# DELAWARE STATE RAIL PLAN

DelDOT

2011

# Acknowledgements

DelDOT would like to recognize the following individuals for their contributions as a Stakeholder in this Plan's development:

| Name | Company |
|---|---|
| Jeffrey Gerlach | AMTRAK |
| David Blankenship | City of Wilmington |
| Sharon Daboin | CSX |
| Jeffrey Stone | Delaware Office of Economic Development |
| Roberta Geier | Delaware Department of Transportation |
| Gregory Oliver | Delaware Department of Transportation |
| Dwayne Day | Delaware Department of Transportation |
| David Campbell | Delaware Transit Corporation |
| Kennard Potts | Delaware Transit Corporation |
| Albert Loyola | Delaware Transit Corporation |
| Cathy Smith | Delaware Transit Corporation |
| James Galvin | Dover Kent MPO |
| Daniel Wolfensberger | Kent Economic Partnership, Inc. |
| Jeannie Fazio | Maryland Department of Transportation |
| Debbie Bowden | Maryland Department of Transportation |
| Nicole Katsikides | Maryland Department of Transportation |
| Karl Kalbacher | New Castle County |
| Rick Crawford | Norfolk Southern |
| Herb Inden | Office of State Planning Coordination |
| David Edgell | Office of State Planning Coordination |
| Bryan Hall | Office of State Planning Coordination |
| Julie Wheatley | Sussex County Economic Development Office |
| Byron Comati | SEPTA |
| Harry Garforth | SEPTA |
| Hal Godwin | Sussex County |
| Dave Gula | WILMAPCO |
| Daniel Blevins | WILMAPCO |
| Foster Nichols | Parsons Brinckerhoff |
| John Baesch | Parsons Brinckerhoff |
| Joseph Gurskis | Parsons Brinckerhoff |
| Anna Lynn Smith | Parsons Brinckerhoff |
| Stephanie Jackson | Parsons Brinckerhoff |
| Len Usvyat | Parsons Brinckerhoff |
| Stephen Bassford | S.L. Bassford and Associates |

# Table of Contents

# List of Tables



# List of Figures

# Acronyms List

| | |
|---|---|
| AAR | American Association of Railroads |
| ADA | Americans with Disabilities Act |
| Amtrak | National Railroad Passenger Corporation |
| AREMA | American Railway Engineering and Maintenance-of-Way Association |
| ARRA | American Recovery and Reinvestment Act of 2009 |
| B & O | Baltimore and Ohio Railroad |
| BCRR | Bay Coast Railroad, Inc. |
| Conrail | Consolidated Rail Corporation |
| COT | Council on Transportation |
| CRIP | Commuter Rail Improvement Program |
| CTP | Capital Transportation Program |
| DART First State | Delaware Transit Corporation |
| DBU | Delmarva Business Unit |
| DCLR | Delaware Coast Line Railroad |
| DEDO | Delaware Economic Development Office |
| DelDOT | Delaware Department of Transportation |
| DEMA | Delaware Emergency Management Agency |
| DSHS | Delaware Department of Safety and Homeland Security |
| DTC | Delaware Transit Corporation |
| DVRPC | Delaware Valley Regional Planning Commission |
| ESPN | East Penn Railroad |
| FAA | Federal Aviation Administration |
| FAF | Freight Analysis Framework |
| FHWA | Federal Highway Administration |
| FRA | Federal Railroad Administration |
| FY | Fiscal Year |
| GM | General Motors |
| HSIPR | High-Speed Intercity Passenger Rail |
| HVAC | Heating, Ventilation, and Air Conditioning |
| LRTP | Long-Range Transportation Plan |
| MARC | Maryland Area Regional Commuter |
| MDDE | Maryland & Delaware Railroad |
| MDOT | Maryland Department of Transportation |
| MP | Milepost |
| MPO | Metropolitan Planning Organization |
| n.e.c. | not elsewhere classified |
| NEC | Northeast Corridor |
| NEPA | National Environmental Policy Act |
| NS | Norfolk Southern Railway Company |
| OL | Operation Lifesaver |

| | |
|---|---|
| PLUS | Preliminary Land Use Service |
| PRIIA | Passenger Rail Investment and Improvement Act of 2008 |
| PTC | Positive Train Control |
| RRIF | Railroad Rehabilitation & Improvement Financing |
| SEPTA | Southeastern Pennsylvania Transportation Authority |
| SRP | State Rail Plan |
| TE | Transportation Enhancement |
| TIFIA | Transportation Infrastructure Finance and Innovation Act of 1998 |
| TIGER | Transportation Investment Generating Economic Recovery |
| TOD | Transit-Oriented Development |
| USDOT | United States Department of Transportation |
| WILMAPCO | Wilmington Area Planning Council |
| WWRC | Wilmington & Western Railroad |

# 1 History – The State's Involvement in Rail

While there may be some isolated examples of Delaware's prior involvement in railroad issues, the creation of the Consolidated Rail Corporation (Conrail) in 1976 brought a more formalized approach for addressing Delaware's rail-related issues. Part of the strategy to make Conrail a for-profit venture was eliminating thousands of miles of light-density lines. Like other states, Delaware was called upon to assume ownership or control of certain lines if rail freight service was to continue and contract with alternative service providers. The federal government established the Local Rail Service Assistance (LRSA) program in 1973 to provide states in the Northeast capital assistance on rail freight service on abandoned light density lines. The program was expanded in 1978 to include monies to local and State agencies to make remedial infrastructure improvements necessary to allow freight service to continue on light-density freight lines. In 1989, the program was reauthorized and renamed the Local Rail Freight Assistance (LRFA) Program.

In 1975, the first Delaware State Rail Plan (SRP) was prepared to satisfy federal funding guidelines. In the 1980s, the State continued its administration of light-density freight lines on the Delmarva peninsula. The State also entered in agreements with Conrail to ensure prompt repair to rail-highway crossing devices. In more recent years, the State invested in infrastructure owned by a Class I carrier (i.e., Norfolk Southern Railway Company [NS]). In the Shellpot Agreement (discussed in greater detail in Chapter 8), the state essentially loaned the railroad funds to rehabilitate one of its bridges. The State did this as means of encouraging the railroad to bring more traffic to and through the State.

The late 1980s saw the return of commuter rail to Wilmington, which necessitated a formal State-funded subsidy program. In the 1990s, the State's commitment to commuter rail increased to include higher service frequencies, more stations, and expansion to Newark. The involvement in light-density freight line operations waned somewhat as State and federal monies for line rehabilitation dried up. The State continued to prepare its SRP though the plan was not intended to be a strategic planning tool.

Between 2000 and 2010, the State increased its investment in the commuter rail system, including the purchase of rail cars and expansion of capacity to accommodate more trains operating over Amtrak's Northeast Corridor (NEC). In addition to track improvements, the State invested heavily in Amtrak's Wilmington Station, in part funded by the American Recovery and Reinvestment Act (ARRA)-funded improvements.

Most importantly, the current decade has brought about a new recognition of the value of rail transportation by the State. The 2010 SRP is focused on improving the capacity and efficiency of the State's rail system to meet the ever-growing demand for passenger and freight rail service in Delaware.

# 2 Introduction/Purpose of Delaware State Rail Plan

Delaware's SRP provides a basis for federal and state rail investment within Delaware. The SRP sets forth Delaware's freight and passenger rail transportation policy, including commuter rail. The SRP is developed to reflect the interests of rail stakeholders and strives to meet the following requirements:

- Broaden the understanding of rail issues for all stakeholders
- Define the role of railroads in a multimodal environment
- Identify infrastructure and other improvements required to improve rail service
- Provide a framework to implement rail improvement initiatives in Delaware
- Support the Delaware Department of Transportation (DelDOT) and other agencies in obtaining federal/other funding

This document has been developed to comply with Chapter 227 of Title 49 of US code Section 22705 as enacted in the Passenger Rail Investment and Improvement Act (PRIIA) of 2008. As such, states are required by PRIIA to submit a state-approved rail plan, which has been revised no less frequently than once every five years, to the US Secretary of Transportation for approval.

The SRP describes how rail fits into the overall transportation planning process and presents a series of goals, objectives, and strategies for Delaware's rail system. The SRP serves as a strategic guide for DelDOT, stakeholders, and the public to guide the future freight and passenger rail capital investments.

## 2.1 SRP Development Process

This section describes which entity or entities within DelDOT have the responsibility to prepare, maintain, coordinate, and administer the SRP. The subsequent section outlines the state and federal approval process for the SRP document itself.

DelDOT's Division of Planning, working in conjunction with the Delaware Transit Corporation (DTC), is responsible for preparing this SRP. Division of Planning retained several consulting firms to address the following in preparing the SRP:

- Collecting data
- Researching rail-related information, including best practices in other states
- Interfacing with stakeholders
- Developing SRP goals, objectives and strategies
- Compiling the passenger and freight rail system inventory

- Identifying rail issues and opportunities
- Identifying safety and security needs
- Identifying and prioritizing needs
- Evaluating projects

DelDOT will implement the SRP and monitor federal legislation relevant to future updates.

The SRP was developed with intensive stakeholder outreach and its preparation was guided by the Delaware Rail Plan Advisory Committee. This committee recommended the SRP to DelDOT's Secretary of Transportation for approval and was composed of the following members:

> **The SRP as a Tool to Identify Issues and Needs**
>
> A main purpose of the SRP is strategizing to most effectively address the issues that have been identified by rail stakeholders as critical to their success. These challenges include rail "chokepoints," where limited track capacity prevents efficient train operations; rail that is not capable of handling 286,000 pound rail cars; and conflicts between freight and passenger rail.

Roberta Geier.....DelDOT Division of Planning

Gregory Oliver.....DelDOT Division of Planning

Albert Loyola ..... DTC

Kennard Potts ..... DTC

David Campbell..... DTC

Jeffrey Stone.....Delaware Economic Development Office (DEDO)

James Galvin .... Dover/Kent County Metropolitan Planning Organization (MPO)

Juanita Wieczoreck .....Dover/Kent County MPO

Rick Crawford.....NS

Daniel Blevins .....Wilmington Area Planning Council (WILMAPCO)

David Gula ..... WILMAPCO

The group met regularly during preparation of the SRP to shape the priorities that are included in the SRP. The SRP was developed to provide the vision for the role of rail in Delaware's transportation system and the region with respect to:

- Freight mobility
- Feasible passenger/high speed rail service
- Transportation efficiency
- Congestion, livable communities, jobs, and environmental sustainability

In addition, SRP stakeholders participated in a workshop held on March 26, 2010 to gain an understanding of rail issues in the State and the broader region. The workshop focused on the current capabilities of Delaware's rail transportation system and what is required to respond to the transportation needs of the region in 2030. The result of this effort was the draft goals that guided the development of objectives and strategies.

## 2.2 FEDERAL COMPLIANCE

The SRP has been prepared to align with the Federal Railroad Administration's (FRA) National Rail Plan, to be completed in 2011. The development of Delaware's SRP reflects national consensus on strategic goals in the areas of safety, state of good repair, economic competitiveness, livable communities and environmental sustainability.

***SRP Review and Endorsement***

Approval of the SRP comprises two steps: 1) DelDOT approves the SRP as meeting its requirements; and 2) subsequent to its approval, the State is required to submit the SRP to the U.S. Secretary of Transportation for its acceptance as PRIIA compliant. Guidelines are set forth in the Passenger Rail Investment and Improvement Act of 2008, Division B-Amtrak, Title III- Intercity Passenger Rail Policy, Section 303-State Rail Plan.

*It should be noted that the FRA has not issued its rules and criteria that define a PRIIA compliant rail plan. The agency has advised that it is two years away from establishing the final rulemaking and regulation. Until that time, the terms of the Act are being used as guidelines.*

State Process

The US Department of Transportation (USDOT) Office of the Secretary is instructed by PRIIA to establish the minimum requirements for preparing and periodically revising the SRP. The legislation, however, does not provide a timetable for the development of the requirements.

PRIIA does provide guidance that includes the following:

- Establish or designate a state rail transportation authority to prepare, maintain, coordinate, and administer the plan;
- Establish or designate a state rail plan approval authority to approve the plan;
- Submit the state's approved plan to the USDOT Secretary of Transportation for review; and
- Revise and resubmit a state-approved plan no less frequently than once every 5 years for re-approval by the Secretary.

Two additional requirements are established by the USDOT related to transparency, coordination, and review:

- A state shall provide adequate and reasonable notice and opportunity for comment and other input to the public, rail carriers, commuter and transit authorities operating in, or affected by rail operations with the state, units of local government, and other interested parties in the preparation and review of its state rail plan.
- A state shall review the freight and passenger-rail service activities and initiatives by regional planning agencies, regional transportation authorities, and municipalities within the state, or in the region in which the state is located, while preparing the

plan, and shall include any recommendations made by such agencies, authorities, and municipalities as deemed appropriate by the state.

Federal Process

According to PRIIA, the Secretary will prescribe procedures for states to submit state rail plans for review, including standardized format and data requirements. Currently, no such procedures have been established. The legislation identified the following 12 specific items to be included in the content of the SRP:[1]

1) An inventory of the existing overall rail transportation system and rail services and facilities within the state and an analysis of the role of rail transportation within the state's surface transportation system.
2) A review of all rail lines within the state, including proposed high-speed rail corridors and significant rail line segments not currently in service.
3) A statement of the state's passenger rail service objectives, including minimum service levels, for rail transportation routes in the state.
4) A general analysis of rail's transportation, economic, and environmental impacts in the state, including congestion mitigation, trade and economic development, air quality, land-use, energy-use, and community impacts.
5) A long-range rail investment program for current and future freight and passenger infrastructure in the state that meets the requirements of subsection (b).
6) A statement of public financing issues for rail projects and service in the state, including a list of current and prospective public capital and operating funding resources, public subsidies, state taxation, and other financial policies relating to rail infrastructure development.
7) An identification of rail infrastructure issues within the state that reflects consultation with all relevant stakeholders.
8) A review of major passenger and freight intermodal rail connections and facilities within the state, including seaports, and prioritized options to maximize service integration and efficiency between rail and other modes of transportation within the state.
9) A review of publicly funded projects within the state to improve rail transportation safety, including all major projects funded under Section 130 of Title 23.
10) A performance evaluation of passenger rail services operating in the state, including possible improvements in those services, and a description of strategies to achieve those improvements.
11) A compilation of studies and reports on high-speed rail corridor development within the state not included in a previous plan under this chapter, and a plan for funding any recommended development of such corridors in the state.

[1] http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6003eh.txt.pdf

12) A statement that the state is in compliance with the requirements of section 22102.

Assuming that this "state-approved" plan meets the interim standards in terms of content and is submitted to the federal government in a timely fashion, approval by the USDOT Secretary should follow.

## 2.3 PUBLIC INVOLVEMENT

The SRP will be posted on DelDOT's website (www.deldot.gov) for a period of sixty (60) days. The public will be invited to submit comments electronically to DTC Customer Service. Additionally, the SRP will be presented to the Technical Advisory Committees of WILMAPCO and the Dover/Kent Metropolitan Planning Organization. The SRP will also be reviewed by the Sussex County Transit Working Group. All three events will be open to the public.

In addition to the March 2010 stakeholder workshop, interviews were conducted with the Port of Wilmington, NS, and the shortline railroads. Also, DEDO provided assistance in administering a survey to freight shippers.

## 2.4 STATE POLICY/GOALS FOR A MULTIMODAL SYSTEM

The SRP was developed reflective of Delaware's other planning efforts, incorporating the sentiment, as well as specific principles and objectives, where relevant. In general terms, these efforts align with supporting smart growth land use policies and environmental sustainability goals.

It is well recognized by DelDOT and other State agencies that rail transportation can contribute to less energy consumption, reduced highway congestion, and lower vehicle emissions. With the current emphasis on sustainable forms of transportation, increased use of rail transportation can serve to cut greenhouse gases and promote Delaware's position in the global economy. Coordination with other modes for the movement of people and goods affords an opportunity to leverage the unique advantages of the individual modes.

**CONGESTION ON I-95**

### *Delaware's Long-Range Transportation Plan*

Delaware's Statewide Long-range Transportation Plan (LRTP), *Moving the First State Forward*, emphasizes multi-modal needs as well as fiscal responsibility with a primary goal of "…continuing to emphasize quality of life as our foundation through balancing the needs of people with the needs of the transportation network."[2]

[2] DelDOT LRTP Summary Presentation, April 9, 2010

The vision for Delaware's LRTP is to have a well-maintained transportation program that integrates all modes statewide, being able to deliver more transit services, bicycle and pedestrian improvements and critical roadway projects.[3]

The SRP follows the Statewide LRTP policy principles and objectives, and reflects rail transportation's important role in Delaware's transportation system. With financing of the transportation system, an increased demand for goods movement, and environmental stewardship identified in the LRTP as three of the challenges facing the State, rail transportation is one of the solutions to address these challenges. Additionally, increased highway congestion was projected in all LRTP planning scenarios as demand for goods grows. A heavier reliance on freight rail transportation can alleviate some of this congestion. Moving commodities by rail helps to reduce the carbon footprint by emitting one-fifth the carbon dioxide as an equivalent truck shipment.[4]

**TABLE 2-1: DELDOT'S LRTP POLICY PRINCIPLES AND OBJECTIVES**

| Policy Principles | Objectives |
|---|---|
| **System Preservation/Optimization**<br>*Maintenance First* | Focus on maintenance and operations and optimizing the transportation system. |
| **Development**<br>*Direct programs, services and facilities to support smart growth and smart transportation initiatives.* | Coordinate land use and transportation in a manner promoting long-term transportation efficiency. |
| **Travel Opportunities and Choices**<br>*Maximize transportation choices for residents and visitors.* | Promote expansion of a variety of travel opportunities with connections to work places, services, and residences, and recreation for those with limited mobility options and the public. |
| **Cost-Effectiveness**<br>*Use cost-effectiveness as the fundamental principle.* | • Use cost-effectiveness indicators when prioritizing projects.<br>• Maintain and use existing resources and equipment.<br>• Use technology to improve service. |

In addition to the State LRTP, the principles behind the SRP are in line with the contents of the State's two MPO LRTPs—the Wilmington Area Planning Council (WILMAPCO) and the Dover/Kent County MPO—as well as Sussex County's LRTP. As part of the State's multimodal planning efforts, the SRP is intended to position Delaware for any additional appropriations that may be advanced at the federal level.

[3] Ibid.

[4] Association of American Railroads <http://www.aar.org/environment/environment.aspx>

# 3 SRP Vision, Goals and Objectives

## 3.1 Rail Trends and Challenges

Rail transportation systems throughout the United States will need to respond to changing trade patterns, and economic and energy trends. The Delaware passenger and freight rail network are part of a larger Mid-Atlantic region multimodal network and an even larger national and global multimodal transportation system. As such, the SRP has been developed in the context of domestic and international commerce.

Delaware recognizes the important role transportation plays in the State's economy, and like many states is faced with the challenge of how to fund an ever-growing need for infrastructure. The maintenance and enhancement of Delaware's rail transportation system will result in significant regional economic and environmental benefits. The challenge, however, is to allocate scarce financial resources to improvements having the greatest public benefit.

## 3.2 Delaware's Rail System Vision

Delaware's railroads form a critical part of the State's multimodal transportation system, and the State's central location along the NEC emphasizes the importance of a regional, multi-state need to share a common vision for resources and investments. This vision guides the strategies relative to investment in passenger and freight rail.

The vision for Delaware's rail system reflects the USDOT's priorities stated in the Preliminary National Rail Plan. This national planning effort provides a framework for Delaware to follow to fully realize the benefits of rail for both Delaware and the Mid-Atlantic region. Delaware's vision brings together the need for efficient freight rail coupled with the desire for high-speed, intercity, and commuter rail connecting the state's growing communities. Delaware realizes the need for more rail capacity for both passengers and freight, and in order to maintain and grow its economic well-being, it is critical for the State to partner with stakeholders and others to advance the rail improvements necessary to maintain and improve the State's multimodal transportation system.

### 3.2.1 Vision Statement for Passenger Rail

As congestion increases on the State's highway network, the demand for Delaware's intercity and commuter rail services will continue to grow. Combined with global environmental trends and volatile fuel prices, the desire for more travel options leads to a passenger rail system that provides safe, fast, reliable and frequent service that is competitive with other travel modes. Connections to other modes will also be essential, including local and regional transit services.

The State's vision for passenger rail is aligned with Amtrak's vision for high-speed rail in the NEC as well as the NEC Infrastructure Master Plan. Both of these recent documents outline

near as well as longer-term needs and solutions in collaboration with the commuter railroads that are located along the NEC.

### 3.2.2 Vision Statement for Freight Rail

Given Delaware's central location in the Mid-Atlantic region, many of the State's industries rely on the freight rail network for efficient delivery of goods. This rail system serves many destinations beyond the State's borders, and its connections with other modes of transport, namely highway and water, provide shippers options in terms of market access, modal economics, and service. With a national emphasis on economic competitiveness and environmental sustainability, an energy efficient choice such as rail is poised to better serve shipper's needs.

Delaware's multimodal freight system should be responsive to increased regional and international economic competition. It can also address limited highway capacity, environmental challenges, rising energy costs, and the need to preserve right-of-way for future rail use.

**The Rail Industry's Impacts on Economic Development**

It is not just the railroads themselves that spur economic development in Delaware - rail-related industries generate jobs that support the region. As an example, Rocla Concrete Tie, Inc., has one of its three US manufacturing facilities located in Bear. Originally located there to serve the development of Amtrak's high-speed Acela services, this proximity to the NEC continues to allow them to cost-effectively serve many locations in the Northeastern United States.

## 3.3 DELDOT RAIL PLAN GOALS, OBJECTIVES AND STRATEGIES

Using this vision as a foundation, six broad goals for Delaware's rail transportation system were identified and used to shape the SRP and lead to development of objectives and strategies. Each goal was translated into specific objectives with strategies developed to attain those objectives. The goals, objectives, and strategies were developed collaboratively by many of the SRP's stakeholders. Figure 3-1 explains the relationship between vision, goals, objectives and strategies.

**FIGURE 3-1: RELATIONSHIP BETWEEN VISION, GOALS, OBJECTIVES, AND STRATEGIES**


DelDOT's goals, objectives, and strategies for freight and passenger rail are presented in Table 3-1.

## TABLE 3-1: GOALS, OBJECTIVES, AND STRATEGIES

| | Objectives | Strategies |
|---|---|---|
| **GOAL 1.** Provide mechanisms for continuous safety and security on all rail modes. | • Working with the railroads, grade crossings identified of particular concern for closure, enhanced warning devices or separation.<br>• Support for future programs and potential funding sources identified to address heightened rail security concerns.<br>• Increased safety of passengers and freight trains by implementing modern technologies, such as positive train control. | • Identify contingencies for major infrastructure compromise or destruction, partnering with other modes as warranted.<br>• Work with USDOT, state agencies, and adjacent states to come up with collaborative procedures to deal with rail and passenger safety, as well as transport of hazardous materials.<br>• Install video surveillance equipment at key asset locations.<br>• Monitor vehicular and pedestrian access to railroad right-of-way.<br>• Work with FRA on implementing new technologies that help with rail safety.<br>• Investigate the potential to create a centralized office of rail safety and security within the State.<br>• Investigate opportunities for cost savings and additional liability protection through an insurance pool or other protective arrangement. |

**TABLE 3-1: GOALS, OBJECTIVES, AND STRATEGIES (CONT'D)**

| | Objectives | Strategies |
|---|---|---|
| **GOAL 2**<br>Preserve the existing network and provide additional rail capacity to maintain and improve Delaware's important link in regional and national rail networks. | • Expanded rail capacity to promote and meet projected growth in freight and passenger demand.<br>• Optimized rail network operations.<br>• Removal of bottlenecks and chokepoints to increase system capacity.<br>• Preservation of rail corridors for future use.<br>• Motivation for business and mixed-use development to locate adjacent to current and future passenger rail stations.<br>• Clear understanding of where and when commuter and intercity rail is feasible within Delaware. | • Collaborate with railroads to upgrade where necessary all rail in the State of Delaware to 286,000-pound freight rail car load capacity.<br>• Identify potential corridors where market demand is projected to warrant 315,000-pound rail car load capacity.<br>• Identify the cost and benefits of improvements needed to achieve 286K compliance and consider alternative ways of funding these projects with the shortlines.<br>• Identify corridors where rail service may be needed and perform cost/benefit analysis to help prioritize these corridors.<br>• Develop Statewide policy for rail-to-trail and rail-with-trail for potential rights-of-way that may be abandoned.<br>• Establish policy and standards on commuter rail stations including spacing between stations of no less than four miles.<br>• Establish a policy for transit-oriented development at passenger rail stations, encouraging density and development at multimodal stations.<br>• Develop a context and policy for where new or expanded passenger rail service can be evaluated.<br>• Continue to identify rail improvements needed in order to stay competitive with global economy.<br>• Investigate the potential for an enhanced State-funded program to allow for additional grade crossing and other rail infrastructure improvements. |

**TABLE 3-1: GOALS, OBJECTIVES, AND STRATEGIES (CONT'D)**

| | Objectives | Strategies |
|---|---|---|
| **GOAL 3**<br>Seamlessly integrate passenger and freight rail with other modes, including transit, ports and aviation. | • System redundancy, reliability and viability to support other modes of transportation.<br>• Improved coordination among freight, intercity passenger and commuter rail systems with other modes of transportation.<br>• The global nature of goods movement is considered when making regional and local freight-related decisions.<br>• Replicating intermodal goods movement "success stories" from Delaware and beyond.<br>• Increased knowledge on the costs vs. benefits of rail travel.<br>• Improved ADA compliance on all passenger rail service.<br>• Seamless transferability provided for passengers between services. | • Coordinate with county, municipal and state economic development offices, airports, ports, and railroads to identify additional opportunities for multimodal goods movement.<br>• Consider development of policy to create protective berms between residential and rail land uses. Policy should specify safety criteria for the placement of trails proposed in railroad corridors, and indentify strategies to prevent trespassing on rail right of way.<br>• Partner with local and regional ports to identify short and longer-term opportunities and ways of enhancing these shipping corridors for mutual benefit.<br>• Continue to explore rail-related responsibilities between DelDOT and DTC to identify opportunities to more effectively manage rail activities in the state, including the potential formalization of a rail group.<br>• Identify ways that rail can help replicate successes experienced when niche markets are able to grow and prosper.<br>• Identify win-win solutions for diverting truck trips to rail.<br>• Partner with Amtrak and transit agencies to advance ADA plans and initiatives.<br>• Consider connections with other public transportation modes when rail timetables are modified as well as when new passenger rail services or corridors are advanced. |

**TABLE 3-1: GOALS, OBJECTIVES, AND STRATEGIES (CONT'D)**

| | Objectives | Strategies |
|---|---|---|
| **GOAL 4**<br>Work with other states and stakeholders to advance improvements in rail transportation through partnerships and innovative funding opportunities. | • Exploitation of successes experienced via public-private partnerships.<br>• Public policies that reflect regional and national interests and promote the attractiveness of rail.<br>• Delaware's interests are voiced as federal policy and legislation are developed.<br>• Implementation of policies that provide competitive pricing for passenger and freight rail travel.<br>• A State funding program that facilitates planning and implementing public investment in rail transportation. | • Develop a State policy on publicly-funded improvements to private property.<br>• Replicate the success of the Shellpot Agreement (described more in Chapter 8) and use as a model for other similar projects.<br>• Conduct economic impact analyses to quantify costs and benefits.<br>• Partner with railroads and others to market the benefits of rail and freight mobility.<br>• Work with the Office of State Planning and the counties to ensure that the transportation element of the comprehensive plans incorporates freight needs as part of the land use recommendations.<br>• Partner with the freight railroads to prioritize reinvestment projects including increasing track speed and weight limits.<br>• Keep abreast of legislation related to Positive Train Control and other federal initiatives.<br>• Partner with other northeastern states in forums such as the Northeast Corridor Infrastructure Advisory Commission to maintain and expand capacity of the NEC.<br>• Consider creating a Rail Freight Assistance Program or Rail Infrastructure Fund, referring to neighboring states for beneficial models (e.g., Pennsylvania, Virginia, Maryland).<br>• Identify the extent to which Delaware should support out-of-state initiatives that can be shown to provide benefit to Delaware.<br>• Investigate, with Maryland and Virginia, the potential for one regional operator on the Delmarva. |

**TABLE 3-1: GOALS, OBJECTIVES, AND STRATEGIES (CONT'D)**

| | Objectives | Strategies |
|---|---|---|
| **GOAL 5**<br>Promote the energy efficiency of rail transportation and educate the public, elected officials, and others on the environmental benefits of rail transportation as well as the economic development opportunities it creates. | • Increased market share of passenger and freight rail services.<br>• Realization that rail corridors are economic drivers for communities throughout Delaware.<br>• Preservation of existing businesses and jobs served by rail transportation; creating new rail-related business opportunities. | • Work with DEDO, the MPOs, and the County Economic Development Directors to identify the markets for rail transportation throughout Delaware as well as other goods that can be transported by rail (e.g., building materials).<br>• Partner with businesses and Economic Development Directors to protect businesses and jobs associated with rail.<br>• Work with DEDO to track number of businesses that locate/relocate to rail lines; quantify the impacts on jobs and goods movement.<br>• Partner with DEDO and others to quantify direct and indirect benefits from rail in Delaware; identify number of jobs that are created and maintained (e.g., Harrington, Wilmington, Newark Yard).<br>• Partner with DEDO and others to quantify the financial loss/gain to preserve rail corridors throughout the State.<br>• Educate municipal officials and the public on the location of rail lines throughout the State, stressing the importance of rail to job creation and preservation.<br>• Work with land use agencies to create policies to preserve existing rail-related business and create new opportunities.<br>• Educate the public on the importance of rail to Delaware's economy, including maintenance facilities and operations centers.<br>• Collaborate with MPOs and others to showcase "freight as a good neighbor" and provide public outreach on rail as a transportation mode.<br>• Partner with county Economic Development Directors to educate shippers on the benefits of rail. |

**TABLE 3-1: GOALS, OBJECTIVES, AND STRATEGIES (CONT'D)**

| | Objectives | Strategies |
|---|---|---|
| **GOAL 6**<br>Contribute to the decision-making process with local governments and land owners to preserve rail corridors and potential station areas for future investment. | • Preserved industrial corridors for future economic development opportunities.<br>• Preserved land around potential stations along current and future passenger rail corridors.<br>• Preserved shortline spurs where warranted. | • Collaborate with the county Economic Development Directors to identify parcels of land adjacent to rail that are ready and available for industrial use.<br>• Partner with Office of State Planning to increase reliance on the Preliminary Land Use Service (PLUS) process to facilitate easier rezoning when warranted.<br>• Partner with DEDO to prepare guidelines for counties to use when rezoning is desired as part of comprehensive plan development.<br>• Work with the MPO and municipalities to identify areas where future TOD is desired (e.g., Cheswold, Clayton).<br>• Partner with railroads and others to develop policy to preserve shortline spurs.<br>• Work to obtain consensus with municipalities, counties and MPOs to identify and preserve industrial corridors.<br>• Partner with DEDO and others to develop policy that prevents residential and other incompatible land use encroachment on rail lines.<br>• Partner with MPOs, counties and municipalities to preserve land along potential future passenger rail corridors for transit-oriented development and park and rides, identifying any travel benefits that can be realized prior to start of passenger rail service.<br>• Consider most promising and/or logical locations for intermodal transfer centers and partner with local officials to explore opportunities to create them. |

In relation to Goal 6, there are several locations in Delaware that have been looked at as future Transit Oriented Development (TOD) areas. TOD employs concepts of mixed use, higher density development that is near a transit stop or station. This type of development is important for future passenger rail planning because higher densities allow for greater potential transit ridership. The land use policy of local governments has an impact on future transit service and the State encourages counties, municipalities, MPOs and land owners to work together to preserve land areas that could potentially support passenger rail in the future. To help identify characteristics that would be suitable for TODs, the University of Delaware's Institute for Public Administration prepared a report specifying a framework for evaluating the potential of selected TOD sites throughout the State. [5]

### Dover/Kent County MPO - Downtown Dover Partnership (DDP)

The Dover/Kent County MPO partnered with the Downtown Dover Partnership (DDP) to create a neighborhood plan for the area surrounding the new Dover Transit Center on the corner of Water and South Queen Streets. The design team was asked to envision how the Transit Center serving both bus and rail services impact the neighborhood over the next 30 years. They began by holding a five-day charrette in late September, 2010 which was supplemented by designs for select sites in the area.

**WATER STREET VIEW- WEST**

The plan developed proposes density similar to the surrounding Loockerman and State Streets while serving a mix of uses. The buildings in the envisioned neighborhood have retail or office uses on the ground floor, residential units or offices in the upper floors, and are adjacent to sidewalks throughout creating a pedestrian oriented neighborhood. To create the density required to support the Transit Center, the Plan identifies policies the City of Dover must change, such as shared parking and storm water facilities and form-based codes. It also identifies an area for an enlarged transit facility and a new building to serve rail passengers.

Source: "Dover Transit Center Neighborhood Plan" Renaissance Planning Group, 2010.

[5] "Transit-Oriented Development (TOD): Identification of Optimal Characteristics In Delaware" Institute for Public Administration University of Delaware, June 2010. <http://www.ce.udel.edu/dct/publications_files/Rpt.%20206%20Transit-Oriented%20Development.pdf>

# 4 Delaware's Existing Rail System

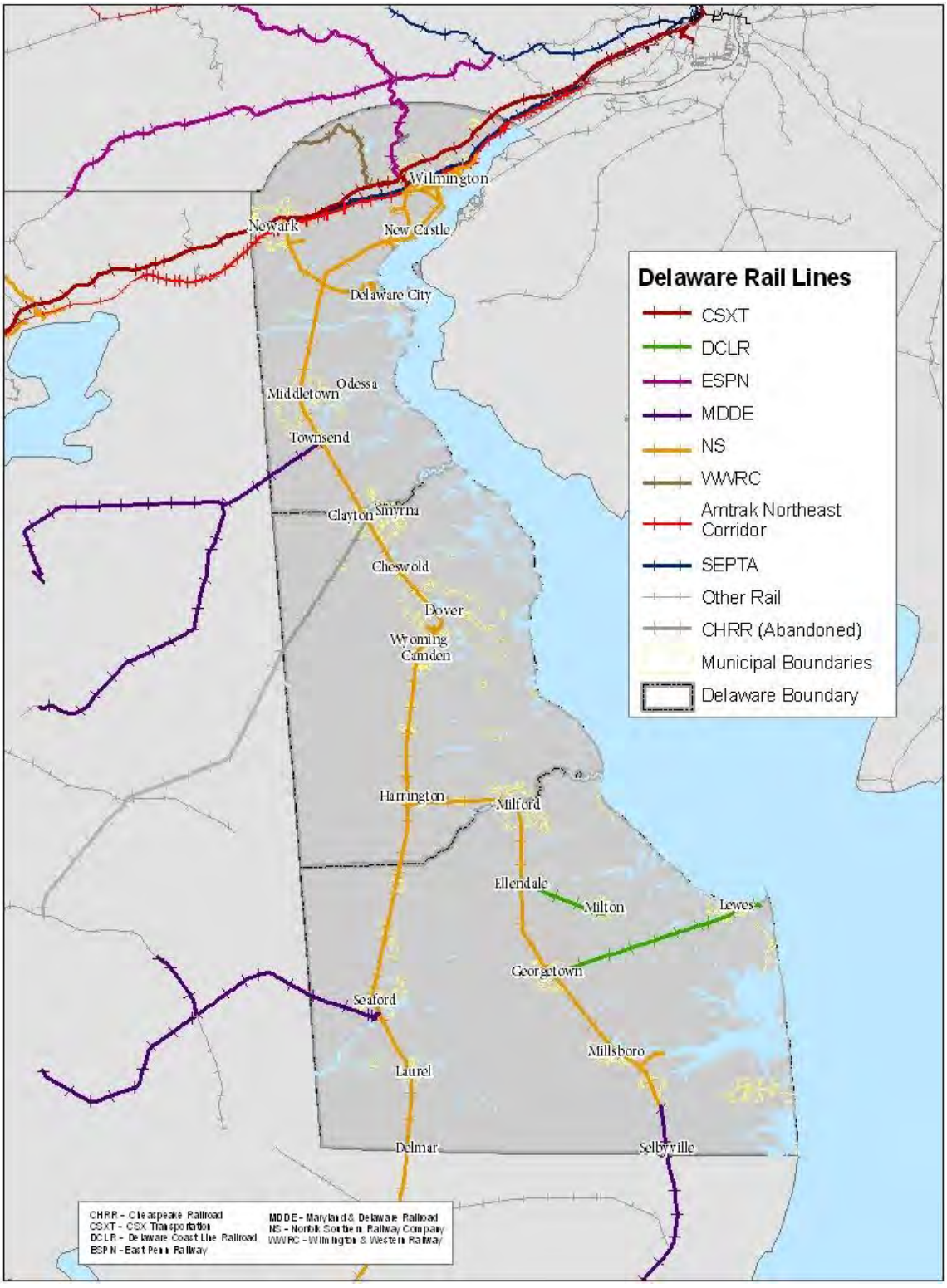
## 4.1 SYSTEM OVERVIEW

Delaware's combined passenger and freight rail network comprises 263 route miles. Passenger rail service is provided by two carriers. The Northeast Corridor (NEC) route of Amtrak, the national passenger rail operator, passes directly through the State providing intercity passenger rail service across the country. Complementing the intercity service are commuter trains operated by SEPTA.

The State is served by the two major railroads located east of the Mississippi River, NS and CSX as well as by four smaller, shortline railroads that provide feeder service for the larger carriers. In addition to providing connections to principal economic centers in the East and Midwest, the Class I railroads also offer Delaware's industries and consumers access to markets west of the Mississippi River as well as in Canada and Mexico through connections with other railroads.

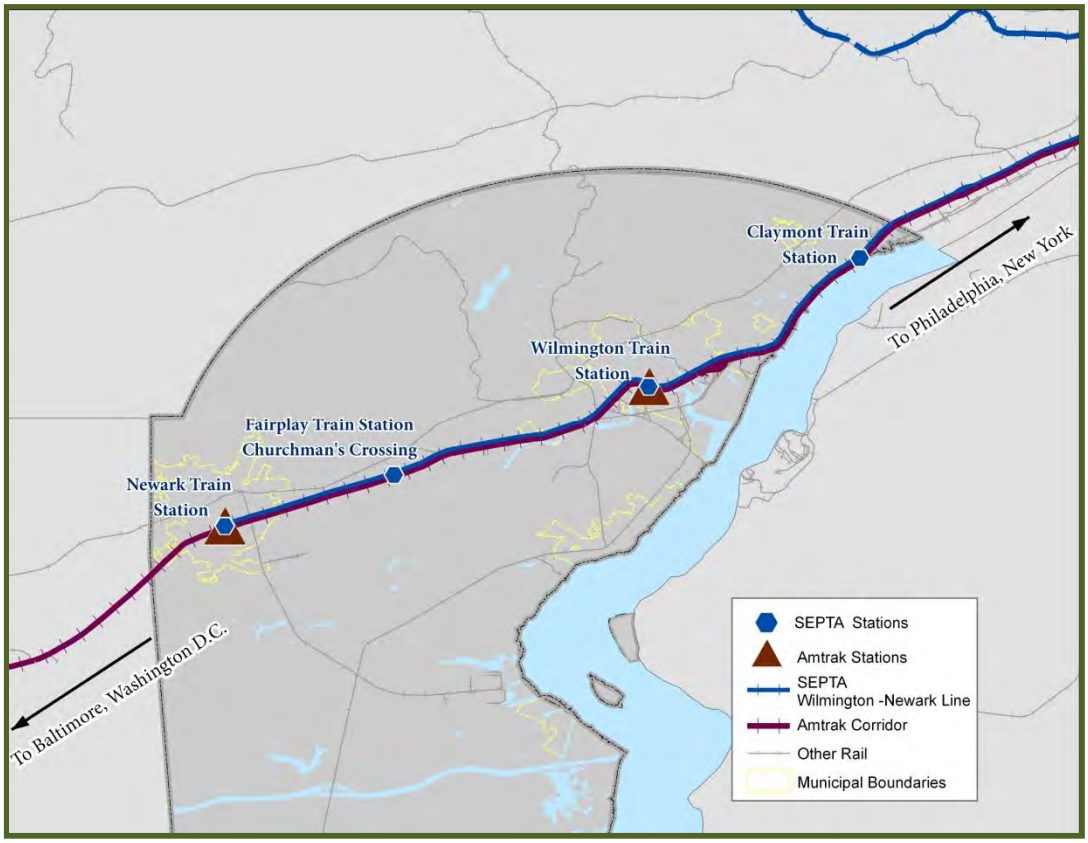
Figure 4-1 is a map of the railroad network in Delaware.

## FIGURE 4-1: DELAWARE'S RAIL NETWORK



# 4.2 PASSENGER RAIL

**FIGURE 4-2: DELAWARE'S PASSENGER RAIL STATIONS**




## 4.2.1 Intercity Rail

### *Amtrak Services*

Amtrak operates 23.3 route miles of passenger railroad in Delaware over its NEC, serving two stations in the State - Newark and Wilmington. All trains that operate on the NEC stop at the Wilmington Station; the Newark station has significantly less service.

**NEWARK TRAIN STATION**

Stations

**Newark Station.** The Newark Station is served each day by two Amtrak NEC trains, providing service between Boston, Massachusetts and Washington D.C. As of December 2010, an additional southbound train stops at Newark on Fridays and an additional northbound train on Saturdays and Sundays. This NEC service is primarily geared towards intercity travel, but there are some commuters who use the service on a more frequent basis.

The track configuration approaching and at the Newark Station consists of four main line tracks; these are named Tracks A, 1, 2, and 3 from south to north. These four tracks at the station area are located between MP 38.5 and MP 39.5 on the NEC. This segment is a short five-mile stretch of four-track railroad between Iron Hill Road (near the Maryland state line) and Ruthby Road (east of Newark). On either side of this segment, the NEC has three main tracks.

The original Newark Station building is located alongside the Track 3 platform and was built by the Philadelphia, Wilmington and Baltimore Railroad (PW&B) in 1877. The PW&B was the major rail link between New York City and Washington. The building was closed in the 1970s by Amtrak. However, a restoration project was conducted in the 1980s allowing the building to be used for other purposes. The building is owned by the City of Newark and now houses the City of Newark's Credit Union, FOP Lodge No. 4, and the Newark Historical Society.[6]

**BIKE RACKS AT NEWARK STATION**

The original station is not currently available for passenger use. Instead a platform with a shelter is used which is located on the opposite side of the NEC from the old station. Amtrak does not provide any station staff, security, or passenger amenities at Newark Station. The Track A platform is used by both Amtrak (for northbound service) and SEPTA, as its Wilmington–Newark Line terminus. DTC has constructed an agent booth and provides security, security cameras, bike racks, a bus shelter and parking at this location, but there are no other amenities.

With the purchase of the Chrysler Plant by the University of Delaware there is a possibility of a new station building in the vicinity of its current location which could serve as a showcase for transit-oriented development in the area. This location is adjacent to University property and passengers currently access the station via car, bike, bus, and on foot. Chapter 9 provides additional detail on the University's interest in transforming this 272-acre site into a regional asset that emphasizes transit-oriented development.

The Maryland Transit Administration's (MTA) MARC Growth and Investment Plan of 2007 calls for extension of its Penn Line commuter rail on the Northeast Corridor beyond the current northern terminus at Perryville to Elkton, Maryland and Northern Delaware. As described in this plan, the commuter authority intends to extend peak service north from Perryville with a new station at Elkton in the near future.

**Wilmington Station.** Built in 1907 and designed by renowned architect Frank Furness, the Wilmington Station has recently completed a renovation which includes the restoration and waterproofing of the building's exterior and a complete restoration of the interior. Other

[6] City of Newark, Delaware Newark Passenger Railroad Station Jan 25 2010 http://www.cityofnewarkde.us/index.aspx?NID=192.

project highlights include a new ramp which complies with the Americans with Disabilities Act (ADA) of 1990, at the corner of Front and French Streets, renovated restrooms, improved HVAC (Heating, Ventilating and Air Conditioning), new technology in elevators and escalators, and a sprinkler system. This renovation project was completed in December 2010 at a cost of approximately $36 million. The project is funded with $20 million from the American Recovery and Reinvestment Act (ARRA), $12 million from DelDOT, and $3.7 million from Amtrak with support from the Federal Transit Administration.[7]

**WILMINGTON STATION**

The Wilmington Station is owned by Amtrak and serves a variety of Amtrak trains including Acela, Regional and Long-Distance on high level platforms. Seven Amtrak routes use the Wilmington Station, providing access beyond the NEC to destinations such as Chicago, Charlotte, New Orleans, Florida and Vermont.

The premium and fastest Amtrak service provided on the NEC between Washington, D.C. and Boston is the Acela Express, with speeds reaching 135 mph south of New York. Thirty (15 northbound, 15 southbound) Acela trains serve the Wilmington Station each weekday. Weekend service is reduced to eight trains on Saturday and eighteen trains on Sunday per day.

The Northeast Regional is a slower service than Acela, but serves additional cities along the NEC, e.g., some trains operate beyond Washington D.C. terminating in Newport News, Virginia. Forty (20 northbound with one extra train on Thursdays and Fridays, 20 southbound with on extra train on Fridays) Northeast Regional Trains serve the Wilmington Station each weekday. There is also weekend service at Wilmington with 34 trains on Saturday and 35 on Sunday (17 northbound and 17 southbound on Saturday, and 17 northbound and 18 southbound trains on Sunday).

The station building contains several amenities for passengers, including food and beverage, restrooms, car rental, and ticket sales offices for both Amtrak and SEPTA. Passengers access this station by car, bus, bicycle, and on foot. A parking garage with 606 spaces on six levels is located across the street from the station and is run by the Wilmington Parking Authority. The monthly rate as of January 2010 was $150.00 dollars and the maximum daily rate was $10.00 dollars.[8]

Ridership

The Wilmington Station is Amtrak's 11th busiest train station.[9] In 2009, total annual ridership at Wilmington Station was 664,429. By comparison, ridership at the Newark Station

[7] http://www.amtrak.com/servlet/ContentServer?c=Page&pagename=am%2FLayout&cid=1246045283210

[8] Wilmington Parking Authority http://www.wilmingtonparking.com/garages_train_station.html

[9] http://www.amtrak.com/pdf/factsheets/DELAWARE09.pdf

amounted to 9,479 passengers. Between 2007 and 2009, ridership declined at the Wilmington Station by 6% and increased at the Newark Station by 32%.

Amtrak Operating Facilities in Delaware

**Operational Center.** Wilmington is home to Amtrak's Consolidated National Operations Center (CNOC), the high-tech, 50,000-square-foot facility from which Amtrak's national operations are controlled. The center opened in 1998.

**Training Facility.** Amtrak's High-Speed Rail Training Facility, also in Wilmington, is where engineers, conductors and on-board staff are trained for Acela Express service. This facility features cutting edge technology and hands-on labs for training engineers, conductors and on-board staff. The training center houses a full-scale locomotive simulator that duplicates the experience of operating the new Acela Express train set from inside the cab, an on-board service-training lab complete with seats, tables and food preparation areas, and nine classrooms. The facility opened in 1999.

**Amtrak's Impact on Delaware's Economy**

Maintenance and other rail-related facilities provide both direct and indirect benefits to Delaware's economy. There are four Amtrak facilities in Delaware:

- Consolidated National Operations Center (CNOC), Wilmington
- High-Speed Rail Training Facility, Wilmington
- Wilmington Shop
- Bear Maintenance Facility

At the end of FY09, Amtrak employed 1,074 Delaware residents. The total wages of Amtrak employees living in Delaware were $72,599,195 during FY09.

**Amtrak Maintenance Facilities.** Delaware is also home to two major maintenance and repair facilities that serve the entire NEC—the Wilmington Shops and the Bear Maintenance Facility. All Amfleet cars, as well as all electric locomotives used on the NEC, are maintained, repaired, and overhauled at these two important facilities.[10]

### 4.2.2 Commuter Rail

***SEPTA***

The Southeastern Pennsylvania Transportation Authority (SEPTA) operates commuter rail service oriented towards Center City Philadelphia, and DTC contracts with SEPTA to extend a portion of its trains into Delaware. Specifically, there are currently 55 weekday trains serving Marcus Hook, Pennsylvania, just across the state line, 35 serving Wilmington and Claymont, and 17 serving Newark and Churchmans Crossing. The Wilmington-Newark line is unusual in the SEPTA regional rail system in having significant destinations at both ends; approximately one-third of ridership is Pennsylvania residents are commuting to Delaware for work, education, or other activities.

The SEPTA Wilmington/Newark Line service in Delaware began operations to Wilmington in 1989, added stops in Claymont in 1991, Newark in 1997, and Churchmans Crossing in 2000. Operated by DTC, DART First State buses serve each of the four stations via multiple routes.

[10] http://www.amtrak.com/pdf/factsheets/DELAWARE09.pdf

SEPTA service in Delaware averages 4,000 passenger trips per day. There are currently plans to expand the service between Wilmington and Newark which is projected to allow SEPTA service to transport 7,840 passenger trips per day after the infrastructure projects are complete.[11]

Parking spaces are available for rail commuters at all stations in Delaware. Parking is free at every station except for the Wilmington Station. DelDOT expanded parking around the Wilmington Station in 2003. Two properties were purchased and developed as pay-to-park:

- Riverfront Parking Deck where are 172 available for SEPTA/Amtrak Users. This garage has a daily rate of $10. The cost to build the garage was $8.5 Million.
- 110 South French Street Surface Lot (170 spaces). This property supports the Wilmington Station. Daily rate is $7. Monthly parking is made available to SEPTA monthly pass holders for $80.

There is also parking at the following locations in Wilmington:

- Wilmington Parking Authority (606 spaces) – Train Station Parking Garage
- Front and Walnut Sts. (150 spaces)

Available parking will also be increased at Fairplay Station from 250 spaces to 376 by constructing a joint parking garage, which will be shared with the office building adjacent to Fairplay Station at Delaware Park.

**TABLE 4-1: DELAWARE TRANSIT CORPORATION COMMUTER RAIL PARKING**

| Station | Parking Spaces |
|---|---|
| Newark | 285 |
| Fairplay at Churchman's Crossing | 376* |
| Wilmington (private pay) | 1,098** |
| Claymont | 504 *** |

* Projected number of spaces after expansion.
** Parking is also available to rail customers, as well as non-rail users.
*** Includes 73 spaces in an additional lot on Governor Printz Boulevard Extension.

## Stations-Commuter Rail Operations

**Newark Station.** All northbound and southbound SEPTA trains access the same low-level platform at Track A in Newark. A mini-high level platform is available for passengers in wheelchairs. A small ticket office is present and security is provided during SEPTA operating hours, but, as discussed in the description of Amtrak services, there is no passenger waiting area other than a shelter oriented towards the parking lot and geared to passengers making local DART First State bus connections (six routes serve this station). In 2009 an average of 249 spaces of the 285 available spaces were used on a daily basis.

[11] http://www.dartfirststate.com/information/programs/wilm_newark/crip_summary_082108.pdf

FAIRPLAY STATION

**Fairplay Station (Churchmans Crossing).** With service initiated in 2000, this is the newest commuter rail station in Delaware and is located near the Delaware Park Horse Racing and Slots. There is no station building but there are several shelters, similar to bus shelters, on the low level platform. There is a guard office, with security provided during SEPTA operating hours. As with Newark, all northbound and southbound trains use the same Track A to serve the station. This station is ADA accessible, with a lift for persons with disabilities on the stairway leading down to the platform from the parking area. Most passengers access this station by car, and five DART First State bus routes also serve the station.

The 250-space free-parking surface lot serves the station and is currently at or exceeding capacity on most weekdays. An additional 126 spaces are planned for commuter use as part of a planned parking structure at the site to serve at least 376 rail patrons daily.

**Wilmington Station.** SEPTA trains are typically operated on the low-level platforms at the Wilmington Station. As described previously under the Amtrak description, passengers access this station by car, DART First State bus, bicycle, and on foot. Seventeen DART First State bus routes serve this station. This is the one train station in Delaware with paid parking.

**Claymont Station.** Claymont is the most northern station stop in Delaware. Closed from 1982 to 1990, the old Claymont train station was destroyed by fire in the late 1980s. When service was reinstated in 1991, retrofitted bus shelters were put in its place. The Claymont Station Improvement Plan was completed in 2009 and includes recommendations on ways to improve the Claymont Station.[12] These include adding station amenities and possibly constructing a pedestrian overpass to reach the tracks on the northbound side as well as making other pedestrian-related improvements on the surrounding roads. Currently, the access to the northbound platform is via stairways and a narrow tunnel. Low level platforms and canted tracks also make it difficult for passengers boarding and exiting the trains arriving at the Claymont Station. A mini-high level platform is available for passengers in wheelchairs and there is a guard office with security provided during SEPTA operating hours. Access to this station is primarily by auto, but pedestrians and bicyclists also access the station from the neighborhoods located to the west of the station. Two DART bus routes serve the station.

CLAYMONT STATION

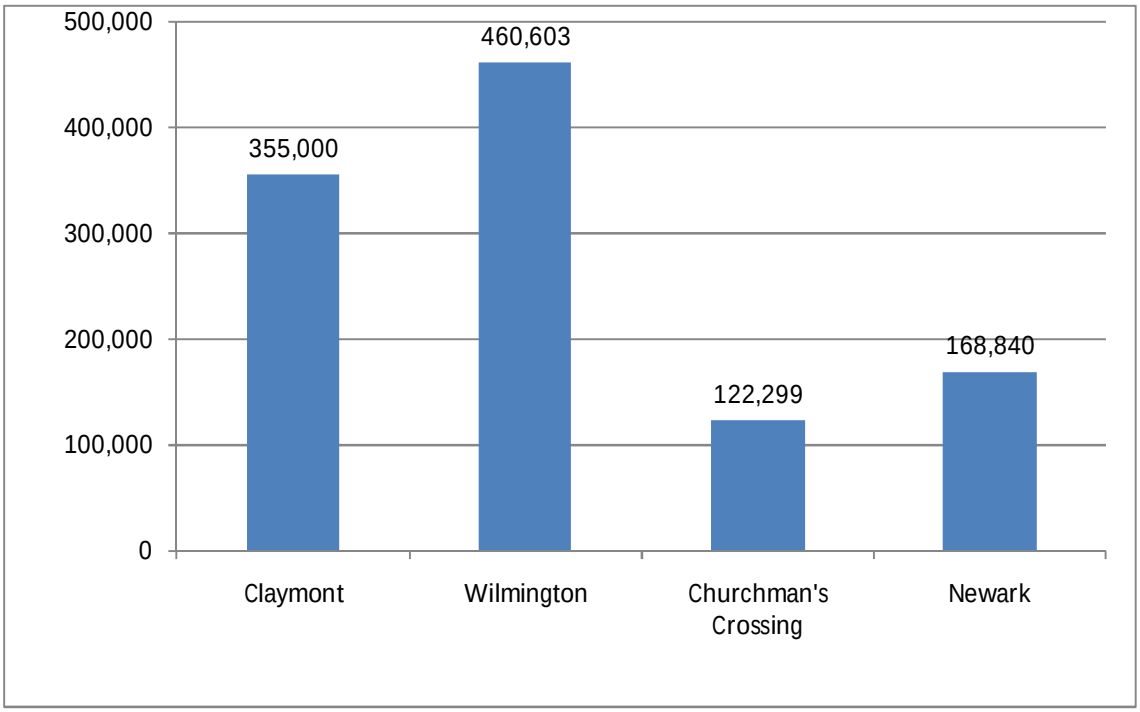
[12] http://www.wilmapco.org/claymont/Claymont%20_Station_Plan_Final.pdf

There is a free, 431-space parking lot off of Myrtle Avenue and overflow lot with 73 spaces located on Marion Avenue. There is a pedestrian bridge over I-495 for station access for commuters using the overflow parking lot. Given the relative abundance of parking at this station, there is typically capacity available.

Ridership

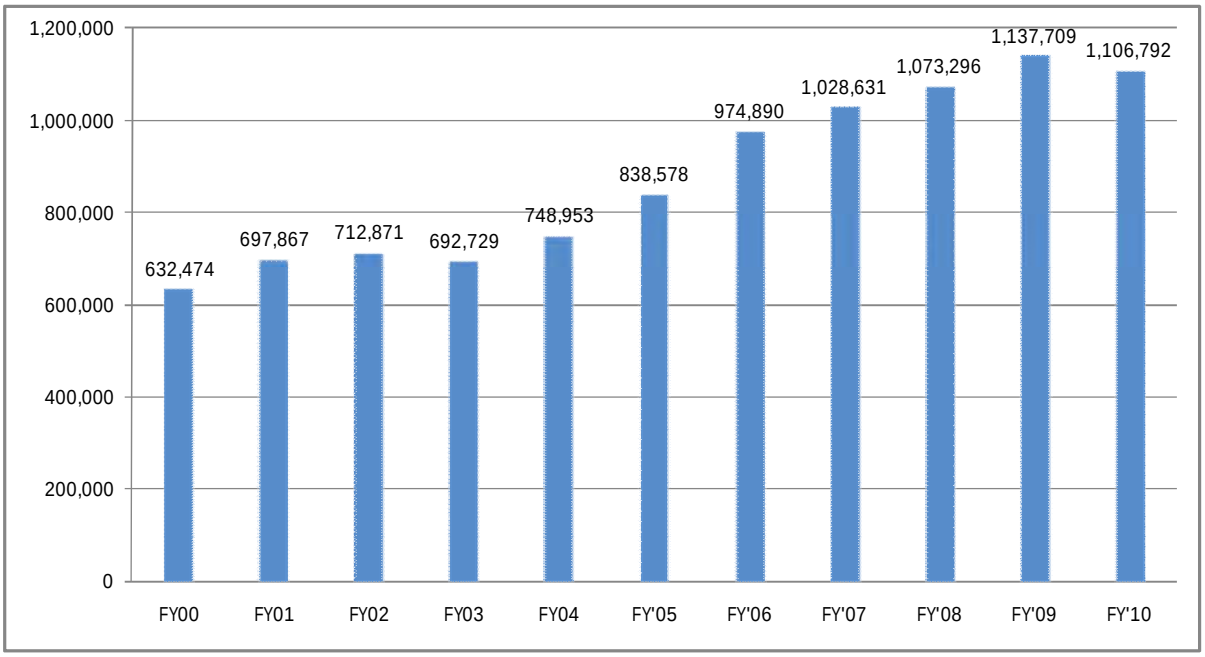
In FY 2010, Wilmington with 460,603 riders had the highest ridership among the SEPTA Wilmington/Newark stations in Delaware followed by Claymont with 355,000 riders; then Newark and Churchman's Crossing with 168,840 and 122,299 riders, respectively.

**FIGURE 4-3: FY 2010 SEPTA ANNUAL RIDERSHIP BY STATION**




Ridership on the Wilmington-Newark line has grown considerably since 2000. Combined total ridership between Claymont, Wilmington, Churchman's Crossing, and Newark stations has grown from 632,474 to 1,106,792 between 2000 and 2010, representing an average growth of 7% per year.

## FIGURE 4-4: SEPTA ANNUAL RIDERSHIP BY YEAR IN DELAWARE

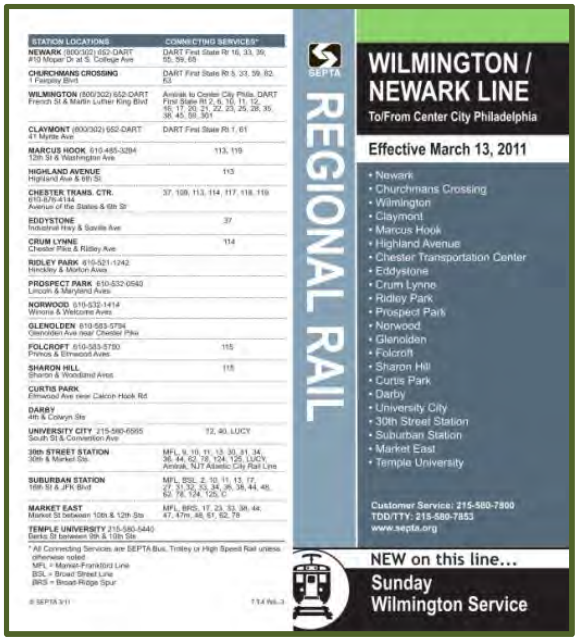



Similar levels of growth have occurred at the individual stations. Annual average ridership growth was 10% at Claymont, 8% at Wilmington, 13% at Churchman's Crossing, and 6% at Newark.

Schedule

There are five SEPTA trains operating northbound from Newark to Philadelphia in the morning. Two additional trains serve the Wilmington Station for the northbound trip to Philadelphia each morning, for a total of seven trains each weekday (six of them during the A.M. commute).

Four SEPTA trains run southbound to Newark for the afternoon/evening commute. During the evening rush hour one additional southbound train terminates at Wilmington and another at Claymont for a total of six trains. Two additional trains go as far as Wilmington each weekday evening.




**SAMPLE SEPTA TRAIN SCHEDULE**

As part of this service there is one express train during the morning and evening commute periods that runs in each direction as a local between Newark and Marcus Hook, Pennsylvania, then with limited stops until University City.[13]

For reverse commutes, four SEPTA trains run southbound from Philadelphia to Newark in the A.M., with three additional trains terminating in Wilmington. For travelers desiring a mid-day southbound trip from Philadelphia to points south of Wilmington, there is an option to transfer from the SEPTA train terminating in Wilmington to a DART First State bus, which then runs express to Churchman's Crossing and Newark. Pre-paid SEPTA tickets and trailpasses can be used as valid fare media for this DART service. One additional mid-afternoon train departs Philadelphia on weekdays and terminates at Wilmington.

Four trains travel north from Newark to Philadelphia during the P.M. commute and evening hours, with another five trains originating in Wilmington for a total of nine northbound trains each weekday evening.

Train service goes as far as Wilmington on Saturdays and Sundays (14 trains), with the Sunday added in March 2011. Figures 4-5 and 4-6 show the weekday and weekend train frequencies between Philadelphia and Newark.

Weekday fares apply on all trains that depart a station before 7:00 P.M. The evening fare, applicable to trains departing after 7:00 P.M., is the same cost as the weekend fare.

[13] http://www.septa.org/schedules/rail/pdf/nwk.pdf

## FIGURE 4-5: SAMPLE SEPTA WEEKDAY REGIONAL RAIL SCHEDULE – WILMINGTON/NEWARK LINE[14]

**MONDAYS through FRIDAYS (Except MAJOR HOLIDAYS)**

**To CENTER CITY**

| Fare Zone | Services | Train Number | 216 | 220 | 2718 | 9212 | 9214 | 9216 | 2730 | 9220 | 9222 | 9234 | 9236 | 9238 | 9240 | 9242 | 2372 | 252 | 2760 | 264 | 1294 | | 268 | 9254 | 1256 | 9260 | 272 | 274 | 276 | 9264 | 9266 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Stations | AM | AM | AM | AM | AM | AM | AM | AM | AM | AM | PM | PM | PM | PM | PM | PM | PM | PM | PM | | PM | PM | PM | PM | PM | PM | PM | PM | AM |
| 5 | ✔ ✔ | Newark | — | — | 6:22 | 6:46 | — | 7:24 | 8:17 | 8:58 | — | — | — | B | — | — | — | — | 4:46 | — | 5:43 | | — | 6:46 | 7:23 | — | — | — | — | — | — |
| 5 | ✔ | Churchmans Crossing | — | — | 6:29 | 6:53 | — | 7:30 | 8:25 | 9:05 | — | — | — | B | — | — | — | — | 4:52 | — | 5:49 | | — | 6:54 | 7:29 | — | — | — | — | — | — |
| 4 | ✔ ✔ ✔ | Wilmington | — | 6:03 | 6:41 | 7:06 | — | 7:43 | 8:40 | 9:17 | — | 10:47 | — | 12:45 | — | 2:45 | — | 4:44 | 5:06 | 5:50 | 6:02 | | — | 7:06 | 7:39 | 8:06 | 8:53 | — | 10:48 | — | — |
| 4 | ✔ ✔ | Claymont | — | 6:11 | 6:49 | 7:16 | — | 7:51 | 8:48 | 9:25 | — | 10:55 | — | 12:53 | — | 2:53 | — | 4:52 | 5:14 | 5:58 | 6:10 | → | — | 7:15 | 7:47 | 8:14 | 9:01 | — | 10:56 | — | — |
| 4 | ✔ ✔ | Marcus Hook | 5:50 | 6:15 | 6:53 | 7:20 | 7:28 | 7:55 | 8:51 | 9:29 | 10:02 | 10:59 | 12:03 | 12:57 | 1:59 | 2:57 | 3:43 | 4:56 | 5:18 | 6:02 | 6:14 | | 7:02 | 7:18 | 7:51 | 8:18 | 9:05 | 9:58 | 11:00 | 11:40 | 12:40 |
| 4 | ✔ | Highland Avenue | 5:53 | 6:18 | 6:56 | — | 7:31 | 7:58 | 8:54 | 9:32 | 10:05 | 11:02 | 12:06 | 1:00 | 2:02 | 3:00 | 3:46 | 4:59 | 5:21 | 6:05 | 6:17 | | 7:05 | — | 7:54 | 8:21 | 9:08 | 10:01 | 11:03 | 11:43 | 12:43 |
| 3 | ✔ | Chester | 5:56 | 6:21 | 6:59 | — | 7:35 | 8:01 | 8:57 | 9:35 | 10:08 | 11:05 | 12:09 | 1:03 | 2:05 | 3:03 | 3:49 | 5:02 | 5:24 | 6:08 | 6:20 | | 7:08 | — | 7:57 | 8:24 | 9:11 | 10:04 | 11:06 | 11:45 | 12:45 |
| 3 | ✔ | Eddystone | 5:58 | 6:23 | 7:01 | — | 7:38 | 8:03 | — | 9:37 | 10:10 | 11:07 | 12:11 | 1:05 | 2:07 | 3:05 | 3:51 | 5:04 | 5:26 | 6:10 | 6:22 | | — | E | — | 8:26 | — | 10:06 | 11:08 | — | — |
| 3 | ✔ | Crum Lynne | 6:01 | 6:26 | 7:04 | — | 7:41 | 8:06 | 9:00 | 9:39 | 10:12 | 11:09 | 12:13 | 1:07 | 2:09 | 3:07 | 3:53 | 5:06 | 5:28 | 6:12 | 6:24 | | 7:11 | X | 8:00 | 8:28 | 9:14 | 10:08 | 11:10 | 11:48 | 12:48 |
| 3 | ✔ ✔ | Ridley Park | 6:03 | 6:28 | 7:06 | 7:28 | 7:43 | 8:09 | 9:02 | 9:41 | 10:14 | 11:11 | 12:15 | 1:09 | 2:11 | 3:09 | 3:55 | 5:08 | 5:30 | 6:14 | 6:26 | | 7:13 | P | 8:02 | 8:30 | 9:16 | 10:10 | 11:12 | 11:49 | 12:49 |
| 2 | ✔ ✔ | Prospect Park – Moore | 6:05 | 6:30 | 7:08 | — | 7:45 | 8:11 | 9:04 | 9:43 | 10:16 | 11:13 | 12:17 | 1:11 | 2:13 | 3:11 | 3:57 | 5:10 | 5:32 | 6:16 | 6:28 | | 7:15 | R | 8:04 | 8:32 | 9:18 | 10:12 | 11:14 | 11:51 | 12:51 |
| 2 | ✔ ✔ | Norwood | 6:06 | 6:31 | 7:09 | 7:30 | 7:46 | 8:12 | 9:05 | 9:45 | 10:17 | 11:14 | 12:18 | 1:12 | 2:14 | 3:12 | 3:58 | 5:12 | 5:33 | 6:17 | 6:29 | | 7:16 | E | 8:06 | 8:33 | 9:19 | 10:13 | 11:15 | 11:52 | 12:52 |
| 2 | ✔ ✔ | Glenolden | 6:08 | 6:33 | 7:11 | — | 7:48 | 8:14 | 9:07 | 9:47 | 10:19 | 11:16 | 12:20 | 1:14 | 2:16 | 3:14 | 4:00 | 5:14 | 5:35 | 6:19 | 6:31 | | 7:18 | S | 8:08 | 8:35 | 9:21 | 10:15 | 11:17 | 11:54 | 12:54 |
| 2 | ✔ ✔ | Folcroft | 6:10 | 6:35 | 7:13 | E | 7:50 | 8:16 | 9:09 | 9:49 | 10:20 | 11:17 | 12:21 | 1:15 | 2:17 | 3:15 | 4:01 | 5:16 | 5:36 | 6:20 | 6:32 | | 7:19 | S | 8:09 | 8:36 | 9:22 | 10:16 | 11:18 | 11:55 | 12:55 |
| 2 | ✔ | Sharon Hill | 6:12 | 6:37 | 7:15 | X | 7:52 | 8:18 | 9:11 | 9:51 | 10:22 | 11:19 | 12:23 | 1:17 | 2:19 | 3:17 | 4:03 | 5:18 | 5:38 | 6:21 | 6:34 | | 7:21 | — | 8:11 | 8:38 | 9:24 | 10:18 | 11:20 | 11:57 | 12:57 |
| 2 | ✔ | Curtis Park | 6:14 | 6:39 | 7:17 | P | 7:54 | 8:20 | 9:13 | 9:53 | 10:23 | 11:20 | 12:24 | 1:18 | 2:20 | 3:18 | 4:04 | 5:20 | 5:39 | 6:22 | 6:35 | | 7:22 | — | 8:12 | 8:39 | 9:25 | 10:19 | 11:21 | 11:58 | 12:58 |
| 2 | ✔ | Darby | 6:16 | 6:41 | 7:19 | — | 7:56 | 8:23 | 9:15 | 9:55 | 10:25 | 11:22 | 12:26 | 1:20 | 2:22 | 3:20 | 4:06 | 5:22 | 5:41 | 6:24 | 6:37 | | 7:24 | — | 8:14 | 8:41 | 9:27 | 10:21 | 11:23 | 12:00 | 1:00 |
| C | ✔ ✔ | University City | 6:23 | 6:52 | 7:30 | D7:44 | D8:06 | D8:34 | 9:24 | D10:05 | D10:35 | D11:32 | D12:37 | D1:30 | D2:32 | D3:30 | 4:17 | 5:32 | 5:50 | 6:32 | D6:48 | | 7:33 | D7:41 | D8:22 | D8:50 | 9:34 | 10:30 | 11:30 | D12:07 | D1:07 |
| C | ✔ ✔ | 30th Street Station | 6:26 | 6:57 | 7:33 | D7:48 | D8:09 | D8:38 | 9:27 | D10:08 | D10:38 | D11:35 | D12:39 | D1:33 | D2:35 | D3:33 | 4:20 | 5:37 | 5:53 | 6:35 | D6:51 | | 7:36 | D7:44 | D8:25 | D8:53 | 9:37 | 10:33 | 11:33 | D12:10 | D1:10 |
| C | ✔ ✔ | Suburban Station | 6:31 | 7:02 | 7:38 | D7:53 | D8:14 | D8:43 | 9:32 | D10:13 | D10:43 | D11:40 | D12:44 | D1:38 | D2:40 | D3:38 | 4:25 | 5:42 | 5:58 | 6:40 | 6:56 | | 7:41 | D7:49 | 8:28 | D8:58 | 9:42 | 10:38 | 11:38 | D12:14 | D1:14 |
| C | ✔ ✔ | Market East Station | 6:36 | 7:07 | 7:43 | D7:58 | D8:19 | D8:48 | 9:37 | D10:18 | D10:48 | D11:45 | D12:49 | D1:43 | D2:45 | D3:43 | 4:30 | 5:47 | 6:03 | 6:45 | — | → | 7:46 | D7:54 | — | D9:03 | 9:47 | 10:43 | 11:43 | D12:18 | D1:18 |
| C | ✔ ✔ | Temple University | 6:40 | 7:11 | 7:47 | 8:02 | 8:23 | 8:52 | 9:41 | 10:22 | 10:52 | 11:49 | 12:53 | 1:47 | 2:49 | 3:47 | 4:34 | 5:51 | 6:07 | 6:49 | — | | 7:50 | 7:58 | — | 9:07 | 9:51 | 10:47 | 11:47 | 12:22 | 1:22 |
| | | Train continues to (see Destination Codes) | ELM AM | ELM AM | CHE AM | — AM | — AM | — AM | CHE AM | — AM | — AM | — AM | — PM | — PM | — PM | — PM | — PM | WTR PM | ELM PM | CHE PM | ELM PM | — PM | | ELM PM | — PM | — PM | — PM | ELM PM | ELM PM | ELM PM | — AM | — AM |

**To WILMINGTON AND NEWARK**

| Fare Zone | Services | Train Number | 1293 | 1295 | 1203 | 1207 | 4211 | 4213 | 4219 | 3223 | 9227 | 9229 | 9231 | 9235 | 9237 | 9241 | 9243 | 9245 | 4249 | 9251 | 5253 | 9257 | 9261 | 4265 | | 4269 | 273 | 275 | 277 | 279 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Stations | AM | AM | AM | AM | AM | AM | AM | AM | AM | AM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | | PM | PM | PM | PM | PM |
| C | ✔ ✔ | Temple University | — | — | — | — | 6:54 | 7:28 | 8:27 | 9:11 | 10:24 | 11:24 | 12:14 | 1:12 | 2:14 | 3:06 | 3:58 | 4:15 | 4:37 | 4:55 | 5:01 | 5:27 | 5:57 | 6:21 | | 7:26 | 8:24 | 9:22 | 10:22 | 11:22 |
| C | ✔ ✔ | Market East Station | — | — | — | — | 7:00 | 7:34 | 8:33 | 9:17 | 10:30 | 11:30 | 12:22 | 1:20 | 2:22 | 3:12 | 4:04 | 4:22 | 4:45 | 5:04 | 5:09 | 5:33 | 6:03 | 6:28 | | 7:32 | 8:30 | 9:28 | 10:28 | 11:28 |
| C | ✔ ✔ | Suburban Station | 4:51 | 5:26 | 5:43 | 6:34 | 7:05 | 7:39 | 8:38 | 9:22 | 10:35 | 11:35 | 12:27 | 1:25 | 2:27 | 3:17 | 4:09 | 4:27 | 4:50 | 5:09 | 5:14 | 5:38 | 6:08 | 6:33 | → | 7:37 | 8:35 | 9:33 | 10:33 | 11:33 |
| C | ✔ ✔ | 30th Street Station | 4:56 | 5:31 | 5:48 | 6:39 | 7:09 | 7:43 | 8:42 | 9:26 | 10:39 | 11:39 | 12:31 | 1:29 | 2:31 | 3:21 | 4:13 | 4:31 | 4:54 | 5:14 | 5:18 | 5:42 | 6:12 | 6:37 | | 7:41 | 8:39 | 9:37 | 10:37 | 11:37 |
| C | ✔ ✔ | University City | 4:58 | 5:33 | 5:50 | 6:41 | 7:11 | 7:45 | 8:45 | 9:28 | 10:41 | 11:41 | 12:33 | 1:31 | 2:33 | 3:23 | 4:16 | 4:33 | 4:56 | 5:17 | 5:20 | 5:44 | 6:14 | 6:39 | | 7:43 | 8:41 | 9:39 | 10:39 | 11:39 |
| 2 | ✔ | Darby | 5:05 | E | 5:57 | 6:48 | 7:18 | 7:52 | 8:52 | 9:35 | 10:46 | 11:46 | 12:40 | 1:38 | 2:40 | 3:30 | 4:23 | 4:40 | 5:03 | E | 5:27 | 5:52 | 6:21 | 6:46 | | 7:50 | 8:48 | 9:46 | 10:46 | 11:46 |
| 2 | ✔ | Curtis Park | 5:07 | X | 5:59 | 6:50 | 7:20 | 7:54 | 8:54 | 9:37 | 10:50 | 11:50 | 12:42 | 1:40 | 2:42 | 3:32 | 4:25 | 4:42 | 5:05 | X | 5:29 | 5:54 | 6:23 | 6:48 | | 7:52 | 8:50 | 9:48 | 10:48 | 11:48 |
| 2 | ✔ | Sharon Hill | 5:08 | P | 6:00 | 6:51 | 7:21 | 7:55 | 8:55 | 9:38 | 10:51 | 11:51 | 12:43 | 1:41 | 2:43 | 3:33 | 4:26 | 4:43 | 5:06 | P | 5:30 | 5:56 | 6:24 | 6:49 | | 7:53 | 8:51 | 9:49 | 10:49 | 11:49 |
| 2 | ✔ ✔ | Folcroft | 5:10 | R | 6:02 | 6:53 | 7:23 | 7:57 | 8:57 | 9:40 | 10:53 | 11:53 | 12:45 | 1:43 | 2:45 | 3:35 | 4:28 | 4:45 | 5:08 | R | 5:32 | 5:58 | 6:26 | 6:51 | | 7:55 | 8:53 | 9:51 | 10:51 | 11:51 |
| 2 | ✔ ✔ | Glenolden | 5:11 | E | 6:04 | 6:55 | 7:24 | 7:59 | 8:58 | 9:41 | 10:54 | 11:54 | 12:46 | 1:44 | 2:46 | 3:36 | 4:30 | 4:47 | 5:10 | E | 5:34 | 6:00 | 6:28 | 6:52 | | 7:56 | 8:54 | 9:52 | 10:52 | 11:52 |
| 2 | ✔ ✔ | Norwood | 5:13 | S | 6:06 | 6:57 | 7:26 | 8:01 | 9:00 | 9:43 | 10:56 | 11:56 | 12:48 | 1:46 | 2:48 | 3:38 | 4:32 | 4:49 | 5:12 | S | 5:36 | 6:02 | 6:30 | 6:54 | | 7:58 | 8:56 | 9:54 | 10:54 | 11:54 |
| 2 | ✔ ✔ | Prospect Park – Moore | 5:14 | S | 6:07 | 6:58 | 7:27 | 8:02 | 9:01 | 9:44 | 10:57 | 11:57 | 12:49 | 1:47 | 2:49 | 3:39 | 4:34 | 4:51 | 5:14 | S | 5:38 | 6:04 | 6:32 | 6:55 | | 7:59 | 8:57 | 9:55 | 10:55 | 11:55 |
| 3 | ✔ ✔ | Ridley Park | 5:16 | D5:45 | 6:09 | 7:00 | 7:29 | 8:04 | 9:03 | 9:46 | 10:59 | 11:59 | 12:51 | 1:49 | 2:51 | 3:41 | 4:36 | 4:53 | 5:16 | D5:29 | 5:40 | 6:06 | 6:34 | 6:57 | | 8:01 | 8:59 | 9:57 | 10:57 | 11:57 |
| 3 | ✔ | Crum Lynne | 5:18 | — | 6:11 | 7:02 | 7:31 | 8:06 | 9:05 | 9:48 | 11:01 | 12:01 | 12:53 | 1:51 | 2:53 | 3:43 | 4:38 | 4:55 | 5:18 | — | 5:42 | 6:08 | 6:36 | 6:59 | | 8:03 | 9:01 | 9:59 | 10:59 | 11:59 |
| 3 | ✔ | Eddystone | — | — | 6:13 | — | 7:33 | 8:08 | 9:07 | 9:50 | 11:03 | 12:03 | 12:55 | 1:53 | 2:55 | 3:45 | 4:41 | 4:57 | 5:20 | — | 5:44 | 6:10 | 6:38 | 7:01 | | 8:05 | 9:03 | — | 11:01 | 12:01 |
| 3 | ✔ | Chester | 5:21 | D5:49 | 6:15 | 7:05 | 7:35 | 8:10 | 9:09 | 9:52 | 11:05 | 12:05 | 12:57 | 1:55 | 2:57 | 3:47 | 4:44 | 5:00 | 5:23 | D5:34 | 5:47 | 6:13 | 6:41 | 7:03 | | 8:07 | 9:05 | 10:02 | 11:03 | 12:03 |
| 4 | ✔ | Highland Avenue | 5:24 | — | 6:18 | 7:09 | 7:38 | 8:13 | 9:12 | 9:55 | 11:08 | 12:08 | 1:00 | 1:58 | 3:00 | 3:50 | 4:48 | 5:03 | 5:26 | — | 5:50 | 6:16 | 6:44 | 7:06 | | 8:10 | 9:08 | 10:05 | 11:06 | 12:06 |
| 4 | ✔ ✔ | Marcus Hook | 5:27 | 5:54 | 6:21 | 7:13 | 7:41 | 8:17 | 9:15 | 9:59 | 11:11 | 12:12 | 1:03 | 2:02 | 3:03 | 3:54 | 4:51 | 5:06 | 5:30 | D5:40 | 5:53 | 6:19 | 6:47 | 7:10 | → | 8:14 | 9:11 | 10:09 | 11:09 | 12:09 |
| 4 | ✔ | Claymont | 5:30 | 5:57 | 6:24 | 7:16 | 7:44 | 8:20 | — | 10:02 | — | 12:15 | — | 2:05 | — | 3:57 | 4:55 | 5:09 | 5:33 | D5:48 | — | 6:22 | — | 7:13 | | 8:17 | — | 10:12 | — | — |
| 4 | ✔ ✔ | Wilmington | 5:39 | 6:07 | 6:34 | 7:26 | 7:57 | 8:36 | — | 10:18 | — | 12:24 | — | 2:14 | — | 4:11 | 5:06 | 5:21 | — | D6:01 | — | 6:38 | — | 7:29 | | 8:33 | — | 10:23 | — | — |
| 5 | ✔ | Churchmans Crossing | — | 6:16 | 6:43 | 7:36 | 8:06 | — | — | — | — | B | — | — | — | 4:22 | D5:16 | — | — | D6:12 | — | 6:47 | — | — | | — | — | — | — | — |
| 5 | ✔ ✔ | Newark | — | 6:26 | 6:56 | 7:44 | 8:21 | — | — | — | — | B | — | — | — | 4:30 | 5:24 | — | — | 6:20 | — | 6:55 | — | — | | — | — | — | — | — |
| | | | AM | AM | AM | AM | AM | AM | AM | AM | AM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | | PM | PM | PM | PM | AM |

D - Stops to discharge or pick up passengers but may depart ahead of schedule.
F - Stops to discharge passengers on notice to conductor and pick up passengers standing on platform in position visible to engineer
B - Refers to connecting express bus service between Newark and Wilmington, Delaware provided by DART First State

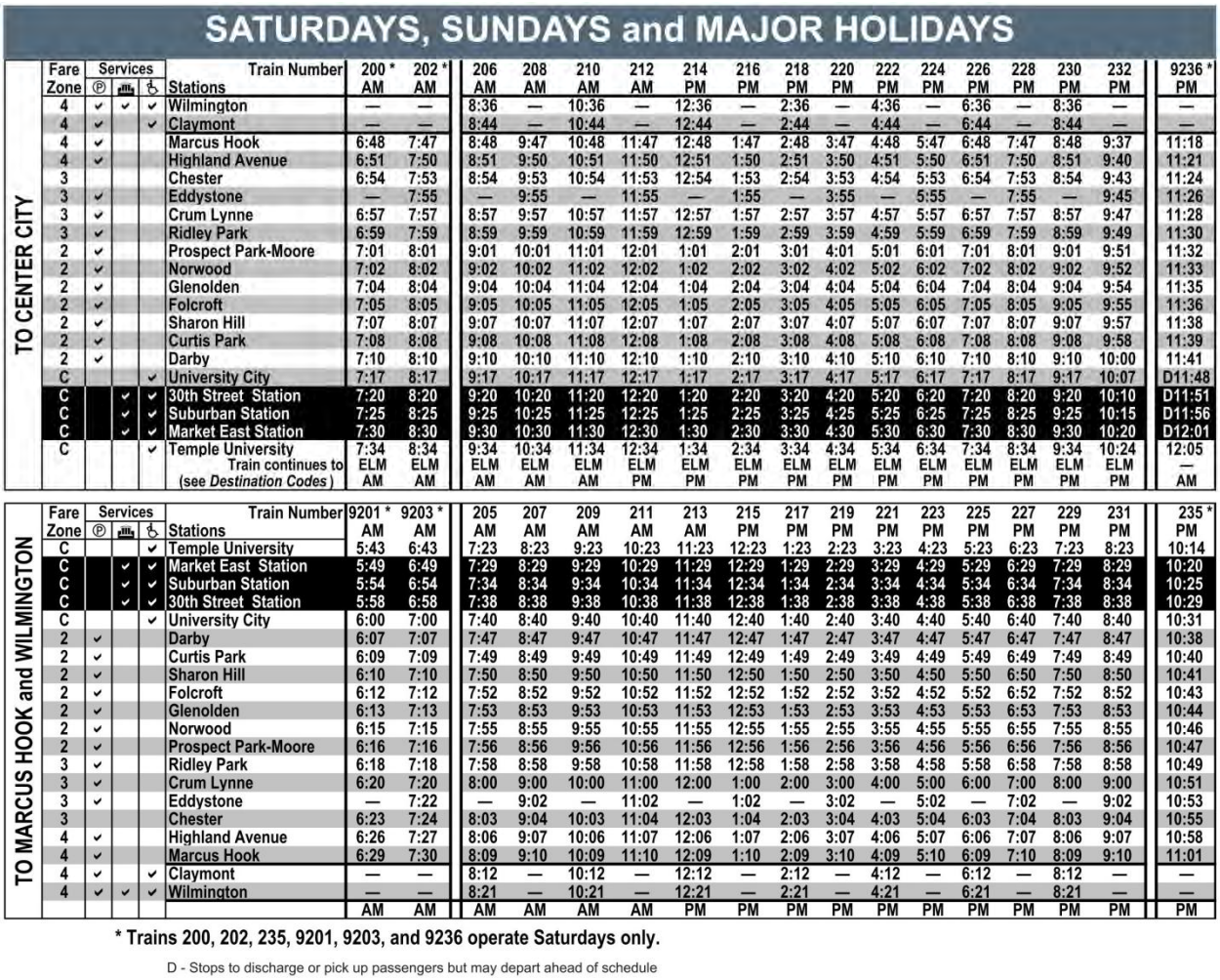
Newark/Wilmington Bus leaves Newark at 11:50 AM, Churchman Crossing at 12:10 PM and arrives at Wilmington at 12:30 PM
Wilmington/Newark Bus leaves Wilmington at 12:29 PM, Churchmans Crossing at 12:52 PM and arrives at Newark at 1:07 PM

**NOTE: Saturday service will operate on December 24 and December 31**

Evening Fares Apply

[14] http://www.septa.org/schedules/rail/pdf/nwk.pdf

## FIGURE 4-6: SAMPLE SEPTA WEEKEND REGIONAL RAIL SCHEDULE – WILMINGTON/NEWARK LINE[15]



**SATURDAYS, SUNDAYS and MAJOR HOLIDAYS**

**TO CENTER CITY**

| Fare Zone | Services | | | Train Number | 200 * | 202 * | 206 | 208 | 210 | 212 | 214 | 216 | 218 | 220 | 222 | 224 | 226 | 228 | 230 | 232 | 9236 * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ⓟ | | ♿ | Stations | AM | AM | AM | AM | AM | AM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM |
| 4 | ✓ | ✓ | ✓ | Wilmington | — | — | 8:36 | — | 10:36 | — | 12:36 | — | 2:36 | — | 4:36 | — | 6:36 | — | 8:36 | — | — |
| 4 | ✓ | | ✓ | Claymont | — | — | 8:44 | — | 10:44 | — | 12:44 | — | 2:44 | — | 4:44 | — | 6:44 | — | 8:44 | — | — |
| 4 | ✓ | | | Marcus Hook | 6:48 | 7:47 | 8:48 | 9:47 | 10:48 | 11:47 | 12:48 | 1:47 | 2:48 | 3:47 | 4:48 | 5:47 | 6:48 | 7:47 | 8:48 | 9:37 | 11:18 |
| 4 | ✓ | | | Highland Avenue | 6:51 | 7:50 | 8:51 | 9:50 | 10:51 | 11:50 | 12:51 | 1:50 | 2:51 | 3:50 | 4:51 | 5:50 | 6:51 | 7:50 | 8:51 | 9:40 | 11:21 |
| 3 | | | | Chester | 6:54 | 7:53 | 8:54 | 9:53 | 10:54 | 11:53 | 12:54 | 1:53 | 2:54 | 3:53 | 4:54 | 5:53 | 6:54 | 7:53 | 8:54 | 9:43 | 11:24 |
| 3 | ✓ | | | Eddystone | — | 7:55 | — | 9:55 | — | 11:55 | — | 1:55 | — | 3:55 | — | 5:55 | — | 7:55 | — | 9:45 | 11:26 |
| 3 | ✓ | | | Crum Lynne | 6:57 | 7:57 | 8:57 | 9:57 | 10:57 | 11:57 | 12:57 | 1:57 | 2:57 | 3:57 | 4:57 | 5:57 | 6:57 | 7:57 | 8:57 | 9:47 | 11:28 |
| 3 | ✓ | | | Ridley Park | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:49 | 11:30 |
| 2 | ✓ | | | Prospect Park-Moore | 7:01 | 8:01 | 9:01 | 10:01 | 11:01 | 12:01 | 1:01 | 2:01 | 3:01 | 4:01 | 5:01 | 6:01 | 7:01 | 8:01 | 9:01 | 9:51 | 11:32 |
| 2 | ✓ | | | Norwood | 7:02 | 8:02 | 9:02 | 10:02 | 11:02 | 12:02 | 1:02 | 2:02 | 3:02 | 4:02 | 5:02 | 6:02 | 7:02 | 8:02 | 9:02 | 9:52 | 11:33 |
| 2 | ✓ | | | Glenolden | 7:04 | 8:04 | 9:04 | 10:04 | 11:04 | 12:04 | 1:04 | 2:04 | 3:04 | 4:04 | 5:04 | 6:04 | 7:04 | 8:04 | 9:04 | 9:54 | 11:35 |
| 2 | ✓ | | | Folcroft | 7:05 | 8:05 | 9:05 | 10:05 | 11:05 | 12:05 | 1:05 | 2:05 | 3:05 | 4:05 | 5:05 | 6:05 | 7:05 | 8:05 | 9:05 | 9:55 | 11:36 |
| 2 | ✓ | | | Sharon Hill | 7:07 | 8:07 | 9:07 | 10:07 | 11:07 | 12:07 | 1:07 | 2:07 | 3:07 | 4:07 | 5:07 | 6:07 | 7:07 | 8:07 | 9:07 | 9:57 | 11:38 |
| 2 | ✓ | | | Curtis Park | 7:08 | 8:08 | 9:08 | 10:08 | 11:08 | 12:08 | 1:08 | 2:08 | 3:08 | 4:08 | 5:08 | 6:08 | 7:08 | 8:08 | 9:08 | 9:58 | 11:39 |
| 2 | ✓ | | | Darby | 7:10 | 8:10 | 9:10 | 10:10 | 11:10 | 12:10 | 1:10 | 2:10 | 3:10 | 4:10 | 5:10 | 6:10 | 7:10 | 8:10 | 9:10 | 10:00 | 11:41 |
| C | | | ✓ | University City | 7:17 | 8:17 | 9:17 | 10:17 | 11:17 | 12:17 | 1:17 | 2:17 | 3:17 | 4:17 | 5:17 | 6:17 | 7:17 | 8:17 | 9:17 | 10:07 | D11:48 |
| C | | ✓ | ✓ | 30th Street Station | 7:20 | 8:20 | 9:20 | 10:20 | 11:20 | 12:20 | 1:20 | 2:20 | 3:20 | 4:20 | 5:20 | 6:20 | 7:20 | 8:20 | 9:20 | 10:10 | D11:51 |
| C | | ✓ | ✓ | Suburban Station | 7:25 | 8:25 | 9:25 | 10:25 | 11:25 | 12:25 | 1:25 | 2:25 | 3:25 | 4:25 | 5:25 | 6:25 | 7:25 | 8:25 | 9:25 | 10:15 | D11:56 |
| C | | ✓ | ✓ | Market East Station | 7:30 | 8:30 | 9:30 | 10:30 | 11:30 | 12:30 | 1:30 | 2:30 | 3:30 | 4:30 | 5:30 | 6:30 | 7:30 | 8:30 | 9:30 | 10:20 | D12:01 |
| C | | | ✓ | Temple University | 7:34 | 8:34 | 9:34 | 10:34 | 11:34 | 12:34 | 1:34 | 2:34 | 3:34 | 4:34 | 5:34 | 6:34 | 7:34 | 8:34 | 9:34 | 10:24 | 12:05 |
| | | | | Train continues to (see *Destination Codes*) | ELM AM | ELM AM | ELM AM | ELM AM | ELM AM | ELM AM | ELM PM | ELM PM | ELM PM | ELM PM | ELM PM | ELM PM | ELM PM | ELM PM | ELM PM | ELM PM | — AM |

**TO MARCUS HOOK and WILMINGTON**

| Fare Zone | Services | | | Train Number | 9201 * | 9203 * | 205 | 207 | 209 | 211 | 213 | 215 | 217 | 219 | 221 | 223 | 225 | 227 | 229 | 231 | 235 * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ⓟ | | ♿ | Stations | AM | AM | AM | AM | AM | AM | AM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM |
| C | | | ✓ | Temple University | 5:43 | 6:43 | 7:23 | 8:23 | 9:23 | 10:23 | 11:23 | 12:23 | 1:23 | 2:23 | 3:23 | 4:23 | 5:23 | 6:23 | 7:23 | 8:23 | 10:14 |
| C | | ✓ | ✓ | Market East Station | 5:49 | 6:49 | 7:29 | 8:29 | 9:29 | 10:29 | 11:29 | 12:29 | 1:29 | 2:29 | 3:29 | 4:29 | 5:29 | 6:29 | 7:29 | 8:29 | 10:20 |
| C | | ✓ | ✓ | Suburban Station | 5:54 | 6:54 | 7:34 | 8:34 | 9:34 | 10:34 | 11:34 | 12:34 | 1:34 | 2:34 | 3:34 | 4:34 | 5:34 | 6:34 | 7:34 | 8:34 | 10:25 |
| C | | ✓ | ✓ | 30th Street Station | 5:58 | 6:58 | 7:38 | 8:38 | 9:38 | 10:38 | 11:38 | 12:38 | 1:38 | 2:38 | 3:38 | 4:38 | 5:38 | 6:38 | 7:38 | 8:38 | 10:29 |
| C | | | ✓ | University City | 6:00 | 7:00 | 7:40 | 8:40 | 9:40 | 10:40 | 11:40 | 12:40 | 1:40 | 2:40 | 3:40 | 4:40 | 5:40 | 6:40 | 7:40 | 8:40 | 10:31 |
| 2 | ✓ | | | Darby | 6:07 | 7:07 | 7:47 | 8:47 | 9:47 | 10:47 | 11:47 | 12:47 | 1:47 | 2:47 | 3:47 | 4:47 | 5:47 | 6:47 | 7:47 | 8:47 | 10:38 |
| 2 | ✓ | | | Curtis Park | 6:09 | 7:09 | 7:49 | 8:49 | 9:49 | 10:49 | 11:49 | 12:49 | 1:49 | 2:49 | 3:49 | 4:49 | 5:49 | 6:49 | 7:49 | 8:49 | 10:40 |
| 2 | ✓ | | | Sharon Hill | 6:10 | 7:10 | 7:50 | 8:50 | 9:50 | 10:50 | 11:50 | 12:50 | 1:50 | 2:50 | 3:50 | 4:50 | 5:50 | 6:50 | 7:50 | 8:50 | 10:41 |
| 2 | ✓ | | | Folcroft | 6:12 | 7:12 | 7:52 | 8:52 | 9:52 | 10:52 | 11:52 | 12:52 | 1:52 | 2:52 | 3:52 | 4:52 | 5:52 | 6:52 | 7:52 | 8:52 | 10:43 |
| 2 | ✓ | | | Glenolden | 6:13 | 7:13 | 7:53 | 8:53 | 9:53 | 10:53 | 11:53 | 12:53 | 1:53 | 2:53 | 3:53 | 4:53 | 5:53 | 6:53 | 7:53 | 8:53 | 10:44 |
| 2 | ✓ | | | Norwood | 6:15 | 7:15 | 7:55 | 8:55 | 9:55 | 10:55 | 11:55 | 12:55 | 1:55 | 2:55 | 3:55 | 4:55 | 5:55 | 6:55 | 7:55 | 8:55 | 10:46 |
| 2 | ✓ | | | Prospect Park-Moore | 6:16 | 7:16 | 7:56 | 8:56 | 9:56 | 10:56 | 11:56 | 12:56 | 1:56 | 2:56 | 3:56 | 4:56 | 5:56 | 6:56 | 7:56 | 8:56 | 10:47 |
| 3 | ✓ | | | Ridley Park | 6:18 | 7:18 | 7:58 | 8:58 | 9:58 | 10:58 | 11:58 | 12:58 | 1:58 | 2:58 | 3:58 | 4:58 | 5:58 | 6:58 | 7:58 | 8:58 | 10:49 |
| 3 | ✓ | | | Crum Lynne | 6:20 | 7:20 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:51 |
| 3 | ✓ | | | Eddystone | — | 7:22 | — | 9:02 | — | 11:02 | — | 1:02 | — | 3:02 | — | 5:02 | — | 7:02 | — | 9:02 | 10:53 |
| 3 | | | | Chester | 6:23 | 7:24 | 8:03 | 9:04 | 10:03 | 11:04 | 12:03 | 1:04 | 2:03 | 3:04 | 4:03 | 5:04 | 6:03 | 7:04 | 8:03 | 9:04 | 10:55 |
| 4 | ✓ | | | Highland Avenue | 6:26 | 7:27 | 8:06 | 9:07 | 10:06 | 11:07 | 12:06 | 1:07 | 2:06 | 3:07 | 4:06 | 5:07 | 6:06 | 7:07 | 8:06 | 9:07 | 10:58 |
| 4 | ✓ | | | Marcus Hook | 6:29 | 7:30 | 8:09 | 9:10 | 10:09 | 11:10 | 12:09 | 1:10 | 2:09 | 3:10 | 4:09 | 5:10 | 6:09 | 7:10 | 8:09 | 9:10 | 11:01 |
| 4 | ✓ | | ✓ | Claymont | — | — | 8:12 | — | 10:12 | — | 12:12 | — | 2:12 | — | 4:12 | — | 6:12 | — | 8:12 | — | — |
| 4 | ✓ | ✓ | ✓ | Wilmington | — | — | 8:21 | — | 10:21 | — | 12:21 | — | 2:21 | — | 4:21 | — | 6:21 | — | 8:21 | — | — |
| | | | | | AM | AM | AM | AM | AM | AM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM | PM |

*** Trains 200, 202, 235, 9201, 9203, and 9236 operate Saturdays only.**

D - Stops to discharge or pick up passengers but may depart ahead of schedule

[15] http://www.septa.org/schedules/rail/pdf/nwk.pdf

# 4.3 FREIGHT RAIL PROFILE

Delaware's freight rail system is of vital importance to the State. As a "green" mode of transportation, freight traveling by rail reduces highway congestion, improves safety, and uses less energy per ton-mile than other modes of transportation. The rail corridors throughout the State are economic drivers for communities large and small, and they provide the opportunity for Delaware's industries and farmers to extend the markets for their goods. Historically, rail carloads in 1989 had 103,069 carloads originating or terminating in the State (excluding through movements). While this number has substantially decreased in recent years due to the nationwide recession, prior to this time the numbers remained around 100,000 carloads per year. As the auto industry has contracted in Delaware in recent years, coal and chemicals have grown in auto's place to keep the number of carloads relatively stable.

Table 4-2 identifies the freight railroads operating in Delaware and their route miles.

**TABLE 4-2: DELAWARE'S FREIGHT RAIL SYSTEM**

| Railroad Name | Railroad Abbreviation | Miles Operated in Delaware |
|---|---|---|
| Norfolk Southern* | NS | 158 |
| CSX Transportation* | CSX | 23 |
| Maryland & Delaware Railroad | MDDE | 16 |
| Wilmington & Western Railroad | WWRC | 10 |
| East Penn Railroad | ESPN | 10 |
| Delaware Coastline Railroad | DCLR | 23 |
| **Total Miles** | | **240** |

* NS also operates 23 miles on the NEC; CSX has trackage rights on the NEC though it does not currently use them.

### 4.3.1 Class I Railroads

***Norfolk Southern***

NS was created when the Norfolk and Western Railway (NW) and the Southern Railway (SR) consolidated in 1982. Both NW and SR railways were the result of a significant number of railway mergers over many years. NW began in Virginia in 1838. SR predecessor line was the South Carolina Canal & RailRoad which was chartered in 1827. By 1982, NW was the product of more than 200 railroad mergers spanning a century and a half. SR was the product of nearly 150 predecessor lines that were consolidated since the 1830s.[16] In 1997, NS and CSX filed a joint application with the Surface Transportation Board (STB) to operate the routes and assets of Conrail, which Congress had created in the 1970s after several

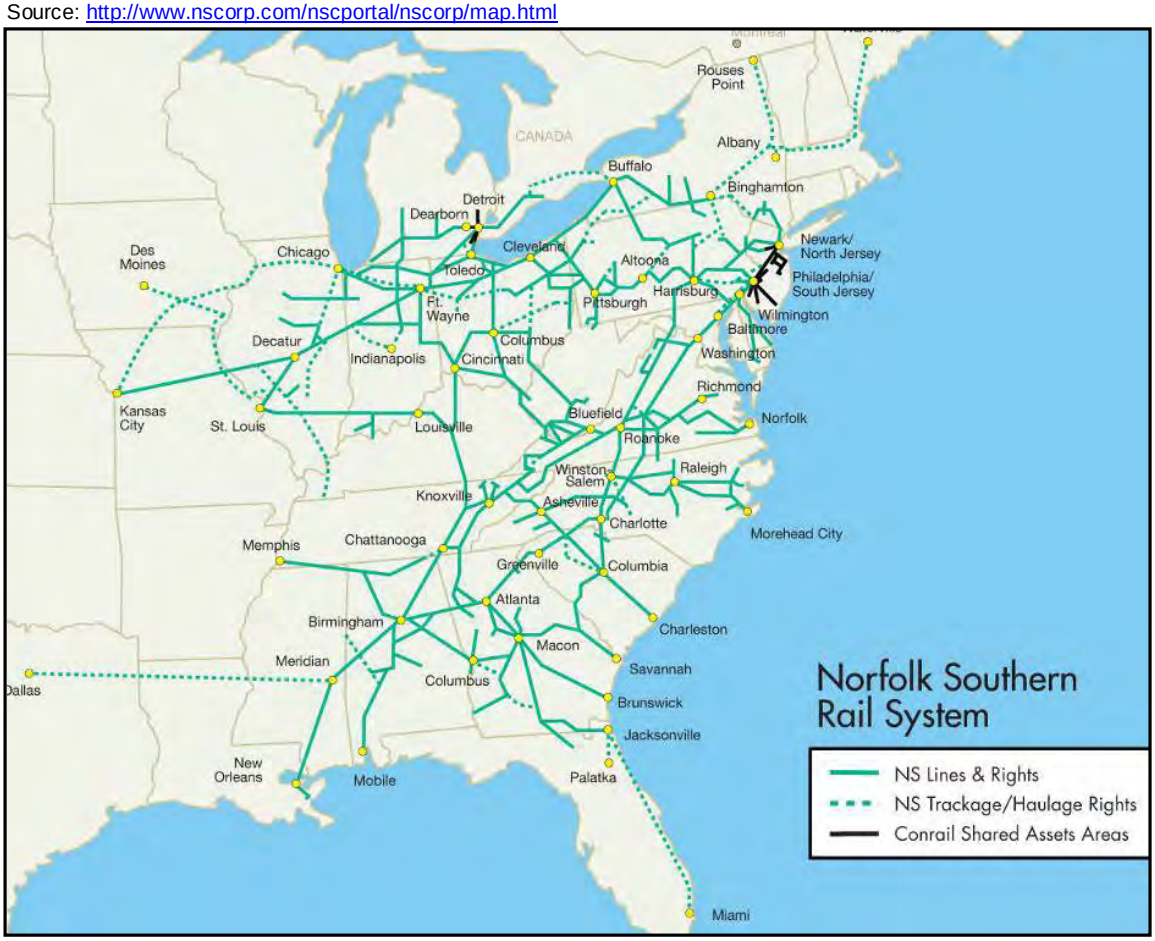
[16] Norfolk Southern - Our History< http://www.nscorp.com/nscportal/nscorp/Community/NS%20History/>

eastern railroads fell into bankruptcy. Because of the transaction, NS's rail operations grew to include 7,200 miles of the Conrail system. NS was allocated Conrail's operations in Delaware and has emerged as the major rail operator in the State.

The majority of NS' operations are east of the Mississippi River and serve nearly all metropolitan areas. NS' gateway cities to the west include Chicago, Kansas City, St. Louis, Memphis, New Orleans, and through haulage rights, Dallas. In the Mid-Atlantic region, in addition to the Port of Wilmington, NS also serves the Port of Baltimore and the Port of Philadelphia. NS largest international operations are at the Port of Norfolk. Figure 4-7 shows the NS network.

**FIGURE 4-7: THE NS NETWORK**

Source: http://www.nscorp.com/nscportal/nscorp/map.html




NS is the largest rail freight carrier in Delaware. It serves the State through access rights over the Northeast Corridor granted by the federal government. It also serves the Delmarva peninsula with a line extending south to Pocomoke, Maryland. NS typically operates between 9 and 12 trains per day in Delaware, with some of the unit trains, e.g. grain and stone, coming in three or four days each week. NS operations on the NEC south of Newark are confined to a 10:00 P.M. to 6:00 A.M. "window," when high-speed intercity and commuter train activity are the lightest so as not to interfere with the movement of passengers on the Corridor.[17]

The major commodities in Delaware carried by NS include grain, corn oil, soybean oil, coal, autos, steel, crushed limestone, chemicals, plastics, paper, wood products, lumber, pulpwood, propane, petroleum products and other miscellaneous products.

[17] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

## NS Network in Delaware

NS operates approximately 158 route miles in Delaware. The NS network additionally includes 23 miles of trackage rights on the NEC. One line, the New Castle Secondary Track, extends 17 miles, from the NEC in Wilmington to Porter. The Delmarva Secondary Track traverses 89 miles Downstate from the Newark Yard to Seaford, through Porter, Dover, and Harrington, and continues into Maryland at Delmar to Pocomoke. The Indian River Secondary Track is 39 miles in length, branching off the Delmarva Secondary at Harrington and connecting to Frankford via Ellendale, Georgetown, and passes by the Indian River power generating station near Millsboro. [18]

Norfolk Southern's network in Delaware also includes four major classification yards.

- **Edgemoor Yard (Wilmington).** This yard is accessed from the south by both the Shellpot Secondary and the New Castle Secondary. These two lines converge just south of the newly rehabilitated swing bridge that crosses the Christina River just south of Edgemoor Yard. NS runs loaded coal trains to/from Wilmington, Delaware and Shire Oaks, Pennsylvania to serve the Connectiv generating station at Edgemoor. Loaded crushed stone headed Downstate also travels through Edgemoor.[19] Service to Edgemoor Yard operates six days a week from Abrams Yard near Norristown, Pennsylvania, using the NEC south of Philadelphia, with intermediate service to Marcus Hook Pennsylvania. In addition, a unit stone train operates, as required, between Abrams Yard and the Indian River Secondary.[20]

**NS TRAIN AT NEWARK STATION**

- **Newark Yard (Newark).** The yard is located just south of "DAVIS" interlocking on Amtrak's NEC. It served the former Daimler-Chrysler plant, which has since been bought by the University of Delaware. It stands as a jumping-off point for serving customers south on the Delmarva Secondary, customers along the NEC between Newark and Wilmington; and north to Edgemoor Yard (Wilmington).

  The Newark Yard serves as an important freight yard location for NS, which uses Amtrak's NEC for operations to south and west to Harrisburg, and north of Newark to

[18] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

[19] Delmarva Railfan Guide http://www.railroadradio.net/content/view/35/154/

[20] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

the Port of Wilmington and the Delmarva Peninsula via the Delmarva Secondary. NS freight trains use the NEC, Track A and 1, to travel to and from the Port of Baltimore and to access their Newark Yard. Per Amtrak requirements, freight service is constrained to operating between 10 p.m. and 6 a.m. on the two-track section of the NEC between Perryville and Northeast, Maryland (Bacon Interlocking). This also affects freight movement at the Newark Yard.

- **Harrington Yard (Harrington).** This yard is located south of the town, adjacent to the State fairgrounds. There are general merchandise through-trains that operate between Enola Yard in Harrisburg, Pennsylvania and the Harrington Rail Yard in Kent County. Newark and Harrington are principal local train bases with four locals typically on a weekday.[21]

**FREIGHT CARS AT HARRINGTON YARD**

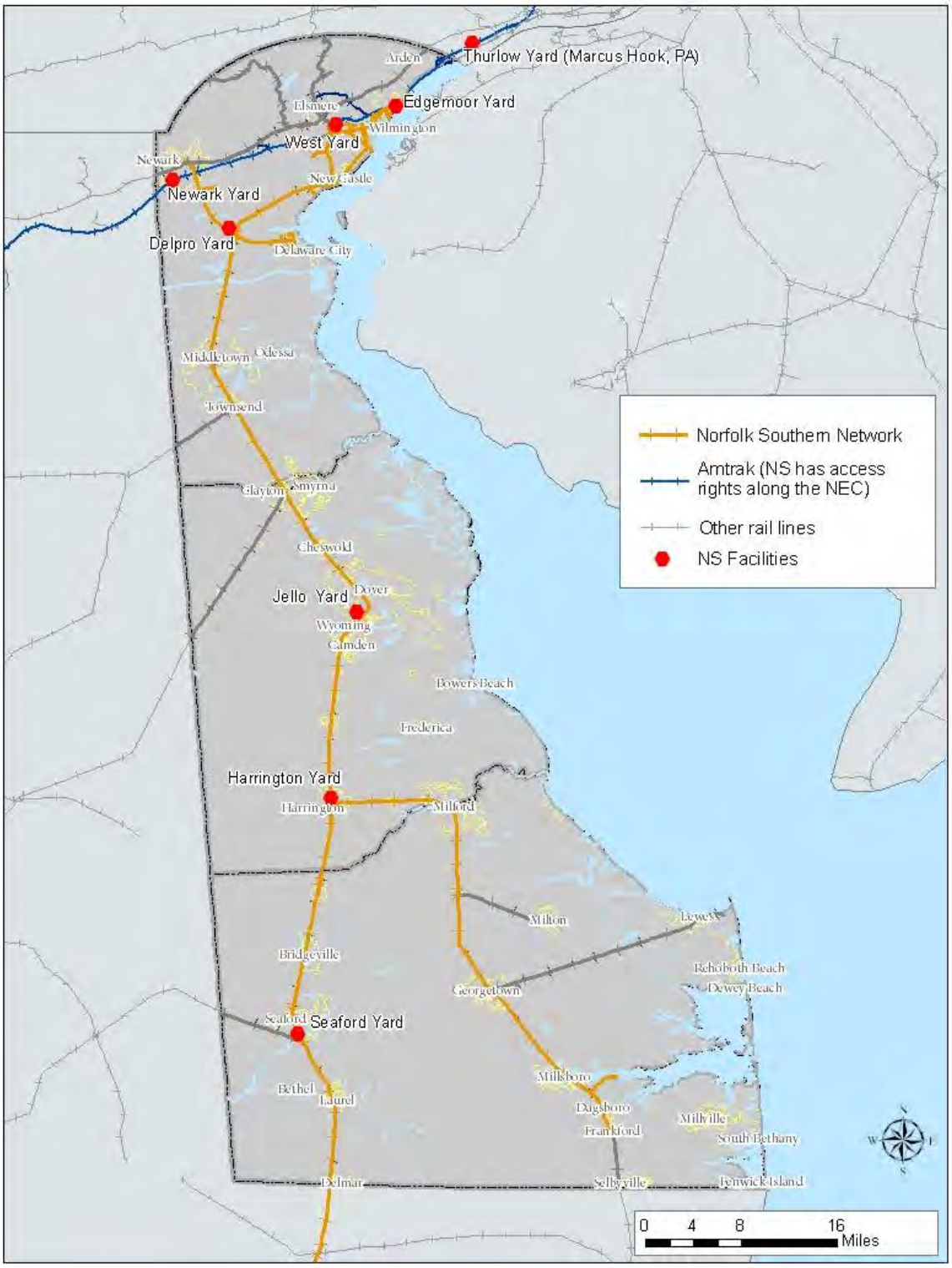
- **Jello Yard (Dover):** This yard is located parallel to New Burton Road in Dover. The trains leaving the Jello Yard serve various industries, such as Kraft or Scott Paper Plant in Dover and Reichhold Chemicals in Cheswold. It also serves other industries in Clayton, Townsend and Middletown. Kraft receives assorted covered hoppers and sugar tanks, while Scott Paper receives three and four-bay coal hoppers.[22]

Figure 4-8 depicts NS' network in Delaware, including rail-related facilities and yards.

[21] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

[22] Delmarva Railfan Guide http://www.trainweb.org/peninsularailfan/cr_jobscripts_dels.html

## FIGURE 4-8: THE NS NETWORK IN DELAWARE



Connections with other Railroads

NS interchanges with CSX, the Maryland and Delaware Railroad and the Delaware Coast Line railroad. The NS network connects with CSX in Wilmington and the three active Maryland & Delaware Railroad (MDDE) lines at Townsend, Seaford, and Frankford. The Delaware Coast Line Railroad (DCLR) interchanges with NS in Georgetown and Ellendale. NS also interchanges with the Bay Coast Railroad in Pocomoke, Maryland.

Track Capacity - Weight Limits

The network will accommodate freight cars of 286,000 lbs. gross weight.[23]

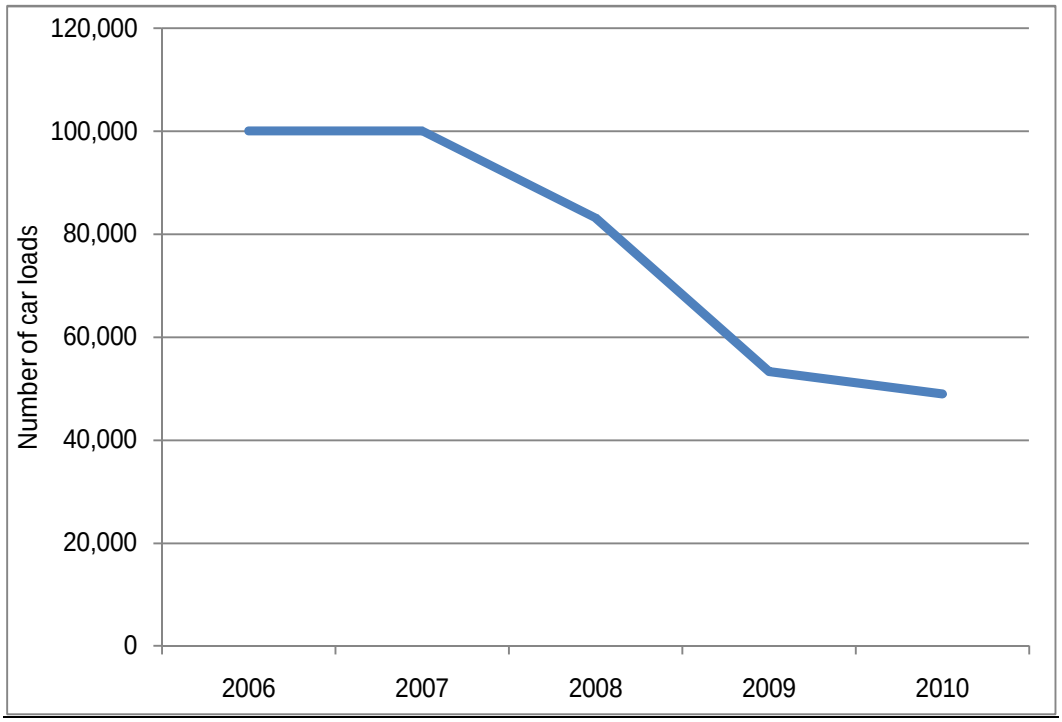
Delmarva Business Unit

The Delmarva Business Unit (DBU) is composed of the former NS Delmarva Cluster, running from Edgemoor Yard in Wilmington, to the end of the Delmarva Secondary main line in Pocomoke, MD. It includes the 39-mile Indian River Branch from Harrington to Frankford as well as Newark and the Port of Wilmington. The DBU consists of 189 route miles of track in Delaware and Maryland with 120 employees. The DBU was established by NS to bring an intense local focus to grow the business, reduce costs, and provide reliable rail service.

In recent times, carloads for the DBU have gradually declined, from just over 100,000 in 2006 and 2007 to less than 50,000 in 2010, primarily due to the loss of Delaware City refinery and Chrysler business. Carloads in 2011 are anticipated to increase as the economy gradually rebounds, including the reopening of the Delaware City refinery under new ownership. The following figure shows the total number of carloads carried by NS in Delaware for the past five years.

[23] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

**FIGURE 4-9: NS NUMBER OF CARLOADS**




Planned Investments

On the New Castle Secondary, NS has plans to reconstruct the Tasker siding to accommodate additional stone trains heading Downstate at an estimated cost of $680,000. Funded by the State through DTC, this project is part of the NEC Commuter Rail Improvement Project and will also increase storage capacity on the NEC.

NS also has plans to add capacity at AutoPort, Inc. in New Castle as part of a public-private partnership project with the Port of Wilmington and AutoPort to handle more automobiles for export and serve increased business in the northeast. The estimated cost for this project is $3.3 million. The Federal Highway Administration (FHWA) will contribute $984,900 in a grant to be managed by DTC. These two projects are included in the project list contained in Chapter 9 of this document.

NS has recently spent over $6 million for track and signal improvements on the Delmarva Secondary in Delaware

### Crescent Corridor

NS's Crescent Corridor is a railroad corridor expansion program that will run along I-81 between Louisiana and New Jersey. While not directly running through Delaware, it is projected to provide relief to Delaware's roadways by diverting 211,000 trucks annually to rail. This will result in 547,000 gallons of fuel saved per year, 6,000 tons of CO2 reduction per year, and $3.7 million in annual congestion savings.

As a comprehensive public-private partnership for improving freight rail transportation in the East, the project will provide for 300 miles of new passing track and double track, new or expanded terminals in 11 markets, and $2.5 billion in new investments through full corridor development (in three phases).

Source: NS presentation to the Delaware Valley Regional Planning Commission (DVRPC), October 2009.

and Maryland to increase speed of railroad and better serve customers.

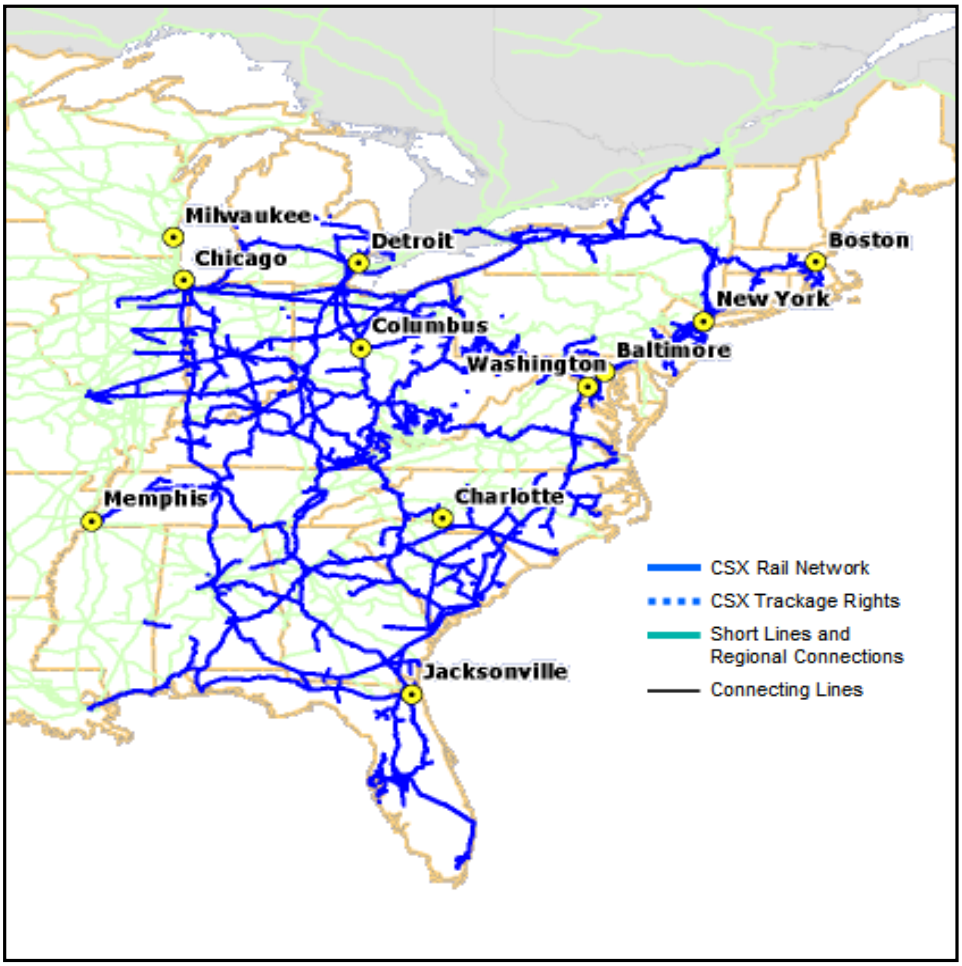
### *CSX Transportation*

CSX's history dates back to 1828, when construction began on the Baltimore & Ohio (B&O) Railroad. The B&O played a vital role in the growth and development of the mid-Atlantic region and paved the way for other regional railroads to follow. CSX was the result of many years of consolidation of railroad companies. The C&O, B&O and Western Maryland Railroad (WM) merged under a single name: Chessie System Railroads in 1973 and by 1980 the Chessie System and Seaboard Coast Line Industries Inc. united to form the CSX Corporation. The Conrail acquisition agreement between NS and CSX provided CSX with an additional 3,200 miles of track.[24] However, none of CSX's acquisition was located in Delaware.

Similar to NS, CSX's network also reaches nearly every major economic and population center east of the Mississippi River, with 23 states served. Connections to markets in the west are provided in Chicago, St. Louis, Memphis and New Orleans. CSX also serves all major Atlantic ports, however, its most efficient operation connects the Port of New York and New Jersey with Midwest markets. Figure 4-10 shows the CSX network.

[24] CSX website http://www.csx.com/?fuseaction=about.history

**FIGURE 4-10: THE CSX NETWORK**




Source: CSX website: http://www.csx.com/index.cfm/customers/maps/csx-system-map/

CSX Transportation (CSX) is the second-largest freight railroad in Delaware. CSX's service in Delaware, however, is limited to its line paralleling the NEC across the northern part of New Castle County (Philadelphia subdivision). Most CSX freight traffic passes through Delaware on this Philadelphia-Baltimore line segment through Wilmington and Newark.

Although the CSX operates through Wilmington, it does not have direct access to the Port. Any CSX traffic originating or terminating at the Port must use the West Yard interchange with the NS in Wilmington.[25] CSX operates a TransFlo bulk transfer terminal in Wilmington and an automotive distribution that is just over the state line in Pennsylvania.

25 Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

CSX owns 23 route miles in the State. In addition it has trackage rights over another 23 miles on the Amtrak NEC. CSX has one classification yard in Delaware, Wilsmere Yard in Elsmere. This yard at one time served the GM assembly plant located just outside of Newport. The former GM plant may soon house the California electric car company Fisker Automotive which would convert the plant into a plug-in hybrid vehicle assembly plant.

**Partnering to Promote Rail**

Startup hybrid car manufacturer Fisker Automotive will be working over the next few years to renovate the Newport-area former General Motors plant, with vehicle production to begin in 2012. Given the proximity of the plant to the NEC, similar to the past usage of the space, there will be opportunities to use rail to ship vehicles both domestically and abroad. DEDO will continue to work with DelDOT to promote the use of rail at this site for both inbound and outbound shipments.

Commodities carried by CSX to and through Delaware include passenger cars, plastics, ores, sulfur and industrial waste. DuPont's Edge Moor Plant produces titanium dioxide for the paper and paint industries. The plant receives ilmenite ore via intermodal truck deliveries from CSX's TransFlo facility at Wilsmere Yard.[26]

Interchanges (with other railroads)

There are several shortline railroads that connect with CSX. These include the East Penn Railroad (ESPN), which interchanges with CSX at Elsmere Junction and the Wilmington and Western Railway connecting at Landenburg Junction. There is also a connection to NS at West Yard in Wilmington.

Track Capacity - Weight Limits

The Philadelphia Subdivision is rated to accept 286,000 pounds gross weight per car.

Planned Investments

CSX does not currently have any expansion plans in Delaware other than ongoing maintenance of facilities.

### 4.3.2 Shortline Railroads

Several shortline railroads provide feeder service for customers not served directly by NS or CSX. The Wilmington and Western Railroad and the East Penn Railroad serve northern New Castle County from the CSX mainline, with the East Penn Railroad extending into Pennsylvania. In southern Delaware, the Maryland and Delaware Railroad and the Delaware Coastline Railroad shortlines have operational routes that connect with the NS network.[27]

[26] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

[27] http://dedo.delaware.gov/business/siteselection/transportation.shtml

### *Wilmington & Western Railroad*

The Wilmington & Western Railroad (WWRC) is a freight and heritage railroad in northern Delaware, operating over a CSX predecessor railroad, Baltimore and Ohio Railroad (B&O), branch between Wilmington and Hockessin. The line has both steam and diesel locomotives in operation, pulling a wide variety of excursion trains.[28]

Track Miles

The WWRC operates on 10.2 miles.

Short History

The WWRC was charted in 1867 to move goods between the mills along Red Clay Creek and the Port of Wilmington. Though it had struggled over the years to remain profitable it now serves both freight and passenger traffic as a heritage railroad between Wilmington and Hockessin in Delaware.[29] It is now owned by the Historic Red Clay Valley Inc., which is the non-profit parent organization of WWRC. The railroad is operated by volunteers dedicated to sharing and preserving the history of Delaware's only steam tourist railroad.[30] It was added to the National Register of Historic Places in 1980.

**WILMINGTON & WESTERN RAILROAD STATION**

Interchanges

The WWRC serves northern New Castle County from the CSX mainline.

Track Capacity - Weight Limits

As primarily a tourist railroad, the WWRC operates over 100 pound rail.

### *East Penn Railroad*

Track Miles

The East Penn Railroad (ESPN) owns and operates 10 miles of track in northern New Castle County.

Short History

The ESPN is a short-line railroad that operates a number of lines in Pennsylvania and Delaware. The ESPN was formed in 2007 through the merger of East Penn Railways

[28] http://en.wikipedia.org/wiki/Wilmington_and_Western_Railroad
[29] Wilmington & Western Railroad About the Railroad http://www.wwrr.com/about/history.asp
[30] Wilmington & Western Railroad http://www.wwrr.com/hrcv/

(EPRY) and Penn Eastern Rail Lines (PRL), each of which began operating in the 1990s. East Penn Railroad was purchased by Regional Rail, LLC in August 2007.[31]

Interchanges

The ESPN is located at Elsmere Junction in Delaware and serves northern New Castle County from the CSX mainline, with the ESPN extending into Pennsylvania.

Track Capacity - Weight Limits

The ESPN is 286,000 lb gross weight compliant.[32]

### *Maryland & Delaware Railroad*

The Maryland & Delaware Railroad (MDDE) is a shortline railroad operating on the Delmarva Peninsula. Its headquarters are in Federalsburg, Maryland.

Track Miles

Currently, the MDDE operates over 120 miles of track in the States of Maryland and Delaware. About 16 of those miles are in Delaware.

Short History

In response to several smaller branch lines along the Delmarva Peninsula being omitted from the Final System Plan when Conrail was created in 1976, the states of Maryland and Delaware attempted to find a way to keep these struggling branches in operation. At first they subsidized these branches with ownership being retained by Penn Central. However this was too costly and they sought a lower cost shortline to be the designated operator of these lines that needed minimal rail service. They selected the MDDE railroad company as the designated operator soon after its organization in August 1977.[33]

**SERVICE ON LEWES SWING BRIDGE**

The company's current branches include Seaford, Chestertown, and Centreville Lines, and the now abandoned route between Clayton, Delaware and Easton, Maryland. In 2000, ownership of the line operating between Frankford, Delaware and Snow Hill, Maryland was transferred to the MDDE. In 2008, MDDE signed a 15-year extension with the State of Maryland for an operating agreement for the Seaford, Chestertown, and Centreville lines. The new agreement calls for MDDE to be designated operator of the lines through 2023.[34]

[31] http://www.eastpennrr.com/

[32] CSX Shortline Profile East Penn Railroadhttp://www.csx.com/index.cfm/customers/other-services-partners/short-line-partners/short-line-directory/short-line-directory-profile/?i=2198

[33] Maryland & Delaware Railroad Company History <http://www.mdde.com/history.html>

[34] Maryland & Delaware Railroad Company History <http://www.mdde.com/history.html>

Interchanges

The MDDE lines connect with the NS network at Townsend, Seaford, and Frankford.

Track Capacity - Weight Limits

There is a small portion of the railroad between Frankford and Selbyville that is not 286K compliant.

Commodities

Primary commodities carried by MDDE are grain related, but they also haul fertilizer, gluten, canola, lumber, drywall, paper products, wax, steel, propane and other chemicals.

### *Delaware Coast Line Railroad*

The Delaware Coast Line Railroad (DCLR) is another shortline railroad currently operating on the Delmarva Peninsula. The track is owned by the State of Delaware and managed by DTC.

Track Miles

The DCLR operates on 23 miles of track in Sussex County.

Short History

The Delaware Coast Line Railroad lines were acquired by the State of Delaware from the Penn Central bankruptcy in 1968 including one branch line from Ellendale to Milton and another from Georgetown to Lewes. Though owned by the state of Delaware they were operated by the Delaware Coast Line Railroad until 1994.

**DCLR AT GRAVEL HILL**

In 1994, the MDDE took over the two branch lines run by the Delaware Coast Line Railroad as contract operator of these two branch lines. In 1999 however, the MDDE decided not to renew the operating contract, and operation of the two lines was returned to the Delaware Coast Line.[35]

Interchanges

The Delaware Coast Line railroad intersects with NS in the cities of Georgetown and Ellendale, Delaware.

Track Capacity - Weight Limits

263,500 pounds.

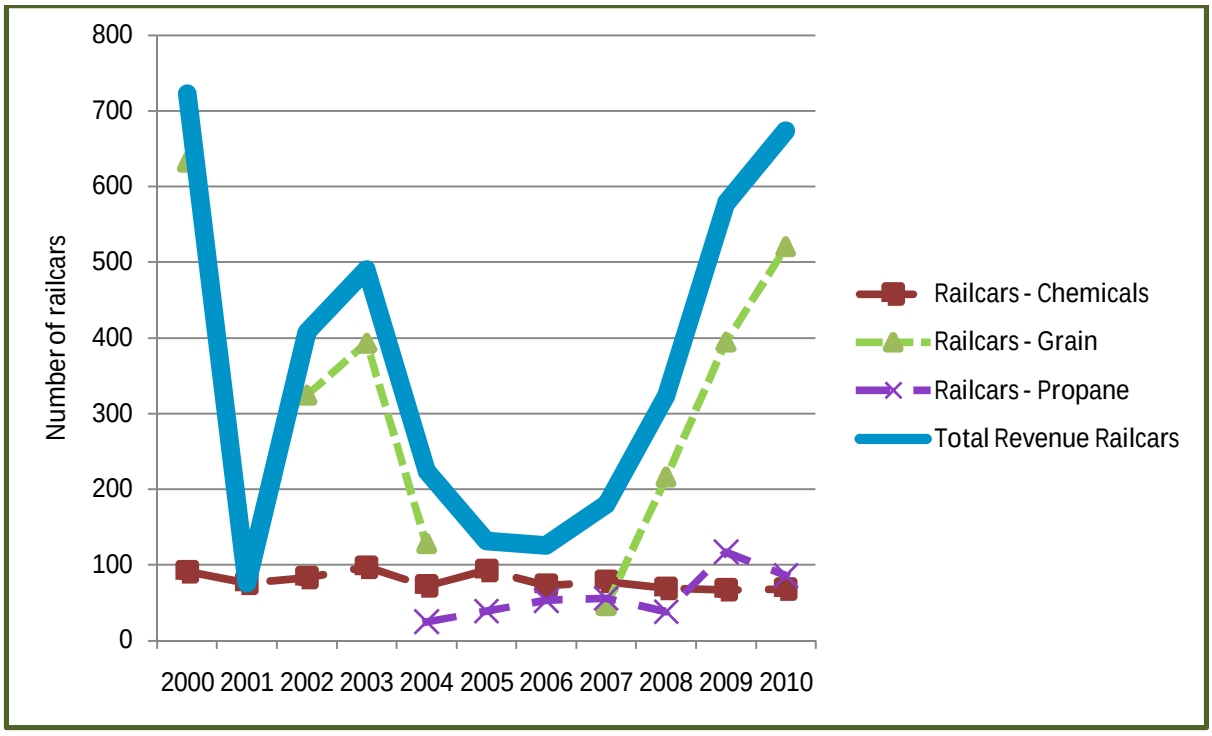
[35] Maryland & Delaware Railroad Company History <http://www.mdde.com/history.html>

Commodities

The main commodities carried by the DCLR are chemicals, grain, and propane.[36] The Gravel Hill unloading site near Milton receives grain. Propane shipments to the Wilson Baker facility on the Milton Industrial Track, which had been inactive since 2000, began in October 2010. Additional shippers are located at the Sussex County Industrial Airpark near Georgetown, where a rail siding accommodates the Schagrin Gas propane facility.

Figure 4-11 shows the annual growth in the number of rail cars of various commodities; while chemicals have remained steady, there has been an increase in grain and propane rail cars.

**FIGURE 4-11: REVENUE RAILCARS ON THE DELAWARE COAST LINE RAILROAD (GEORGETOWN-LEWES)**

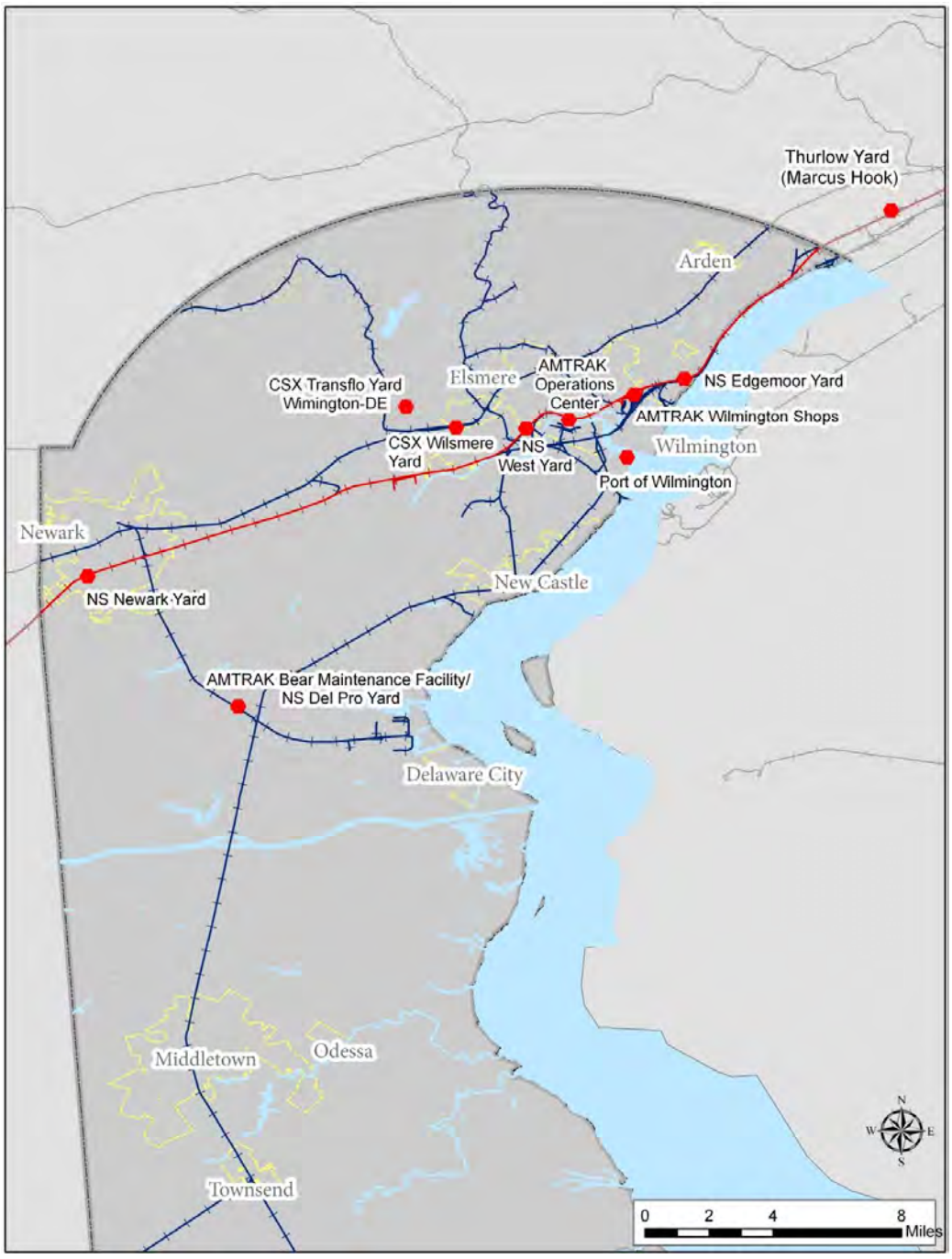



### 4.3.3 Multi-Modal Freight Rail Facilities

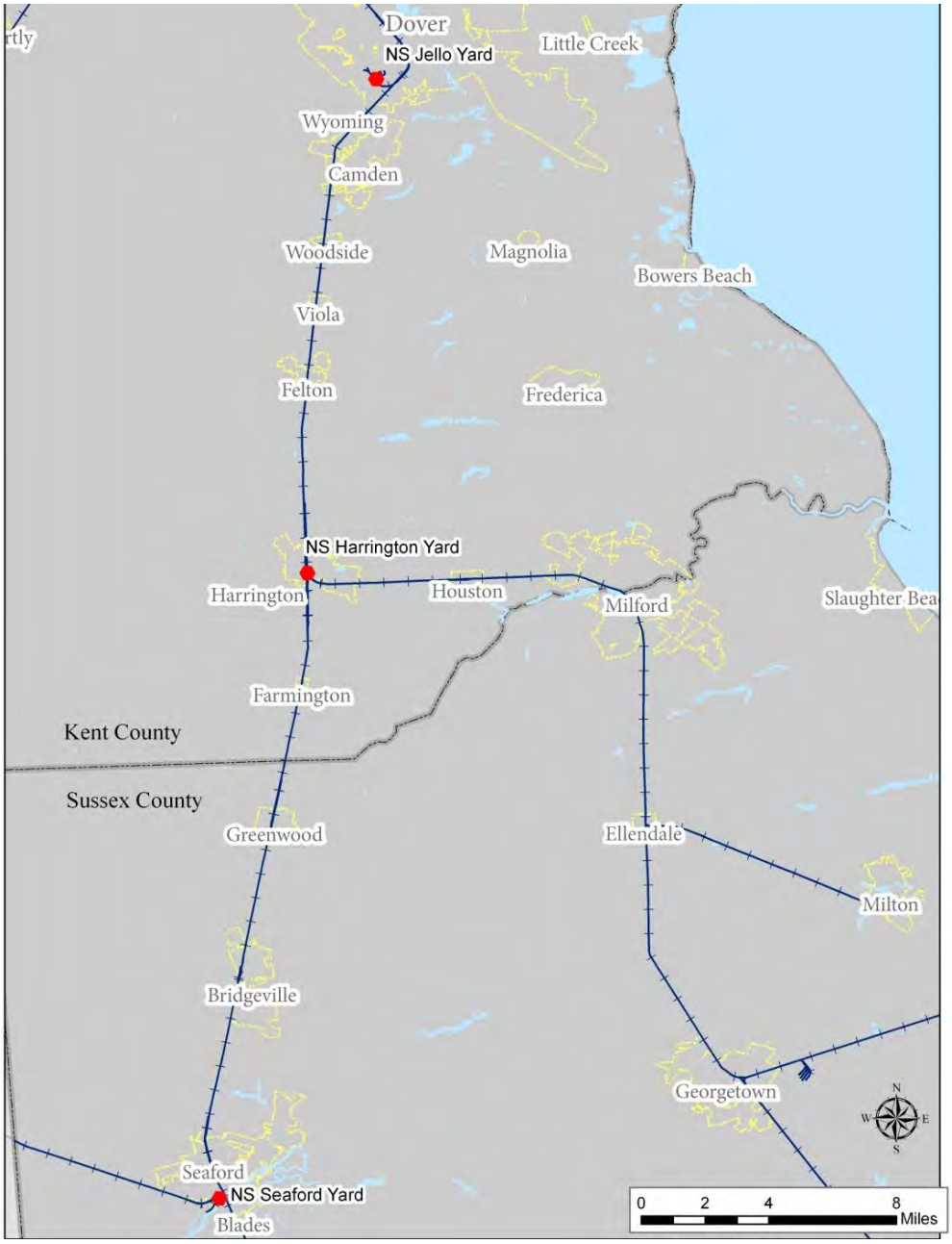
New Castle, Kent and Sussex Counties are home to several multi-modal freight rail facilities. Figures 4-12 and 4-13 highlight the location of these facilities.

[36] Delaware Freight and Goods Movement Plan Technical Report. Delaware Department of Transportation Division of Planning. June 2004.

## FIGURE 4-12: NEW CASTLE COUNTY RAIL FACILITIES



## FIGURE 4-13: KENT AND SUSSEX COUNTY RAIL FACILITIES



### *Port of Wilmington*

The Port of Wilmington is a full-service deepwater port and marine terminal handling over 400 vessels per year with an annual import/export cargo tonnage of over 4 million tons.[37] The Port of Wilmington is directly served by NS with railcar loading docks located next to terminal warehouses. The State of Delaware upgraded the internal rail circulation and intermodal facilities of the port.[38]

**PORT OF WILMINGTON**

With 800,000 square feet of refrigerated space, the Port of Wilmington has created a niche market as the largest importer in North America for bananas and other fresh fruit as well as juice concentrates. [39]

As North America's largest dock-side cold storage facility, the Port handles roughly 1.5 million tons of imported containerized fruit annually. Approximately 40% of this is transported by rail, with the remainder by truck.

The Port currently receives kraft liner board and newsprint (150,000 tons/year total) in rail box cars from the Southern United States that are shipped to Central America. The Port also receives generators by rail for shipment overseas. With respect to outbound rail shipments, the Port receives steel products from Swedish Steel and ships them to the Midwest. This is a seasonal service when the Great Lakes are inaccessible in the winter due to ice. The Port also ships apple juice concentrate imported from Argentina by rail to the West Coast.

> **Private Industry Partners for Mutual Benefit**
>
> A new 1,000 foot siding is planned in Wilmington at Christiana Avenue to serve a new warehousing facility that is to be built by DuPont. The facility will be designed to process petroleum and other refinery products and ship the recycled byproducts overseas via the Port of Wilmington.
>
> The siding's construction is to be privately funded, and when completed it is expected that Norfolk Southern will have 9-10 rail cars per day serving the facility.

Also important to Delaware's rail network is AutoPort located in New Castle. AutoPort is a vehicle processing and modification facility and is used for both importing and exporting vehicles. With a capacity for managing over 100,000 vehicles per year, AutoPort can handle high volumes of fleet conversions for domestic and export markets. AutoPort provides customized port processing, handling and modification services for the automotive industry which includes commercial vehicle fleets, taxi cabs, police cars, military vehicles, etc. AutoPort is within overnight reach of one-third of

[37] http://www.portofwilmington.com/
[38] http://dedo.delaware.gov/business/siteselection/transportation.shtml
[39] http://www.portofwilmington.com/

the U.S. population by rail and truck, and provides the Midwest and the Northeast with easy access to Atlantic Ocean shipping lanes.[40]

The Port is interested in growing its business by partnering with and supporting railroads on several needs that are of mutual interest and benefit. For example, the Port is in support of providing double stack clearances on the NEC to afford additional opportunities for freight in the region. There is also interest from several port contractors for container terminals on the river in order to create on-dock rail facilities to help reduce truck congestion and diesel emissions.

### Industry Growth to Help Spur Rail Investment

As a barrier island located on Virginia's Eastern Shore, Wallops Island is mainly known for housing NASA's Wallops Flight Facility. Operated by NASA's Goddard Space Flight Center, it is primarily a rocket launch site to support science and exploration missions for NASA and other US government agencies. As the programs of the center expand, the facility's proximity to rail could be of benefit if growth in new or related industries occurs, generating more rail car loadings. This is an example of a potential rail freight destination, and could encourage NS to advance improvements to the swing bridge at Seaford, a critical link on the Delmarva Peninsula.

CSX TransFlo Terminal (Wilmington)

The TransFlo Terminal in Wilmington is important for companies that do not have direct access to rail transportation. This bulk intermodal facility provides the capability to transfer products between rail cars and trucks. The Wilmington location is one of 58 connected to the CSX network.

In addition to these facilities within the State, there are facilities located in Maryland and Virginia that have or could have an impact on rail operations in Delaware. One that is of particular relevance to the growth of rail in the State is described below.

**BAY COAST CAR FLOAT**

Source: Bay Coast Railroad, Inc
<http://www.varail.com/baycoast.htm>

Bay Coast Car Float

NS's main north-south line in Delaware extends to Pocomoke, Maryland and provides an alternative connection to Norfolk, Virginia and other locations in the south via the Bay Coast Railroad (BCRR) car float operation at Cape Charles, Virginia.[41] A railroad car float is an unpowered barge with rail tracks mounted on its deck pushed or pulled by a tugboat.

The BCRR consists of 70 miles of mainline and 26 miles on the car float operation from Cape Charles to Little Creek, Virginia. One barge with 25 car capacity is pulled by tugboat

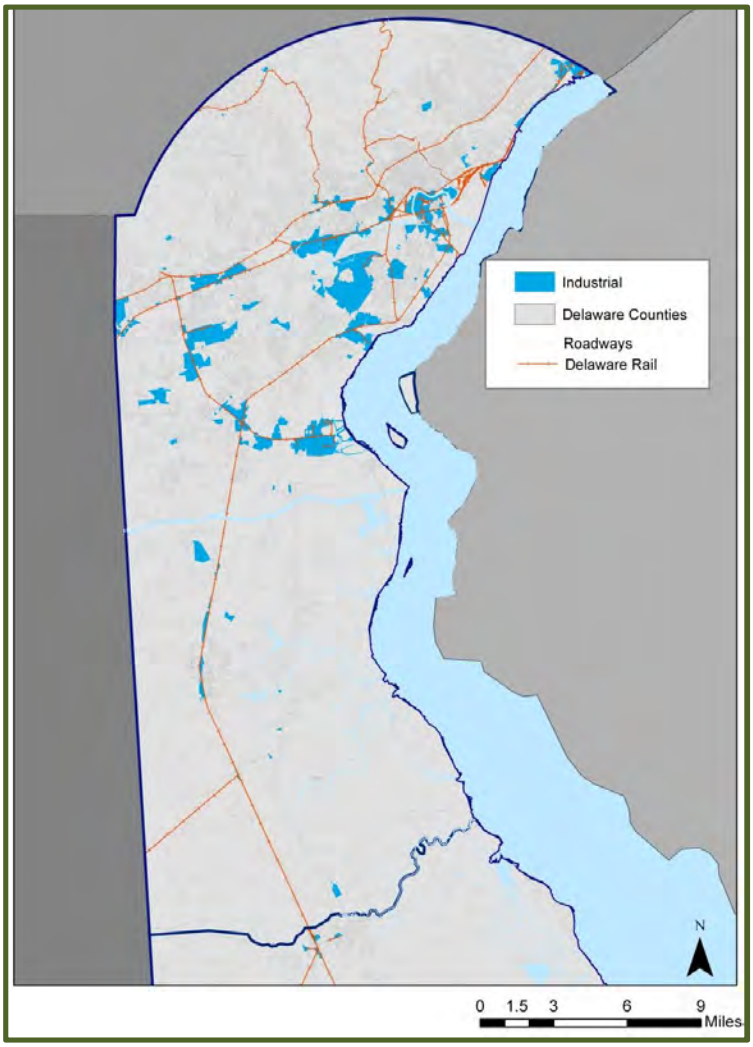
[40] http://www.autoportinc.com/

[41] Delaware Data Book, Delaware Economic Development Office, April 2010 <http://dedo.delaware.gov/pdfs/databook/Databook.pdf>

across the Chesapeake Bay. The BCRR route bypasses the congested NEC and its restricted clearances, with the unique capability to handle high-roof 60 ft. boxcars, tri-level enclosed auto racks, and over dimension shipments.[42]

Delaware is home to a relatively large amount of land that is zoned industrial, particularly in New Castle County. Many of these parcels are located near rail. DelDOT and DEDO continue to work together to make use of rail an option for current as well as future businesses in Delaware. As an example, Figure 4-14 highlights the land that is zoned industrial in New Castle County.

**FIGURE 4-14: INDUSTRIAL LAND USE AND ZONED INDUSTRIAL LAND (2007)**




Sources: Office of State Planning Coordination and New Castle County Land Use Department

[42] Bay Coast Railroad, Inc. http://www.varail.com/baycoast.htm

### 4.3.4 Rail-Related Facilities

#### *Rails to Trails*

Rails-to-trails is the common name used to describe abandoned rail lines that have been converted to paved or gravel paths for recreational and commuting use. Providing these former rail lines with an alternative use allows for preservation of the rail right-of-way if the rail was ever to become active again in the future.

Currently, there are four rails-to-trails/rail-with-trail located in Delaware. One of these is the Junction and Breakwater Trail located in the southwest portion of the Cape Henlopen State Park between Lewes and Rehoboth. The other trails include the James F. Hall Trail in Newark and the Tri-Valley Trail in New Castle County.

**JUNCTION BREAKWATER TRAIL**

The Junction and Breakwater Trail has many different scenic views ranging from oak trees and pines to rolling fields of farmland. The Junction and Breakwater Trail is Delaware's longest rail-trail in the State, providing an opportunity to use the train for a variety of recreational purposes. At 3.9 miles in length, it follows the former Penn Central Rail Line that once transported passengers to the many Methodist resort camps along the Atlantic coast.[43]

Recently, a two-mile portion of the New Castle Industrial Track, that will fill the gap in the trail between the Wilmington Riverfront and New Castle, was leased to New Castle County for trail use. This right-of-way that is no longer in use is owned by the State and managed by DTC.

Delaware collaborates with the national Rails-to-Trails Conservancy to promote providing alternative uses for abandoned rail rights-of-way. This program has allowed abandoned rail lines to be a benefit to the community at the same time it is preserving the right-of-way for the rail if it were to become active again.

[43] http://www.railstotrails.org/news/recurringFeatures/trailMonth/archives/0411.html

### Delaware Rail to Trail & Rail with Trail Facility Master Plan

In 2006, the Delaware Department of Transportation (DelDOT) developed a Statewide Rail-to-Trail and Rail-with-Trail Master Facility Plan for potential bicycle and pedestrian use. Eleven (11) railroad corridors were identified and further evaluated for potential development for trails. Additionally, the plan evaluated the interconnectivity of the rail/trail corridors with other existing trail systems, greenways, and pedestrian/bicycle networks.

The following rail corridors were selected for more advanced evaluation:

New Castle County

1. Brandywine Industrial Track (2.3 miles)
2. New Castle County Industrial Track (1.8 miles)

Kent County

1. Clayton-Easton Line

Sussex County

1. Georgetown-Lewes Running Track (16.7 miles)
2. Ellendale-Milton Industrial Track (6.8 miles)
3. The Junction-Breakwater Trail has been completed and DelDOT is currently looking to make connections to other trails and to the Georgetown-Lewes Running Track

# 5 Freight Activity in Delaware

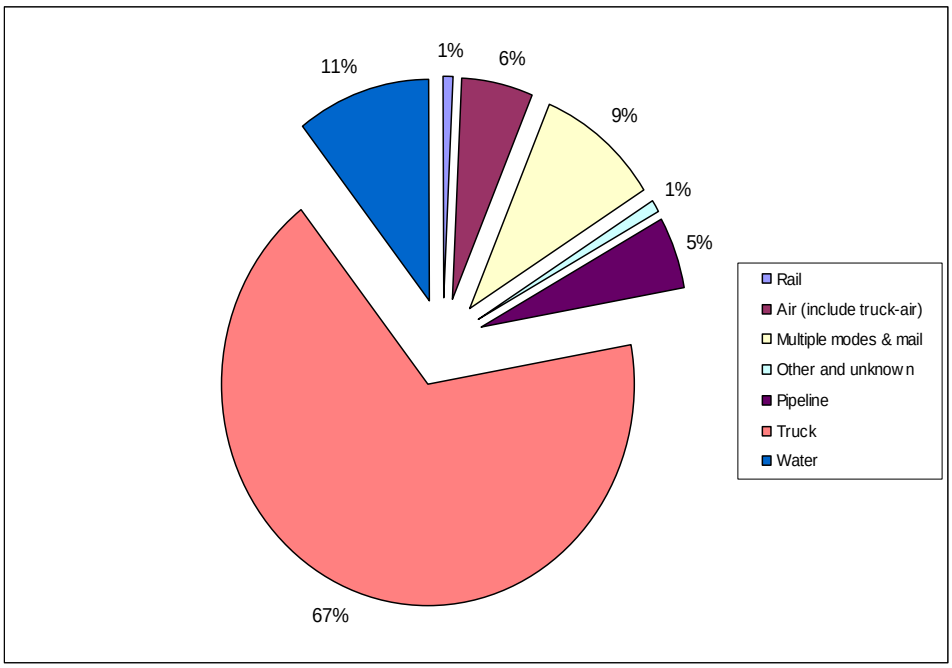
## 5.1 Freight Analysis Framework

The Freight Analysis Framework (FAF) is a public database developed by the FHWA that integrates data from a variety of sources to create a comprehensive picture of freight traffic flows by commodity and mode. FAF version 3.1.2 (FAF3) is the most current version describing freight movements by tonnage and value for 2009.

Measured by either value or tonnage, trucks continue to be the dominant means of freight transport for shipments originating or terminating in Delaware. Rail represents a small share of the freight market.

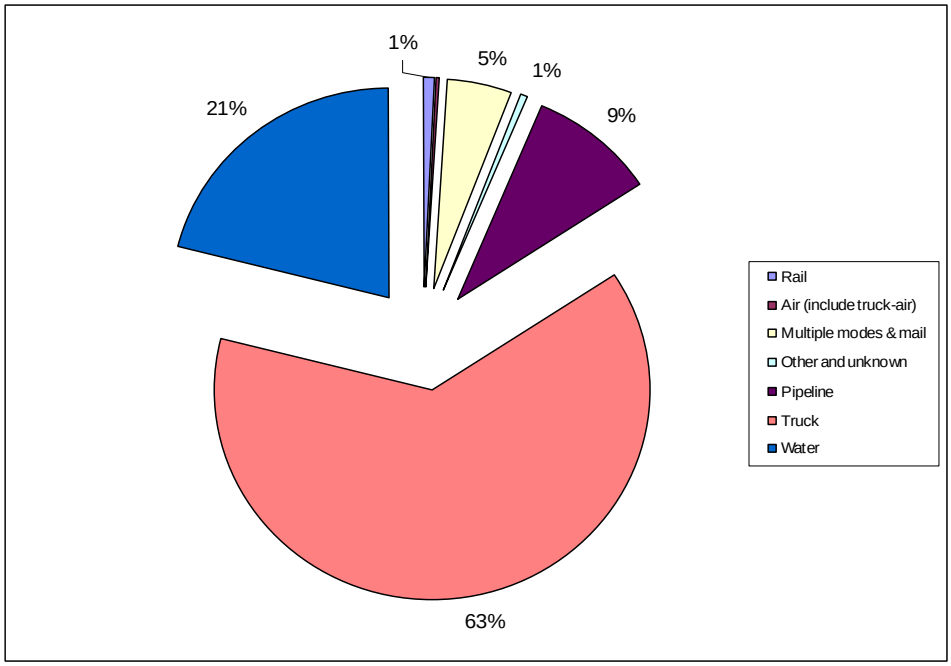
Figure 5-1 suggests that top three modes of freight originating in Delaware by dollar value are: truck (67%), water (11%) and "multiple modes/mail" (9%). Rail accounts for only 1% of the share. Most of the water-based share is derived from exports shipped from Delaware through transatlantic shipments.

**Figure 5-1: Modal Distribution of Freight Originating in Delaware by Dollar Value (2009)**



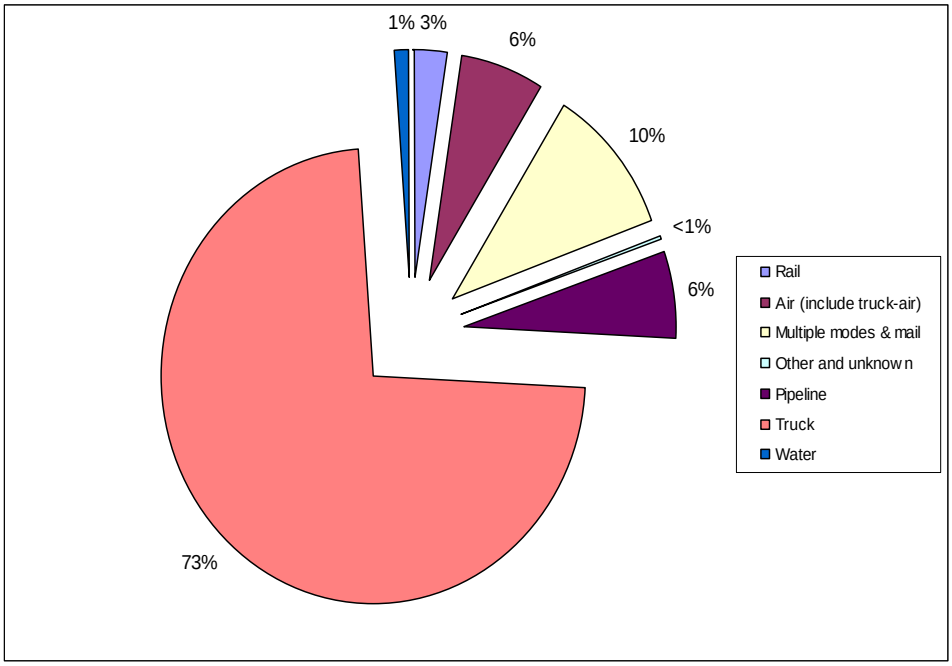
By weight, as shown in Figure 5-2, truck holds the largest share of goods originating in Delaware (63%). As expected, water share is higher by weight at 21% and pipeline becomes the third highest share of freight originating in Delaware at 9%.

**FIGURE 5-2: MODAL DISTRIBUTION OF FREIGHT ORIGINATING IN DELAWARE BY WEIGHT (2009)**



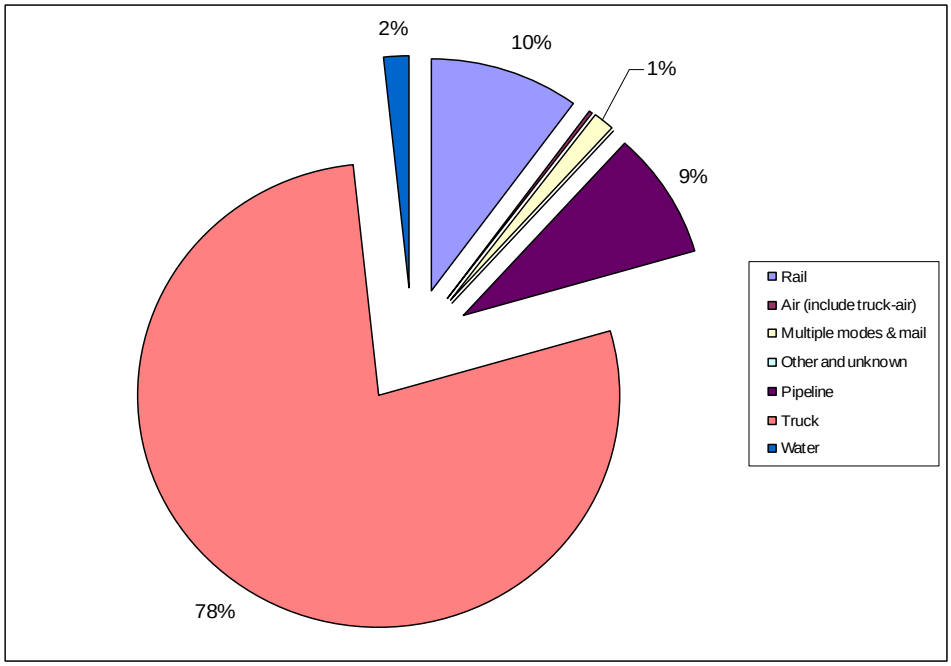
By dollar value, truck based share of freight destined for Delaware is even higher at 73% as shown in Figure 5-3. Multiple modes/mail and air account for the next two largest shares at 10% and 6%, respectively. Rail accounts for 3% of total dollar value freight shipped to Delaware.

**FIGURE 5-3: MODAL DISTRIBUTION OF FREIGHT TERMINATING IN DELAWARE BY DOLLAR VALUE (2009)**



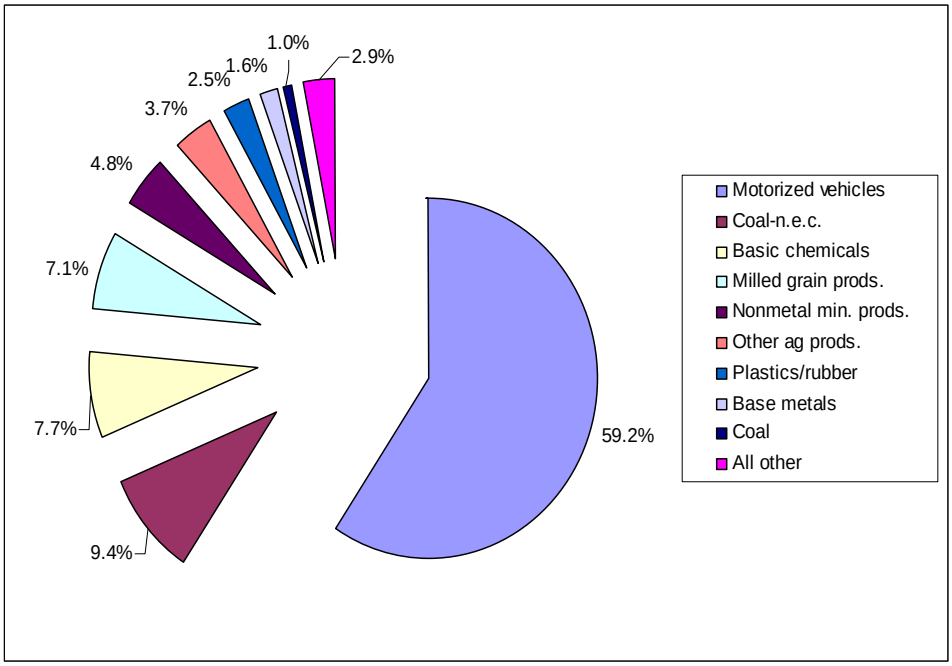
More rail-based freight is destined for Delaware than originating in the State: rail accounts for 10% of the total tonnage of freight shipped to the State (Figure 5-4). Truck is the most prevalent mode of freight shipped to Delaware at 78%.

**FIGURE 5-4: MODAL DISTRIBUTION OF FREIGHT TERMINATING IN DELAWARE BY WEIGHT (2009)**



The top dollar value rail-based category of freight originating in Delaware is motorized vehicles at 59% (Figure 5-5). Other commodities include coal—n.e.c.,[44] basic chemicals, milled grain products, nonmetal mineral products and other agricultural products.

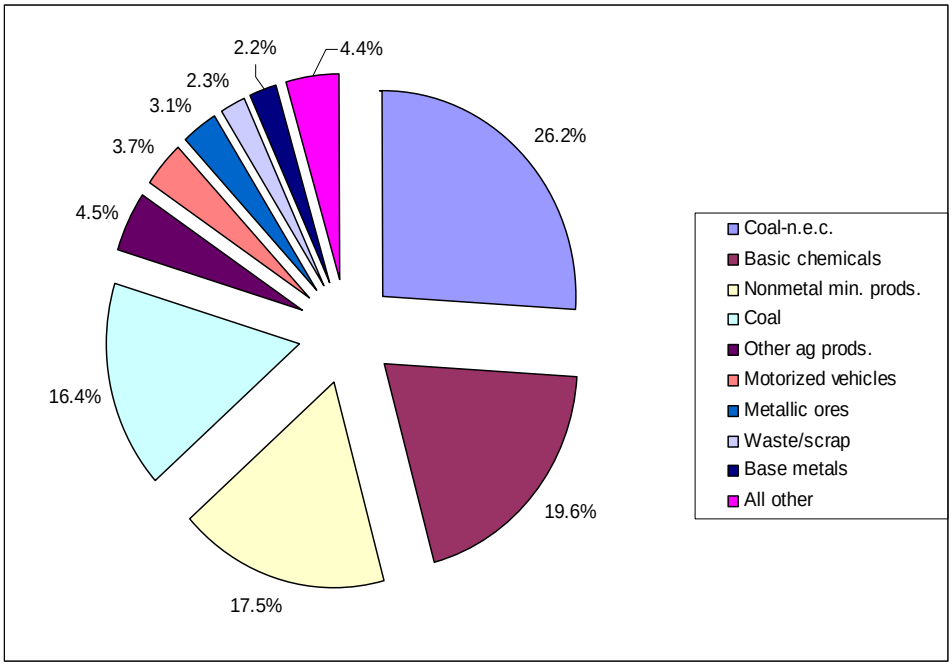
**FIGURE 5-5: TOP 10 RAIL TRANSPORTED COMMODITIES ORIGINATING IN DELAWARE BY DOLLAR VALUE (2009)**




[44] n.e.c.: not elsewhere classified.

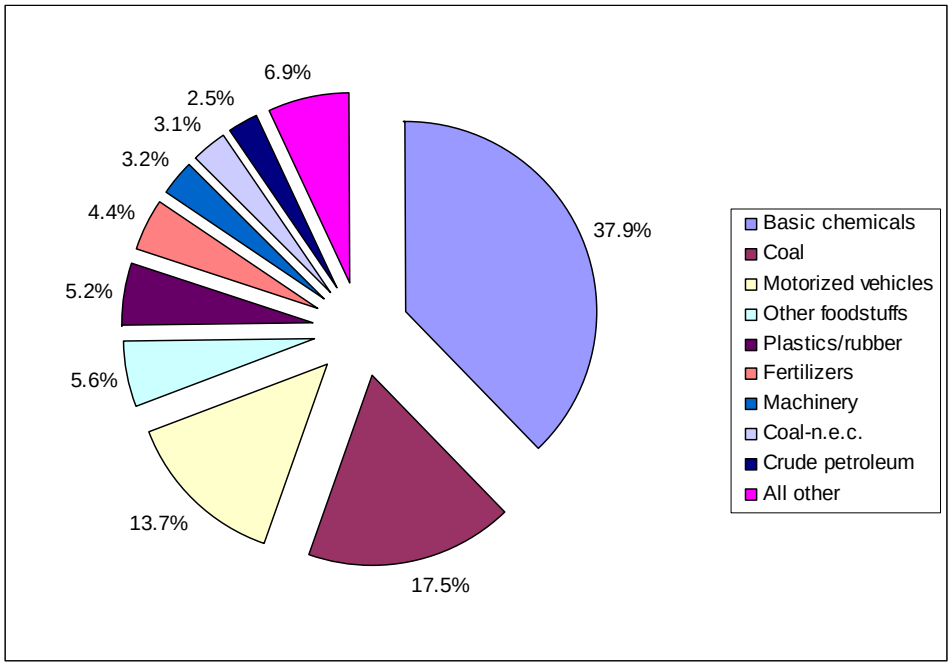
By weight, the top rail freight commodities originating in Delaware (including pass through goods) include coal—n.e.c., basic chemicals, non-metal mineral products, coal, and other agricultural products as shown in Figure 5-6.

**FIGURE 5-6: TOP 10 RAIL TRANSPORTED COMMODITIES ORIGINATING IN DELAWARE BY WEIGHT (2009)**



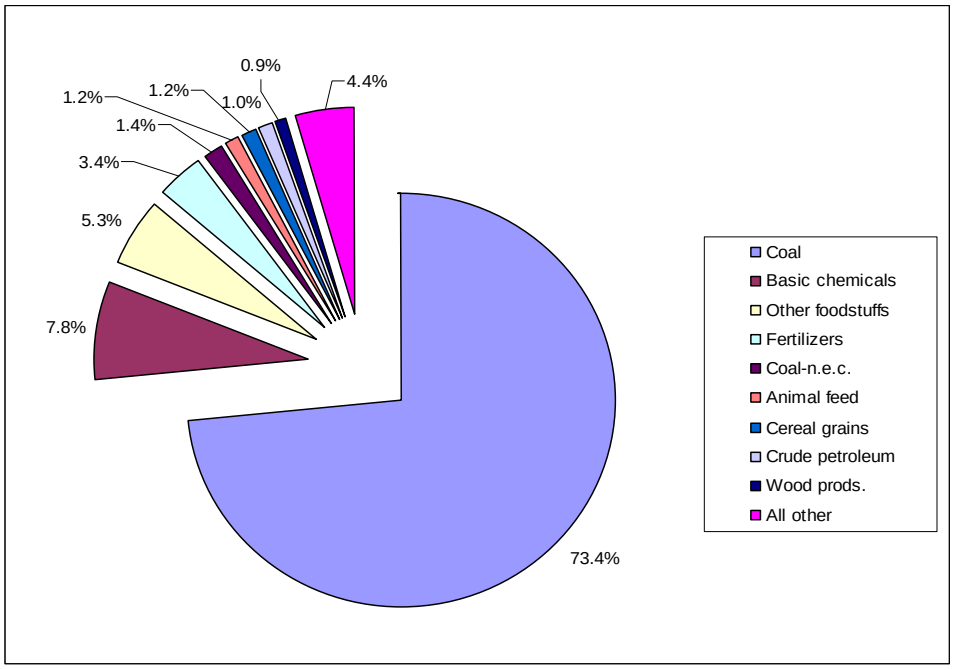
As shown in Figure 5-7, similarly, the top commodities, by dollar value, of rail-based freight for which Delaware is a destination include basic chemicals (38%), coal (18%), motorized vehicles (14%), other foodstuffs (6%), plastics/rubber (5%), and fertilizers (4%).

**FIGURE 5-7: TOP 10 RAIL TRANSPORTED COMMODITIES TERMINATING IN DELAWARE BY DOLLAR VALUE (2009)**



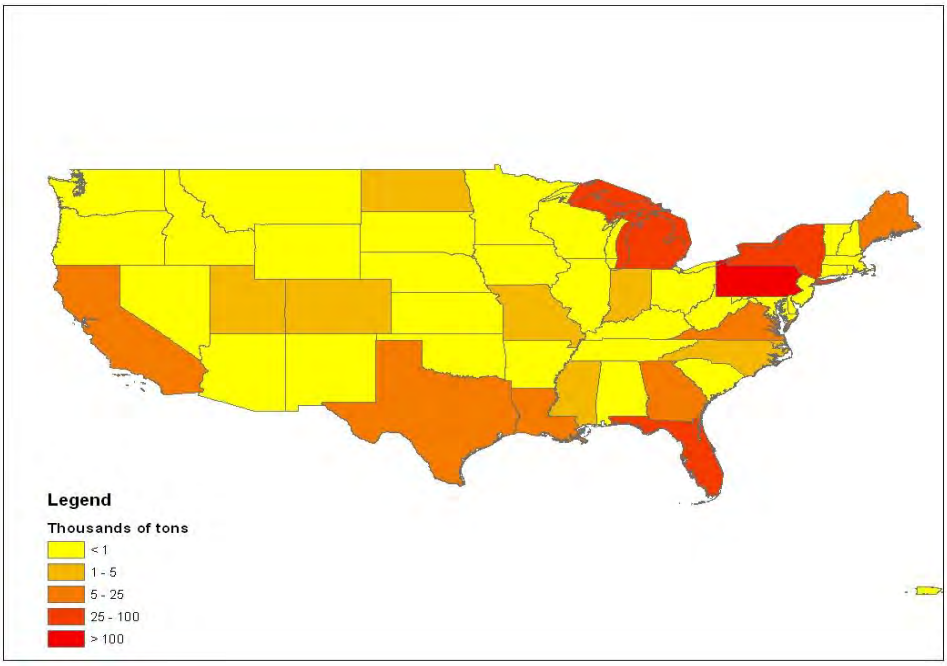
By weight, coal is overwhelmingly the largest share of rail freight destined for Delaware at 73%, followed by basic chemicals (8%) and food products (5%) as shown in Figure 5-8.

**FIGURE 5-8: TOP 10 RAIL TRANSPORTED COMMODITIES TERMINATING IN DELAWARE BY WEIGHT (2009)**



The destination of rail freight shipments from Delaware and transported by rail is more varied, reflecting the diversity of goods manufactured in the State, as shown in the heat map in Figure 5-9.

**FIGURE 5-9: RAIL FREIGHT ORIGINATING IN DELAWARE BY DESTINATION (2009)**

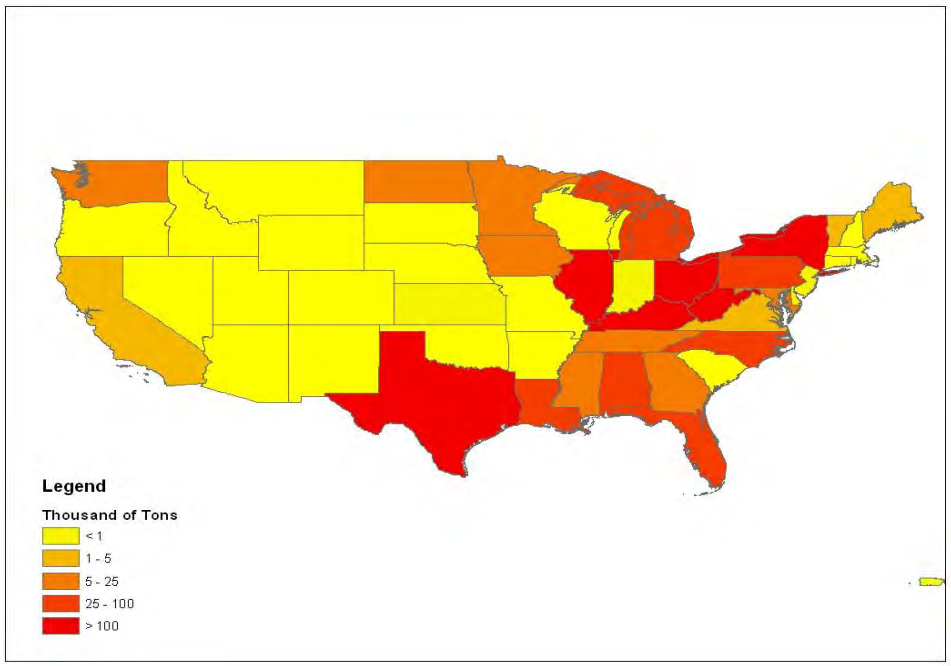



Source: Freight Analysis Framework

By weight, the majority of rail freight shipped to Delaware comes from the traditional "rust belt" states and Texas. This corresponds with the top commodities of coal, chemicals, and motorized vehicles. Figure 5-10 represents the originating states from which goods are received by rail in Delaware.

Significant rail volumes from these states can continue to be expected as manufacturing grows in Delaware along with increased number of cars shipped from AutoPort. Until the use of other fuels becomes more commonplace, the use of coal for power on the Delmarva Peninsula will continue to be important as population increases in this region. Nevertheless, NRG's Indian River Power Plant is expected over time to cut back on coal consumption, and there are periodic proposals to close it or convert it to gas.

**FIGURE 5-10: ORIGINS OF RAIL FREIGHT WITH DESTINATION IN DELAWARE (2009)**




Source: Freight Analysis Framework

## 5.2 GROWTH PROJECTIONS

The FAF rail freight flow projections originating in Delaware through 2040 by both weight and value are expected to experienced a decent growth (4.2% annual growth), particularly there are some commodities with notable growth in volume from Delaware is expected (>10% annual growth): textiles, plastics, electronics, chemicals, and miscellaneous manufacturing products.

The rate of growth for rail freight inbound to Delaware is projected to be negligible . Commodities that are expected to grow include miscellaneous manufacturing products, waste/scrap, chemical and mixed freight. Furniture, base metals, nonmetallic minerals,

animal feed, wood products and base chemicals are expected to slightly decline through 2040.

Truck and water shipments from Delaware are expected to increase by the smallest percent (3.5% and 1.5% average annual growth respectively), while other intermodal shipments as well as air are expected to grow at a highest rate through 2040 (14.6% and 8.6% average annual growth respectively). The relatively larger increases in average annual percentage growth for air and other intermodal modes of transport suggests that manufacturing goods of high value and/or time sensitivity will continue to grow in Delaware's industrial sector.

## 5.3 FREIGHT IN DELAWARE

Delaware's rail transportation network plays an essential role in economic development initiatives that support the State's as well as the nation's economies. This network provides an option to the highway system and Delaware is concerned with attracting new economic activities along with retaining and expanding existing ones.

Delaware is home to a wide variety of freight generators and receivers, with freight rail service provided to each county. Figures 5-11, 5-12, and 5-13 that follow were developed at the Delmarva Rail Summit in May 2010 and depict the freight-related land uses and identified needs. As shown in these maps, most of the major industrial sites in Delaware are located on railroad lines or have rail connections available, including the ports. The State is very interested in preserving the zoning of vacant industrial property with rail access so that in the future this land can support more industry that can be served by the State's existing rail network.

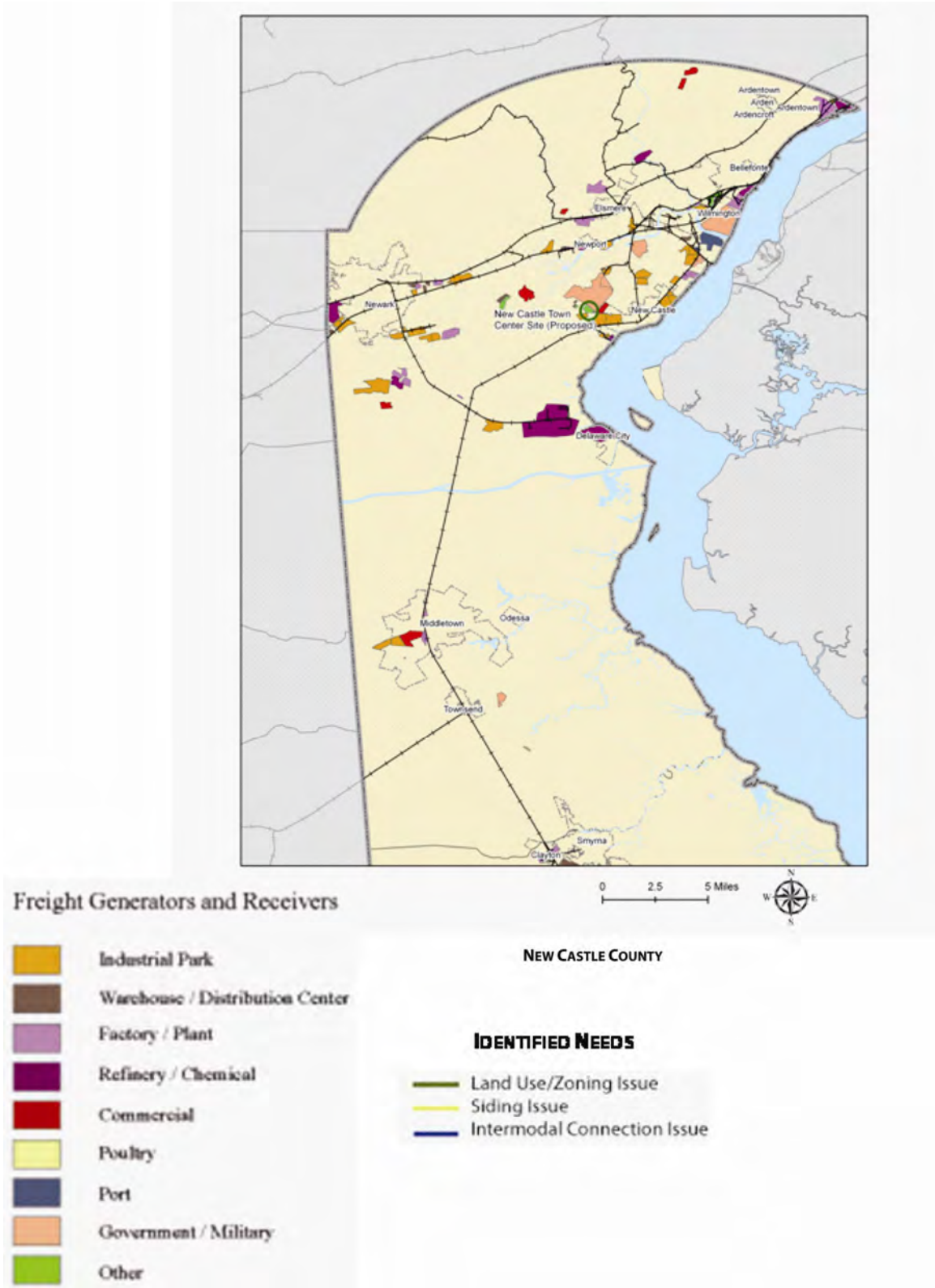
### 2010 Freight Shippers Survey

In early 2010, the Delaware Economic Development Office (DEDO) led the execution of a freight shipper survey to understand what they current ship or receive via rail as well as how rail freight transportation could be improved in Delaware. Fifty responses were received, representing agriculture, manufacturing, distribution, warehouse/storage, retail and a large variety of other industries. The majority of companies (47) do not use rail transportation for outbound shipments. Time and cost were noted as the two main reasons why rail is not the preferred means of goods movement. The shippers responded that more reliability for rail is needed in order to use rail for outbound shipments. Several respondents indicated that their volumes were not large enough for outbound shipments and their customers do not have the capability to receive this way. Comments were also made regarding the cost-effectiveness of rail and how it is oftentimes cheaper to ship via truck.

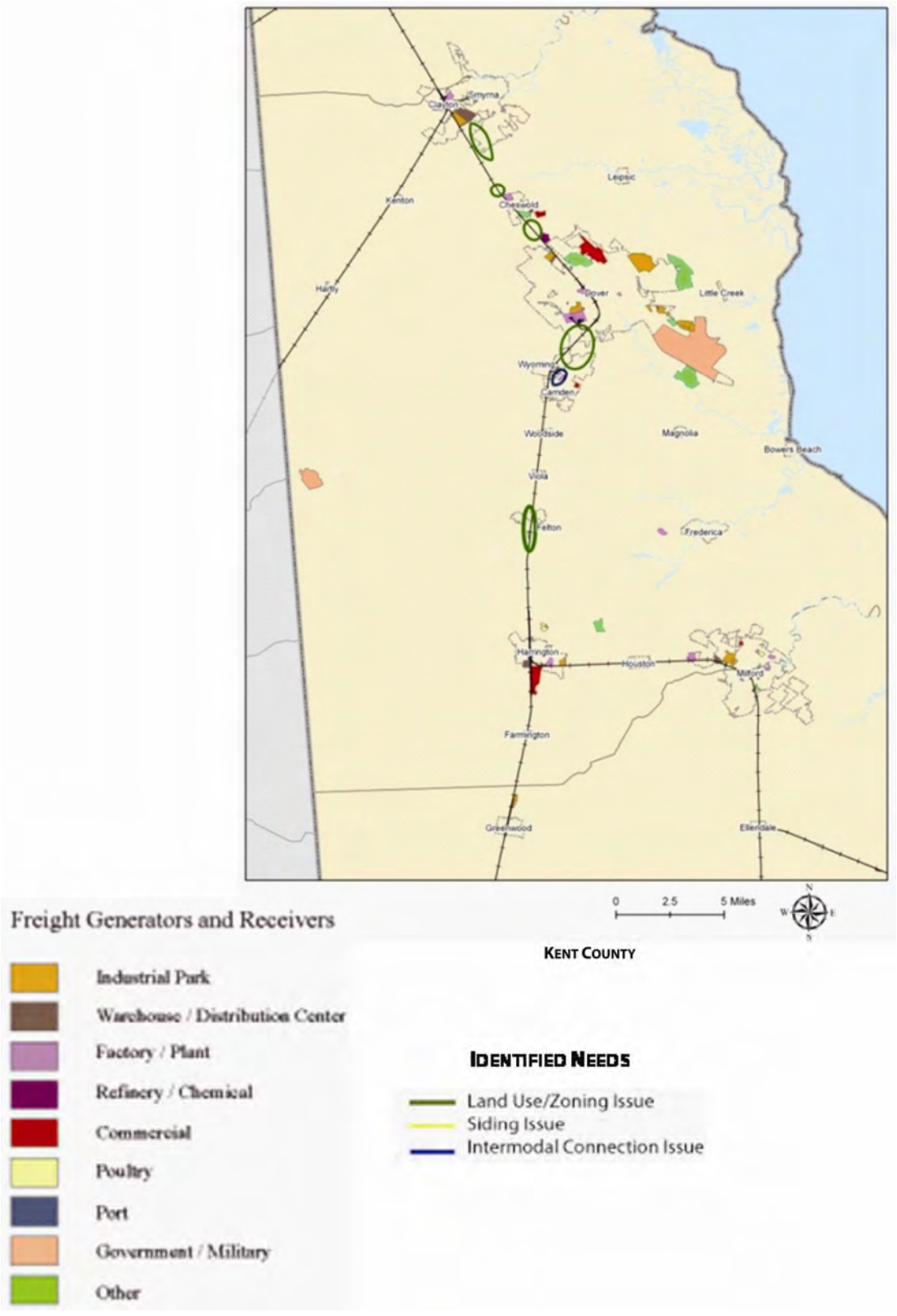
In terms of inbound shipments, typical materials include raw materials such as fatty acids and inhalation hazards, corn and soybean meal, PET shot coke, caustic materials, wood pulp rolls, vehicles, and aggregates. In many cases, because of the hazardous nature of the materials, rail is the only method of transportation. Comments from inbound shippers echoed the unreliability of service, particularly with regard to NS and Amtrak. Efficiency in operations and cost control were raised as areas where improvements could be made. Similar to outbound shipments, there was interest in having the capability to ship via rail, as well as making it more time- and cost-competitive with trucks. In many cases, the amount of materials needed does not warrant the use of rail.

These figures also highlight areas where there are concerns with land use and zoning, the need for a siding, or an improved intermodal connection. As identified at the Delmarva Rail Summit, these areas of concern are included in the project list as part of Chapter 9, and/or in the SRP's objectives and strategies in Chapter 3.

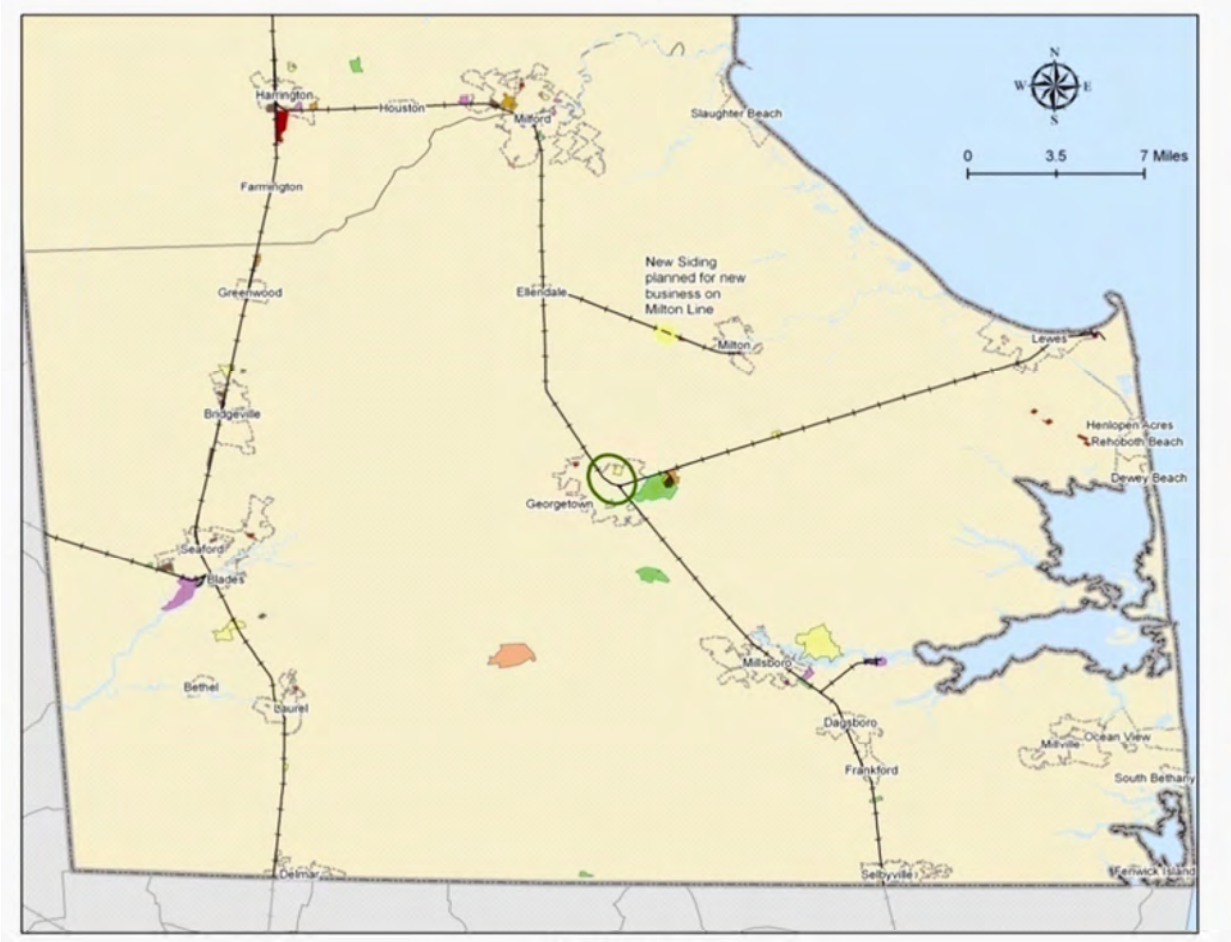
## FIGURE 5-11: FREIGHT GENERATORS/RECEIVERS - NEW CASTLE COUNTY



## FIGURE 5-12: FREIGHT GENERATORS/RECEIVERS - KENT COUNTY



## FIGURE 5-13: FREIGHT GENERATORS/RECEIVERS - SUSSEX COUNTY




SUSSEX COUNTY

Freight Generators and Receivers

- Industrial Park
- Warehouse / Distribution Center
- Factory / Plant
- Refinery / Chemical
- Commercial
- Poultry
- Port
- Government / Military
- Other

**IDENTIFIED NEEDS**

- Land Use/Zoning Issue
- Siding Issue
- Intermodal Connection Issue

# 6 Rail Safety and Security

Safety and security are of paramount importance to any transportation system as they directly impact the efficiency and effectiveness of the transportation network. Rail-based transportation systems can also be more vulnerable to safety and security concerns given their fixed-route nature and high volume capacity.

Rail safety and security is an important issue facing the rail industry as well as all levels of government: federal, state, and local. Various programs are in place at each of these levels to ensure safety and security. Coordinating among the involved agencies is a crucial component of rail safety and security for passenger and freight rail providers.

**GRADE CROSSING IN SUSSEX COUNTY**

DTC's Development Department is responsible for operating the two State-owned rail lines and for monitoring regional rail freight service and safety issues. Rail freight is also under scrutiny by DelDOT, which has responsibility for ensuring the safety and utility of the rail infrastructure. In addition to owning two short-line rail properties, DelDOT's rail responsibilities include the inspection of state-owned rail lines, implementation and monitoring of grade-crossing-control devices, and development and implementation of the SRP. DelDOT ensures that federal safety guidelines on rail freight operations are followed, and it supports Delaware's economic goals through strategic enhancement of the rail freight system. As owner of two short-line properties described above, DTC contracts with a private operator to manage and maintain them. Together DelDOT and DTC monitor rail safety for the entire rail system, including grade crossings.

## 6.1 RAIL SAFETY

### 6.1.1 Federal and State Regulation

Railroad safety is governed by both federal and state regulations. Federal regulations are implemented and monitored primarily by the FRA, the agency responsible for ensuring safe operations. FRA prescribes the rules, regulations, and orders as required by the Rail Safety Act of 1970. This act provides for state-specific participation programs; as such, Delaware has been participating in rail safety programs as well.

### 6.1.2 Grade Crossing Safety

There are 379 highway crossings in Delaware - 276 at grade and 103 grade-separated. Table 6-1 below summarizes number and types of grade crossings in Delaware.

**TABLE 6-1: CROSSING DEVICES**

| Crossing Device | Number |
|---|---|
| Crossings with Gates and Flashers | 61 |
| Crossings with Flashers and/or Traffic Signal | 166 |
| Passive Crossings (signs and markings only) | 49 |
| Total At-Grade Crossings | 276 |
| Total Grade-Separated Crossings | 103 |
| **Total Crossings** | **379** |

Several federal and state agencies are responsible for maintenance and improvement of Delaware's public at-grade rail crossings (Table 6-2). DelDOT is primarily responsible for most issues relating to at-grade rail crossings safety but only on the state-maintained roadway network. The table below identifies the agencies and key responsibilities involved in rail matters.

**TABLE 6-2: SAFETY-RELATED RAIL RESPONSIBILITIES IN DELAWARE**

| Agency | Department | Key Responsibilities |
|---|---|---|
| DelDOT | Traffic Engineering Section | • Identify crossings with greatest need for *safety* upgrades |
| DelDOT | Quality Section | • Coordinate all capital projects related to at-grade and grade separated rail crossings<br>• Oversee implementation of repairs to at-grade rail crossings<br>• Select and implement rideability improvements based on annual ratings |
| DelDOT, FHWA, and DTC | Joint Highway-Rail Crossing Safety Committee | • Determine which at-grade crossings will be selected for upgrades using Section 130[45] funds based on studies from DelDOT Traffic |
| DelDOT and DTC | Planning | • Determine State spending priorities regarding freight railroad projects |
| DelDOT | Planning | • Manage Rail to Trails program |
| DelDOT | Subdivisions | • Coordinate with developers regarding improvements to at-grade crossings in proposed developments |

[45] Highway rail crossing program is authorized by US Code Title 23, Section 130, commonly referred to as "Section 130."

| | | |
|---|---|---|
| DelDOT | Signing and Striping; Pavement Management Sections; Project Development | • Implement of signing and striping<br>• Identify roadways with at-grade crossings to be resurfaces as part of the annual Pavement and Rehabilitation Program |
| Delaware Transit Corporation (DTC) | | • Manage Delaware Coast Line Railroad<br>• Manage Operation Lifesaver Delaware |
| Federal Railroad Administration (FRA) | | • Maintain database of all public, private and pedestrian crossings<br>• Conduct safety inspections |
| Railroads | | • Submit updates to FRA on their adherence to federal regulations<br>• Inspect and maintain track and crossings |
| FHWA | | • Administer Section 130 funds |

The federal highway rail crossing program is authorized by US Code Title 23, Section 130, commonly referred to as "Section 130." The goal of this program is to improve the safety of the most hazardous public rail-highway crossings. Section 130 funds are typically used to install train-activated warning bells, flashing lights, and gates at rail-highway crossings. Section 130 funds cannot be used at private rail-highway crossings.

DelDOT's Traffic Engineering Section handles a portion of Delaware's grade crossing program. Its responsibility involves identifying and evaluating grade crossings needing improvements and providing recommendations on these to the Federal Rail Crossing Safety Program. Typically, all of the grade crossings are reviewed on an annual basis and five to ten crossings are shortlisted for improvements, with the top two or three receiving the required improvements. Since the recommended improvements affect the privately owned railroads, each improvement project is coordinated with the owner. DelDOT has procedures and guidelines in place to identify candidate highway-rail grade crossing locations that require safety improvements. On an annual basis, DelDOT's Traffic Section uses FRA's GradeDec.NET software to calculate benefit/cost ratios for all of Delaware's public highway-rail grade crossings.

DelDOT's Quality Section coordinates all capital and repair projects related to at-grade and grade separated rail crossings; they also identify and select for improvement crossings with poor rideability. In 2010, DelDOT's Quality Section coordinated the programming and implementation of 14 grade-crossing improvement projects four of which went to construction. As part of the project selection process, DelDOT considers which road projects cross a railroad and sometimes is able to improve additional grade crossings because they fall within the limits of a paving or widening project. The Quality Section also oversees the grade crossing program funded in the Capital Transportation Program (CTP). It also coordinates improvements created by capital projects that may impact a crossing.

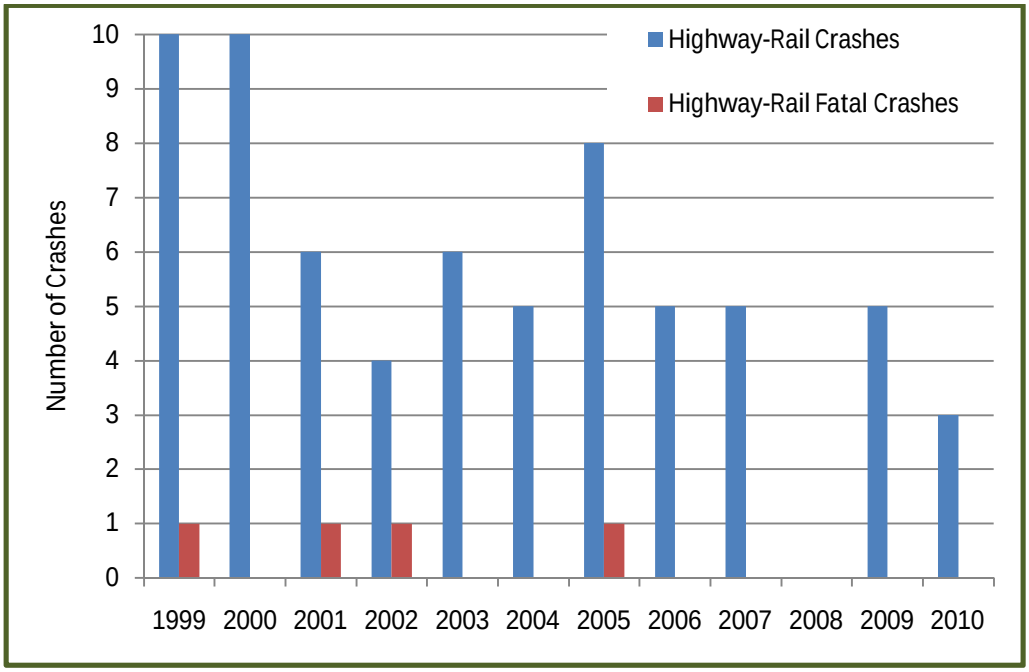
DelDOT places a high priority on safety at railroad crossings and follows federal guidance for allocating appropriate percentages of funding to address safety and rideability issues.

Over the past ten years, Delaware has had an average of 5.8 grade crossing collisions per year. Figure 6-1 below shows the trend of highway-rail grade crossing accidents. Notably, there were no accidents in 2008.

DelDOT also works with the railroads to determine whether gates may be warranted at an at-grade crossing based on the volume of highway traffic, a history of crashes, and/or train frequencies. Even as the number of crashes levels off in Delaware, DelDOT continues to be interested in receiving federal funds for further safety improvements.

In FY10 $1.1 million in grade crossing safety improvements was funded by the federal government with another $270,000 funded by the State. $1.12M is available for FY11, with $279,000 from the State. The State provided $250,000 in FY10 for rideability improvements and $750,000 in FY11.

**FIGURE 6-1: DELAWARE'S HIGHWAY-RAIL CRASHES**




### 6.1.3 Safety Outreach Activities

Delaware's Operation Lifesaver (OL), established in 1986, is an educational outreach program of DTC. As part of the national Operation Lifesaver, Inc., Delaware's chapter is focused on reducing the number of highway-rail grade crossing crashes. OL Delaware's outreach program includes billboards, bus posters, radio and television public service

announcements, and special event exhibits. The OL program involves the railroads, DelDOT, police departments and the community to improve safety systems. OL Delaware's program also works with other State entities to prevent trespassing on rail rights of way.

Over the past decade, OL Delaware has also interacted with more than 150,000 people through exhibits, informational kiosks and full on-site presentations. OL Delaware, with the assistance of Amtrak and NS, also hosts a train ride and station tour that reinforces the OL messages.

### 6.1.4 System Safety Monitoring

Contributing to the safety of Delaware's transportation system is documentation, standards, and safety monitoring. Through FRA, every rail provider in the State is required to keep detailed documentation on all reportable accidents.

### 6.1.5 Bridges and Undergrade Structures

Bridge and underground structures are sensitive elements of any transportation system. Under the Rail Safety Improvement Act of 2008, the FRA must implement regulations requiring owners of track carried on one or more railroad bridges to adopt certain safety practices to prevent deterioration of railroad bridges and to improve bridge safety.

### 6.1.6 Train Safety Technology

Rail safety can be greatly enhanced through crash avoidance by using better technology. The Rail Safety Improvement Act of 2008 calls for a new policy initiative to develop technologies to help with safety improvements.[46] Positive train control (PTC) is one of the requirements coming from this law. The American Railway Engineering and Maintenance-of-Way Association (AREMA) describes PTC as having the following characteristics:[47]

- Train separation or collision avoidance
- Line speed enforcement
- Temporary speed restrictions
- Rail worker wayside safety

Required newer train technologies such as PTC are the responsibility of the individual railroads, but DelDOT will continue to stay abreast of the recommendations from FRA.

## 6.2 RAIL SECURITY

Passenger and freight rail is a crucial link in the country's transportation network, therefore the security of the rail networks is of utmost importance. Further, since September 11, 2001, along with the airlines, security on the railroads has received increased attention.

[46] http://www.utu.org/worksite/safety/safetyact2008.htm

[47] http://www.arema.org/eseries/scriptcontent/custom/e_arema/comm/c37/05-01-08/AREMA_MP_23-2-1_New_2008_Mar_F.doc

Security is important from both from both a passenger and a freight movement perspective. On the passenger security side, it becomes particularly difficult given the mass movement of people; on a freight side, millions of tons of hazardous materials are moved along the nation's transportation network. Better communication, accountability, and coordination between agencies are important factors in rail security and a continual focus of rail security plans.

### 6.2.1 Federal and State Regulation

The key agencies responsible for security on the nation's rail transportation system are the US Department of Homeland Security on the federal side and DelDOT/DTC, Delaware Emergency Management Agency (DEMA), and Delaware Department of Safety and Homeland Security (DSHS) on the state side. These agencies have addressed transportation security largely through identifying critical assets, developing protection strategies for these assets, and developing emergency preparedness plans.

The Association of American Railroads organized a Rail Security Task Force. This task force developed a comprehensive risk analysis and security plan for the rail system, which included creating a database of critical railroad assets, assessing railroad vulnerabilities, analyzing terrorism threats and calculating risks, and identifying countermeasures.[48]

The railroad sector also maintains communications with the US Department of Defense, the US Department of Homeland Security, the US Department of Transportation, the Federal Bureau of Investigation, and state and local law enforcement agencies.

### 6.2.2 Amtrak

Unlike the airlines, with single points of staffed access, rail systems have multiple points of access. Amtrak has in place a range of behind-the-scenes and front-line security measures aimed at improving passenger rail security, some of which are conducted on an unpredictable or random basis.[49]

For several years now, Amtrak has increased patrols by its police officers at its major stations and other facilities, including patrols by K-9 detection teams. In February 2008, Amtrak deployed Mobile Security Teams to patrol stations and trains on an undisclosed, unpredictable basis. They also randomly screen passengers, inspect carry-on items, and patrol trains. These teams consist of specially trained uniformed Amtrak Police, special counter-terrorism agents, and K-9 units. Because predictable security can be exploited, the unpredictable rotation of the Mobile Security Teams adds to their ability to deter and detect potential threats.

Since a 2004 Security Directive from the U.S. Transportation Security Administration (TSA), Amtrak has carried out additional passenger identification procedures through a random ticket verification process.

[48] http://www.dot.state.oh.us/Divisions/Rail/Programs/StatewideRailPlan/Documents/Chapter%207%20-%20Rail%20Safety%20and%20Security.pdf

[49] http://www.amtrak.com/servlet/ContentServer?c=Page&pagename=am%2FLayout&cid=1246041980529

### 6.2.3 Commuter Rail

DTC contracts with Amtrak for on-call and on-site police presence at the Wilmington Station and along the NEC corridor. There are separate contracts with private security firms for guard services at the three other passenger stations in Delaware.

### 6.2.4 Freight Rail

The American Association of Railroads (AAR) produced a "Terrorism Risk Analysis and Security Management Plan" in late 2001 that was designed to enhance freight railroad security. As a result of the plan, freight railroads established more than 50 security enhancing countermeasures. Delaware's Class I railroads have freight security plans as well as continuity of operations plans in place that are reflective of the AAR's plan. Communication among security officials, law enforcement and the railroads is critical to ensuring secure operations on Delaware's transportation system.

# 7 Institutional Arrangements

## 7.1 Rail Responsibilities

Rail responsibilities are divided between several DelDOT divisions and the Delaware Transit Corporation (DTC). Each agency may have several lead roles but also has a supportive role on the others' efforts. The table below lists rail responsibilities by agency.

**Table 7-1: Rail Responsibilities and Arrangements**

| DelDOT | DTC |
|---|---|
| • Implementation and monitoring of grade-crossing-control devices (Traffic)<br>• Develop and implement the State Rail Plan (Planning)<br>• Evaluate strategic and long-range rail planning (Planning)<br>• Ensure federal safety guidelines on rail freight operations are followed (Traffic)<br>• Support Delaware's economic goals through strategic enhancement of the rail freight system (Planning)<br>• Administer grade crossing protection program (Traffic) | • Monitor regional rail freight service and safety issues<br>• Passenger rail studies and projects<br>• Management of commuter rail operations<br>• Administer State-owned shortline<br>• Coordinate and monitor regional rail freight service issues<br>• Promote rail safety<br>• Inspect State-owned rail lines<br>• Manage federal grants rail infrastructure and service planning projects |

## 7.2 Organizational Structure of State's Rail Involvement

As discussed in Chapter 1, the State's involvement in rail issues increased dramatically in the late 1970's and 1980's. During that time, the State acquired and rehabilitated light-density rail freight lines as well as securing contractors to continue to provide freight service. Commuter rail service was reinstituted to Wilmington and then Newark. This required negotiating subsidy and operating agreements with SEPTA and Amtrak. The State also constructed or reconstructed station facilities to be served by the commuter trains.

Finally, the State was required to administer a substantial amount of federal funds for both freight infrastructure improvements and commuter operations. Administering the rail service required staff to become conversant with rail operations, rail safety matters, rail legislation, rail funding programs, etc. These newly acquired activities required that existing staff "learn the rail business." Existing staff from the then Department of Highways and Transportation and the later Delaware Transportation Authority (DTA) took a lead role. Prior to 1995, DTA would be divided into various units including the Delaware Administration for Regional Transit (DART) and the Delaware Railroad Administration (DRA). DRA handled virtually all rail matters including rail planning.

In 1995, the Delaware Transit Corporation (DTC) was established as an operating division of DelDOT and the DRA was abolished. Most of the rail functions were absorbed into DTC as part of Contract Operations and Rail Services and then the Development Department which included both rail passenger and bus services. Rail safety education and outreach activities were included in DTC's Marketing and recently, DelDOT Homeland Security section in Traffic has also taken in a role in rail safety and coordination with both passenger and freight providers. Historically, the placement of rail activities within the organizational structure followed certain individuals possessing extensive rail operations expertise. DTC and Planning will continue to work cooperatively at the strategic level to provide for a truly intermodal system. DTC should continue to lead at the tactical level with participation by Planning where necessary.

The Delaware SRP (2000) included a table showing lead and support roles for DelDOT Planning and DTC Rail Services. With the passage of time and change of staff and situation, it is time to re-examine assignment of activities, especially as they relate to DelDOT Planning and DTC.

### 7.2.1 DelDOT Planning

Currently, there are several positions assigned to rail planning and administration within DelDOT Planning. These positions also address other transportation modes such as marine, freight and aviation including issues relating to the Federal Aviation Administration (FAA), Federal Highway Administration (FHWA), and the Port of Wilmington. The Port of Wilmington and several airports work in collaboration with DelDOT and thus DelDOT has a strong liaison role. This strong intermodal coordination strengthens the possibilities for better coordination in inter-modal connectivity for both passenger and freight travel from, through and into Delaware. Federal funding for all rail projects made available from the Federal Transit Administration (FTA) and FRA will be made available directly to the Delaware Transit Corporation in coordination with DelDOT Finance or Planning. The resultant coordination of resources, match requirements, and identification of private funding for rail improvements will help keep the planning and delivery of rail services effective and efficient.

For these reasons and others, which will be explained subsequently, it is recommended that DTC or some other entity in the State assume the primary role in rail planning and administration. That entity will continue to have a strong working relationship with existing positions in DelDOT Planning which would continue to be involved in strategic planning for all modes including rail.

### 7.2.2 Rail Group

As discussed above, the scope of the rail function and its location within DelDOT has changed over the years. At its highest point, in terms of scope and visibility, there was the Delaware Railroad Administration. It is recommended that the Department re-evaluate the means by which rail services are planned and delivered to find out whether the current arrangement can be altered in some way to make it more efficient and effective.

## 7.3 LIABILITY AND INSURANCE

In recent years, commuter rail crashes in Southern California and Maryland resulted in loss of life, severe bodily injuries, and significant destruction of public and private property. These tragedies highlight the need for passenger railroads to be adequately protected through insurance or other means to compensate victims and replace or repair property (as well protect public coffers). Given that the only passenger rail service in Delaware operates on the NEC, the operating of passenger service over a freight railroad is not currently a concern. However, with the interest in investigating the feasibility for Downstate passenger rail service, the issue of freight railroads and liability will need to be considered, as freight railroads do not typically accept liability for passenger operations. Nevertheless, passenger railroads typically carry a significant amount of liability protection to address such incidents.

There are three types of liability protection available to public agencies:

- **Commercial Insurance.** Most transit agencies purchase commercial insurance. Premium costs vary with the amount of the deductible, maximum amount of coverage, and the scale of the operation. Even a commuter rail service as small as DTC's with slightly more than 20 miles and with 40 weekday trains would have an annual premium cost of several million dollars. In addition to its cost, commercial insurance has several disadvantages. First, commercial policies have large deductibles, typically in the amount of $5 million per occurrence. Thus, an agency must be prepared to find other sources of funds for the initial $5 million of any incident. Lower deductibles are available but result in higher annual premium costs.

  A second disadvantage is determining the appropriate amount of coverage. A maximum coverage of $200 million was once considered the standard. Several years ago, the federal government passed legislation, which limits the amount of claims to $200 million in a single event. Unfortunately, the provisions of the legislation were less than precise as to its application. Currently, there are several initiatives including a study by the Surface Transportation Board to revisit this subject. Now however, freight railroads are requiring higher limits, upwards of $500 million before permitting commuter trains to operate on their tracks. The two accidents referred to above may each result in settlements exceeding the $200 million threshold and will tend to reinforce the demand for greater coverage.

- **Tort Limitations.** Several commuter rail agencies are covered by tort cap limitations established by their state legislatures. Of note (because of their operation of the Wilmington/Newark commuter rail line) is SEPTA's limitation, which has a $1 million cap on liability for each occurrence. Pennsylvania's cap on tort claims has been in effect for over 15 years and has withstood challenges in court. While the riding public might question the equity of such an arrangement, such limitations have resulted in huge costs savings for the SEPTA by avoiding multi-million dollar insurance premiums and implicitly holding judgments to less than $1 million. One limitation of tort caps is that they are limited to the state in which they are legislated. The Pennsylvania tort cap does not cover incidents occurring in Delaware or New Jersey. In 1995, the State of Delaware enacted a $300,000 limitation on liability judgments,

which to this day remains untested in court. The risk of an adverse legal ruling has caused Delaware to pursue another means of providing liability protection.

- **Risk Fee.** Faced with the prospect of SEPTA dropping its commercial insurance, and with the cap on SEPTA's liability limited to Pennsylvania and an untested tort cap of its own, 1996 Delaware elected to enter into an arrangement with Amtrak for liability protection paying Amtrak an annual risk fee. Currently, the fee amounts to $1.1 million per year with a $300,000 deductible, which is equal to the amount of the State's tort cap. To date, there never has been an incident resulting in claims reaching the $1 million level.

Given the current train operations in Delaware, a recommended path forward for the State is to have its existing tort cap limitation validated. Alternatively, new tort cap legislation could be enabled and subsequently validated in court. Like SEPTA, DTC's financial exposure would be limited to the amount of the tort cap. At the same time, the $1.1 million annual payment to Amtrak could be eliminated. If this is not an option, Delaware should attempt to find a means of obtaining cheaper commercial insurance through an insurance "pool" arrangement, which could include a federally sponsored program if it became available. This may or may not be cheaper than the current risk fee arrangement.

In successfully pursuing one of these options, Delaware could eliminate its need to have Amtrak provide the liability protection and the commitments and entanglements, which go with it.

# 8 Rail Funding Options

Investments in Delaware's rail system – both maintenance and expansion – benefit the economies of the State as well as the region. Despite this important role, rail only has one dedicated funding source at the federal level. FTA Section 5309 Fixed Guideway Modernization capital program provides funding for the establishment of new rail or busway projects, the improvement and maintenance of existing and other fixed guideway systems and the upgrading of bus systems.[50] At the state level, rail funding has been accomplished through funding of specific projects on a limited, strategic basis as well as partnerships with the private sector, such as the Shellpot Agreement with NS. However, a financially constrained environment at the federal and state levels has led to a backlog of projects waiting to be advanced.

The challenge continues in Delaware, as well as the rest of the United States, to find adequate and predictable funding for these projects. At the federal level, one potential solution is the creation of a national infrastructure bank to leverage private, state, and local capital to invest in projects of regional and national significance that are not well-served under current funding structures. Similar to other recent federal funding programs, an infrastructure bank could be competitively awarded, evaluating projects against one another to determine which produce greater taxpayer benefit. As mentioned as part of the SRP's strategies in Chapter 3, beyond the federal programs, desire exists within Delaware to explore the creation and funding of a State infrastructure bank for these types of projects.

**REHABILITATION OF THE SHELLPOT BRIDGE IN NEW CASTLE COUNTY**

The growing prevalence of public-private partnerships nationwide, as well as Delaware's experience with such an arrangement via the Shellpot Agreement, should be helpful in advancing projects that have mutual public and private benefits. The Newark Train Station Project, highlighted in Chapter 9, will also likely be another example where through public and private participation a project can be advanced in the current economic climate. Another strategy mentioned earlier in the Plan is potentially creating a rail freight-assistance program that can be used by the shortline railroads to advance improvements that are needed.

[50] Federal Transit Administration . Capital Program (Section 5309) <http://www.fta.dot.gov/funding/data/grants_financing_1109.html>

## Shellpot Agreement as a Public/Private Partnership Model

In 2002, the State of Delaware and NS entered into a Railroad Facilities Improvement and Revenue Participation Agreement, which covered various aspects of the rehabilitation of NS's Shellpot Bridge in New Castle County. Known as the "Shellpot Agreement," the State's total investment was $13.9 million.

NS pays a per-car charge or toll to the State for each crossing of the bridge. The State is also entitled to guaranteed minimum annual payments in the event that rail traffic levels are lower than anticipated. Over the 20-year life of the agreement, the minimum payment from NS for use of the bridge will total $4.5 million, which is approximately 32 percent of the original investment (without considering inflation). To the State's benefit, there is no limit on the amount of fees that the state can earn, i.e., if rail traffic levels are consistently high, the State could earn car movement fees greater than the original investment.

The per-car charge is based on a sliding scale: $48.03 for the first 5,000 railcars, $27.24 for the next 15,000 railcars, $20.58 for the next 15,000 railcars, $13.72 for the next 15,000 railcars, and $6.86 for each car in excess of 50,000. In the first seven years of the Agreement, the State has earned $8.9 million or more than 60 percent of the original investment. Even with the current recession, it is extremely likely that State will recoup its original investment.

Clearly, this kind of funding program has advantages for a State compared to an outright grant. The revenue stream allows the state to make other investments in the future. For this reason, the Shellpot Agreement is an excellent model for public-private partnerships. Recently, NS approached the State to invest funds in the rehabilitation of its rail line between Harrington and Delmar. A report prepared by the State's consultant suggested that rehabilitation of the swing bridge in Seaford would be an excellent candidate for the Shellpot Agreement model. There is the potential risk that the State would not recover its investment if traffic south of the proposed upgraded line declined or ceased. There is a potential upside, however, attributable to traffic growth from new industries such as NASA's Wallops Island complex.

Aside from investments in infrastructure owned by the major freight railroads in Delaware - NS and CSX - the state has invested in Amtrak-owned facilities such as the Wilmington Station. Recently, the State and Amtrak agreed to a $32 million improvement program with none of the State's investment being reimbursed by Amtrak. Other funding alternatives are available for infrastructure required by rail stakeholders. The Maryland siding program is an example of shipper assistance. ShortlineShortline railroads may also have to fund directly. Because of the small traffic volumes, revenues marginally cover operating costs; thus, the Shellpot Agreement model would seem to have little application. The State invests directly in the rail lines that it owns—Georgetown to Lewes and Ellendale to Milton—with annual expenditures in the $200,000 range.

# 8.1 FEDERAL FUNDING PROGRAMS

## 8.1.1 PRIIA

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA) tasks states with establishing or designating a state rail transportation authority that will develop statewide rail plans to set policy involving freight and passenger rail transportation within their boundaries, establish priorities and implementation strategies to enhance rail service in the public interest, and serve as the basis for federal and state rail investments within the state [§303]. State rail plans are to address a broad spectrum of issues, including an inventory of the existing rail transportation system, rail services and facilities within the state. They must also include an explanation of the state's passenger rail service objectives, an analysis of rail's transportation, economic, and environmental impacts in the state, and a long-range investment program for current and future freight and passenger infrastructure in the state. The plans are to be coordinated with other state transportation planning programs and clarify long-term service and investment needs and requirements. USDOT is to establish minimum standards for the preparing and periodically revising state rail plans.[51]

PRIIA attempts to put rail on an equal footing with planning for other transportation modes by requiring state rail plans as a prerequisite to receiving grant funding. PRIIA also requires USDOT to develop a national rail plan that is consistent with approved state rail plans and outlines the national rail policies and priorities to promote an integrated, cohesive, efficient, and optimized rail system for the movement of goods and people.[52] Several sections of PRIIA exist:

- Intercity Passenger Rail Service Corridor Capital Assistance Program (section 301): to be used as grants for capital investments benefiting intercity rail passenger service. USDOT is authorized to use appropriated funds to make grants to assist in financing the capital costs of facilities, infrastructure, and equipment necessary to provide or improve intercity passenger rail transportation.
- High-Speed Rail Corridor Development (section 501): PRIIA also appropriated funds to establish and implement a high-speed rail-corridor development program. Grants could be used for capital projects which are broadly defined to include typical activities in support of acquiring, constructing, or improving rail structures and equipment.
- Congestion Relief (section 302): PRIIA appropriated funds to USDOT to make grants to states or to Amtrak in cooperation with states for financing the capital costs of facilities, infrastructure, and equipment for high-priority rail-corridor projects necessary to reduce congestion or facilitate ridership growth in intercity rail passenger transportation.[53]

It is anticipated that a cost allocation formulation is in the process of being developed under the provisions of PRIIA section 212 for all joint-use facilities. This formulation would apply to all carriers involved in a cost sharing agreements on the NEC.

[51] http://www.fra.dot.gov/downloads/PRIIA%20Overview%20031009.pdf
[52] http://www.fra.dot.gov/downloads/rrdev/hsrstrategicplan.pdf
[53] http://www.fra.dot.gov/downloads/PRIIA%20Overview%20031009.pdf

### 8.1.2 ARRA

The American Recovery and Reinvestment Act of 2009 (ARRA) signed into law on February 17, 2009 calls for an additional $8 billion for PRIIA projects. As part of this legislation, FRA would develop a strategic plan for administering newly appropriated funds, followed by a detailed grant program, and a competitive grant application cycle.


**ARRA BANNER AT WILMINGTON STATION**

### 8.1.3 HSIPR

In June 2009, the FRA launched the High-Speed Intercity Passenger Rail (HSIPR) Program. In the long-term, the HSIPR Program aims to build an efficient, high-speed passenger rail network connecting major population centers 100 to 600 miles apart. In the near-term, the program will aid in economic recovery efforts and lay the foundation for this high-speed passenger rail network through targeted investments in existing intercity passenger rail infrastructure, equipment and intermodal connections.[54] The foundation for the HSIPR Program is contained in two pieces of legislation described above: PRIIA and ARRA.

In addition to the $8 billion provided in ARRA, the HSIPR Program also included approximately $92 million in FY 2009 and remaining FY 2008 funds appropriated under the existing State Grant Program. As part of this program, Amtrak's Northeast Corridor received 1.2 billion for improvements between Washington, D.C. and Boston. DelDOT is one of the awardees of this funding.

### 8.1.4 Other Funding and Financing Sources

#### *Railroad Rehabilitation & Improvement Financing (RRIF) Program*

The Railroad Rehabilitation & Improvement Financing (RRIF) Program provides direct federal loans and loan guarantees to finance development of railroad infrastructure of up to $35 billion (up to $7.0 billion is reserved for projects benefiting freight railroads other than Class I carriers).

The funding may be used to:

- Acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings and shops;

[54] http://www.fra.dot.gov/rpd/passenger/2325.shtml

- Refinance outstanding debt incurred for the purposes listed above; and
- Develop or establish new intermodal or railroad facilities

Direct loans can fund up to 100% of a railroad project with repayment periods of up to 35 years and interest rates equal to the cost of borrowing to the government. Eligible borrowers include railroads, State and local governments, government-sponsored authorities and corporations, joint ventures that include at least one railroad, and limited option freight shippers who intend to construct a new rail connection.

These federal financial assistance programs must pay for the cost to the government of providing that financial assistance. In most cases this is done with appropriations from Congress. Since the RRIF Program does not currently have an appropriation, this cost must be borne by the applicant which may entail costs of up to $100,000 per loan.[55]

Delaware may decide to offer guarantees to private parties interested in applying for this loan.

***Transportation Innovation & Finance (TIFIA)***

The Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA), via the US Department of Transportation (USDOT), makes three forms of credit assistance available for surface transportation projects of national or regional significance: secured (direct) loans, loan guarantees and standby lines of credit.

The TIFIA credit program's fundamental goal is to leverage federal funds by attracting substantial private and other non-federal investment in critical improvements to the nation's surface transportation system.

Some passenger rail projects may be eligible for TIFIA including intercity passenger rail facilities and passenger rail vehicles.[56]

### 8.1.5 Future Capital Investment

DelDOT's Capital Transportation Program (CTP) is a 6-year program of transportation investments that is updated yearly. DelDOT submits a proposed annual update to Delaware's six-year Capital Transportation Program to the Governor's Council on Transportation (COT). The COT reviews proposed projects, works with the MPOs to prioritize new projects, holds public meetings and hearings, and submits the CTP to the governor and budget office by March of each year. Expenditure of CTP funds is authorized when the General Assembly passes the "Bond Bill," which is for each fiscal year (July 1-June 30).

The most recent approved CTP is for years 2010 through 2015. Only a small portion of the program is related to rail spending which is usually addressed in statewide and county-specific spending categories. Much of rail spending is anticipated on an annual basis because it relates to specific federal or state programs. Recurring rail-related investment consists of the following categories, as included in the 2010-2015 CTP:

[55] http://www.fra.dot.gov/rpd/freight/1770.shtml
[56] http://www.fra.dot.gov/rpd/passenger/269.shtml

- Rail crossing safety program (these programs are discussed in more detail in Chapter 6)
- Rideability program (these programs are discussed in more detail in Chapter 6)
- Rail Preservation
- Other less specific investment areas:
    - Transportation Enhancements[57]
    - Information Technology Initiatives Program

Non-recurring, project and county specific rail spending in the 2010-2015 CTP includes the following:

- Newark Train Station: relocating the Newark Train Station to west of SR 72[58]
- Northeast Corridor Improvements Yard to Ragan, Civil, Structural: constructing an additional rail line and reconstruction of the rail bridge over Mill Creek (Structural/Civil Phase)
- Rail Improvements, Third Track, Newark to Wilmington: adding a third high-speed track along a 1.5-mile segment of the NEC, which will increase track capacity and allow operation of 10 additional SEPTA commuter trains between Wilmington and Newark ( Construction Phase)[59]
- Orange Street Bridge Rehabilitation: reconstructing the Orange Street railroad overpass on the Amtrak NEC in Wilmington
- Wilmington-Newark Commuter Rail Cars: purchasing four new commuter rail cars for service between Newark and Philadelphia
- Rail Program Autoport: improving access to the Port of Wilmington
- Wilmington Train Station: renovating passenger amenities at Wilmington Train Station, including the main entrance and restroom facilities and improving access for persons with disabilities.

**RENOVATED WILMINGTON STATION**

[57] The goal of the Transportation Enhancements (TE) Program is to provide funding support for the development and implementation of a variety of non-traditional projects that highlight the cultural, aesthetic and environmental aspects of the transportation system (example: rehabilitation and operation of historic railroad facilities)

[58] Note: with the purchase of the Chrysler Site by the University of Delaware in 2009, a feasibility study was conducted in 2010 that determined it would be feasible to keep the Newark Station in the vicinity of its current location. The funding allocated for relocation may be used for the improvements needed to eliminate the passenger-freight conflicts at this location. Refer to http://www.wilmapco.org/newarktrain/ for the full report.

[59] The Third Track project is broken out into two different phases in the DelDOT CTP (FY 2011- FY2015) one for Structural and Civil work and one for Construction.

**TABLE 8-1: ONGOING CAPITAL INVESTMENT PROGRAMS**

| Program Name | FY 2011 Funding ('000) |
|---|---|
| Rail crossing safety | $1,447 |
| Rideability program | $750 |
| Transportation Enhancements[60] | $4,250 |
| Information Technology Initiatives[61] | $6,960 |
| Rail preservation | $300 |

Chapter 9 contains additional information on projects beyond the next six-year period.

### 8.1.6 Capital Funding

Sources of funding vary by project and program. Table 8-2 outlines sources of funding for rail-specific programs and projects outlined previously.

**TABLE 8-2: FUTURE CAPITAL INVESTMENT SOURCES OF FUNDING**

| Program Name | Federal | State | Other |
|---|---|---|---|
| Rail crossing safety | 90% | 10% | |
| Rideability program | | 100% | |
| Transportation Enhancements[62] | 80% | 20% | |
| Information Technology Initiatives[63] | | 100% | |
| Rail preservation | | 100% | |
| **Project Name** | **Federal** | **State** | **Other** |
| Newark Train Station | Varies by phase, 0%–80% | Varies by phase, 0%–100% | |
| Northeast Corridor Improvements Yard to Ragan (Structural/Civil Phase) | Varies by phase, 0%–80% | Varies by phase, 0%–100% | |
| | | | |
| | | | |
| Rail Improvements, Third Track, Newark to Wilmington (Construction Phase)[65] | 80% | 20% | |
| Orange Street Bridge Rehabilitation | | 33% | 67% |
| Wilmington-Newark - Commuter Rail Cars | 100% | | |
| Rail Program AutoPort | 100% | | |
| Wilmington Train Station | Varies by phase, 0%–80% | Varies by phase, 0%–100% | Varies by phase, 0%–100% |

[60] Only a small portion is related to rail
[61] Only a small portion is related to rail
[62] Only a small portion is related to rail
[63] Only a small portion is related to rail
[65] The Third Track project is broken out into two different phases in the DelDOT CTP (FY 2011- FY2015) one for Structural and Civil work and one for Construction.

# 9 Statewide Rail Improvements and Investments

### 9.1.1 Regional Initiatives

The Northeast Corridor Infrastructure and Operations Advisory Commission was created under the Passenger Rail Improvement and Investment Act of 2008 (PRIIA). The Commission is directed by Congress to encourage mutual and regional cooperation in developing strategies to maintain, improve and expand intercity, commuter and freight rail along the Northeast Corridor. Carolann Wicks, former Secretary of the Delaware Department of Transportation was selected to Chair the Commission at its inaugural meeting in Washington, D.C. on September 27, 2010.

The Commission is comprised of representatives from the U.S. Department of Transportation, Amtrak, the District of Columbia and the eight states served by the Northeast Corridor: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware and Maryland.

Delaware will be very active in the Commission's mandate to recommend future direction of the NEC as a transportation and economic corridor for the region and the nation. The Commission will develop goals and recommendations for the future of the Corridor that will expand and improve services, reliability, reduce travel times, increase service frequencies and develop a formula for allocating costs and revenues among the users and the owners of the Corridor.

In 2010, the Federal Railroad Administration (FRA) announced a Multi-State Planning Grant award of $10 million for high speed improvement service development plan and environmental analysis of the Northeast Corridor. Delaware joined 10 other states and the District of Columbia requesting FRA to conduct the study. Delaware will contribute and participate in the two-year NEC study.

#### Chesapeake Connector as a Regional Asset

The Chesapeake Connector project will construct a third track on Amtrak's Northeast Corridor (NEC) between Prince and Bacon Interlockings in Cecil County, Maryland – a distance of approximately 6.3 miles. One of Delaware's priority rail projects, this project is anticipated to provide both public and private benefits.

The NEC currently narrows down to two tracks in this area, making this a critical choke point for freight and passenger trains. The third track will benefit Norfolk Southern, which has to use the NEC to access Delaware and the Delmarva Peninsula, but is restricted to doing so between the hours of 10:00 p.m. and 6:00 a.m. Waiting trains also impact service to the Port of Baltimore. The two track configuration also hampers extension of commuter rail service into this segment, which is the only portion of the NEC between Washington DC and New York City without commuter rail service.

This project is to provide three continuous tracks between Perryville, Maryland and Wilmington, Delaware. If feasible, a grade-separated crossing of the existing NEC Tracks 2 and 3 could be further evaluated, providing complete separation of NS and Amtrak operations. Grade separation would improve safety for freight and passenger operations and expand freight operations to a 24 hour window.

### 9.1.2 Rail Projects

Future capital investment in Delaware's rail system depends on the investments provided by the private sector, as well as the State and federal government. As shown in the proposed table of projects in Table 9-1, the majority of projects require funding from a variety of sources.

The projects contained in this list were compiled from a variety of sources, including the CTP and rail stakeholders. They represent both passenger and freight needs, and sometimes both within a single project. The passenger rail projects are intended to address service and operational deficits in the region and the freight projects similarly address the need to address capacity issues as well as state-of-good repair.

**Amtrak's Northeast Corridor Infrastructure Master Plan**

Released in October 2009, this Master Plan represents collaboration between key stakeholders of the NEC including 16 railroads, 12 states, the District of Columbia, the FRA, and regional policy and planning groups. The intent of the plan is to secure widespread support for investment that will enable the NEC to achieve its full potential as a critical component of the nation's transportation system. Included in the plan are future service plans as well as a phased program of infrastructure improvements to achieve the 2030 vision for both intercity and commuter rail along the NEC .

Freight and passenger projects are included for each of Delaware's counties and are intended to reflect the desire to enhance the communities in which they are located through environmental, economic, or employment benefits. Several opportunities for private investment are noted, building off of the State's success with the Shellpot Agreement.

The projects are organized based on whether they would be completed in the short term (through 2015), mid-term (2020), or longer term (2030). They were evaluated based on the goals and objectives for the SRP, which included considering the project's impacts on the State's (and region's) rail transportation system, as well as their influence and impacts on other modes such as transit, trucks, aviation, and ports.

In addition, a series of planning studies have been identified to continue to address the need for additional or expanded rail service as the State's population continues to grow, particularly in the southern two counties. The majority of projects and studies that have been identified relate to ways to mitigate the chokepoints throughout Delaware's rail transportation system. At both a regional and a local level, Delaware's rail system is impacted by Amtrak's NEC Infrastructure Master Plan and the Mid-Atlantic Rail Operations Study, as well as the larger-scale freight efforts such as NS' Crescent Corridor.

**Mid-Atlantic Rail Operations Study (MAROPS)**

Led by the I-95 Corridor Coalition, this two phase study was sponsored by the state departments of transportation in Delaware, New Jersey, Pennsylvania, Maryland and Virginia. Phase I (2002) focused on the need to address regional transportation as a system and identified the rail chokepoints, including the program needed to eliminate them. Phase II (2009) examined the condition and performance of the region's rail system in order to further understand the impact of rail choke points on rail freight transportation and the economy of the region.

Delaware realizes that needed improvements do not stop at state borders and that there are multi-state benefits on many of the proposed projects. While the project table that follows only contains projects that are directly sponsored by Delaware, the State is also involved in projects sponsored by other states. For example, Maryland's Third Track Project, a.k.a., the "Chesapeake Connector" and the replacement of the Baltimore and Potomac tunnel in Maryland are two projects that directly impact Delaware's rail transportation system. In the case of the Chesapeake Connector, while located in Cecil County Maryland, Delaware stands to gain significant freight and passenger benefits, hence the State's interest in continuing to move this project forward.

The desire to eliminate chokepoints on the NEC has been raised as a regional issue, with Amtrak, Maryland, Delaware and NS all very interested in working with the FRA to determine the best way to add capacity in New Castle County as well as Cecil County, Maryland. It is quickly apparent that freight and passenger rail issues overlap considerably in the region, particularly on Amtrak's NEC.

In terms of the planning timeframes, the proposed improvements are arranged for both the shorter and longer-term. In a short term view (less than five years), projects are focused on how much funding is needed to maintain the current system. In the longer term (up to 20 years), Delaware is focusing on how to expand its rail transportation system to meet projected growth.

### Chesapeake Connector Freight and Passenger Rail Benefits

WILMAPCO is currently leading the development of a freight and passenger rail benefits study in Cecil County Maryland to investigate the cost and benefits of a series of physical improvements between Prince and Bacon Interlockings on the NEC, a distance of approximately 6.3 miles. This section of the NEC is currently a two-track section in a corridor that is generally a three track railroad. The study is investigating future passenger and freight rail opportunities by estimating demand for intercity passenger rail service for Amtrak and MARC commuter services and quantifying freight benefits in terms of carloads and potential new markets. The cost-benefit analysis will also help to determine the need and timing for any physical improvements.

Although this section of track is located in Maryland, it is one of Delaware's priority rail projects and anticipated to provide both public and private benefits. This is a unique situation for the State in that if it is determined that the project should advance, Delaware may need to participate in funding this out-of-state project. The study results are intended to provide a path forward with a series of actions to advance this project in accordance with federal and private funding options. The study is expected to be completed by the end of 2011 and includes collaboration with DelDOT/DTC, CSX, MDOT/MTA, NS, Amtrak and other stakeholders.

The list presents previously-identified projects of various sizes, that together, maintain and add capacity to Delaware's rail transportation system. Improvements include signals, switches, sidings, and grade crossings.

Improvements to passenger rail service were focused on considering the following factors:

- Increasing ridership
- Increasing on-time performance
- Increasing multimodal connectivity
- Reducing travel times
- Increasing farebox recovery ratio
- Increasing service frequency

These projects also reflect a recommended change from DelDOT's LRTP to expand the capacity of rail facilities for freight and commuter passengers.

## Newark Train Station Study

At 272 acres, the former Chrysler Assembly Plant represents one of the largest contiguous developable land parcels adjacent to a rail station on the entire NEC. Close to residential neighborhoods and existing university facilities, the site is within walking distance of the downtown/historic district of the City of Newark. The University of Delaware plans to develop this parcel as a regional asset and include transit-oriented development to maximize opportunities for integrated transportation and pedestrian networks.

The Newark Train Station Study was undertaken to establish the physical and operational feasibility of redeveloping a passenger rail station at the former Chrysler site. Completed in 2010, this feasibility study determined that it would be feasible to construct an additional freight track that would eliminate the freight and passenger train operating conflicts at the station.

There is also potential to improve regional commuter rail service by closing the gap between Perryville, Maryland and Newark, Delaware, linking MARC and SEPTA service in the future.

There are a number of different stakeholders who have an interest in the Newark Train Station:

- University of Delaware
- Delaware Transit Corporation
- DelDOT
- City of Newark
- New Castle County
- Delaware Economic Development Office
- WILMAPCO
- NS
- Amtrak
- MTA/MARC
- SEPTA

In October 2010, WILMAPCO was awarded a TIGER II Planning Grant to fund the Newark Regional Transportation Center, which would advance the planning efforts for the project including preliminary engineering efforts and National Environmental Policy Act (NEPA) environmental studies. The funds would be used to 1) determine the optimal solution for train operations in the vicinity of Newark; 2) design a reconfiguration of the Newark Train Station for passenger and intermodal use; and 3) develop the Newark Train Station in context with the 272-acre former Chrysler site, in concert with the University of Delaware capital plans, and leverage the transit-oriented development (TOD) opportunities afforded by the site. In addition to resolving the freight and passenger train operating conflicts, the intent of the effort is for the Newark Regional Transportation Center to serve as a catalyst for enhancing sustainable development in the City of Newark.

**LOCATION OF POTENTIAL NEW TRACK AT NEWARK**

This project list was pulled from the following documents, plans, and other relevant products:

- Delaware Freight Rail Plan, 2000
- Delaware NEC Rail Study, 2003 Final Report
- 2004 Statewide Freight and Goods Movement Study
- MARC Growth and Investment Plan, 2007
- Amtrak NEC Infrastructure Master Plan, 2010
- WILMAPCO and Cecil County, MD Plans for NEC Third Track between Perryville and Elkton
- Delaware 2010 Freight Shippers Survey, DEDO

**Delaware's Offshore Wind Park**

The Offshore Wind Park will provide the amount of energy used by as many as 100,000 households in the state, and meets the state's goals for stable-priced, clean energy. The offshore wind farm is to be built 11.5 miles off the coast of Rehoboth Beach in Delaware. Rail may be an important resource in importing the materials needed to complete the wind farm.

The project list on the following pages shows a series of projects that could be accomplished in the next 20 years. While it is not likely that all of these projects will be completed in this timeframe, it should serve as a reference for transportation, land use agencies, and others when making decisions on projects that would affect Delaware's transportation network. It could also be used as a potential source of projects which would be applicable for federal grant applications.

Passenger rail projects were evaluated and prioritized based on their relevance to the SRP's goals and objectives. While a project may be shown as a relatively high priority, there are several reasons why another project would be implemented sooner, including the ability of private partners to contribute funding and critical repair needs.

The projects included in the list support DTC's intentions to expand commuter service by extending additional SEPTA trains into Delaware. More frequent peak-hour service and additional travel options in midday and evening will allow trains to serve more customers and remove additional traffic from I-95 and other highways. This is largely a matter of funding the incremental operating costs of extending trains which currently terminate at Marcus Hook to Wilmington or Newark, but there are also two significant capital issues which are being addressed. A two-track section of the NEC south of Wilmington station limits the number of trains which can operate beyond that point; DelDOT's Commuter Rail Improvement Program (CRIP) will provide a third track and remove this constraint. SEPTA will also need additional rolling stock to operate additional train-miles, so Delaware is procuring four commuter rail cars as part of the SEPTA Silverliner V acquisition program currently underway and discussed below.

In addition to the projects included in these lists, there are a number of projects either underway or of interest that warrant mentioning in the SRP.

SILVERLINER V CARS NEAR NEWARK

The projects underway include:

- **SEPTA Commuter Rail Cars**. Four cars of SEPTA's new commuter rail purchase will be primarily dedicated to the Wilmington-Newark line providing service to Philadelphia. With a total capital cost of $7.9M, these cars are anticipated to be in service in 2011.

- **Wilmington Station Rehabilitation Project**. As described earlier in this document, performing the necessary improvements to this station will restore the building's exterior as well as improve passenger amenities including the main entrance, restrooms, and better access for persons with disabilities. This project was completed in early 2011 and funded partially through the American Recovery and Reinvestment Act (ARRA), DelDOT and FTA for a total project cost of $32 million.

- **BR 1-651 on Newport Road Railroad Crossing at Marshalton Road.** A CSX project, this includes the replacement and raising of the new bridge to conform to CSX railroad requirements. As part of this project the road approaches are also being raised and tied in to the existing roadway to afford the railroad additional clearance under bridge 1-651. This is a $7 million project that includes federal and local funding and is expected to be completed in 2015.

- **BR 1-503 on St Anne's Church Road Railroad Crossing over NS**. This project includes replacement of existing bridge which was on DelDOT's list of structurally deficient bridges with steel beams and composite concrete deck with Mechanically Stabilized Earth (MSE) walls. The total cost of the project is approximately $9.3 million and expected to be completed in FY 2011.

As discussed in Chapter 6, there are also several freight programs that fund specific smaller projects each year. These projects are:

- **Statewide Rail Crossing Safety Program.** This program encompasses safety and rideability improvements including installation of signage, pavement markings, lights and/or gates at deficient crossings. In FY 2010, $9.3 million has been programmed, which includes both a federal and a State share. The improvements in this program provide for safer highway/rail grade crossings at locations with a statistically significant crash history.

- **Rail Preservation Program.** Projects in this program allow for preventative maintenance to sustain and upgrade the condition of the State-owned lines in Sussex County and the historic Red Clay Valley (parent company of the Wilmington and Western Railroad). $2.1 million in State funds was programmed for FYs 2010-2015.

Additionally, for freight needs, there have been several projects or issues identified that may evolve into formal projects at some point in the future. It is important to note that these needs do not have any State funding associated with them at this time. These projects include:

- **Georgetown Siding.** This near-term project would install a one-track switch in the Indian River Secondary Line and construct a small siding adjacent to the Georgetown Station. Construction of this project would allow NS to store freight cars in Georgetown, which are mostly unit trains with aggregate.
- **Relocate Edgemoor Yard.** This project would relocate the Edgemoor Yard to an area around Bear or Porter in New Castle County. A potential new yard in the long-term would centralize all north end operations and allow for Newark Yard to serve as the primary staging yard for NS, supporting the Port of Wilmington and Reybold.
- **Seaford Swing Bridge Rehabilitation.** This long-term project would rehabilitate the obsolete turning bridge over the Nanticoke River in Sussex County. As a critical segment to NS' Maryland and Virginia operations, a tri-state funding plan and/or a public-private partnership similar to the Shellpot Agreement could be investigated.

Federal stimulus funding has provided Delaware with the opportunity to study and/or implement many projects that have been identified in previous years. The table that follows also includes projects that were advanced via federal stimulus and other federal funding programs. The FRA's High-Speed Intercity Passenger Rail (HSIPR) Program provided funding to one study in early 2010, the Downstate Intercity Rail Project.

Finally, there are several potential needs that Delaware will need to monitor and address as the SRP is advanced.

- **Positive Train Control (PTC).** The Rail Safety Improvement Act of 2008 requires railroads to have PTC systems in place by the end of 2015. As described in Chapter 6, the State will continue to follow this unfunded mandate as additional legislation is developed.
- **CSX Double Tracking in New Castle County.** CSX desires double tracking portions of their line that runs through New Castle County including 9.1 miles at the Pennsylvania/Delaware state line to Elsmere and another 9.9 miles from Landenberg Junction to the Maryland/Delaware state line.

**TABLE 9-1: PROPOSED FREIGHT PROJECTS**

| Timing | Project Title | Location | Description | Total Capital Cost (In Millions) | Rationale | Estimated completion date |
|---|---|---|---|---|---|---|
| Short-term | New Castle Secondary Siding | New Castle County | Storage capacity transferred from NEC to the New Castle Secondary. Reconstruct or rebuild the Tasker siding on New Castle Secondary. Project will also increase capacity on the Newport Industrial Track. | $0.7 | This project will accommodate additional NS stone trains heading Downstate by allowing more traffic flow without impacting local operations. | 2015 |
| Short-term | Rail Program Autoport | New Castle County | The project will address capacity improvements for handling railroad cars at Port of Wilmington. Sidings will be constructed on Autoport, Inc. and NS Railway right-of-way to increase capacity from 60 to 90 railcars. New connections to the NS main track will be provided to eliminate the conflict with highway traffic at Terminal Avenue. It is part of a public-private project with NS putting up 70% of the cost and FHWA 30%. | $3.015 | This project represents earmark money going to NS to improve access to the Port of Wilmington. Improving access to the Port of Wilmington will enable easier transportation of goods into and out of the Port, which will contribute positively to Delaware's economy. The project is a partnership between the Port and NS. NS has received an FHWA earmark of $984,900 and is funding the remainder themselves. | 2015 |
| Short-term | Raise Edgemoor Yard | New Castle County | Flooding frequently occurs in the yard causing disruption in service. To fix this problem the yard could be raised anywhere from 2 to 6 feet. | $7.0 | This is a short term solution that may not be the most effective because of the steep grade the yard will need to be raised to avoid the flooding. A longer term solution would be to relocate the yard. | 2015 |

## TABLE 9-2: PROPOSED PASSENGER RAIL PROJECTS

| Timing | Project Title | Location | Priority | Description | Total Capital Cost (In Millions) | Local Share | Federal Share | Rationale | Estimated completion date |
|---|---|---|---|---|---|---|---|---|---|
| Short-term | Orange Street Bridge Rehabilitation | New Castle County | Low | Reconstruct bridge near Wilmington Station. Reconstruction of the Orange Street railroad overpass on the Amtrak Northeast Corridor in Wilmington to allow three through tracks making it more efficient to have more commuter trains south of Wilmington. | $7.4 | $2.4 | $5.0 (Amtrak) | Remove girder permitting Amtrak to use Track 2 northbound saving operating time. Amtrak recently indicated through Value Engineering of a potential $2.2M savings. | 2013 |
| Short-term | CRIP – Third Track Wilmington-Newark. Third Track - Ragan to Brandy | New Castle County | High | Install 1.5 miles of track, turnouts, freight approach and reconfiguring interlockings. Also includes communications and signals work. | $37.6 | $10.1 | $27.5 | Improvements are essential to add commuter frequencies south of Wilmington and improve reliability of all services | Mar. 2014 |
| Long-term | Ruthby Interlocking | New Castle County | Low | Expand rail capacity near S.R. 273 | $2.0 | $0.4 | $1.6 | Crossovers between tracks 1, 2 and 3 to support expanded SEPTA train frequencies. | Long-term |
| Long-term | High level platforms - Churchmans Crossing | New Castle County | Low | Construct high level platforms on both sides and a parking garage while maintaining freight access | $20.0 | $4.0 | $16.0 | Expanded capacity at Churchmans Crossing to support expanded SEPTA frequencies. Contract with partner requires structured parking. | Long-term |
| Long-term | Claymont Station Improvements | New Castle County | Medium | From Claymont Station Study – construct new high-level platforms at north part of station platform on straight section of track. The Preferred Alternative would add station amenities, improved pedestrian connections, a new station building located close to Myrtle Avenue and a new station entrance with a bus turnaround, passenger drop-off, public plaza, and 12 carpool and carshare parking spaces. Expand Claymont's commuter station in collaboration with TOD. Passenger bridge and structured parking. | $30.0 | $6.0 | $24.0 | In partnership with developer to expand and improve passenger facility. | Long-term |
| Long-term | Reconfigure Holly Interlocking | New Castle County | Low | Realign passenger tracks near Claymont. | $10.0 | $2.0 | $8.0 | Increase speed of intercity and commuters; separation of freight operations. | Dec. 2020 |
| Long-term | Holly - Landlith Interlockings - Track Upgrade, Reconfiguration, New Fourth Track | New Castle County | Low | | TBD | TBD | TBD | Reconfiguration of interlocking will provide flexibility through Wilmington. New track will improve track capacity and operations. | Long-term |
| Long-term | Churchmans Crossing Parking Structure | New Castle County | Medium | Construct new parking garage at commuter rail station in conjunction with private development at the site. | $7.0 | | | Contract with development partner requires structured parking. | Long-term |
| Long-term | Landlith to Wine (New Third Track) | New Castle County | Medium | Construct new 3rd track between Landlith and Wine Interlockings | $50.0 | $10.0 | $40.0 | New track to rectify a choke point on the NEC and allow the possibility for additional SEPTA service into Wilmington. | Long-term |

**TABLE 9-3: PROPOSED STUDIES**

| Timing | Project Title | Priority | Description | Total Study Cost (In Millions) | Estimated completion date |
|---|---|---|---|---|---|
| Short-term | Downstate Rail--Delmarva Intercity Rail Study | High | Investigate demand and start-up needs for 1-2 daily trains to Southern Delaware and Ocean City, Maryland. Study proposed intercity passenger rail corridor in southern Delaware. | $0.9 | 2012 |
| Short-term | Newark Station Design & Environmental Analysis | High | Enlarge station capacity to accommodate new large development at University of Delaware. | $3.0 | 2012 |
| Short-term | Chesapeake Connector: Freight and Passenger Rail Benefits Study | High | Cost benefit analysis for physical improvements to 6.3 mile NEC segment in Cecil County, Maryland | $0.15 | 2011 |
| Short-term | Delaware-Maryland Commuter Rail | Medium | Analyze demand costs for commuter rail connecting Newark, Northern Maryland, Baltimore & Washington DC. | $1.5 | 2013 |
| Short-term | Newport Station Area Planning TOD | Medium | Transit and land use planning, traffic analysis and modeling, site development design. | $0.1 | 2011 |
| Mid-term | Chesapeake Connector | Medium | Design, environmental analysis and preliminary engineering, 3rd track Bacon to Prince (Maryland). | $2.0 | 2015 |
| Long-term | Edgemoor Station Area Planning TOD | Medium | Transit and land use planning, traffic analysis and modeling, site development design. | $0.1 | Mid-term |
| Long-term | Kent County to New Castle County Commuter Rail | High | Address commuter rail New Castle County to Kent County regardless of the outcome of the Delmarva Intercity study | $0.9 | Long-term |

Current Studies