment. The engines automatically shut down when not in use. In their Dearborn, Michigan, rail yard, CSX has seen GenSet locomotives provide an 80 percent reduction in both nitrous oxide and particulate matter emissions.

GenSet locomotives are installed into existing locomotives and are used only for switching inside rail yards. They do not have enough power to pull a full train at high speeds for an extended period of time.

- ❖ A precedent for MPO involvement has been set by the North Jersey Transportation Planning Authority (NJTPA). NJTPA approved \$1.8 million in federal Congestion Management and Air Quality (CMAQ) funding, which along with \$600,000 from the Port Authority of New York and New Jersey and \$600,000 from Conrail, will provide a total of \$3 million for two locomotive replacements.

☞ **Investigate Marine Highways and Short Sea Shipping.**

- ❖ Short Sea Shipping is freight shipping activity that connects ports without crossing an ocean. For the DVRPC region, short sea shipping connections include any port along the east coast of the US and in the Gulf of Mexico.
- ❖ America's Marine Highway system is currently being looked at by the federal government as an opportunity to better use the water assets of the country. Marine Highways have the capability to help reduce landside congestion, emissions, and dependence on oil. Various active proposals have suggested connecting the Philadelphia-Camden region of the Delaware River to Newark, Virginia, and the Gulf of Mexico through new Marine Highway Initiatives.

☞ **Continue to work with EPA and groups dedicated to reducing harmful emissions.**

- ❖ In 2004, US EPA launched the SmartWay program, which identifies and highlights products and carriers that reduce transportation emissions. DVRPC should promote the SmartWay program and encourage local companies to become involved in the program.
- ❖ DVRPC participates in the Mid-Atlantic Diesel Collaborative and it assists the Clean Air Council on freight-related issues. These partnerships should be continued and augmented where possible. The Clean Air Council's new effort to reduce the emissions of drayage trucks is one area where a new partnership may exist.

Vision 4: Enhance the Links between Freight-Related Transportation and Land Use

The DVRPC Long-Range Plan emphasizes linking transportation and land use, but from a freight-planning point of view this has often been overlooked. It is important to develop strategies that allow for the retention or placement of distribution centers, warehouses, and other freight-generating businesses in locations that are well situated for freight activity. Many different agencies help companies find industrial space to locate new businesses, but there is no all-inclusive freight and industrial land use plan for the region that shows all

industrial land and its associated transportation infrastructure. An ideal facility should be served by multiple modes and be hosted by a community accepting of the business. Below are a series of policies that could improve these linkages:

☞ Maintain existing industrial areas.

- ❖ Creating a program that would preserve historically industrial areas for freight use would be of great benefit to the freight industry as it continues to grow. These areas tend to already be serviced by multiple modes and are located close to transportation infrastructure.
- ❖ This preservation is especially needed along the Delaware River. The waterfront has seen an increase in residential and commercial activity; however, ports and their related facilities are still necessary for the viability and growth of the region.

☞ Continue to promote and support freight villages.

- ❖ Freight villages offer an excellent way to combine transportation and land use. They allow for keeping several industries together so that they may enjoy economies of scale, as well as share access to multiple modes, while not having to worry about each individual facility disrupting a community.
- ❖ A few freight villages already exist in the DVRPC region, such as the Pureland facility in southern New Jersey. Cultivating additional freight villages, as well as continuing to support the existing ones, would be a great benefit to promoting the link between freight transportation and land use.

Vision 5: Make Operational Improvements

Studies have proven that operational improvements such as Intelligent Transportation Systems (ITS) can make roadways and other modes increase the capacity of the transportation system without capital-intensive projects. By providing superior traveler information, it becomes possible to have better route alternatives and better emergency response, thus decreasing the amount of time that goods (and people) sit in congestion. DVRPC has dedicated staff who work on improving the operations element of the region's roadways. Below is a series of strategies that were jointly developed by the Transportation Operations Unit and Freight Planning Unit to improve the operations of the transportation infrastructure from a freight point of view.

☞ Continue to develop connections between Department of Transportation operations centers and commercial motor vehicles.

- ❖ New Jersey and Pennsylvania have implemented a 511 traveler information system to give automated traffic updates. This phone and internet based system provides real-time travel information which can be relayed directly to truck drivers.
- ❖ Support the interface of operations centers with private sector GPS units (such as those used by truck drivers).
- ❖ Establish a public education campaign on 511 for truckers.
- ❖ Implement CCTV cameras and Variable Message Signs (VMS) along important truck routes, such as NHS connectors, to collect and distribute real-time information on incidents, special events, and construction.

☞ Expand and maintain Incident Management Task Forces.

- ❖ Incident management task forces are groups of organizations that respond to any accident or other incident on the roadway. These corridor-based groups discuss how the different agencies can best work together to minimize the duration of congestion caused by incidents along the highways in that corridor.



The PennDOT District 6 Traffic Operations Center.

(Photo provided by DVRPC)

☞ Incorporate additional ITS components across modes.

- ❖ Continue to incorporate ITS components in regional highway projects.

- ❖ Fully support all recommendations in the DVRPC ITS Master Plan.
- ❖ Create a new operations center for Delaware River Port Authority (DRPA)-owned bridges.
- ❖ Install traffic control systems on new rail lines. All new main-line rail lines proposed in this document require new traffic control systems to control traffic.
- ❖ Coordinate ITS components with intermodal terminals. Continue to support projects that link ports to the highway ITS system.

☞ Expand the amount and reliability of Weigh-In-Motion monitoring.

- ❖ Overweight trucks cause damage on the region’s roadways. Weigh stations and facility scales, combined with greater enforcement, can ensure that all motor vehicles meet size and weight regulations.
- ❖ Once weight monitoring systems are in place, an electronic safety inspection device such as *PrePass* should be used to speed the flow of commercial motor vehicles through any check points. This will allow electronic readers to check a truck to see if there are any reasons for further inspection.

☞ Implement additional regional security systems.

- ❖ Additional security monitoring is needed across all modes.
- ❖ Install additional highway cameras and conduct first-responder training. Many of these initiatives are currently being coordinated through the DVRPC Transportation Operations Unit.
- ❖ Install additional security along freight rail lines, including additional fences, cameras, and local enforcement to keep civilians from trespassing on rail lines.
- ❖ Increase port security. One example is the introduction of the Transportation Workers Identification Credential (TWIC). Also, a 2008 Port Security grant offers \$19,000,000 to increase security.

☞ Promote advanced reservation systems for deliveries and pick ups.

- ❖ One demonstrated strategy for improving truck flows at ports, warehouses, and distribution centers is to establish an advanced reservation system for making deliveries and pick-ups. This can produce significant benefits, such as increasing the efficiency of the facility, reducing driver delay, and minimizing the impacts on local communities and highways.

Freight Highway and Connector Program

The freight highway and connector program consists of roadway projects that are of special importance to freight and trucking operations. Since trucks use virtually all roads, all projects that create additional roadway capacity, or improve existing roadways can be considered as beneficial to freight. However, in order to prepare a more meaningful list, the projects listed in this section include only projects on interstates and NHS intermodal freight connectors. This approach has two results: one, it results in a highway program consisting of projects that can be deemed especially important to the freight community, and two, it assists the freight community in serving as active advocates for the projects.

The entire program totals approximately \$7.8 billion in known costs to public roadways and \$4.6 billion to the region's turnpikes. The projects listed in the freight highway program are some of the most crucial projects to the region in terms of securing funding. It is important that they be completed to provide additional capacity and, more importantly, to provide passengers and freight with a safe and reliable highway network. DVRPC has outlined many different opportunities to add additional capital to help fund these large, regionally significant projects in a report entitled "DVRPC Options for Filling the Region's Transportation Funding Gap." (Publication #07045)

Trucking plays a major role in the movement of goods in the DVRPC region. The DVRPC aggregation of the Federal Highway Administration's Freight Analysis Framework 2.2 database showed trucking to be responsible for 75 percent of the movements attributed to the Philadelphia Consolidated Statistical Area.

The list below is numbered in such a way that the project number matches the corresponding map for the freight highway program (figure 3 on p.27). Project descriptions include an abbreviation following the project that stands for the period in which the project is anticipated to be completed: short-term projects (0-5 years) are listed first, then medium-term projects (6-15 years), and long-term projects (16+ years) are listed last within each improvement category.

Widening

The most basic way to provide additional capacity on a stretch of roadway is to widen it and create an additional lane(s). Due to adjacent development and the high cost of widening projects, there are few major widenings planned in the DVRPC region. All current planned

highway widening projects are on the Pennsylvania and New Jersey turnpikes. These projects will be funded through bonds leveraged against anticipated toll revenue.

- 1) **Widen the PA Turnpike Northeast Extension (I-476) from Midcounty to Quakertown.** This roadway is currently two lanes in each direction. The widening project will make the roadway three lanes in each direction. Overhead bridges along the roadway will need to be reconstructed to accommodate widening.
 - ❖ Phase I: widen from Midcounty to Lansdale. This phase is expected to cost \$295,000,000. (ST)
 - ❖ Phase II: widen from Lansdale to Quakertown. This phase is expected to cost \$665,000,000. (MT)
- 2) **Widen the PA Turnpike (I-76) from Valley Forge to Downingtown.** The roadway is currently two lanes in each direction. Widening would make the roadway three lanes in each direction. Bridges that cross over the roadway will need to be reconstructed to accommodate widening. This project is estimated to cost \$300,000,000. (MT)
- 3) **Widen NJ Turnpike from Exit 6 through Exit 9.** This project will take the separated highway that exists north of Exit 9 (East Brunswick) and extend it to Exit 6 (PA Turnpike). More information on this project can be found at www.NJTurnpikewidening.com. This project is projected to cost \$2,700,000,000. (ST)
- 4) **Widen the NJ Turnpike from the Delaware Memorial Bridge to Exit 4.** This road segment currently has two lanes in each direction. North of Exit 4, the turnpike is three lanes in each direction. This project will add one lane in each direction so that the turnpike is three lanes in each direction from the Delaware Memorial Bridge until it becomes a separated highway. This project is projected to cost \$310,000,000. (LT)

New or Improved Interchanges

The functionality of a highway system is greatly influenced by the configuration of its interchanges. The ability to get on and off, as well as to shift from one highway to another, is essential for all passenger and freight movements. At the same time, interchanges can be extremely expensive to construct. The four projects listed below will cost over \$2 billion dollars, but they are vital to adding efficiency to the highway system. Missing connections can force trucks to use local roads and create adverse conditions for the community. As freight operators are asked to be better neighbors, it is important to design infrastructure in such a way that allows them to minimize their local impacts.

- 5) **Construct missing moves at I-295 and NJ 38.** The existing I-295 and NJ 38 interchange does not provide all the direct traffic movements between the two roadways. This project will provide for the construction of the missing moves via direct and semidirect connector ramps. This project is expected to cost \$190,400,000. (MT)

- 6) **Construct I-95 and I-276 (PA Turnpike) Interchange.** This project can be divided into two phases. (MPMS #13347)
 - ❖ Phase I would accommodate movements from northbound I-95 to eastbound I-276 and from westbound I-276 to southbound I-95. This would allow for the renumbering of a section of I-276 and allow movements on I-95 to traverse the region more seamlessly. This phase is expected to cost roughly \$600,000,000. (MT)
 - ❖ Phase II would construct the remaining three quadrants to complete the interchange; Phase II is expected to cost roughly \$600,000,000. It is believed that Phase I can be a viable project without Phase II. (LT)
- 7) **Construct a direct connection of I-295 at the I- 295/NJ 42/I-76 Interchange.** This interchange is the most congested interchange in the DVRPC region. The project will provide a direct connection for I-295 traffic, eliminating the segment of road where I-295 shares the road with NJ 42. The total cost for this project is projected to be \$1,140,900,000. (DB #355) (MT)
- 8) **Construct I-295/NJ 42 missing moves project.** This project will allow for moves at the I-295/NJ 42 interchange that are not possible with the current configuration. Construction is estimated to cost \$154,200,000. All of the funding for this project is identified in the outer years of the DVRPC TIP. (DB #355A) (MT)

New or Improved Connectors

Intermodal connectors are often referred to as the “last-mile” that freight moves on the highway system. With respect to imported goods, connectors may also be described as the “first-mile” that freight moves. They are public roads that connect major intermodal terminals to the National Highway System (NHS) network. The basic criterion for an NHS connector is that the roadway must serve an intermodal facility (or facilities) and have an average of 100 trucks per day in each direction. (Note: the term and concept “NHS connector” also applies to roads serving passenger transportation facilities.)

The projects listed below include projects on NHS connectors, as well as some additional connector projects that apply the NHS connector concept to truck generators that are not purely intermodal facilities. Some of the projects do not have costs associated with them. This is mostly due to the fact that these projects have multiple options, and the final design has not been fully determined.

- 9) **Create a new PA 309 connector road.** This project will construct a new two-lane connector road between PA 309 and the PA Turnpike Lansdale Interchange. This project is being completed in two phases.
 - ❖ Phase I is funded through the DVRPC TIP for \$25,998,000 for 2009 to 2011. (MPMS #16438) (ST)
 - ❖ Phase II has yet to be programmed. According to the DVRPC 2035 Long-range Plan, total cost for both stages is estimated to be \$60,300,000. (MT)

- 10) **Construct access road and bridge to planned Paulsboro Port Facility.** This project will build a dedicated road for truck traffic moving into and out of the proposed new port facility in Paulsboro. This project will keep traffic for the port facility out of the nearby residential community. Estimated cost of the project is \$16,000,000 and will be constructed through a NJDOT grant. (ST)
- 11) **Reconstruct access road via 26th Street to the Philadelphia Naval Yard.** This project will provide another entrance to the Navy Yard besides the heavily used Broad Street entrance. Current funding for this project is \$6,425,000, all of which appears in the 2009 and 2010 years in the DVRPC TIP. (MPMS #46958) (ST)

- 12) **Create a new local connector roadway in Camden and create a Port District Road to connect the terminals along the Delaware River in Camden.** This project was identified in the DRPA Master Plan and has an estimated cost of \$115,000,000. (MT)



A truck on the NHS Connector for the South Philadelphia Freight Complex
(Photo provided by DVRPC)

- 13) **Improve access to South Philadelphia Freight Complex.** There are three projects along this road that need construction.

- ❖ Reconstruct Old Delaware Avenue, which connects the Packer Avenue Marine Terminal and CSX Greenwich Rail Yard to Columbus Boulevard, to accommodate growth in traffic and the heightened need for security. This project is expected to cost \$3,300,000. (ST)



A truck passing under a rail bridge along Saville Avenue entering Penn Terminals.

(Photo provided by DVRPC)

- ❖ Construct new gate at Packer Avenue Marine Terminal. (MT)
- ❖ Create new port access road for the proposed SouthPort facility. Depending on the alignment of the new road, it may be possible to extend Old Delaware Avenue into the new facility or to access the new facility through the Packer Avenue Marine Terminal. This project is expected to cost \$6,000,000. (MT)
- 14) **Create alternate access into Penn Terminals.** Only one roadway, Saville Avenue, connects Penn Terminals to the PA 291 (which then connects to the Interstate highway system). On Saville

Avenue, there is an overhead railroad bridge that limits the vertical clearance under it to 14 feet. This is sufficient to accommodate a normal trailer; however, it restricts the flow of some project and specialty cargo. The best solution appears to be to build an alternative connection into Penn Terminals for oversized cargo and emergency access. (MT)

- 15) **Construct Gibbstown/DuPont Repauno access road.** This project will create a new access road in Gibbstown to the old DuPont Repauno site, which is planned for industrial use, most likely a new port facility. Like the Paulsboro access road project, this will keep trucks out of the nearby residential area. The project has an estimated cost of \$25,000,000. (MT)
- 16) **Reconstruct connector from PA 322 to CSX Twin Oaks Yard.** This interchange is highly used by auto-carriers, but is not configured in a safe way for modern truck use. This project was recommended in the DVRPC NHS Connector Study. It may be possible to incorporate this project into the I-95/PA 322 Interchange Project. (MT)

Major Reconstruction Projects

The Interstate Highway System was first authorized in 1956. It is the largest highway system in the world and the largest public works project in history. The system requires continual maintenance in order to stay operational and safe. Segments of highway often need to be repaved, resurfaced, or totally reconstructed. The DVRPC Long-Range Plan allocates roughly two-thirds of its highway funding to roadway and bridge reconstruction, rehabilitation, resurfacing, and restoration. The projects listed in this section represent more than half of the total funding presented in the freight highway program. In addition to building new capacity to handle additional traffic, it is imperative that the region's existing infrastructure be safe and functional.

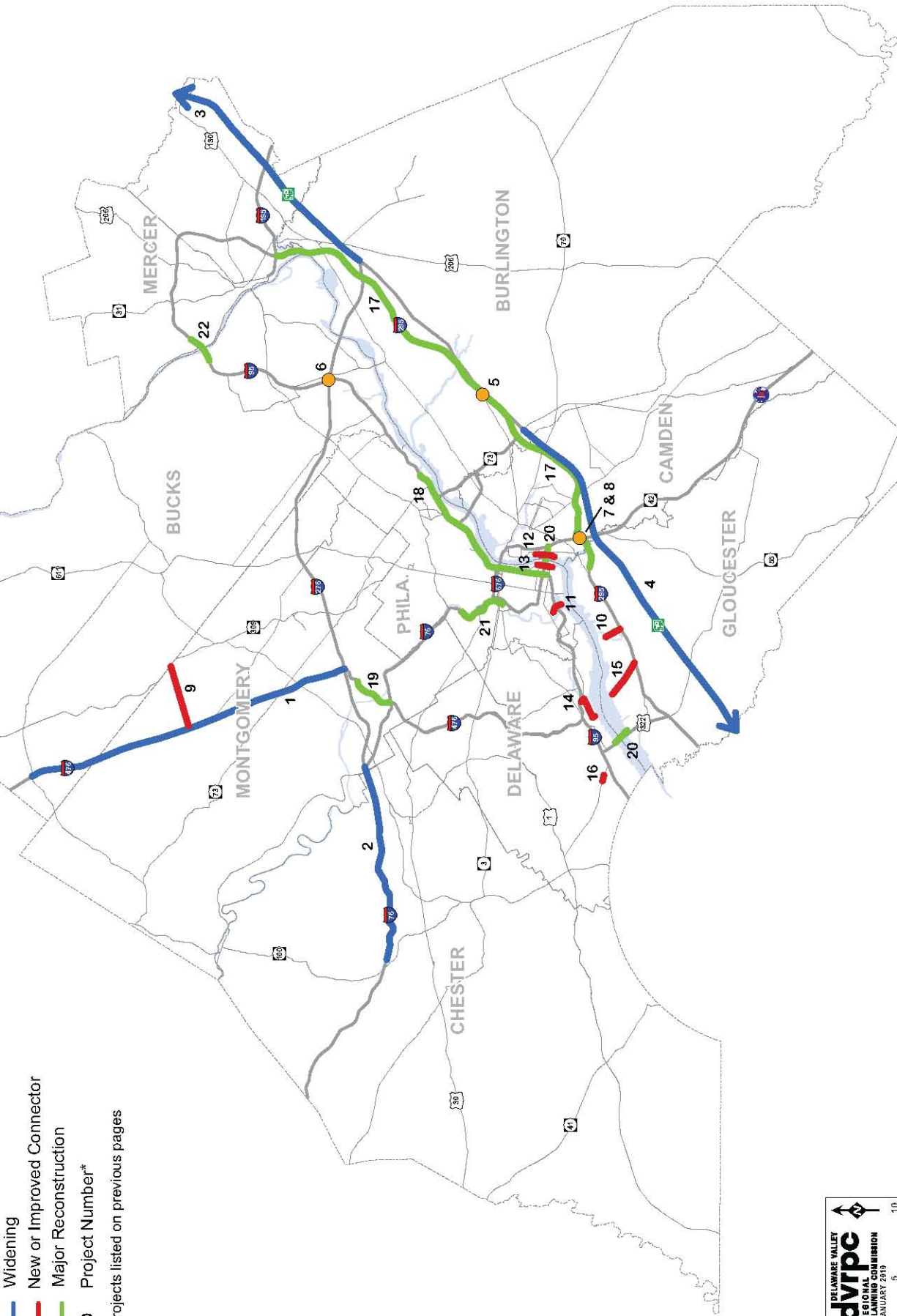
- 17) **Resurfacing, pavement repair, and rehabilitation of I-295.**
 - ❖ Phase I: Resurfacing I-295, from US 130 to the NJ 29/I-195 Interchange. This project is funded in the DVRPC TIP for \$12,860,000 in 2009. (MPMS #03326) (ST)
 - ❖ Phase II: Pavement repair and resurfacing I-295, from Rancocas-Mount Holly Road to US 130. This project is currently identified in the DVRPC TIP with \$42,300,000 in funding in 2010 and 2011. (MPMS #08324) (ST)
 - ❖ Phase III: Rehabilitation of I-295 from NJ 45 to Berlin-Haddonfield Road. This project is currently identified in the DVRPC TIP with \$81,400,000 in funding in 2011 and 2012. (MPMS #00372) (ST)
- 18) **Reconstruction of I-95.** On September 10, 2007, the U.S. Department of Transportation announced six interstate routes that will be the first to participate in a new federal initiative to develop multistate corridors to help reduce congestion. I-95 was named one of these "corridors of the future." (MPMS #'s for the following projects include: 17821, 47812, 82619, 80094, 79686, 79825, 79683, 80014, 84226)

- ❖ I-95 (North): This section of the reconstruction includes the section of I-95 from I-676 to Cottman Avenue. It also includes interchange improvements at I-676, Girard Avenue, Allegheny Avenue, the Betsy Ross Bridge, Bridge Street, and Cottman Avenue. This project is estimated to cost a total of \$3,750,400,000. Five sections of this project currently have funding programmed in the DVRPC TIP for a total of \$134,574,000. (LT)
 - ❖ I-95 (South): This project entails the reconstruction of I-95 viaducts from Queen Street to Washington Avenue. This project is estimated to cost a total of \$651,000,000. (LT)
- 19) **Reconstruction of I-476 from Chemical Road to I-76.** This project will provide for the reconstruction of both north and southbound lanes. The only widening will be of shoulders to meet FHWA 2008 standards. This project is currently identified in the DVRPC TIP with \$40,000,000 in funding in 2009 and 2010. (MPMS #80479) (ST)
- 20) **Maintenance to DRPA bridges.**
- ❖ The Walt Whitman Bridge's main span deck is still part of the original construction from the 1950's. A complete redecking project is needed. The estimated cost of this project is \$115,000,000 (ST)
 - ❖ The Commodore Barry Bridge's deck is expected to reach the end of its useful life in roughly 15 years. A complete redecking project will be needed at that point. It is estimated that the redecking will cost \$200,000,000 and be completed in roughly 2025. (LT)
- 21) **Rehabilitation of I-76.**
- ❖ Existing I-76 structure pre-cast parapets from US1 to South Street need to be repaired in both eastbound and westbound directions. The project will also extend and modify the existing parapet to glare screen height. This project is funded in the DVRPC TIP for \$19,790,000 in 2009. (MPMS #76644) (ST)
 - ❖ I-76/US 1 bridges at Gustine Lake Interchange. This interchange is in close proximity to Roosevelt Boulevard, Kelly Drive, and I-76. There are five bridges that will be replaced. \$18,000,000 is currently identified through the DVRPC TIP in the years 2010 and 2011. (MPMS #50931) (ST)
- 22) **Reconstruct and widen Scudder Falls Bridge (I-95).** This project will widen the Scudder Falls Bridge to three lanes in each direction and make interchange improvements at the NJ 29 Interchange in New Jersey and the Taylorsville Road Interchange in Pennsylvania. The estimated cost of this project is \$309,000,000. This bridge is owned and maintained by the Delaware River Joint Toll Bridge Commission. (ST)

Identified Projects

- New or Improved Interchange
- Widening
- New or Improved Connector
- Major Reconstruction
- 20** Project Number*

*Projects listed on previous pages



Freight Rail Program

The goal of the freight rail program is to serve as a comprehensive list of all capital projects needed to improve the capacity and operations of the freight rail system. Because of this, projects range greatly in cost, from those around \$500,000 to those over \$500,000,000. The total program is estimated to represent roughly \$1.46 billion in needs.

MPOs have traditionally done an excellent job of documenting all highway project needs and are just now beginning to examine rail freight needs in greater depth. Federal funds administered through the DVRPC TIP have not historically funded many projects for privately owned railroads. However, that is starting to change, as the 2009 TIP includes \$5,000,000 for a double-stack project along the CSX Trenton Subdivision (listed as project #7 below, MPMS #48197).

Maintenance projects and future projects for new railroad sidings represent important enhancements of the rail freight network. DVRPC fully supports these types of projects, yet many are unknown, unspecified, or subject to change based on the location of new businesses. As a result, they are not included in the following project list. As mentioned in the Policies section, it is essential to continue and augment the state funding that helps fund these projects.

The list below is numbered in such a way that the project number matches the corresponding map (figure 4, Page 36) for the freight rail program. Project descriptions include an abbreviation following the project, which stands for the period in the which the project is anticipated to be completed: short-term projects (0-5 years) are listed first, then medium-term projects (6-15 years), and long-term projects (16+ years) are listed last.

New Main Track

Like adding a lane to an existing highway, adding a new main track to a rail line is the most straightforward way of creating additional freight rail capacity. Also, similar to highway widening, adding new main line track to a rail line is extremely expensive. The projects in this section represent the majority of money that makes up the freight rail program. As freight increases, these are the projects that will be necessary to maximize rail utilization in the DVRPC region.

Most main lines in the region are single tracked, with occasional passing sidings. The passing sidings allow for one train to pass another. However, single track lines may slow

the movement of trains, jeopardize their reliability, and restrict what type of cargo is carried by rail. To truly maximize rail capacity, double tracking all main lines is an important goal.

- 1) **Create additional capacity on the Norfolk Southern Morrisville Line between Abrams and Morrisville yards.** There are three projects identified for this section of track.
 - ❖ Create a two-mile passing siding for an estimated cost of \$6,000,000. (MT)
 - ❖ Create a direct freight dedicated connection in Norristown. Currently, Norfolk Southern trains share track with SEPTA between CP Ford and CP Kalb near Norristown. If this line is going to have significantly more traffic, this conflict needs to be eliminated. (LT)
 - ❖ Restore a second main track and rehabilitate bridges and culverts to provide a continuous second main track for an estimated cost of \$72,200,000. This project was identified in the Mid-Atlantic Rail Operations (MAROps) Study Phase I. (LT)
- 2) **Add second main track on the CSX Trenton Line from Ewing to Manville Yard.** The majority of this project takes place outside of the DVRPC region. The estimated cost of this project is \$76,500,000. This project was identified in the MAROps Study Phase I. (MT)
- 3) **Add second main track on the CSX Trenton line from Control Point (CP) River to CP Wood.** This project would connect a series of sidings, creating a continuous second main track through Northeast Philadelphia and Lower Bucks County. The segments that need additional track are: Newtown Junction to CP Nice, Cheltenham Junction to CP Berry, and CP Nesh to CP Wood. This project has an estimated cost of \$102,900,000. This project was identified In the MAROps Study Phase I. (MT)
- 4) **Construct additional main track along the CSX High Line and CSX Trenton Line from CP Belmont to CP Arsenal.** The High Line is one of CSX's main lines through Philadelphia, running along the west bank on the Schuylkill River. The Trenton Line is CSX's main line running from Philadelphia to Trenton through Northeast Philadelphia and Lower Bucks County. The estimated cost of this project is \$202,200,000. This project was identified In the MAROps Study Phase I. (LT)
- 5) **Construct a second main track on the CSX Philadelphia Subdivision from the Delaware State Line to CSX Trenton Line.** The estimated cost of this project is \$40,000,000. This project was identified in the MAROps Phase I study. (LT)
- 6) **Construct dedicated freight track along the Amtrak Northeast Corridor from Wilmington to Philadelphia.** This project will eliminate train conflicts between Norfolk Southern and Amtrak passenger trains. The estimated cost of this project is \$582,600,000. This project was identified in the MAROps Study Phase I. (LT)

Additional Vertical Clearance

Intermodal freight transportation using railroads can trace its history back to before WWII. However, the concept of double stacking container trains was not fully implemented until 1984. Now, more than one million shipments are transported using double stack intermodal rail service every year in the U.S., and it represents a growing share of the railroad industry. The nature of double stack requires more vertical clearance than more traditional rail cars. The rail industry in general is moving toward larger and heavier railcars because the more goods they can fit into a railcar or on a rail platform, the more effective their business can be. Due to these trends, it is becoming necessary to create more vertical clearance on many freight rail lines. The projects listed below offer an excellent way for the DVRPC region to improve its rail capacity and allow additional businesses to take advantage of rail transportation.

- 7) **Create double stack vertical clearance along the CSX Trenton Line.** This project is funded through both the Pennsylvania State Capital Program and the DVRPC TIP. CSX is also contributing to the funding of this project. The total estimated cost is \$32,000,000. This project was identified in the MAROps Study Phase I. (ST)



Photograph of a Norfolk Southern railroad track crossing over CSX's Trenton subdivision near the SEPTA Woodbourne, PA, passenger station.
(Photograph provided by CSX)

- 8) **Make improvements under Broad Street to improve access to port facilities and intermodal yards.** Currently, only one of the three lines that pass under Broad Street near the Philadelphia Sports Complex is cleared for double stack. The estimated project cost is \$750,000. (ST)
- 9) **Increase vertical clearance at the Willits Road Overpass on the Bustleton Industrial Track.** This project will allow for plate F boxcars to pass under the overpass to access the Northeast Philadelphia Industrial Park and other businesses located on the line. Plate F boxcars require 17 feet of clearance. This project is estimated to cost \$1,000,000. (ST)
- 10) **Increase vertical clearance on the Port Richmond Branch.** Clear 21 overhead bridges and two additional restrictions along the Port Richmond Branch accessing the Tioga Port area. The estimated total cost is \$20,000,000 to \$25,000,000. A possible alternative is to connect the northern section of the Port Richmond Branch to the Delair Branch. (LT)

- 11) **Increase vertical clearance on the Trenton Subdivision in the tunnel near the Philadelphia Museum of Art.** The estimated total cost is \$6,000,000. This line provides a redundant route to the CSX High Line on the opposing side of the Schuylkill River. (LT)
- 12) **Increase vertical clearance at Grays Ferry Avenue.** The CSX Trenton Subdivision goes under Grays Ferry Avenue as it enters the East Side/TransFlo Yard. The estimated total cost is \$4,000,000. (LT)
- 13) **Create additional clearance for high stack cars on the CSX Philadelphia Subdivision.** This project was identified in the MAROps Phase I study. This project will create clearance for high stack cars at 11 locations from Clifton Avenue to Broad Street. The clearance along these five miles of track is currently 19 feet 1 inch, but it needs to be 20 feet 2 inches to accommodate high stack cars. This project is estimated to cost \$8,300,000. This project is highly contingent upon the completion of other projects, such as the Howard Street Tunnel project in Baltimore. The Howard Street Tunnel project will be very costly, and several alternatives are under review. (LT)

Additional Capacity through Sidings, Yards, and Wyes

Besides vertical clearance and new main track, another way to create capacity on freight rail lines is by creating new connections through wyes and sidings, along with increasing capacity in rail yards (by creating a new yard or expanding an existing yard). These projects are relatively low in cost compared to the new main track and vertical clearance projects listed above. Also, most of these projects can be completed in either the short or medium term. It is likely that additional projects that would fall in this section will be needed but have not yet been identified.

- 14) **Make rail improvements and expansions at the Keystone Industrial Port Complex (KIPC).** This project will be done in phases.
 - ❖ Phase I is a \$3,200,000 project, of which \$750,000 has been secured through PennDOT funding. (ST)
 - ❖ Phase II includes projects that are estimated to cost roughly \$32,000,000 and have been broken down into eight phases. Construction of the additional phases will depend on the businesses that occupy the available space. (MT)
- 15) **Create an additional direct connection from the CSX Trenton Subdivision to the Conrail Engleside Line at CP Park.** This project completes a wye and allows for better movement of westbound trains on the CSX Trenton Subdivision to turn north onto Conrail and also for the reverse move. This project will help connect trains travelling between south Philadelphia and southern New Jersey (and vice versa). The project is estimated to cost \$4,000,000, of which \$3,500,000 of funding has been secured from PennDOT. (ST)

- 16) **Restore the eastern track connection on the 60th Street Industrial Track.** This project will restore the eastern portion of the 60th Street Industrial Track that connects the Fort Mifflin area along the Schuylkill River with the SEPTA Airport Line. Currently, trains are routed via the western end of Philadelphia International Airport. This project could support efforts to transport anticipated dredge spoils from the Delaware River deepening project. It would also make the rail line behind the airport potentially expendable if the land is needed for airport expansion. (ST)
- 17) **Add a siding to the Wilmington and Northern Branch in Pocopson, PA.** This project creates a switching location that will eliminate some train moves across Route 1. This project along the East Penn Railroad is funded for \$550,000. (ST)
- 18) **Expand the yard capacity at Bridgeport and Paulsboro.** This project will give SMS Rail Lines more yard capacity to store trains for the businesses that they serve through these yards. The estimated total cost is \$2,500,000. (ST)
- 19) **Create additional rail yard capacity along the Bordentown Secondary between the Delair Bridge and Woodbury.** This area serves as the main rail line for all of southern New Jersey. The main yard on this line, Pavonia, is antiquated and, while able to handle current traffic, would not be able to handle significant additional activity. (MT)
- 20) **Expand Norfolk Southern Intermodal Rail Terminal located in the Navy Yard.** The Norfolk Southern Corporation has recently completed an economic and employment impact analysis for expansion of the yard in conjunction with its Crescent Corridor Project. It is believed that at the conclusion of this project, the Norfolk Southern Intermodal Terminal in the Navy Yard will handle 72,000 lifts annually. The estimated cost for this project, including construction and the purchase of lift equipment, is \$15,950,000. (MT)

Grade Crossings

Highway–railroad grade crossings represent one of the greatest safety concerns attributed to freight railroads. It is important that the region maintain an accurate database of grade crossings, and that each grade crossing meet the safety requirements regulated by the Federal Railroad Administration (FRA).

- 21) **Create a grade-separated crossing at Main Street in Darby, PA, on the CSX Philadelphia Subdivision.** This rail crossing is unique in that it involves a public transit trolley (SEPTA Trolley Route 11) crossing a Class I main line in a



Trolley passes CSX Philadelphia Subdivision along Main Street in Darby, PA.

(Photo provided by DVRPC)

commercial area. This project was identified in the DVRPC study of the grade crossings in Delaware County. Further, more detailed study is needed, and close coordination with local officials and the community would be essential. While difficult to estimate the project costs because of the complexities of this location, an estimated cost of this project is \$50,000,000. (MT)

Reconstruction

There are select reconstruction projects that are of the magnitude that they should be included in this document. Additional maintenance projects will be needed and they may be completed by using private funds or state funding. As with highways, it is imperative that the region's existing infrastructure be safe and functional.

- 22) **Replace crossover switch at CP Trent.** This project will upgrade the crossover at CP Trent directly beyond the West Trenton Train Station. This project is estimated to cost \$2,500,000. (ST)
- 23) **Bring Stoney Creek Branch up to Class II rail.** The Stoney Creek Branch currently has washouts and derailments, which frequently put the line out of service. It is estimated that \$10,000,000 would be needed to bring the line up to Class II standards. These improvements should be undertaken in concert with efforts to restore passenger rail operations to Quakertown. (MT)
- 24) **Rehabilitate track, signaling, and bridge on the Phoenixville Industrial Track.** This project will help to repair track that services the northern end of the Phoenixville Industrial Track, which was originally used by Pennsylvania Railroad to access sand quarries. The line is 10.3 miles long; however, Norfolk Southern only operates over the first 2.3 miles. This project will replace an aging bridge over this 2.3 mile section, as well as make ballast and other track improvements. The rest of the line is being looked at for transit operations, or may be abandoned. The estimated cost for this project is \$1,000,000. (ST)
- 25) **Rehabilitate track along Beesley's Point Secondary.** Ideally, this line would be upgraded to continuously welded rail. However, due to the cost, this represents a long-term solution. Installing continuously welded rail would require new rail at the cost of approximately \$300,000 per mile. However, for the short term, Conrail is working to weld sections of the jointed rail at the more favorable cost of \$80,000 per mile. (ST)
- 26) **Reconstruct two swing bridges along the Penns Grove Secondary in Bridgeport and Paulsboro.** Both of these locations have bridges that open for marine traffic. Replacement of the current bridges is estimated to cost about \$20,000,000 each. They will need to be reconstructed in about five years. (MT)
- 27) **Restore the Blue Comet Line.** The Blue Comet Line was a historic commuter rail line that connected north and south New Jersey through the Pine Barrens. Currently, freight rail traffic that travels between North Jersey and South Jersey must take a circuitous

route via the Delair Bridge and Pennsylvania. This project would restore this line, which is currently owned by NJDOT, for freight and possible commuter service between Winslow Junction and Woodmansie. The estimated cost for this project is \$130,000,000. (LT)

- 28) **Upgrade Salem Running Track between Swedesboro and Woodbury.** This project will make various improvements to this line to support increasing traffic along the line and at the interchange between Conrail and the Southern Railroad of New Jersey. This project is estimated to cost \$7,625,479. (ST)
- 29) **Upgrade Robbinsville Industrial Track.** This project will improve drainage, weld 280 joints, install 2,000 new ties, surface 4.4 miles of track, and renew two grade crossings, among other improvements. The total cost of all the improvements is expected to be \$2,576,950. (ST)
- 30) **Delair Bridge Reconstruction.** Even though the piers, deck, and superstructure of the Delair Bridge are currently 286K compliant (286,000 pound railcars are the industry standard), the approach spans to the bridge, which are over 100 years old, will require replacement beginning within five years. The Delair Bridge provides the sole rail freight corridor into South Jersey for Conrail and for the NJ Transit Atlantic City line from Philadelphia. The condition of the approach spans jeopardizes the ability to serve existing customers and short lines in South Jersey (most of which are 286K compliant) and to further grow rail freight activity in the region. Preliminary estimates for replacing the approach spans are in the \$18-\$25 million range and could be staged over a two- to three-year construction period.



DVRPC Long-Range Vision for Freight

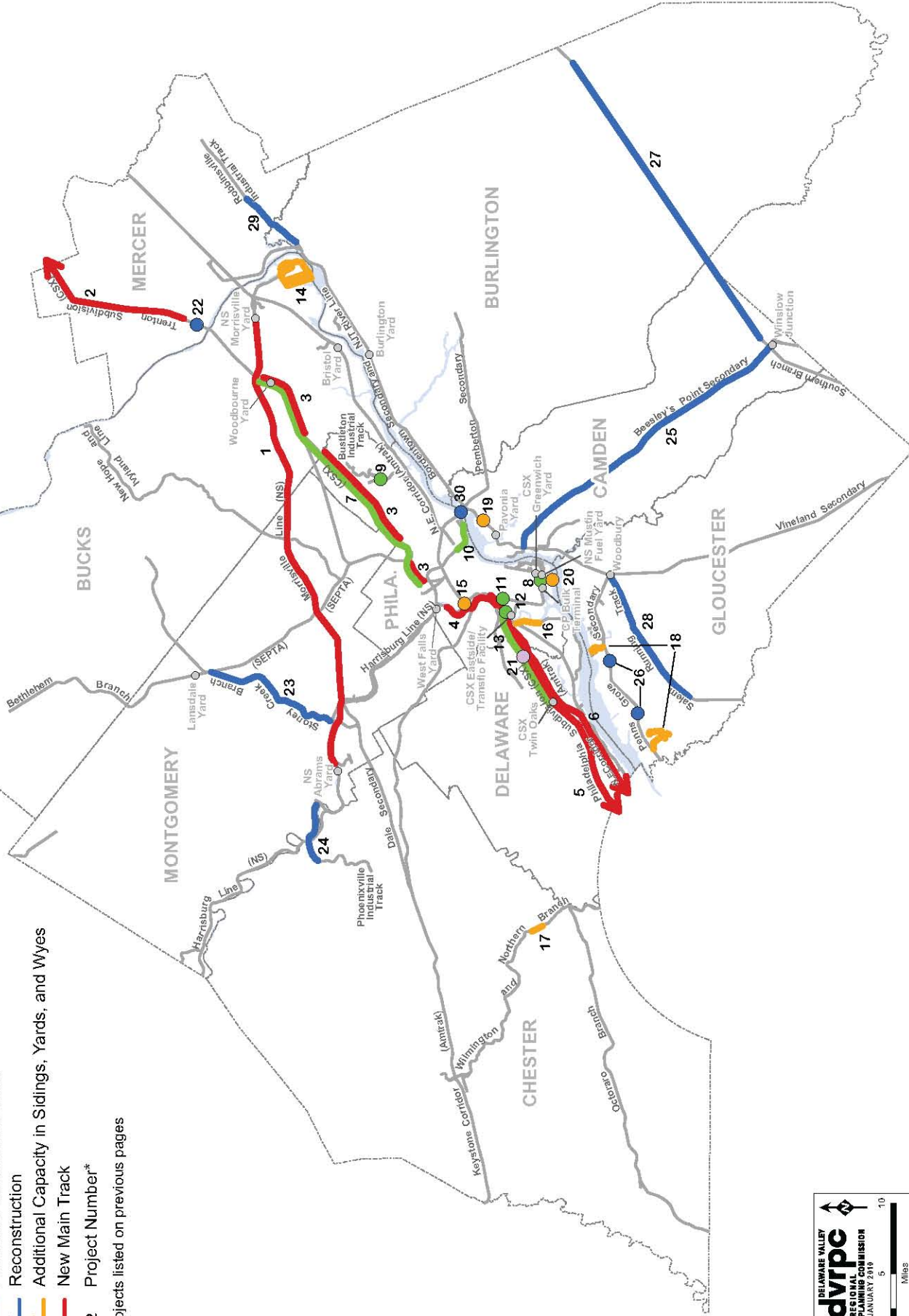
Figure 4: Freight Rail Program

Identified Projects

- Grade Crossing
- Additional Vertical Clearance
- Reconstruction
- Additional Capacity in Sidings, Yards, and Wyes
- New Main Track

12 Project Number*

*Projects listed on previous pages



DELAWARE VALLEY
dvrpc
 REGIONAL
 PLANNING COMMISSION
 JANUARY 2010

0 5 10
 Miles

Distribution Facilities Program

This section contains a list of the distribution facilities in the DVRPC region that have plans for major expansion, thus increasing the cargo-processing capabilities of the region. These facilities are mapped on Figure 5 (page 40). Travel by water and air is not directly linked to MPO funding categories and it is difficult to anticipate where major warehouse and distribution center expansions will occur. However, it is important to remain aware of key locations devoted to goods movement activity and the highway and rail infrastructure that connects into these areas. For example, the connector roadways mentioned in the highway section of this paper are integrally linked to some of the facilities mentioned below.

Also vital are the land-use measures that are covered in the Policies section. Zoning in the DVRPC region is “home rule” in nature; thus, each municipality can determine the land use and zoning of individual sites. This adds additional incentive for freight facilities to work with local municipalities when siting future freight facilities.

- 1) **Construct a new regional produce market in Southwest Philadelphia.** The new site is anticipated to hold a state-of-the-art 560,000 square foot warehouse with a storefront area where the public can buy fruits and vegetables. Seventy percent of the \$215,000,000 project cost will be paid by the State of Pennsylvania, while \$5,000,000 will be paid by the federal government. The rest of the funding will come from private developers. The Philadelphia Regional Port Authority will own the land and lease it to the Produce Market. (ST)
- 2) **Deepen the main channel of the Delaware River to 45 feet.** This project is highly controversial and will require close cooperation among the U.S. Army Corps of Engineers, New Jersey, Pennsylvania, Delaware, and others to proceed. Ships traveling the Delaware River to local ports must stay within the main channel of the Delaware River. This project would increase the depth of the channel from the Delaware River Bay to the Ben Franklin Bridge. The channel is currently at 40 feet, but that restricts the ports along the river from competing for larger, deeper drafting ships. (MT)
- 3) **Construct a new marine terminal in Paulsboro.** The planned port of Paulsboro will be a three-berth facility with roughly 190 acres of land for cargo handling. The terminal is envisioned as a mixed-use terminal. The construction of this facility is estimated to cost \$150,000,000. (ST)

4) **Construct a new marine terminal in Gibbstown at the former DuPont Repauno site.** The facility in Gibbstown has not yet been designed, but would sit on a parcel with 300 acres of useable land for the terminal. The terminal is envisioned as a mixed-use terminal. The construction of this new facility is estimated to cost \$200,000,000. (MT)

5) **Construct a new marine terminal, entitled NorthPort, just north of the Packer Avenue Marine Terminal.** Northport is a joint venture between the Philadelphia Regional Port Authority (PRPA) and Holt Logistics. The site consists of piers 96, 98, and 100, and the Publicker Industries Site. The parcel size is over 100 acres (including water areas) and the future terminal will be developed as a multipurpose facility. (MT)

6) **Construct a new marine terminal, entitled SouthPort, at the eastern end of the Navy Yard.** The site consists of a developable area in excess of 150 acres (including water areas) and provides for up to 2,280 linear feet of potential berthing along the Delaware River. The site is surrounded by the Philadelphia Industrial Development Corporation (PIDC) Navy Yard to the west; the Norfolk Southern and CSX rail intermodal yards to the northwest; the Packer Avenue Marine Terminal to the north; and the Delaware River to the east and south. SouthPort is envisioned by PRPA as a container facility. The site has been bid out to a private developer for construction and operation rights. (MT)



“Parcel 9A” the future site of SouthPort.
(Photo provided by the Philadelphia Regional Port Authority)

7) **Add a third berth at the Kinder Morgan Facility within the Keystone Industrial Port Complex.** This third berth would be for handling liquid cargo. (MT)

8) **Reconstruct/Reclaim Pier 3 along the Schuylkill River.** This site is currently home to SJ Anderson Construction, Inc. However, it is possible that other industrial use could be made of the pier. Reconstruction of the pier would allow barge traffic to service industry at the location. (MT)

9) **Expand Penn Terminals.** The company that borders Penn Terminals to the north recently went out of business and Penn Terminals is looking into acquiring the property as a way to expand its on-site warehousing capacity. (MT)

10) **Expand Philadelphia International Airport.** The proposed \$5,000,000,000 project, which includes a new runway, two major runway extensions, expanded terminals, and

associated airfield and landside improvements, builds on the existing airfield to expand the capacity of the airport. Another alternative plan contemplates reconfiguring the entire airport with two new runways, a consolidated terminal, and six new concourses. The 2,200-acre airport site is bounded by I-95, the Delaware River, a residential neighborhood, and a national historic landmark. The project may require the relocation of a UPS sorting facility, 100 acres of a U.S. Army Corps of Engineers' dredge disposal site, a rail line, and 20 acres of fill in the tidal area of the Delaware River. (MT)



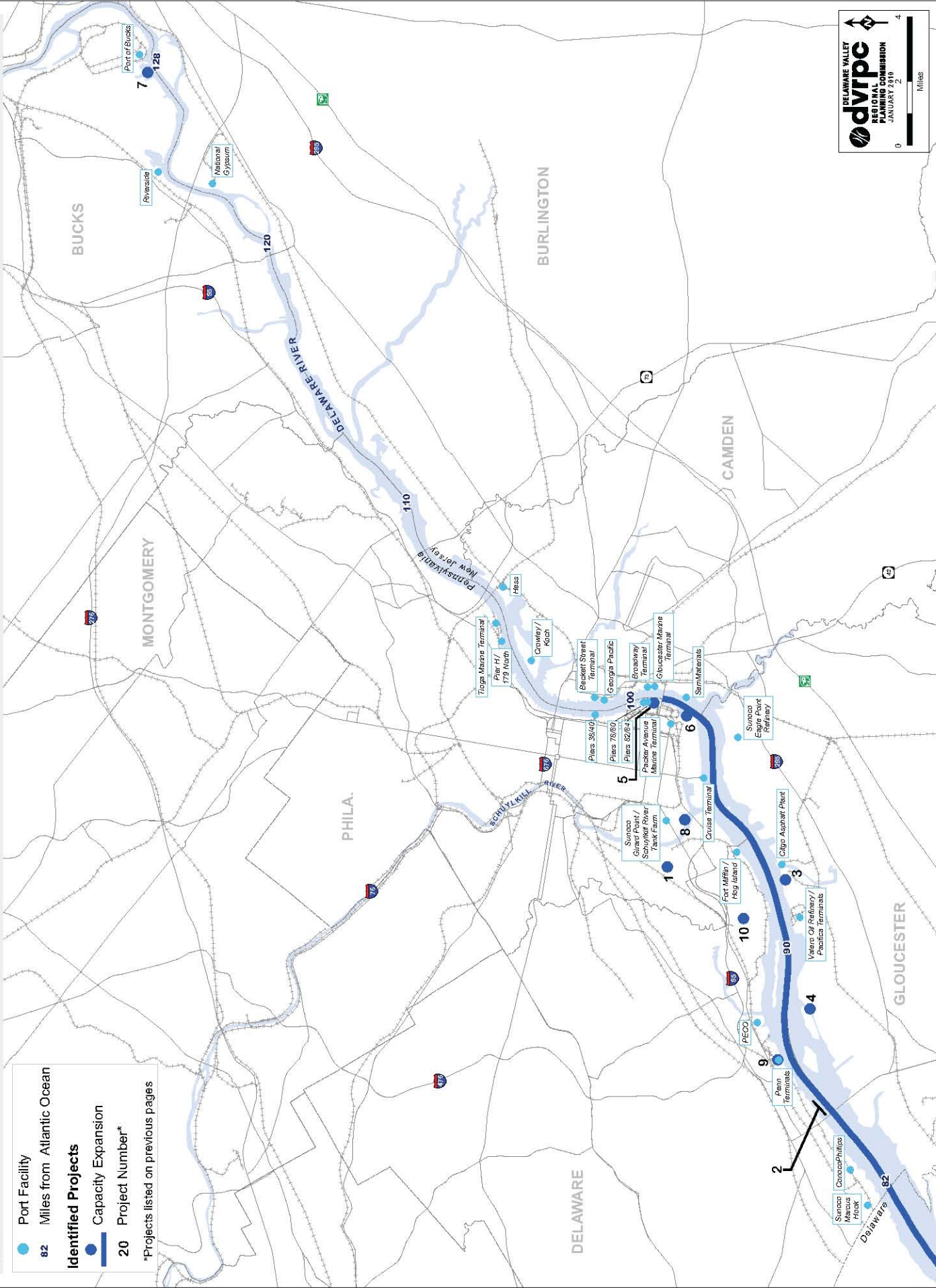
Palletized Cargo being transported at the Philadelphia International Airport
(Photo provided by DVRPC.org)



DVRPC Long-Range Vision for Freight

- Port Facility
 - 82 Miles from Atlantic Ocean
 - Identified Projects**
 - Capacity Expansion
 - 20 Project Number*
- *Projects listed on previous pages

Figure 5: Distribution Facilities Program



Freight-Related Studies

The capital improvement projects already listed and described in this document were identified by DVRPC with great assistance from its freight planning partners. However, during the interview process and research phase of this project, many other problems were discussed for which no project had been identified. These problems require additional study. The purpose of this section is to describe a list of problems for which further study and investigation are required.

- 1) **Long-term truck parking spaces.** A recent Pennsylvania statewide study of truck parking found a 4,400-space deficiency across the state. The study found eight corridors statewide with unmet demand, of which six pass through or terminate in the DVRPC region. DVRPC is studying this issue and trying to determine possible locations for additional spaces.



A Truck parked on the shoulder leaving the Yardley Welcome Center.
(Photo provided by DVRPC)

- 2) **25th Street Viaduct.** The 25th Street Viaduct is an essential rail corridor that is the primary route for rail traffic into the South Philadelphia Freight Complex. The viaduct runs over 25th Street and is built with a steel structure and a concrete skin. From a railroading point of view, the facility is in good condition. However, the concrete skin is shedding into the active City street below. No project has been identified for this problem, and it requires further study to determine a viable solution that appeases both the railroad and the community.
- 3) **South Philadelphia Freight Land Use and Transportation Master Plan.** South Philadelphia remains the goods movement hub for the region. It contains the largest port facility, with two more currently planned. It also holds the largest intermodal rail terminal in the region (and a second new intermodal terminal), the Philadelphia International Airport, and a diverse mix of industrial and warehouse space. Much of this infrastructure is aging, and congestion is an increasing problem both in terms of land

use and transportation. A study should be done to develop a comprehensive plan for this section of the City, which is vital to the movement of goods in the whole region.

- 4) **Municipal Solid Waste Transportation Study.** Municipal solid waste has not been consistently treated over time. In the 1990s, DVRPC produced three solid waste-related studies, but a comprehensive regional plan was never developed. Most goods movement databases do not incorporate Municipal Solid Waste. With some of the region's landfills nearing capacity, a long-term vision of how municipal solid waste should be transported within the region should be developed.
- 5) **Regional Warehouse Inventory and Policy Plan.** A vast array of warehouses and distribution facilities enables the region's economy and affords consumer satisfaction. A regional inventory is needed to better understand the region's warehousing resources and activities (as distinct from other transportation facilities, such as port terminals and rail yards). Among the projected outcomes of the project will be a comprehensive GIS database on warehouses and distribution facilities, guidance for local municipalities on greenfields and big-box development and brownfields reuse, and a regional policy plan that links warehouses and freight villages to the transportation network and land use considerations.
- 6) **Freight Financial Plan.** Roughly \$14 billion in projects are identified in this report, not including the expansion of the Philadelphia International Airport. Innovative financing will be necessary in order to fund all of the projects. The public benefit must be determined for each project to determine what level of public funding should be pursued. Also, a quantitative regional prioritization method for freight projects needs to be developed.
- 7) **NHS Connector Simulation.** Freight traffic is expected to grow dramatically through the year 2035, and the local roads that will be most affected by this growth are the NHS connectors. Thus, a study using the VISSIM visualization tool to simulate traffic conditions on NHS connector roadways should be undertaken using different "what if" scenarios for future traffic levels.
- 8) **Freight Rail Plan.** Continuing the work of the MAROps studies and based on a heightened interest in increasing regional freight rail traffic and the interwoven passenger-freight rail network, a comprehensive regional freight rail plan should be undertaken. This study would build upon the railroad policies and projects identified in this report in order to prepare detailed rail facility maps and a more exhaustive improvement plan for all railroads.
- 9) **Freight Data Plan.** Additional and improved freight data is essential for comprehensive planning and effective decision making. Freight data is also beneficial to establishing performance measures and having increased accuracy for commercial vehicle projections in the regional traffic model. Currently, DVRPC uses publicly available data or data that is collected by DVRPC. However, in order to obtain more comprehensive

and more accurate freight freight flow information, data from private vendors may also need to be purchased.

- 10) **Amtrak and Freight Coordination.** The Amtrak Northeast Corridor currently does not allow freight railroads with trackage rights to carry 286,000 pound railcars due to maintenance concerns. Allowing for 286,000 pound railcars on the Amtrak Northeast Corridor could open up additional rail-based business for the region. Additional study on how the freight railroads could better utilize the Northeast Corridor while maintaining Amtrak's rail infrastructure is needed.
- 11) **County Freight Scans.** Based on the success of the Freight Seminar that DVRPC coordinated with the Greater Valley Forge TMA, this study would entail a unique focus on freight facilities and operations in each of the DVRPC counties. DVRPC staff would start by meeting with the member agencies in each county and setting up site visits of the major freight facilities. The goal of this study would be to better connect the member governments with the need for freight investment and to reach the public in new ways.

Conclusions

The preparation of the 2035 Long-Range Plan affords an excellent and appropriate platform to comprehensively identify policies, projects, and studies that are needed to facilitate the safe and efficient movement of goods in the Delaware Valley in the short and long term. Freight needs are unique in nature and differ appreciably from the types of initiatives necessary to move people from origin to destination, so their treatment merits significant research, analysis, and consideration.

Establishing a regional freight strategy for the Delaware Valley is critical. Freight shipments continue to exhibit steady growth rates, even eclipsing increases in passenger travel. Furthermore, external developments such as new technologies or new facilities outside of the region may lead to even greater increases in freight activity. For example, the expansion of the Panama Canal is expected to bring a large increase in Asian cargo to East Coast ports.

Local freight infrastructure, combined with a skilled labor force and extensive transportation services, form a true regional asset. Comparable attributes in breadth and depth within the individual modes of transportation are found in few other metropolitan areas across the nation. This report is intended to serve as a blueprint to improve freight facilities and operations, to capitalize on the freight network, and to derive maximum benefit for the region.

Advancing a regional freight agenda requires close coordination with the DVRPC member governments and DVRPC committees, such as the DVRPC Board, Regional Transportation Committee, and Regional Citizens Committee. Many initiatives related to freight fall outside of the traditional purview of Metropolitan Planning Organizations (MPOs) (e.g., river deepening projects, rail freight improvements, and warehouse locations), so great care must be exerted in reaching consensus, establishing priorities, and seeking funding solutions.

Freight projects often cannot exist strictly within the DVRPC region. Many projects will be more successful if they are done on a broader scale across multiple MPO regions. For this reason, it is crucial that DVRPC continue to work with bordering MPO's on freight issues and projects. It is also important that DVRPC continue to work with larger corridor efforts such as those undertaken by the I-95 Corridor Coalition.

The identified policies, projects, and studies are grounded in the National Freight Policy and federal transportation legislation and represent one of the region's most detailed listings of freight needs ever compiled. This report goes well beyond prior efforts and provides greater

specificity about potential projects, such as locations, limits, and cost. This added information is extremely useful in helping illuminate the magnitude of needed freight improvements.

This document is envisioned as having multiple uses and users. First and foremost, the contents will be distilled down to create a more condensed, user-friendly freight element that will be widely distributed with the 2035 Long-Range Plan. Secondly, the report may serve as a primary source to identify projects seeking federal transportation funding through the DVRPC Transportation Improvement Program (TIP). Finally, the report offers a fertile basis for municipalities, cities, counties, and adjacent regions, as they also seek to devise plans that better incorporate freight considerations into transportation planning.

By building upon its current assets and instituting many of the initiatives identified in this report, the Delaware Valley is uniquely poised to derive even greater benefits from freight activity and to minimize any adverse impacts to local communities. In this pursuit, DVRPC will continue to cultivate public-private partnerships and work closely with local shippers, carriers, and members of its freight advisory committee, the Delaware Valley Goods Movement Task Force.

APPENDIX A

Program Summary Sheets



Map ID # Facility Limits Brief Description Time Period Location Cost

Freight Highway and Connector Program

Map ID #	Facility	Limits	Brief Description	Time Period				Location					Cost	
				2008-2013	2014-2025	2026-2035	Bucks	Chester	Delaware	Montgomery	Philadelphia	Burlington		Camden
Widening														
1	I-476 (PA Turnpike)	Mid-County Interchange to Quakertown Interchange	Widen from 2 to 3 Lanes in each direction	x		x	x							\$ 960.00
2	I-76 (PA Turnpike)	Valley Forge Interchange to Downingtown Interchange	Widen from 2 to 3 Lanes in each direction	x		x	x							\$ 300.00
3	NJ Turnpike	Exit 6 to Exit 9	Extend "dual-dual" configuration	x				x					x	\$ 2,700.00
4	NJ Turnpike	Delaware Memorial Bridge to Exit 4	Widen from 2 to 3 Lanes in each direction		x						x	x		\$ 310.00
New or Improved Interchange														
5	I-295	Interchange at NJ 38	Construct missing moves at interchange	x								x		\$ 190.40
6	I-95 / I-276	Interchange	Create an interchange at the intersection of I-95 and I-276 (PA Turnpike)		x									\$ 1,200.00
7	I-295/NJ 42/I-76	Interchange	Construct direct connection for I-295 through Interchange	x								x		\$ 1,140.90
8	I-295/NJ 42	Interchange	Construct missing moves at interchange	x								x		\$ 154.20
New or Improved Connector														
9	PA 309	PA 309 to Lansdale Interchange	Create new Connector Roadway between PA Turnpike and PA 309	x					x					\$ 86.30
10	Port Connector	Port of Paulsboro to I-295	Create new NHS Connector for the newly constructed Port of Paulsboro	x									x	\$ 16.00
11	26th Street	Penrose Avenue to Philadelphia Navy Base	Reconstruct Access to Navy Base to accommodate additional development	x						x				\$ 6.50
12	Port District Roadway	Beckett Street Terminal to Gloucester Marine Terminal	Create new Port District Road in Camden	x								x		\$ 115.00
13	Old Delaware Avenue	Packer Avenue Marine Terminal to Columbus Blvd	Various improvements	x							x			\$ 9.30
14	Penn Terminals Access	Penn Terminals to PA 291	Create additional access into Penn Terminals from PA 291	x						x				unknown
15	Port Connector	Gibbstown / Repauno Industrial Site	Create new NHS Connector for the planned Gibbstown / Dupont Repauno Industrial Site	x									x	\$ 25.00
16	PA 322	Twin Oaks Interchange	Reconstruct interchange at CSX Twin Oaks Facility to better accommodate modern trucks								x			unknown
Major Reconstruction														
17	I-295	NJ 45 to NJ 29	Resurfacing, pavement repair, and rehabilitation	x								x	x	\$ 136.50
18	I-95	Section A	Total Reconstruction		x									\$ 4,401.40
19	I-476	Chemical Road to I-76	Total Reconstruction of all lanes	x						x				\$ 40.00
20	Walt Whitman Bridge	Bridge	Re-deck main span of Bridge	x								x		\$ 115.00

Map ID #	Facility	Limits	Brief Description	Time Period			Location					Cost In Millions	
				2008-2013	2014-2025	2026-2035	PA		NJ				
20	Commodore Barry Bridge	Bridge	Re-deck main span of Bridge			X							\$ 200.00
21	I-76	US 1 to South Street	Precast Bridge Parapets Rehabilitation and 5 bridge replacements	X									\$ 37.80
22	I-95	NJ 29 Interchange to Taylorsville Road Interchange	Widen Scudders Falls Bridge from 2 lanes to 3 lanes in each direction	X									\$ 309.00
Total													\$ 12,453.30

Freight Rail Program

New Main Track													
1	Norfolk Southern Morrisville Line	Abrams Yard to Morrisville Yard	Add 2-mile passing siding and then transform siding into second main track			X							\$ 78.20
2	CSX Trenton Line	CP Ewing to Manville Yard	Add second main track			X							\$ 76.50
3	CSX Trenton Line	Newtown Junction to CP Wood	Add second main track			X							\$ 102.90
4	CSX Trenton Line	CP Belmont to CP Arsenal	Add second main track			X							\$ 202.20
5	CSX Philadelphia Subdivision	Delaware State Line to CSX Trenton Line	Add second main track			X							\$ 40.00
6	Northeast Corridor	Wilmington to Philadelphia	Add dedicated freight track			X							\$ 582.60
Additional Vertical Clearance													
7	CSX Trenton Line	CP Nice to CP Wood	Create Double Stack Clearance under 15 bridges.	X									\$ 35.20
8	CSX Greenwich Yard	Stadium Tower	Create doublestack clearance on two lines near the Sports Complex leading to Greenwich Intermodal Yard	X									\$ 0.75
9	Bustleton Industrial Track	Willits Road Overpass	Create 17' of vertical clearance to allow Plate F boxcars to serve the line		X								\$ 1.00
10	Conrail Port Richmond Branch	CSX Philadelphia Subdivision to Tioga Marine Terminal	Create additional vertical clearance into the Tioga Port Area		X								\$ 25.00
11	CSX Philadelphia Subdivision	Art Museum Tunnel	Create Double Stack Clearance		X								\$ 6.00
12	CSX Schuylkill River Line	Grays Ferry Avenue	Create Double Stack Clearance		X								\$ 4.00
13	CSX Philadelphia Subdivision	Clifton Avenue to Broad Street	Create double stack clearance at 11 bridges	X									\$ 8.30
Additional Capacity through Sidings, Yards, and Wyes													
14	Keystone Industrial Port Complex	KIPC	Series of rail improvements			X							\$ 32.00
15	Conrail Engle-side CSX Trenton Line	CP Park	Create wye to allow for movement between rail lines	X									\$ 4.00
16	60th Street Industrial Track	Fort Mifflin to Septa Airport Line	Restore missing connection	X									unknown
17	Wilmington and Northern	Pocopson	Add siding	X									\$ 0.55

#	Facility Map ID	Limits	Brief Description	Time Period			Location						Cost In Millions
				2008-2013	2014-2025	2026-2035	PA			NJ			
				Bucks	Chester	Delaware	Montgomery	Philadelphia	Burlington	Camden	Gloucester	Mercer	
18	Paulsboro and Bridgeport Yards	Yard	Expand yard capacity for shortline operations	x							x		\$ 2.50
19	Bordentown Secondary	Delair Bridge to Woodbury	Create additional yard capacity		x					x	x		unknown
20	Expand Norfolk Southern Intermodal Yard	Philadelphia Navy Yard Facility	Expand the terminal in coordination with the Crescent Corridor project.	x				x					\$ 15.95
Grade Crossings													
21	CSX Philadelphia Subdivision	Main Street, Darby, Pa	Create Grade Separated Rail Crossing		x								\$ 50.00
Reconstruction													
22	CSX Trenton Line	CP Trent	Replace crossover switch	x								x	\$ 2.50
23	Stoney Creek Branch	Norfolk Southern Morrisville Line to Septa Bethlehem Branch	Upgrade to Class II Rail Quality		x			x					\$ 10.00
24	Phoenixville Industrial Track	Northern End	Rehabilitate track, signaling and bridges	x				x					\$ 1.00
25	Beesley's Point Secondary	Bordentown Secondary to Southern Branch	Continue to weld the jointed rail	x						x			unknown
26	Pennsgrove Secondary	Bridgeport and Paulsboro	Reconstruct swing bridges		x						x		\$ 40.00
27	Blue Comet Line	Winslow Junction to Woodmansie	Restore freight service on historic commuter line			x							\$ 130.00
28	Robbinsville Industrial Track	Bordentown to Hamilton	Upgrade various aspects of track	x							x		\$ 2.50
29	Salem Running Track	Swedesboro and Woodbury	Upgrade the track to support the interchange between Conrail and Southern Railroad of New Jersey	x							x		\$ 7.60
30	Delair Bridge	Delair Bridge	Reconstruct Bridge to maintain 286k railcar capacity		x						x		\$ 25.00
Total													\$ 1,461.25

Distribution Facilities Program

1	Regional Produce Market	67th Street and Essington Avenue	Construct new state-of-the-art 560,000 square foot warehouse	x									\$ 215.00
2	Main Channel of Delaware River	Delaware Bay to the Ben Franklin Bridge	Deepen river from 40 to 45 feet to allow for larger cargo ships		x						x		unknown
3	Paulsboro Marine Terminal	190 acre site in Paulsboro	Construct new mixed-use marine terminal	x								x	\$ 150.00
4	Gibbstown Marine Terminal	300 acre site of former DuPont Repauno site	Construct new mixed-use marine terminal		x							x	\$ 200.00
5	NorthPort	Piers 96, 98, 100 and the Publicker Industries Site	Construct new industrial facility		x							x	unknown
6	SouthPort	Piers 122, 124 and Parcel 9A in the Navy Yard	Construct new container terminal with 2,280 linear feet of berthing		x							x	unknown

Map ID #	Facility	Limits	Brief Description	Time Period			Location						Cost	
				2008-2013	2014-2025	2026-2035	PA		NJ		In Millions			
7	Kinder Morgan Port Facility	Keystone Industrial Port Complex	Construct 3rd berth for handling liquid cargo	x										unknown
8	Pier 3	Pier 3 of Schuylkill river, which is currently occupied by SJ Anderson Construction Inc.	Reconstruct / Reclaim the pier to accommodate possible barge traffic	x										unknown
9	Penn Terminals	Expansion north of the current facility	Expand warehouse capacity on the parcel abutting Penn Terminals to the North	x										unknown
10	Philadelphia International Airport	Site is bounded by I-95, The Delaware River, a residential neighborhood and a historic site	Expand the airport to include at least one additional runway and additional terminal capacity	x										\$ 5,000.00

Abstract Page

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Geographic Area Covered: DVRPC Region

Key Words: Freight, Goods Movement, National Highway System, Freight Rail, Ports, Airports, Intermodal Freight Facilities.

Abstract: The region has a vast array of freight facilities that benefit the regional quality of life. DVRPC has projected an 82% growth in the value of cargo shipments by 2035, so increased capacity and efficiency to carry goods is important for the region. The purpose of this report is to present a list of policies and projects that have the capability of increasing the positive impact of goods movement in the region. The project lists represent just over \$14 billion in identified project needs, not including the expansion of the Philadelphia International Airport. The report also presents studies to improve freight movements and activities.

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